OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

VOL. 860

MARCH 1969

MICRO PHOTO DIVISION
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 4, 1969 Volume 860 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1968

Examiner affirmed	134
Examiner affirmed in part	17
Examiner reversed	37
Total	188

Certificates of Correction for the Week of Mar. 4, 1969

D. 209,906	3,359,396	
3,020,139	3,359,469	
3,314,111	3,360,537	
3,328,053	3,363,089	
3,342,180	3,363,995	
3,344,707	3,364,322	
3,344,977	3,364,477	
3,347,869	3,365,077	
3,349,112	3,365,243	
3,353,325	3,365,297	
3,353,421	3,365,312	
3,354,002	3,365,647	
3,356,713	3,365,691	
3,357,196	3,370,515	
3,357,299	3,378,704	
3,357,821	3,387,820	
	3,388,023	

Rules of Practice in Patent Cases

[37 CFR Part 1]

Proposed Changes Relating to Issuance of Patent to Assignee

The Patent Office is considering changes in its rules of practice relating to issuance of patent to assignee.

The proposed changes are intended to expedite the process of title searching prior to issuance of patent to assignee. A patent would be issued to the assignee of record only if specifically requested at time of payment of the issue fee; the request to be entered in the appropriate space of the Fee Transmittal notice. When printed, the revised Notice of Allowance (POL–85) and the Fee Transmittal Notice (POL–85*a*) would reflect this change. Space would also be provided on the Fee Transmittal Notice for entry of the Deposit Account Number where its use is desired. The requirement for two copies of each paper authorizing use of the Deposit Account would remain unchanged.

Therefore, under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6), notice is hereby given that the Patent Office proposes to revise § 1.334 of Title 37, Code of Federal Regulations, to read as follows:

§ 1.334 *Issue of patent to assignee*

In case of an assignment of the entire interest in the invention and application, or of the entire interest in the patent to be granted, the patent will issue to the assignee only if specifically requested at time of payment of the issue fee; and if the assignee hold an undivided part interest, the patent will issue jointly to the inventor and the assignee only if specifically requested at time of payment of the issue fee; if it is desired that the patent so issue the assignment in either case must first have been recorded, and at a day not later than the date of the payment of the issue fee; in the case of an application for reissue, the assignment must be recorded before the case is allowed; in the case of an application for a design patent, the assignment must be recorded at least ten days before the case is allowed.

All persons who desire to present their views, objections, recommendations, or suggestions in connection with the proposed changes are invited to do so on or before March 31, 1969.

EDWARD J. BRENNER,
Commissioner of Patents.

Dated: Feb. 11, 1969.

Approved:
ALLEN V. AUSTIN,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 213; Feb. 13, 1969

Disclaimers

3,283,871.—*Paul E. Becking*, Lake Orion, *James D. Bungard*, East Detroit, and *Roy E. Sherman*, Warren, Mich. WRITING SYSTEM HAVING ORDINATE AND ABSCISSA READER MEANS. Patent dated Nov. 8, 1966. Disclaimer filed Jan. 27, 1969, by the assignee, *Intercontinental Systems, Inc.*

Hereby enters this disclaimer to claims 1, 2, 3, 7, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 27 of said patent.

3,359,665.—*Martin E. Gerry*, Santa Ana, Calif. COMBINATION SOUND AND SLIDE PROJECTOR. Patent dated Dec. 26, 1967. Disclaimer filed Dec. 10, 1968, by the inventor.

Hereby enters this disclaimer to claim 1 of said patent and the terminal portion of the term of the patent subsequent to Dec. 12, 1984.

Dedication

Reissue No. 26,142.—*Setrak K. Boyajian*, Worcester, Mass. ENVELOPES AND THE LIKE WITH REMOISTENABLE ADHESIVE COMPRISING POLYVINYL ALCOHOL. Reissue Patent dated Jan. 10, 1967. Dedication filed October 17, 1968, by the assignee, *E. I. du Pont de Nemours and Company.*

Hereby dedicates to the Public all of the remaining term of said patent.

New Applications Received During December 1968

Patents	8001
Designs	441
Plant Patents	5
Reissues	40
Total	8487

Issue—March 4, 1969

Patents	1300	No. 3,430,260 to No. 3,431,559, incl.
Designs	76	No. 213,414 to No. 213,489, incl.
Reissues	11	No. 26,529 to No. 26,539, incl.
Total	1387	

Foreign Patents Received in the Search Center as of January 31, 1969

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Jan. 17, 1969	44,592
(*Patents*)	Jan. 15, 1969	283,957
Austria	Jan. 27, 1969	266,000
Belgium	Jan. 22, 1969	676,400
Canada	Jan. 27, 1969	804,800
Czechoslovakia	Jan. 17, 1969	126,950
Denmark:		
(*Fremlaeggelsskrifter*)	Nov. 19, 1968	111,520
(*Patents*)	Nov. 19, 1968	110,050
East Germany	Jan. 15, 1969	64,817
Egypt	June 28, 1967	6,873
Finland:		
(*Utläggningsskrifter*)	Jan. 7, 1969	40,450
(*Patents*)	Oct. 8, 1968	37,023
France:		
(*Patents*)	Jan. 22, 1969	1,534,650
(*Additions*)	Jan. 29, 1969	91,800
(*Medicaments*)	Jan. 27, 1969	5,500 M
(*Additions*)	May 2, 1968	162 CAM
Germany:		
(*Auslegeschriften*)	Dec. 2, 1968	1,277,170
(*Patents*)	Dec. 16, 1968	1,262,992
Great Britain	Jan. 27, 1969	1,136,700
India	Apr. 11, 1968	101,130
Ireland	Nov. 20, 1968	27,841
Italy	Apr. 25, 1968	670,000
Japan	Jan. 22, 1969	29,600/68
Netherlands:		
(*Octrooiaanvragen*)	Oct. 7, 1968	07,864/68
(*Patents*)	Dec. 2, 1968	125,282
Norway:		
(*Utlegningsskrifter*)	Jan. 27, 1969	115,776
(*Patents*)	Jan. 8, 1969	113,329
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Jan. 22, 1969	56,033
Rumania	Jan. 22, 1969	51,151
Sweden:		
(*Utläggningsskrifter*)	Jan. 15, 1969	304,919
(*Patents*)	Jan. 15, 1969	303,114
Switzerland	Jan. 30, 1969	464,120
U.S.S.R.	Dec. 12, 1968	220,122

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Issue Fees

Effective March 31, 1969, the Patent Office will discontinue the practice of estimating the number of printed pages of specification in advance of printing.

Instead, a Minimum Issue Fee will be due three months from the date of the Notice of Allowance. This minimum fee, which consists of $100 plus $10 for the first page of printed specification plus $2 for each sheet of drawing, will be shown on the Notice of Allowance which has been revised to reflect the new practice.

After the patent is printed and the number of pages of specification is found to exceed the one already paid for, a Notice of Balance of Issue Fee Due will be attached to the Grant. Failure to pay this balance within THREE MONTHS FROM THE DATE OF THE PATENT will result in lapse of the patent.

Practitioners are urged to use the special fee transmittal forms provided with the Notice of Allowance and the Notice of Balance of Issue Fee Due.

The above fees will not be accepted from anyone other than the applicant, his assignee, attorney, or a party in interest as shown by the records of the Patent Office.

ATTENTION is also directed to the space designated on the Notice of Allowance Transmittal form PO–85*a* wherein the name of the assignee is required *if it is desired to have the patent issued to an assignee or assignees.*

RICHARD A. WAHL,
Jan. 31, 1969. *Assistant Commissioner.*

Erratum

All references to Patent No. 3,428,211 to Jerry F. Scharf, William J. Lohr, and Vinson S. Potts, for Container Closure Having Pull-Tab Opening Means, appearing in the OFFICIAL GAZETTE of February 18, 1969, should be deleted as the application was withdrawn from issue and the patent was not issued.

Patents Available for Licensing or Sale

D. 210,213. EGG SHAPED ROCKING TOY. Simmons Correia, Jr., 16 Wells St., Lawrence, Mass., 01841.

2,929,776. PROCESS FOR REMOVAL OF SULFUR, METALS AND ASPHALT FROM PETROLEUM CRUDES. Carlo Padovani et al. Correspondence to: Young & Thompson, Tower Bldg., 14th and K Sts., NW., Washington, D.C., 2005.

3,059,545. HYDRAULIC DEVICES FOR AUTOMATIC CONTROL OF MECHANICAL MOVEMENT, e.g., OF ADVANCE OF A GEAR BLANK IN A GEAR CUTTING MACHINE. Cesare Sabbioni, Via Gandino 35/2, Bologna, Italy.

3,318,499. SHEATH FOR A WOODSMAN'S TOOL. Niclo W. Kallio, 24 Cape Court, Pekin, Ill., 61554.

3,387,389. EDUCATIONAL VISUAL AID. Fred E. Wierauch, 1324 20th, Longview, Wash., 98632.

3,389,535. PROTECTIVE PACKAGING OF PLASTIC MATERIAL FOR VIALS AND THE LIKE, AS WELL AS PROCESS AND EQUIPMENT FOR OBTAINING IT. Massimo Armetti, Milan, Italy. Correspondence to: Krafft & Wells, 1007 Pennsylvania Bldg., Washington, D.C., 20004.

3,397,577. APPARATUS FOR INDICATING THE FILLED STATE IN LIQUID GAS CYLINDERS. Hans Siebert, Kassel, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,397,935. LIQUID CUP AND CONTAINER ASSEMBLY USABLE AS A BINOCULAR TELESCOPE. Michitoshi Natsume, Tokyo, Japan. Correspondence to: Sughrue, Rothwell, Mion, Zinn & McPeak, Munsey Building, Washington, D.C., 20004.

3,407,450. FASTENING DEVICE FOR SKI AND MOUNTAINEERING SHOES. Loris Baso. Correspondence to: Woodhams, Blanchard and Flynn, 2026 Rambling Road, Kalamazoo, Mich., 49001.

3,410,352. RECIPROCATING BULLDOZER BLADE. Emery C. Tharp, 430 Powell St., Indianapolis, Ind., 46227.

3,417,723. AUXILIARY STEERING DEVICE FOR AN OUTBOARD MOTOR BOAT. Audrey O. Akermanis, 3401 N. Westmoreland Drive, Orlando, Fla., 32804.

3,420,940. AUTOMATIC PLAYER FOR ELECTRONIC MUSICAL INSTRUMENT. Ronald Glass et al. Correspondence to: Hugo E. Weisberger, Munsey Building, Washington, D.C., 20004.

The following 2 patents are offered by: Bradford E. Bailey, 812 St. Marks Ave., Westfield, N.J., 07090.

2,640,333. METHOD OF QUICK-FREEZING FOODSTUFFS.

2,699,045. METHOD OF MANUFACTURING ICE.

The following 2 patents are offered by: Ledgemont Laboratory, Attn: Lowell H. McCarter, Kennecott Copper Corp., 128 Spring St., Lexington, Mass., 02173.

3,408,283. HIGH CURRENT DUOPLASMATRON HAVING AN APERTURED ANODE POSITIONED IN THE LOW PRESSURE REGION.

3,409,529. HIGH CURRENT DUOPLASMATRON HAVING AN APERTURED ANODE COMPRISING A METAL OF HIGH MAGNETIC PERMEABILITY.

Hazeltine Research, Inc. offers to grant non-exclusive licenses on reasonable terms and conditions under the following patent.

Inquiries and requests for licenses should be addressed to: Hazeltine Research, Inc., 5445 W. Diversey Ave., Chicago, Ill., 60639. Attn: W. O. Swinyard, Pres.

3,316,349. IMAGE ORTHICON BEAM CONTROL SYSTEM FOR AUTOMATICALLY OPTIMIZING SIGNAL-TO-NOISE RATIO OF THE VIDEO OUTPUT.

The Radio Corporation of America offers to grant non-exclusive licenses on reasonable terms and conditions under the following 21 patents.

Inquiries respecting licenses should be addressed to: Radio Corporation of America, Staff Vice President, Domestic Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,409,339. DAMPING DEVICE.

3,409,736. PHASE AND FREQUENCY CORRECTION SYSTEM.

3,409,878. CONTROLLING INTERCHANGES BETWEEN A COMPUTER AND MANY COMMUNICATION LINES.

3,409,893. ZIGZAG RADIATOR WITH PANEL REFLECTOR.

3,410,203. NON-IMPACT PRINTER EMPLOYING LASER BEAM AND HOLOGRAPHIC IMAGES.

3,411,031. TRANSISTOR DEFLECTION CIRCUIT.

3,411,032. TRANSISTOR TELEVISION DEFLECTION CIRCUITS HAVING PROTECTION MEANS.

3,411,061. FAST CRITICALLY DAMPED MOTOR DRIVE SYSTEM.

3,411,149. MAGNETIC MEMORY EMPLOYING STRESS WAVE.

3,411,199. SEMICONDUCTOR DEVICE FABRICATION.

3,411,846. ELECTROPHOTOGRAPHY.

3,412,242. METHOD OF CHARGING A ZINC OXIDE PHOTOCONDUCTIVE LAYER WITH A POSITIVE CHARGE.

3,412,265. HIGH SPEED DIGITAL TRANSFER CIRCUITS FOR BISTABLE ELEMENTS INCLUDING NEGATIVE RESISTANCE DEVICES.

3,412,344. SEMICONDUCTOR PLASMA LASER.

3,413,063. ELECTROPHOTOGRAPHIC APPARATUS.

3,413,145. METHOD OF FORMING A CRYSTALLINE SEMICONDUCTOR LAYER ON AN ALUMINA SUBSTRATE.

3,413,417. AUXILIARY EARPHONE CIRCUIT FOR A HIGH VOLTAGE TRANSISTOR AMPLIFIER.

3,413,448. INFORMATION HANDLING APPARATUS.

3,413,553. METHOD OF SEPARATING CONDUCTORS EXTENDING FROM AN ELECTRICAL COMPONENT FOR TESTING PURPOSES.

3,413,597. GROUND SPEED AND TIME-TO-STATION INDICATOR FOR USE WITH DME.

3,413,612. CONTROLLING INTERCHANGE BETWEEN A COMPUTER AND MANY COMMUNICATIONS LINES.

The General Electric Company is prepared to grant non-exclusive licenses under the following 135 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: The General Electric Company, Patent Counsel, Housewares Division, 1285 Boston Ave., Bridgeport, Conn., 06602.

3,391,271. ELECTRIC FOOD COOKER.

Applications for license under the following patent may be adressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,411,121. INSULATED CLAMPING MEANS FOR LAMINATED MAGNETIC CORE.

Applications for license under the following 4 patents may be addressed to: Patent Counsel, Contractor Equipment Division, General Electric Company, 1285 Boston Ave., Bldg. 21–ES, Bridgeport, Conn., 06602.

3,404,316. CIRCUIT BREAKER SEGREGATION SYSTEM.

3,404,317. CIRCUIT BREAKER PANEL ASSEMBLY.

3,411,042. PANEL ASSEMBLY FOR SINGLE AND HALF WIDTH CIRCUIT BREAKERS.

3,412,291. PANELBOARD HAVING MULTIBLADED CONTACTS.

Applications for license under the following 4 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Medical Division, Waterford, N.Y., 12188.

3,067,230. PROCESS FOR PREPARING ORGANOSILICON COMPOUNDS.

3,114,721. RADIATION SHIELDING COMPOSITION.

3,208,973. EQUILIBRATION OF ORGANOPOLYSILOXANES USING PHOSPHORUS-CONTAINING CATALYSTS.

3,271,361. PROCESS FOR MAKING ORDERED SILOXANE POLYMERS.

Applications for license under the following 7 patents may be addressed to: Patent Counsel, Appliance and Television, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,153,913. REFRIGERATION SYSTEM INCLUDING CHARGE CHECKING MEANS.

3,273,353. FLEXIBLE TRAY TYPE ICE MAKER.

3,289,584. SEMI-AUTOMATIC ICE MAKER WITH AIR DISTRIBUTING MEANS.

3,362,188. REFRIGERATION SYSTEM INCLUDING HIGH PRESSURE PROTECTION.

3,376,711. REFRIGERATOR CABINET CONSTRUCTION.

3,408,825. ELECTRONIC REFRIGERATION CONTROL SYSTEM.

3,309,717. PROCESS FOR IMPROVING RESISTANCE OF THERMOPLASTIC MATERIALS TO ENVIRONMENTAL STRESS-INDUCED CRAZING, AND PRODUCT PRODUCED THEREBY.

Applications for license under the following 8 patents may be addressed to: Patent Counsel, LSTG Division, General Electric Company, 1 River Road, Bldg. #28, Schenectady, N.Y., 10005.

3,196,087. WATER DEMINERALIZATION APPARATUS.

3,234,109. METHOD AND APPARATUS FOR FLASH DISTILLATION.

3,387,155. REMOVABLE BRUSH MAGAZINE ARRANGEMENT.

3,393,333. GENERATOR COOLING STRUCTURE.

3,394,265. SPINNING RESERVE WITH INLET THROTTLING AND COMPRESSOR RECIRCULATION.

3,395,299. DOWNSET END WINDING ROTOR FOR DYNAMOELECTRIC MACHINE.

3,408,516. DYNAMOELECTRIC MACHINE ROTOR WITH CURRENT CARRYING ROTOR WEDGES.

3,408,517. MULTIPLE CIRCUIT WINDING PATTERNS FOR POLYPHASE DYNAMOELECTRIC MACHINES.

Applications for license under the following 9 patents may be addressed to: Patent Counsel, General Electric Company, X-Ray Department, 4855 Electric Ave., Milwaukee, Wis., 53201.

3,311,111. CONTROLLABLE ELECTRIC BODY TISSUE STIMULATORS.

3,244,174. BODY IMPLANTABLE CONDUCTOR.

3,333,045. BODY IMPLANTABLE ELECTRICAL CONDUCTOR.

3,335,716. DIAGNOSTIC THERMOGRAPHY METHOD AND MEANS.

3,340,493. BODY IMPLANTABLE ELECTRICAL CONNECTOR.

3,345,989. IMPLANTABLE POWER SOURCE EMPLOYING A BODY FLUID AS AN ELECTROLYTE.

3,391,569. RESPIRATION MONITOR CALIBRATOR.

3,416,533. CONDUCTIVE CATHETER.

3,416,534. BODY ORGAN ELECTRODE.

Applications for license under the following 50 patents may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

2,864,998. PRESSURE MEASURING ARRANGEMENT FOR A VACUUM CIRCUIT INTERRUPTER.

2,892,911. VACUUM-TYPE CIRCUIT INTERRUPTER.

2,892,912. VACUUM TYPE CIRCUIT INTERRUPTER.

2,949,520. CONTACT STRUCTURE FOR AN ELECTRIC CIRCUIT INTERRUPTER.

2,972,032. VACUUM INTERRUPTER.

2,975,255. VACUUM CIRCUIT INTERRUPTER.

2,975,256. VACUUM TYPE CIRCUIT INTERRUPTER.

2,976,382. ARC EXTINGUISHING STRUCTURE FOR AN ELECTRIC CIRCUIT INTERRUPTER.

2,980,782. VACUUM TYPE CIRCUIT INTERRUPTER.

3,008,022. CONTACT STRUCTURE FOR A VACUUM-TYPE CIRCUIT INTERRUPTER.

3,014,107. VACUUM SWITCH.

3,014,108. VACUUM SWITCH.

3,014,109. ALTERNATING CURRENT VACUUM SWITCH.

3,014,110. ALTERNATING CURRENT VACUUM CIRCUIT INTERRUPTER.

3,016,436. VACUUM CIRCUIT INTERRUPTERS.

3,036,180. CONTACT STRUCTURE FOR A VACUUM-TYPE CIRCUIT INTERRUPTER.

3,038,980. VACUUM TYPE CIRCUIT INTERRUPTER.

3,048,681. SHIELD MOUNTING ARRANGEMENT FOR A VACUUM CIRCUIT INTERRUPTER.

3,048,682. SHIELD MOUNTING ARRANGEMENT FOR A VACUUM CIRCUIT INTERRUPTER.

3,071,667. VACUUM-TYPE CIRCUIT INTERRUPTER.

3,082,307. VACUUM-TYPE CIRCUIT INTERRUPTER.

3,089,936. CONTACT STRUCTURE FOR AN ELECTRIC CIRCUIT INTERRUPTER.

3,090,852. GETTERING ARRANGEMENT FOR A VACUUM CIRCUIT INTERRUPTER.

3,125,441. ELECTRODES FOR VACUUM CIRCUIT INTERRUPTERS AND METHOD OF MAKING SAME.

3,140,373. ARC IONIZABLE BERYLLIUM ELECTRODES FOR VACUUM ARC DEVICES.

3,141,058. CERAMIC-TO-METAL SEAL FOR HIGH VOLTAGE VACUUM DEVICE.

3,158,719. CONTACT STRUCTURE FOR AN ELECTRIC CIRCUIT INTERRUPTER.

3,158,722. COIL STRUCTURE FOR PRODUCING A MAGNETIC FIELD IN AN ELECTRIC CIRCUIT INTERRUPTER.

3,163,734. VACUUM TYPE CIRCUIT INTERRUPTER WITH IMPROVED VAPOR-CONDENSING SHIELDING.

3,167,629. MOVABLE SHIELD STRUCTURE FOR VACUUM GAP DEVICES.

3,182,156. VACUUM TYPE CIRCUIT INTERRUPTER.

3,185,797. VACUUM TYPE CIRCUIT INTERRUPTER WITH IMPROVED ARC SPLITTING MEANS.

3,185,798. ELECTRIC CIRCUIT INTERRUPTER OF THE VACUUM TYPE WITH SERIES-RELATED ARCING GAPS.

3,185,799. VACUUM TYPE ELECTRIC CIRCUIT INTERRUPTER IN WHICH A MAIN ARC IS DIVIDED IN SERIES-RELATED ARCS.

3,185,800. VACUUM TYPE CIRCUIT INTERRUPTER WITH IMPROVED VAPOR-CONDENSING SHIELDING.

3,210,505. ELECTRODE STRUCTURE FOR AN ELECTRIC CIRCUIT INTERRUPTER.

3,211,866. VACUUM TYPE ELECTRIC CIRCUIT INTERRUPTER WITH PLURAL PARALLEL-CONNECTED CONTACT POINTS.

3,225,167. VACUUM CIRCUIT BREAKER WITH ARC ROTATION CONTACT MEANS.

3,246,979. VACUUM CIRCUIT INTERRUPTER CONTACTS.

3,263,162. APPARATUS AND METHOD FOR MEASURING THE PRESSURE INSIDE A VACUUM CIRCUIT INTERRUPTER.

3,283,101. DOUBLE-BREAK VACUUM SWITCH WITH BELLOWS MOUNTED MOVABLE BRIDGING CONTACT.

3,283,103. MEANS FOR CONTROLLING PHASE RELATIONSHIP BETWEEN FLUX AND CURRENT IN A VACUUM INTERRUPTER.

3,290,772. METHOD OF MAKING A BRAZED JOINT.

3,302,990. METHOD AND APPARATUS FOR EVACUATING AN ELECTRIC DISCHARGE DEVICE OF THE VACUUM TYPE.

3,313,604. BRAZED JOINT.

3,321,598. VACUUM-TYPE CIRCUIT INTERRUPTER WITH ARC-VOLTAGE LIMITING MEANS.

3,321,599. VACUUM-TYPE CIRCUIT INTERRUPTER WITH MEANS FOR REDUCING ARC VOLTAGE DURING HIGH INSTANTANEOUS CURRENTS.

3,345,484. SHIELDING FOR A VACUUM TYPE CIRCUIT INTERRUPTER.

3,372,258. ELECTRIC CIRCUIT INTERRUPTER OF THE VACUUM TYPE WITH ARC-VOLTAGE CONTROL MEANS FOR PROMOTING ARC TRANSFER.

3,372,259. VACUUM-TYPE ELECTRIC CIRCUIT INTERRUPTERS WITH ARC-VOLTAGE LIMITING MEANS.

Applications for license under the following 26 patents may be addressed to: General Electric Company, Aircraft Engine Group, 1000 Western Ave., West Lynn, Mass., 01905. Attn: Patent Counsel.

3,187,444. SPECIMEN MOUNTING.

3,286,470. TIP-TURBINE FAN WITH THRUST REVERSER.

3,289,414. CRUISE FAN POWERPLANT.

3,289,946. ANNULAR CONVERGENT-DIVERGENT EXHAUST NOZZLE.

3,336,134. FOAM MATERIAL.

3,339,933. ROTARY SEAL.

3,340,084. CONTROLLED DENSITY HETEROGENEOUS MATERIAL AND METHOD FOR PRODUCING SAME.

3,341,114. ANTI-ICING MEANS.

3,347,553. FLUID SEAL.

3,347,667. CHROMIUM BASE ALLOY.

3,352,770. ELECTROCHEMICAL MACHINING OF SMALL DIAMETER HOLES IN HIGH TEMPERATURE SUPERALLOYS.

3,352,958. METHOD FOR MAKING ELECTRODE HOLDER.

3,355,890. CRUISE FAN POWERPLANT.

3,356,288. STATOR ADJUSTING MEANS FOR AXIAL FLOW COMPRESSORS OR THE LIKE.

3,356,340. TURBINE ROTOR CONSTRUCTIONS.

3,357,850. VIBRATION DAMPING TURBOMACHINERY BLADE.

3,358,440. FLEXIBLE SUPPORT MEANS FOR GAS TURBINE POWERPLANTS.

3,358,441. EFFICIENT PART POWER GAS TURBINE POWERPLANT.

3,362,155. AXIAL FLOW SEPARATOR.

3,362,681. TURBINE COOLING.

3,369,792. AIRFOIL VANE.

3,375,997. COMPOUND AIRCRAFT AND PROPULSION SYSTEM.

3,381,474. COMPOUND AIRCRAFT AND PROPULSION SYSTEM.

3,381,518. AERATION METER.

3,383,094. ROTOR BLADE LOCKING MEANS.

3,383,197. POWDERED BRAZING MIXTURE.

3,383,206. NICKEL BASE ALLOY AND ARTICLE.

3,388,888. COOLED TURBINE NOZZLE FOR HIGH TEMPERATURE TURBINE.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-31-66
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*5-02-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-20-66
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4-03-67
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	7-18-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	4-03-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	*7-01-66
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	3-06-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	4-25-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-22-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*4-03-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-02-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-18-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	5-31-67

Total number of pending applications (excluding Designs)	3,215
Total number of Design applications pending	187,132

Expiration of patents: The patents within the range of numbers indicated below expire during March 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,587,576 to 2,590,832, inclusive
Plant Patents	Numbers 1,077 to 1,080, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JEROME J. KANTER

No. 7978. Decided July 3, 1968

[55 CCPA —; 399 F.2d 249; 158 USPQ 331]

1. PATENTABILITY—PROCESS—UNOBVIOUS PRODUCT.

"The unique features of any composition or article of manufacture, not found in the starting materials yet inhering in the composition or article, are necessarily 'achieved' during the process of manufacture. The law is settled that the process of manufacture is not thereby rendered patentable. The process itself, considering the prior art, must satisfy the statutory conditions for patentability."

2. SAME—SAME—SAME—35 U.S.C. 100.

"Appellant also argues that the 'inventive concept lies basically in the process.' We cannot very well argue with appellant's intuition as to where the 'concept' lurks. We can only point out that the steps of the claimed process are old except for the alloy worked on and the product new. Appellant has achieved this new product by performing an old process on a starting material, or base metal alloy, not previously used in the process. The end-product is satisfactory, whereas prior end-products were not, due to spalling, because the old process has produced a novel article. That novelty is due to the characteristics of the starting material, not the process to which it was subjected. The selection of the starting material was, presumably, not obvious but such selection is not a category of patentable invention. 35 U.S.C. 100. Selection resulted in a new, useful, and unobvious product on which claims have been allowed but it did not, in our view, result in either a new or unobvious process."

3. SAME—PARTICULAR SUBJECT MATTER—"SILICONIZED FERROUS PRODUCTS AND PROCESSES FOR SAME."

The refusal of certain claims in an application entitled "Siliconized Ferrous Products and Processes for Same," as unpatentable over the prior art, is affirmed.

AFFIRMED.

Henry L. Brinks, Robert L. Harmon for appellant.
Joseph Schimmel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals [2] affirming the Examiner's rejection of claims 1, 4, 14, and 15, of appellant's application Serial No. 197,702, filed May 25, 1962, entitled "Siliconized Ferrous Products and Processes for Same." Claims 5 and 7–11 have been allowed.

The invention of the appealed claims is the process of forming an adherent, silicon-containing coating ("case") on ferrous metal articles.

It has long been known that iron and steel articles with surface coating (cases) of high silicon-iron alloys have certain desirable properties, including resistance to abrasion and corrosion. However, the tendency of the silicon-containing case to separate from the iron or steel core has limited the commercial use of articles so coated. Appellant has discovered that this spalling does not occur when the core article—the article on or in which the coating is formed—has "a stable

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Consisting of Magil, Rosa and Lidoff, Examiners-in-Chief, opinion by Magil.

body centered cubic crystal structure," e.g., an "alpha-delta" alloy. The appealed claims read:

1. The process of providing a metal article with an adherent silicon-containing case which comprises, maintaining a ferrous base metal alpha-delta alloy article at elevated temperatures while contacting with a siliconizing reagent for impregnating the surfaces of said alpha-delta alloy with silicon to form a case containing silicon upon an underlying core, said alpha-delta alloy having a stable body centered cubic crystal structure in sufficient amounts in its solid solution phase to suppress allotropic transformations in the temperature range up to about 2,000° F. for reducing stress-rupture between said case and said underlying core.

4. The process of claim 1 in which said alpha-delta alloy is a steel alloy.

14. The process of claim 1 in which said alpha-delta alloy contains at least about two percent by weight silicon.

15. The process of claim 1 in which said alpha-delta alloy contains at least about one percent by weight aluminum.

The following reference is relied on:

Henderson et al., 2,501,051, Mar. 21, 1950.

Henderson discloses the siliconizing process used by appellant. In fact, appellant's specification refers to the Henderson patent for an example of the method he adopts.[3] Henderson, however, forms a silicon-containing case for a variety of core articles, cast irons, "alloy irons," "alloy steels" including those containing chromium, and, even non-ferrous metals, "particularly copper." Alpha-delta alloys are not disclosed.

The Board held appellant's claims unpatentable under 35 U.S.C. 103, it being obvious, in the Board's view, "to carry out the conventional siliconizing operation on a particular alloy * * *." The Board relied, inter alia, on seven of our recent decisions including *In re Larsen*, 49 CCPA 711, 292 F.2d 531, 130 USPQ 209 (1961); *In re Albertson*, 51 CCPA 1377, 332 F.2d 379, 141 USPQ 730 (1964); *In re Neugebauer*, 51 CCPA 1138, 330 F.2d 353, 141 USPQ 205 (1964).

We think the last of these is controlling. The appellants in that case argued that the *application* of a novel photoconductive coating to a conventional electrically conductive substratum *in the conventional manner* was itself a patentable *process*. They urged:

* * * while it may be obvious to prepare the article by coating once the article is known, it certainly can not be obvious to prepare the article by such a process when the article is unknown and, absent appellants' disclosure, there is nothing to teach the claimed article.

We rejected that argument and held that the unobviousness of the final product was not determinative of the unobviousness of its method of manufacture.

In the case at bar, it is the substratum (with its consequent more permanent adhesion) rather than the coating which is new. Obviously, this distinction does not warrant a different result with respect to process patentability. We therefore affirm.

Appellant would distinguish *In re Larsen*,[4] supra, and, we suppose, by analogy, *In re Neugebauer*, supra, as "based upon the proposition that once certain compounds had been conceived, the process by which they were made was obvious." Appellant argues:

By contrast, in the process of the present invention, the unique feature of preventing rupture between the iron layers is achieved *during* the process for pro-

[3] In fact the specification says (our emphasis): "The *siliconizing process* employed may be one, or more, of the *processes* set forth in the Ihrig, Henderson, or Eckman patents set forth hereinabove, although the Eckman process is preferred."
[4] In which a majority of this court held that the patentability of a chemical compound did not determine the patentability of its method of preparation.

ducing the articles, as set forth above. The novel process is essential to the present invention.

We cannot agree. [1] The unique features of any composition or article of manufacture, not found in the starting materials yet inhering in the composition or article, are necessarily "achieved" during the process of manufacture. The law is settled that the process of manufacture is not thereby rendered patentable. The process itself, considering the prior art, must satisfy the statutory conditions for patentability.

[2] Appellant also argues that the "inventive concept lies basically in the process." We cannot very well argue with appellant's intuition as to where the "concept" lurks. We can only point out that the steps of the claimed process are old except for the alloy worked on and the product new. Appellant has achieved this new product by performing an old process on a starting material, or base metal alloy, not previously used in the process. The end-product is satisfactory, whereas prior end-products were not, due to spalling, because the old process has produced a novel article. That novelty is due to the characteristics of the starting material, not the process to which it was subjected. The selection of the starting material was, presumably, not obvious but such selection is not a category of patentable invention. 35 U.S.C. 100. Selection resulted in a new useful, and unobvious product on which claims have been allowed but it did not, in our view, result in either a new or unobvious process.

[3] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

I respectfully record my dissent from the conclusion of the majority.

Initially, it appears from this record that the Examiner, in his final rejection, stated that the claims which are now here on appeal were rejected "as the obvious method of making the article defined by claims 5 and 7–11." Those claims, it will be observed, are directed to the article and are now all allowed. In a subsequent letter, the Examiner referred to the Manual of Patent Examining Procedure, 706.03-(q),[5] and a Commissioner's notice, entitled "Guidelines of Patentability," 792 O.G. 293 GPI(e),[6] urging that the "alleged novel starting material is obvious from an inspection of the claimed article." Appellant's brief to the Board challenged the statutory foundation for such a rejection in the patent statutes. Only in a supplemental Examiner's answer, in response to appellant's reply brief, was the Henderson patent relied upon as *prior art* in discussing the appealed claims. The Board stated the rejection as "apparently" arising under 35

[5] Manual of Patent Examining Procedure (MPEP), 706.03(q):

An applicant may invent a new and useful article of manufacture. Once the article is conceived, it often happens that anyone skilled in the art would at once be aware of a method of making it. In such a case, if applicant asserts both article and method claims, the article claims are allowed but the method claims may be rejected as being drawn to an ***obvious method of making the article.***

[6] While I remain of the view that the 1952 Patent Act sets forth the controlling statement of "guidelines for patentability," that section of the Commissioner's notice, Guidelines of Patentability, 792 O.G. 293 GPI(e), provides:

It is well settled that a process which amounts of nothing more than an obvious manner of producing an article or product is not patentable.

While a rejection on this ground does not require the citation of art or the allowance of any claim, it must be apparent to a person ordinarily skilled in the art, without reference to any method disclosure contained in the application, how the article was made. In other words, the rejection is proper if such a person would be able, upon the basis of his own knowledge, to produce the article merely by having it shown to him or by being told what ingredients it contained. Note *In re Larsen*, 49 CCPA 711.

U.S.C. 103, relying upon the Henderson patent as exemplifying "the obvious practice of the well known siliconizing procedure."

Thus, to the extent that the reasoning of the Patent Office is postulated upon the premise that once appellant had conceived his article, the method of making it would be obvious, that rejection is in error. 35 U.S.C. 103 requires us to consider the differences between subject matter sought to be patented and the prior art as of the time the invention was made. Those statutory strictures must be carefully and accurately applied.

Second, on this record, I am unable to determine from the present record, with the certainty of the majority, that the invention resides in the article. Rather, it seems to me to be doubtful whether the invention resides in the article alone or in the process. In that instance, and where the invention may be claimed with equal facility in terms either of the method or structure, both types of claims should be allowed to issue on the basis that they are but alternative, statutorily-recognized expressions for defining the invention. *In re Conover*, 49 CCPA 1205, 304 F.2d 680, 134 USPQ 238 (1962). See *In re Bowman*, 52 CCPA 1521, 347 F.2d 905, 146 USPQ 207 (1965).

Finally, even if I were of the majority view that the invention resides in the article, I would dissent for the reasons more fully stated in my dissenting opinions in *In re Larsen*, 49 CCPA 711, 718, 292 F.2d 531, 536, 130 USPQ 209, 213 (1961), and *In re Albertson*, 51 CCPA 1377, 1381, 332 F.2d 379, 382, 141 USPQ 730, 733 (1964). While I agree that the statement of the case of *In re Neugebauer*, 51 CCPA 1138, 330 F.2d 353, 141 USPQ 205 (1964), proffered by the majority is accurate, I do not think that it is controlling on the record here.

It seems to me that *In re Naylor*, 54 CCPA 902, 369 F.2d 765, 152 USPQ 106 (1966), is more appropriate to the situation before us. There, we stated, id. at —, 369 F.2d at 767–68, 152 USPQ at 108:

However, appellant is not claiming simply a process for preparing polybutadiene. Rather it is a process for preparing a particular polybutadiene having a particular microstructure and particular properties. Concededly, the reference combination does not teach that the Crawford process, as modified by the disclosure of Badische-Anilin, would produce the product sought by appellant and recited in his claims. We cannot ignore the particular product unexpectedly produced by the claimed process, as the Patent Office apparently has done, in determining whether the claimed subject matter *as a whole* is obvious. * * *

Here, a particular product is unexpectedly produced in that the prior silicon-containing cases tended to spall, whereas appellant's products overcome this difficulty.

For these reasons, I would reverse.

U.S. Court of Customs and Patent Appeals

IN RE PAUL J. NAQUIN, JR.

No. 7963. Decided July 3, 1968

[55 CCPA —; 398 F.2d 863; 158 USPQ 317]

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—INVENTION INVOLVING DISTINCT ARTS.

"The specification need describe the invention only in such detail as to enable a person skilled in the most relevant art to make and use it. When an invention, in its different aspects, involves distinct arts, that specification is adequate which enables the adepts of each art, those who have the best chance of being enabled, to carry out the aspect proper to their specialty. *Interna-*

tional Standard Electric Corp. v. *Ooms, Com'r.*, 81 U.S. App. D.C. 215, 157 F.2d 73, 70 USPQ 32 (1946).

2. PATENTABILITY—AFFIDAVIT—OPINIONS ON ULTIMATE LEGAL ISSUE.

"We agree with the Board that the affiants' opinions on the ultimate legal issue are not evidence in the case. *In re Lindell*, 55 CCPA —, 385 F.2d 453, 155 USPQ 521 (1967); *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515 (1962). However, we think that statements of fact, however commingled with inadmissible assertions, ought to be considered. *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965).

REVERSED.

J. Arthur Young, Donald J. Quigg, L. Malcolm Oberlin for appellant.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals,[2] affirming the final rejection of claims 1–3 of appellant's application Serial No. 237,830, filed November 15, 1962, entitled "Analysis of Seismic Signals." No claim has been allowed.

The invention is a method of underground surveying in which seismic waves, generated at various locations on the earth's surface, travel into the earth and are reflected by subterranean formations back to the surface where they are detected and measured by appropriately placed geophones.

Analysis of the reflected waves permits a determination of the shape of underground formations. However, the heterogeneous nature of the earth through which the waves travel introduces unpredictable error into the analysis. Appellant eliminates this error by a complex series of mathematical computations, the general nature of which can be gleaned from reading claim 1:

1. A method of seismic surveying which comprises *imparting vibrations* to the earth sequentially at a plurality of first locations spaced from one another, separately *recording vibrations* reflected from subterranean formations to each adjacent pair of a plurality of second locations spaced from one another at the surface of the earth to provide a plurality of pairs of seismic signals for each adjacent pair of said plurality of second locations, each pair of seismic signals for a given pair of said plurlity of second locations being representative of vibrations imparted to the earth from a respective different one of said plurality of first locations, *producing a cross correlation signal* for each of said pairs of seismic signals, *adding the cross correlation signals* for each of said pairs of seismic signals for each of said adjacent pairs of said plurality of second locations to produce a composite correlation signal for each of said adjacent pairs of said plurality of second locations, *determining the time difference* of each of the composite correlation signals corresponding to the maximum peak value of the respective composite correlation signal, *plotting the value of time difference* thus determined versus the location of the respective adjacent pair of said plurality of second locations to form a time difference curve, *making a running integration* of the time difference curve to obtain a dip curve, and *subtracting* said dip curve from said time difference curve to produce a time correction curve. [Emphasis ours.]

Appellant's brief says that the requisite calculations would be "extremely time-consuming and cumbersome" without the use of a digital computer. Accordingly, appellant's specification is addressed to such use.

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Consisting of Kreek and Keely, Examiners-in-Chief, and Andrews, Acting Examiner-in-Chief, opinion by Andrews.

The invention claimed is concededly new, useful, and unobvious. The existence of patentable subject matter has not been questioned. The only issue in the case is whether appellant's specification sets forth the method "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains" to use it. 35 U.S.C. 112, first paragraph. The Board held that the specification was deficient in this respect. We reverse. We find no substantial basis in this record to support the Board's decision.

The Examiner's final rejection reads, in part:

* * * the mere allegation that one skilled in the art would be able to select appropriate components of the computer does not make it so. It is noted that 35 U.S.C. 112 requires the description contained in the specification to be so clear as to enable any person skilled *in the art to which it pertains*, to make and use the device. This application is drawn to an invention in the art of seismic signal processing, not the computer art. [3]

* * * * * * *

There is no disclosure in the present application of how the steps of "adding," "determining the time difference," "making a running integration," etc. are performed on the computer in terms of these elemental operations other than the allegation that *"principles of program sequences of such computers are equally well known"* * * *. *The Examiner agrees that such principles are well known to those skilled in the computer art*, however applicant claims a specific method apart from general principles. Further experimentation should not be required of those skilled in the art in order to perform the specific method claimed. Applicant has claimed a specific method of applying these principles but has not disclosed how the method is performed. [Emphasis ours.]

Appellant apparently replied [4] to the effect that the proper test would be the sufficiency of the specification to inform a skilled programmer.

Another Examiner assumed responsibility for the case at this juncture and wrote the following in the Examiner's answer:

Appellant argues that a skilled programmer can program the computer given appellant's disclosure and the Rule 132 affiants so state. It is noted, however, that the claims on appeal are drawn to a method of seismic surveying, not a method of computer programming. The statute, 35 U.S.C. 112, requires that the specification be so clear "as to enable any person *skilled in the art to which it pertains* * * * to make and use the same" (emphasis added). Thus on their face, appellant's arguments clearly show that, while one skilled in the computer programming art may perform the method, one skilled in the seismic prospecting art cannot.

It is clear that each Examiner thought appellant's specification inadequate because it would not teach one skilled in the seismic prospecting art how to program a computer.

The Board, however, rejected this criterion for the specification's adequacy, saying:

Such information [in the specification] must be adequate to enable a programmer of ordinary skill to prepare such a program, not necessarily in the detail that would inform a seismic surveyor as to how to program a computer but certainly in more detail than would suffice for a skilled mathematician to carry out the specified operations with pencil, paper and a ruler.

We agree. **[1]** The specification need describe the invention only in such detail as to enable a person skilled in the most relevant art to make and use it. When an invention, in its different aspects, involves distinct arts, that specification is adequate which enables the adepts of each art, those who have the best chance of being enabled, to carry

[3] This statement was made in a discussion of claims other than those on appeal. It is, however, the Examiner's view of the general principle and it sharpens our appreciation of his subsequent comments.
[4] Appellant's reply is not in the record in this court.

out the aspect proper to their specialty. *International Standard Electric Corp.* v. *Ooms, Com'r.*, 81 U.S. App. D.C. 215, 157 F.2d 73, 70 USPQ 32 (1946).

The Board nevertheless *sustained* the rejection with the following statement:

> We cannot say as a matter of law from the record in this case that this apparent deficiency of the instant specification would be supplied by prior knowledge or that the basis of the Examiner's challenge was clearly erroneous.

This, of course, is the langauge of reliance—of deference to the Examiner's determination. It is incongruous when the only criterion employed by the Examiner is simultaneously rejected. It is obviously error when that criterion is seriously flawed. Cf. *Morgan* v. *United States*, 298 U.S. 468, 481 (1936).

The Board dismissed affidavits, filed by appellant, as opinions and, further, as the opinions of those with a broader expertise than that of an ordinary programmer. **[2]** We agree with the Board that the affiants' opinions on the ultimate legal issue are not evidence in the case. *In re Lindell*, 55 CCPA —, 385 F.2d 453, 155 USPQ 521 (1967); *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515 (1962). However, we think that statements of fact, however commingled with inadmissible assertions, ought to be considered. *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965). Here, one of the affidavits contains a sworn statement, made of the affiant's own knowledge, that the average computer programmer is familiar with subroutines for running integration, addition, etc. If this statement is true, the Examiner's rejection is, of course, baseless. In the absence of a challenge to the affiant's qualifications or, at the very least, a contrary inference by the Board or Examiner from the other evidence, we are unable to hold that this record supports the Board's affirmance. The decision of the Board is, therefore, reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE MARWAN R. KAMAL AND EDGAR R. ROGIER

No. 7964. Decided July 3, 1968

[55 CCPA —; 398 F.2d 867; 158 USPQ 320]

1. CLAIM—CONSTRUCTION OF CLAIMS—SCOPE DETERMINED BY CLAIM TERMINOLOGY.
   "* * * one of ordinary skill in this art would be apprised of the scope of the claim in view of the terminology there used. See *In re Hansen*, 51 CCPA 1447, 332 F.2d 825, 141 USPQ 803 (1964)."
2. SAME—BROADER THAN DISCLOSURE—BROAD INVENTION.
   "To the extent that the Board affirmed the Examiner on the ground that the appellants' written description of his invention is not 'properly representative of all the classes of polyfunctional organic compounds containing labile hydrogen atoms,' we disagree with that decision. From this record, and in the absence of prior art, appellants are the first to discover the polyisocyanate of claim 1. They also appear from this record to be the first to have reacted the polyisocyanate of claim 1 with a polyfunctional organic compound containing labile hydrogen atoms. This seems to us to be a *broad* invention, see *In re Boller*, 51 CCPA 1484, 332 F.2d 382, 141 USPQ 740, 743 (1964), which entitles appellants to claims commensurate with that broad invention as disclosed. *In re Sus*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301 (1962)."
3. SAME—SAME.
   Appellants concede that there are many polyfunctional organic compounds containing labile hydrogens that have not been specifically named in appellants' specification. But a disclosure of that extent is not required by the statute. As stated by this court in *In re Grimme*, 47 CCPA 785, 274 F.2d 949, 124 USPQ 499, 501 (1960): * * * It is manifestly impracticable for an applicant who discloses a generic invention to give an example of every species falling within it, or even to name every such species. It is sufficient if the disclosure teaches those skilled in the art what the invention is and how to practice it. * * *
4. SAME—SAME.
   "We thus believe that appellants' disclosure, which includes a description of broad functional groups, broad classes of polyfunctional compounds, 33 specific compounds and 15 working examples is legally sufficient. The fact that appellants' invention is not the polyfunctional organic compound, per se, but resides instead in the *combination* of this class of compounds with the novel polyisocyanate make this extensive disclosure adequate to comply with the section 112 requirements. See *In re Cavallito*, supra."
5. SAME—SAME—PHARMACEUTICAL AS OPPOSED TO NON-PHARMACOLOGICAL SUBSTANCES—*In re Cavallito; In re Surrey* DISTINGUISHED.
   "While it has been held in *In re Cavallito*, supra, and *In re Surrey*, 54 CCPA 855, 370 F.2d 349, 151 USPQ 724, 730 (1966), that 'the possible existence of compounds falling within the scope of the claims, but not having the utility set forth in appellant's specification, may properly be *considered* in connection with a rejection on undue breadth,' those cases are distinguishable from the present situation. Both involved claims to pharmaceutical compounds, whose utility depended in large part upon their acceptance by the human body, while appealed claim 7 is directed to polymeric materials, which are to be used as molding compounds, adhesives, in laminates, and the like. The use of polymeric materials in this capacity is art-recognized and does not involve the unpredictability before the court in those cases."
6. SAME—SAME—JUDICIAL NOTICE OF INOPERATIVE SPECIES.
   "Moreover, despite appellants' specific request for evidence of the factual basis for the Board's decision, the Board has provided no such evidence. We think it improper for the Board to, in effect, judicially notice the 'inoperability' of species of compounds within the bounds of claim 7. It is not, and cannot be 'common knowledge' that certain polyfunctional organic compounds containing labile hydrogen atoms will react with the novel polyisocyanate defined by claim 1 to yield products not desired by appellants, since, by this record, appellants are the first persons to react such compounds with their new polyisocyanate. See *In re Spormann*, 53 CCPA 1375, 363 F.2d 444, 150 USPQ 449 (1966); *Bray* v. *Tears*, 26 CCPA 1103, 102 F.2d 877, 41 USPQ 321 (1939)."
7. SAME—SAME—POSSIBLE INOPERATIVE SPECIES.
   "Furthermore, the mere possibility of inclusion of inoperative substances, if, indeed, operability is properly questionable under 35 U.S.C. 112, does not prevent allowance of broad claims. *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474 (1964)."

REVERSED.

Anthony A. Juettner, Gene O. Enockson (*William C. Babcock, George R. Jones, David S. Abrams, Beale and Jones*) for appellants.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The sole issue involved in this appeal from the Patent Office Board of Appeals [2] is whether the claim on appeal complies with the requirements of 35 U.S.C. 112, second paragraph.

That issue arises in an appeal from the decision of the Board, adhered to on reconsideration, affirming the Examiner's rejection of claim 7 of appellants' application.[3] All of the remaining claims in the application were allowed.

---

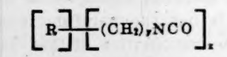
[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] The Board consisted of Messrs. Magil, Lidoff, and Mangan, Examiners-in-Chief. Mr. Lidoff wrote the opinion.
[3] Application Serial No. 250,211, filed January 9, 1963, for "Polyisocyanates and Derivatives."

The claim here contended for is:

7. A polymer prepared by reacting the compound of claim 1 with a polyfunctional organic compound containing labile hydrogen atoms.

The compound of claim 1, which the Patent Office found patentable, is:

1. A compound having the formula:



where y is an integer selected from 0 and 1, x is an integer of 2 to about 4 and R is the hydrocarbon group of polymeric fat acids $R(COOH)_x$, said polymeric fat acids having been prepared by polymerizing fat acids of 8–24 carbon atoms.

Appellants' specification begins:

This invention relates to novel polyisocyanates *and polymers prepared from such polyisocyanates.* More particularly, the present invention relates to new polyisocyanates derived from polymeric fat acids *and to polymers prepared from such polyisocyanates and polyfunctional organic compounds containing labile hydrogen atoms.* [Emphasis added.]

After describing the polyisocyanates of the invention, and the methods of preparing them, that written description of the invention further describes certain polymers prepared by reacting the polyisocyanates of the invention with polyfunctional organic compounds containing labile, or active, hydrogen atoms. In the words of the specification:

The polyisocyanates of the present invention can be handled with unexpected ease. Thus they are characterized by very low toxicity and have a long shelf life due to their slow reactivity with moisture. They are particularly useful for preparing polymers from polyfunctional organic compounds containing labile hydrogen atoms. We have found that condensation polymers of our polyisocyanates and amines can be prepared without difficulty. The reactions of other isocyanates such as aromatic diisocyanates and amines are extremely difficult to control. Also, the polymers prepared according to our invention have good flexibility and are easily molded. Polyureas and polyurethanes prepared from our polyisocyanates are tough and absorb only extremely low amounts of water.

The polyfunctional organic compounds containing active hydrogen atoms can be selected from a wide variety of materials. These compounds contain groups such as —OH, —NH_2, —NRH, —COOH, —SH and the like. Examples of such reactants are diols, polyfunctional phenols, diamino compounds, diacids, dithiols and the like. Compounds containing mixed functional groups can also be used such as hydroxycarboxylic acids, aminoalcohols, aminoacids and the like. Representative polyfunctional organic compounds include: ethylene glycol, diethylene glycol, trimethylene glycol, tetramethylene glycol, hexamethylene glycol, decamethylene glycol, 1,5-pentanediol, 1,4-hexanediol, resorcinol, pyrocatechol, p,p'-dihydroxydiphenyl, pyrogallol, decamethylene dithiol, thioresorcinol, ethylene dithiol, phthalic acid, adipic acid, hexamethylene diamine, trimethylene diamine, 1,3-diaminobutane, tetramethylene diamine, phenylene diamine, toluene diamine, xylylene diamine, ethanolamine, N-phenyldiethanolamine, 2-amino-1-butanol, triethanolamine, 12-hydroxydecanoic acid, piperazine, bis-(hydroxymethyl) durene, 2,4-dinitrophenyl hydrazine, phenyl hydrazine, and the like.

The specification continues with 15 specific working examples describing the production of certain members of the class of polymers defined in claim 7. These polymers, appellants state, are useful as molding compounds, adhesives, in the preparation of laminates and the like.

With this somewhat detailed background of the invention, we shall now turn to the issues as framed by the Examiner and the Board. We have found it helpful to discuss various aspects of the Board's reasoning separately, while bearing in mind that but a single statutory basis for the rejection exists.

A recurring theme in the Examiner's reasoning was that appellants lacked the "concept" or "contemplation" of certain compounds. He thought the term "polyfunctional organic compound" was too broad since "compounds such as polyalkylene ether glycols, which though *probably operable*, are not recited in the disclosure and obviously, therefore, are not *contemplated*." [Emphasis added.] At another point, the Examiner thought claim 7 was so "vague and indefinite" that it read upon compounds "such as vitamin A and ribonucleic acid which have replaceable hydrogen atoms, but are not contemplated by this invention." The Examiner expressly stated, however, that he was not asking for a specific working example of all the compounds "used or contemplated" and that he was *not challenging the operability* of any compound to react with appellants' isocyanate.

In his answer, he indicated that the basis for the rejection is 35 U.S.C. 112 and that appellants failed to define properly the nature of the invention in accordance with the requirements of the statute. Thus, the claim has been rejected on the ground of "being vague, indefinite and too broad."

There, the Examiner reiterated many of the grounds for his rejection and, in addition, stated:

* * * Rather he [the Examiner] is saying that the specification is *lacking as to the concept* of using certain of these generic classes with the new isocyanate, and because of this failure appellants are not entitled to the use of broad language which would encompass and read on such materials. * * * [Emphasis added.]

Moreover, the Examiner stated:

The honorable Board should note that *the Examiner is not challenging the operability* of such materials, namely the polyethers, polyesters, polyformals, etc. to react with the isocyanate. *Rather he is questioning the conception* by the inventors of the interaction of them with their isocyanate. [Emphasis added.]

To this the Examiner added the following additional contention:

A short analysis of the term [polyfunctional organic compound containing labile hydrogen atoms] is in order. It is to be noted that there is no limitation that the compound must contain only carbon, hydrogen, sulfur, oxygen and nitrogen, the most common elements of organic compounds. Presently it can contain boron, phosphorus, selenium and many other moieties, *none of which are contemplated* by the specification. There is also lacking an indication as to how many labile hydrogens are present. The other functionality could be other than labile hydrogen, such as an epoxide ring which could split open. It is not even indicated that the compound must be suitable for preparing a polyurethane. * * * [Emphasis added.]

The Board stated its full agreement with the Examiner's rejection of the appealed claim "as failing to comply with the provisions of 35 U.S.C. 112." The Board, however, attempted to clarify what it terms "an apparent misunderstanding" as to the Examiner's position:

* * * The Examiner did not state that the appealed claim did not cover inoperative subject matter, but indicated that he did not challenge the operability of such materials as polyethers, polyesters, and polyformals in the reaction with isocyanates.

We must agree with the Examiner that the disclosure is not properly representative of all the classes of polyfunctional organic compounds containing labile hydrogen atoms and, therefore, the specification does not support the tremendously broad terminology. Included therein are numerous reactants which, while they may react with the isocyanate, would do so to produce polymers not exhibiting the properties of appellants' products, namely, flexibility and moldability. Included are reactants which cause cross-linking as well as reactants

of classes entirely foreign to, not related to the labile hydrogen-containing reagents exemplified.

We have indulged in this formulation of the position below to point out the difficulties in evaluating a rejection based upon 35 U.S.C. 112 when the particular statutory language is not explicitly relied upon.

In evaluating this rejection, we would first observe that the "written description of *the invention*," 35 U.S.C. 112 (first paragraph), discloses two aspects of appellants' invention: a polyisocyanate compound, and a polymeric reaction product produced by the chemical combination of that polyisocyanate compound and a polyfunctional organic compound containing labile hydrogen atoms. Portions of appellants' specification, i.e., the written description of the invention, as filed, indicate the breadth of the subject matter which appellants regarded as their invention. Thus, there can be no question that the claims are "too broad" in the sense of embracing a "concept which was not stated in the original disclosure" of the invention in appellants' specification. *In re Cavallito*, 48 CCPA 711, 282 F.2d 357, 127 USPQ 202 (1960).

Second, we observe from this record that the terminology used by appellants in the appealed claim is not in question and that compounds falling within the terminology of claim 7 are well known in the art as illustrated in a number of United States patents.[4]

Each of the cited patents indicates that terminology such as "organic compound containing labile or active hydrogens" is conventional language in this art, which apparently is well understood by those of ordinary skill. In addition, the Examiner has conceded that the terminology is conventional.

Thus, analyzing appellants' *invention*, it rests in the reaction combination of a particularly defined compound, of claim 1, and a polyfunctional, organic compound containing labile hydrogen atoms. **[1]** Accordingly, we must conclude that there is nothing amiss in the *form* of the claim, and that one of ordinary skill in this art would be apprised of the scope of the claim in view of the terminology there used. See *In re Hansen*, 51 CCPA 1447, 332 F.2d 825, 141 USPQ 803 (1964). It is neither "vague" nor "indefinite."

[2] To the extent that the Board affirmed the Examiner on the ground that the appellants' written description of his invention is not "properly representative of all the classes of polyfunctional organic compounds containing labile hydrogen atoms," we disagree with that decision. From this record, and in the absence of prior art, appellants are the first to discover the polyisocyanate of claim 1. They also appear from this record to be the first to have reacted the polyisocyanate of claim 1 with a polyfunctional organic compound containing labile hydrogen atoms. This seems to us to be a *broad* invention, see *In re Boller*, 51 CCPA 1484, 332 F.2d 382, 141 USPQ 740, 743 (1964), which entitles appellants to claims commensurate with that broad invention as disclosed. *In re Sus*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301 (1962).

[3] Appellants concede that there are many polyfunctional organic compounds containing labile hydrogens that have not been specifically named in appellants' specification. But a disclosure of that extent is

[4] Hanford et al., 2,284,896, June 2, 1942.
Rothrock, 2,374,136, Apr. 17, 1945.
Schultheis et al., 3,012,991, Dec. 12, 1961.
Britain, 3,054, 757, Sept. 18, 1962.
Merten et al., 3,055,845, Sept. 25, 1962.

not required by the statute. As stated by this court in *In re Grimme*, 47 CCPA 785, 274 F.2d 949, 124 USPQ 499, 501 (1960):

> * * * It is manifestly impracticable for an applicant who discloses a generic invention to give an example of every species falling within it, or even to name every such species. It is sufficient if the disclosure teaches those skilled in the art what the invention is and how to practice it. * * *

[4] We thus believe that appellants' disclosure, which includes a description of broad functional groups, broad classes of polyfunctional compounds, 33 specific compounds and 15 working examples is legally sufficient. The fact that appellants' invention is not the polyfunctional organic compound, per se, but resides instead in the *combination* of this class of compounds with the novel polyisocyanate makes this extensive disclosure adequate to comply with the section 112 requirements. See *In re Cavallito*, supra.

Moreover, we think the Board's criticism that the terminology of the claim is such that it include numerous reactants which, while they may react with the isocyanate, would produce polymers not exhibiting the properties of appellants' products, is unwarranted. While the Board confined its comment to the properties of flexibility and moldability of the resultant product, as disclosed in the specification, we observe that the working examples illustrating the preparation of the polymers are not so restricted.

Examples I to XV illustrate, among other things, that the polymers may be easily molded and in some instances are flexible, as in Examples I, II and IV; that the polymers are flexible but somewhat brittle, as in Example V; rubbery, as in Examples VI and VII; relatively brittle, as in Examples VIII, IX and XI; or even tacky, as in Example XIV.

The Solicitor argues, on this issue, that claim 7 is broad enough to include polyfunctional compounds which would be expected to be inoperable for appellants' purposes. He states that the possible existence of compounds falling within the scope of the claim, but not having the utility set forth in appellants' specification, may properly be considered in connection with a rejection on undue breadth, citing *In re Cavallito*, supra.

[5] While it has been held in *In re Cavallito*, supra, and in *In re Surrey*, 54 CCPA 855, 370 F.2d 349, 151 USPQ 724, 730 (1966), that "the possible existence of compounds falling within the scope of the claims, but not having the utility set forth in appellant's specification, may properly be *considered* in connection with a rejection on undue breadth," those cases are distinguishable from the present situation. Both involved claims to pharmaceutical compounds, whose utility depended in large part upon their acceptance by the human body, while appealed claim 7 is directed to polymeric materials, which are to be used as molding compounds, adhesives, in laminates, and the like. The use of polymeric materials in this capacity is art-recognized and does not involve the unpredictability before the court in those cases.

In *In re Riat*, 51 CCPA 1031, 327 F.2d 685, 140 USPQ 471, the court distinguished *In re Cavallito*, stating:

> Whether a disclosure gives reasonable assurance that all of the compounds embraced by the claims would be useful for the purposes intended must be determined by the particular circumstances of each case, including the nature of the compounds per se and the supporting disclosure. Here, in contrast to *Cavallito* which involved pharmaceutical compounds where unpredictability is particularly notorious, we are concerned with azo dyestuffs which constitute an art-recog-

nized genus. We find no suggestion in the record of any compound encompassed by the generic claims which would not be a dyestuff. Both of the appealed claims are drawn to azo dyes and the Examiner stated that "azo dyes are well known."

[6] Moreover, despite appellants' specific request for evidence of the factual basis for the Board's decision, the Board has provided no such evidence. We think it improper for the Board to, in effect, judicially notice the "inoperability" of species of compounds within the bounds of claim 7. It is not, and cannot be "common knowledge" that certain polyfunctional organic compounds containing labile hydrogen atoms will react with the novel polyisocyanate defined by claim 1 to yield products not desired by appellants, since, by this record, appellants are the first persons to react such compounds with their new polyisocyanate. See *In re Spormann*, 53 CCPA 1375, 363 F.2d 444, 150 USPQ 449 (1966); *Bray* v. *Tears*, 26 CCPA 1103, 102 F.2d 877, 41 USPQ 321 (1939).

[7] Furthermore, the mere possibility of inclusion of inoperative substances, if, indeed, operability is properly questionable under 35 U.S.C. 112, does not prevent allowance of broad claims. *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474 (1964).

Based upon the foregoing, the decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, did not participate.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,604,313, F. W. Grantham, DRYERS; **2,643,463,** same; LAUNDRY APPARATUS, **filed** Feb. 12, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c251, *Paulette Grantham et al.* v. *McGraw-Edison Company.* Motion to dismiss granted, July 24, 1968. Order vacating order of July 24, 1968, dismissing complaint and cause hereby is reinstated, Oct. 25, 1968.

2,643,463. (See 2,604,313.)

2,703,772, R. R. Keithly, TRANSFER METHOD FOR MANUFACTURING INFRARED REFLECTING FABRIC, **filed** Nov. 16, 1964, D.C. Del. (Wilmington), Doc. 2939, *Minnesota Mining and Manufacturing Company* v. *Gentex Corporation.* Consent judgment, Oct. 21, 1968.

2,727,069, J. P. M. Van Waes, PREPARATION OF UREA, **filed** Aug. 16, 1968, D.C., E.D. Calif. (Fresno), Doc. F–214–C, *Stanicarbon, N.V.* v. *Valley Nitrogen Producers, Inc.*

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Aug. 9, 1967, D.C., N.D. Ala. (Birmingham), Doc. CA–67–454, *The Norwich Pharmacal Company* v. *Walley Milling Company, Inc.* Consent judgment that defendant had infringed patent, and enjoining and restraining defendant from manufacturing same, Oct. 31, 1968.

2,757,381, Le Cottier and Trentesaux, TROUSERS, **filed** Apr. 18, 1961, D.C., S.D.N.Y., Doc. 61–C–1406, *Yves Le Cottier et ano.* v. *R. H. Macy & Co. et al.* Order of discontinuance, Oct. 30, 1968.

2,764,830, E. Frey, ARTICULATED BANNER UNIT CONSTRUCTION, **filed** Oct. 10, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1696–CC, *Massillon-Cleveland-Akron Sign Co.* v. *Golden State Advertising Co., Inc. and Albert A. Gold.*

3,071,721, H. G. Dehmelt, OPTICAL ABSORPTION MONITORING OF ORIENTED OR ALIGNED QUANTUM SYSTEMS; **3,109,960,** Bell and Bloom, ELECTRODELESS DISCHARGE LAMP APPARATUS; **3,150,313,** H. G. Dehmelt, MODULATION OF A LIGHT BEAM BY ABSORBING QUANTUM SYSTEMS EXHIBITING A PERIODICALLY VARYING ALIGNMENT; **3,158,803,** W. E. Bell, APPARATUS FOR MONITORING MAGNETIC FIELD GRADIENTS; **3,170,086,** same, ELECTRODELESS DISCHARGE LAMP APPARATUS; **3,173,082,** Bell and Bloom, OPTICALLY DRIVEN SPIN PRECESSION METHOD AND APPARATUS; **3,187,251,** W. E. Bell, QUANTUM OSCILLATORS; **3,252,081,** Ruddock, Bell, Bloom, Arnold and Sarles, OPTICAL MAGNETOMETER AND GRADIOMETER; **3,256,500,** J. T. Arnold, OPTICAL MAGNETOMETERS; **3,257,608,** Bell and Bloom, OPTICAL MAGNETOMETERS; **3,263,161,** Ruddock, Slack and Breiner, METHOD FOR DETERMINING DEPTH AND FALLOFF RATE OF SUBTERRANEAN MAGNETIC DISTURBANCES UTILIZING A PLURALITY OF MAGNETOMETERS; **3,267,360,** H. G. Dehmelt, OPTICAL ABSORPTION MONITORING OF ALIGNED ALKALI ATOMS; **3,281,709,** H. G. Dehmelt, APPARATUS FOR OPTICAL ALIGNMENT AND DETECTION OF ATOMIC ENERGY STATES; **3,350,632,** H. G. Robinson, OPTICALLY PUMPED ATOMIC DIFFUSION MASER WITH SEPARATE PUMPING AND OBSERVATION REGIONS, **filed** Aug. 23, 1968, D.C., S.D.N.Y., Doc. 68–C–3412, *Hiroca Corporation* v. *Union Oil Company of California and Varian Associates.*

3,108,280, Mayes and Carrel, LOG PERIODIC BACKWARD WAVE ANTENNA ARRAY; **3,150,376,** Carrel and Mayes, MULTI-BAND LOG PERIODIC ANTENNA, **filed** Apr. 29, 1965, D.C., E.D. Ill. (Chicago), Doc. 65c671, *The Finney Company* v. *JFD Electronics Corporation and University of Illinois Foundation.* Cause stricken from the calendar without prejudice with leave to reinstate on motion of either party, Sept. 12, 1968.

3,109,960. (See 3,071,721.)

3,116,557, J. R. Trice, Jr., METHOD AND MEANS FOR LAYING SEWER PIPE, **filed** Sept. 30, 1968, D.C., N.D. Ind. (South Bend), Doc. 4261, *Alignment Systems, Inc.* v. *Woodruff and Sons, Inc. and Roy J. Woodruff.*

3,138,027, Y. T. Li, PRESSURE GAGE, **filed** Sept. 10, 1968, D.C. Mass. (Boston), Doc. 68–801–CA, *Microdot Inc., doing business as Dynisco* v. *Barber-Colman Company.*

3,144,085, M. M. Hasha, POWER SPINNER UNIT FOR WELL SWIVELS, **filed** Sept. 30, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–824, *Malvern M. Hasha and International Tool Company, Inc.* v. *Robert Y. Eckels et al.* **Same, filed** Nov. 10, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–586, *Malvern M. Hasha* v. *Fast-Way Engineering Inc. et al.* Final decree, patent valid and is infringed by defendants. Defendants hereby enjoined until Aug. 11, 1981, Sept. 13, 1968.

3,145,329, Deakin and Powell, DIODE RECEPTACLE, **filed** Sept. 29, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65–C–992, *Sealectro Corporation* v. *L.V.C. Industries, Inc.* By order complaint dismissed without prejudice, Oct. 25, 1968.

3,148,686, H. S. Cournoyer, HAIR STYLING IMPLEMENT WITH RESILIENT PRONG TEETH, **filed** Aug. 11, 1967, D.C., S.D. Fla. (Miami), Doc. 67–819–C–JE, *Grooming Developers, Inc.* v. *Shane Hite, Inc. et al.* Plaintiff owner of patent, claims 1–3 valid, defendants Siegel, Shane Hite and Shel-Den permanently enjoined; counterclaim dismissed with prejudice, Apr. 19, 1968.

3,150,313. (See 3,071,721.)

3,150,376. (See 3,108,280.)

3,158,803. (See 3,071,721.)

3,159,346, Caparone and Dykzeul, CONTROL VALVES FOR A DOMESTIC WATER HEATER, **filed** Oct. 25, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1562–R, *Robertshaw Controls Co.* v. *Brannen Pipe & Supply and Emerson Electric Co.* Voluntary dismissal of action, Sept. 25, 1968.

3,170,086. (See 3,071,721.)

3,173,082. (See 3,071,721.)

3,187,251. (See 3,071,721.)

3,216,038, Gould and Gould, SYNTHETIC PLASTIC BROOM BRISTLES, **filed** Oct. 18, 1968, D.C., S.D. Fla. (Miami), Doc. 68–1209–C–TC, *Keystone Plastics, Inc.* v. *C & P Plastics, Inc., a dissolved corporation, Gerald Carey and Walter Bolnau, individually and as trustees for and members of the last Board of Directors of C & P Plastics, Inc., and John G. Dauber, Attorney, as trustee for and member of the last Board of Directors of C & P Plastics, Inc., and resident agent to accept service of process for said corporation.*

3,233,278, H. K. Lundgren, WINDOW SASH MOUNTING, **filed** Oct. 30, 1968, D.C. Minn. (Minneapolis), Doc. 4–68–C–356, *Herbert K. Lundgren and Allmetal Weatherstrip Company* v. *Reese Metal Weather Strip Company.*

3,237,436, D. A. Williams, TUMBLER LOCK STRUCTURE, **filed** Sept. 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1531–WPG, *Supra Products, Inc.* v. *Joseph Maertz, etc. et al.*

3,242,509, G. P. Nissen, GYMNASTIC FLOOR COVERING, **filed** Feb. 21, 1967, D.C., S.D.N.Y., Doc. 67–C–744, *Nissen Corporation* v. *Everlast Sporting Goods Mfg. Co., Inc.* Stipulation and order of dismissal pursuant to Rule 41a, Oct. 21, 1968.

3,247,524, H. M. Umann, HYGIENIC APPARATUS FOR USE ON TOILET BOWLS, **filed** Sept. 26, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1779, *World Industries, Inc.* v. *Richco Plastic Co.*

3,252,081. (See 3,071,721.)

3,252,474, Ehrens and Weiner, LINE TAP VALVES, **filed** Oct. 7, 1968, D.C., S.D.N.Y., Doc. 68–C–3941, *Sealed Unit Parts Co., Inc.* v. *Aaron J. Weissman, et al.*

3,256,500. (See 3,071,721.)

3,257,608. (See 3,071,721.)

3,263,161. (See 3,071,721.)

3,267,360. (See 3,071,721.)

3,272,003, D. R. Harting, FATIGUE LIFE GAGING METHODS, **filed** Sept. 17, 1968, D.C.N.J. (Newark), Doc. 940–68, *The Boeing Company* v. *Dentronics, Inc.*

3,273,706, A. J. Bundy, GLASS PALLET PACKAGE, **filed** July 22, 1968, D.C., E.D. Tenn. (Greenville), Doc. 2247, *American Saint Gobain Corporation* v. *Armstrong Glass Company.* Consent judgment, Oct. 9, 1968.

3,274,724, J. H. Brandt, RIFLE BOLT MECHANISM, **filed** Aug. 28, 1967, D.C., E.D. Tex. (Sherman), Doc. 1786, *John H. Brandt* v. *Ranger Arms, Inc.* Cause dismissed with prejudice, Oct. 1, 1968.

3,281,709. (See 3,071,721.)

3,293,426, Zeitz and Zagel, LIGHTING FIXTURE, **filed** Sept. 13, 1967, D.C. N.D. Ill. (Chicago), Doc. 67c1569, *Compco Corporation* v. *Guardian Light Company.* Order cause dismissed by agreement with prejudice, Sept. 12, 1968.

3,350,632. (See 3,071,721.)

REISSUES

MARCH 4, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

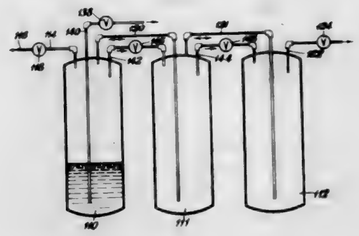
26,529
METHOD AND APPARATUS FOR DISPENSING VAPORIZABLE LIQUIDS

Horst William Lichtenberger and Paul E. Loveday, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Original No. 3,241,580, dated Mar. 22, 1966, Ser. No. 208,050, July 6, 1962. Application for reissue Aug. 3, 1967, Ser. No. 661,150

U.S. Cl. 141—5 **8 Claims**

Int. Cl. B65b *31/00, 1/04;* **B67c** *3/00*



A vaporizable liquid, such as liquid nitrogen, is dispensed on demand from a bank of storage zones by arranging the zones in series with the first zone being communicable with a dispensing outlet, and by transferring liquid from the bottom portion of each succeeding zone to the top portion of each preceding zone such that the first zone in the series is the first to substantially empty and the last zone in the series is the last to substantially empty.

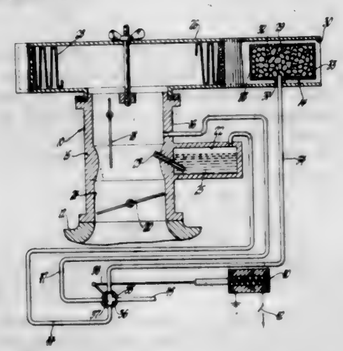
26,530
VAPOR RECOVERY SYSTEM

Joseph T. Wentworth, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original No. 3,221,724, dated Dec. 7, 1965, Ser. No. 340,298, Jan. 27, 1964. Application for reissue Dec. 5, 1967, Ser. No. 698,064

U.S. Cl. 123—136 **7 Claims**

Int. Cl. F02m *17/34*



This invention relates to a vapor recovery system for the fuel system of an internal combustion engine. In particular, gasoline vapors given off by the fuel tank and carburetor of an engine while shut off are adsorbed temporarily by a vapor adsorbent, such as activated charcoal. When the engine is running the fuel vapors are desorbed and conducted through the fuel system and burned in the combination chambers of the engine.

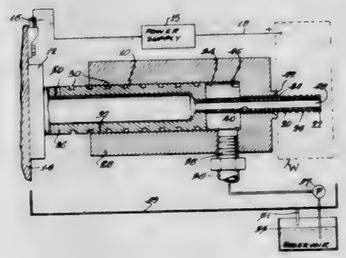
26,531
ELECTROLYTIC CAVITY SINKING APPARATUS

Joseph L. Bender, Wheeling, and Lynn A. Williams, Winnetka, Ill., assignors to Anocut Engineering Company, Elk Grove Village, Ill., a corporation of Illinois

Original No. 3,309,303, dated Mar. 14, 1967, Ser. No. 464,045, June 15, 1965, which is a division of Ser. No. 37,766, June 21, 1960, now Patent No. 3,214,360, dated Oct. 26, 1965. Application for reissue Aug. 14, 1967, Ser. No. 663,462

U.S. Cl. 204—224 **15 Claims**

Int. Cl. B23p *1/00*



An electrolytic cavity sinking apparatus having a cathodic electrode, and means for pumping an electrolyte from a source through a work gap between the electrode and a workpiece under high pressure and at a high velocity in the work gap. An insulated bushing having a bore surrounds the electrode, and seals the entry face of the workpiece as the electrode penetrates the workpiece. The electrode and bushing co-operatively define an electrolyte inlet passage around the exterior of the electrode. A tubular, piston-like mount is connected to the electrode, and slides in the bore of the bushing in sealing relationship therewith. The interior of the tubular mount and the interior of the electrode are connected with each other to form an electrolyte outlet passage leading from the work gap. The bushing is driven against the entry face of the workpiece by an unbalanced force acting on it which is created by pressurized electrolyte.

26,532
MAILING ENVELOPES

Frank X. Mudd, Jr., Palatine, Ill., assignor to Curtis 1000, Inc., Ramsey, Minn., a corporation of Minnesota

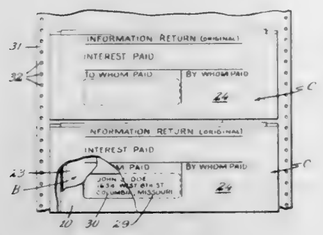
Original No. 3,237,970, dated Mar. 1, 1966, Ser. No. 340,602, Jan. 28, 1964. Application for reissue May 19, 1967, Ser. No. 652,379

U.S. Cl. 282—25 **8 Claims**

Int. Cl. B41l *1/20*

The invention relates to a structure in which an original copy form is detachably secured overlying the window

panel of a window envelope. A duplicate copy form of material capable of producing visible indicia when subjected to pressure is enclosed in the envelope. The original



copy form is written upon, the writing being duplicated on the duplicate copy form with the duplicate writing being visible through the window of the envelope.

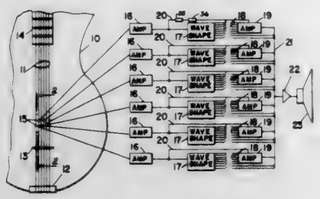
26,533

TONE GENERATION SYSTEM

Jack C. Cookerly, 7655 Atoll Ave., North Hollywood, Calif. 91605, and George R. Hall, 13613 Huston St., Sherman Oaks, Calif. 91403

Original No. 3,213,180, dated Oct. 19, 1965, Ser. No. 153,467, Nov. 20, 1961. Application for reissue Oct. 12, 1967, Ser. No. 676,663

U.S. Cl. 84—1.16 **11 Claims**
Int. Cl. G10h *3/00*



A musical instrument such as a guitar includes transducer means responsive to the playing of the guitar for supplying an electrical A.-C. signal of an amplitude which is a function of the playing. This A.-C. signal in turn is passed through wave shaping circuits which convert the signal into an output signal of a desired wave shape and of a given frequency derived from the frequency of the original A.-C. signal. The amplitude of this output signal is normally constant as a result of the type of wave shaping circuits employed and the various divisions or multiples generated of the original frequency of the A.-C. signal. Therefore there is required a means for varying the amplitude of the final output tone derived from the output signal from the wave shaping circuits in accord with original amplitude variations resulting from the playing of the instrument. This means takes the form of a means responsive to the amplitude of the A.-C. signal to provide a control voltage which is a function of the amplitude. Control circuit means responsive to this control voltage connect to a suitable reproducing means for the control signal to vary the amplitude of the output tone in accordance with the playing of the instrument.

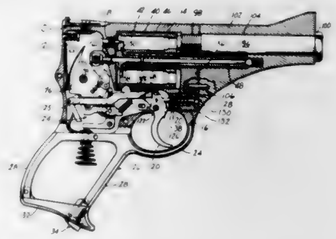
26,534

REVOLVER TYPE FIREARM WITH CYLINDER CRANE

Karl R. Lewis, 77 Olney Road, Wethersfield, Conn. 06109

Original No. 3,221,433, dated Dec. 7, 1965, Ser. No. 410,965, Nov. 13, 1964, which is a division of Ser. No. 71,339, Nov. 23, 1960, now Patent No. 3,163,951, dated Jan. 5, 1965. Application for reissue Oct. 12, 1967, Ser. No. 676,660

U.S. Cl. 42—62 **7 Claims**
Int. Cl. F41c *1/00*



In a revolver type firearm the cylinder is carried by a crane supported for pivotal movement relative to the frame by a pivot portion received in a conforming frame opening. This pivot portion of the crane is hollow and receives a spring for biasing the trigger.

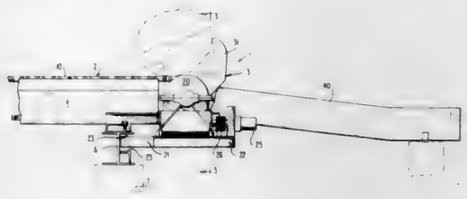
26,535

LIVE DECK AND LOADER ASSEMBLY

John S. Mellott and Hayes R. Mellott, both of Rte. 1, Box 97, Mercersburg, Pa. 17236

Original No. 3,355,042, dated Nov. 28, 1967, Ser. No. 465,069, June 18, 1965. Application for reissue Apr. 18, 1968, Ser. No. 724,324

U.S. Cl. 214—91 **5 Claims**
Int. Cl. B66b *17/14*



A live deck and stop and loader assembly for conveying logs to a saw mill and feeding the logs one at a time onto the carriage of the saw mill. The stop and loader mechanism is mounted on the main drive shaft of the live deck, and separate power drives are provided to operate the live deck and the stop and loader mechanisms independently of one another.

26,536

GOLF CART

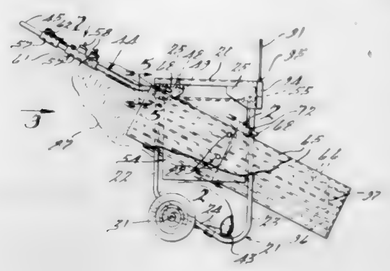
Orlie W. Dawson, Farmington Township, Wayne County, Mich. (31800 Nottingham Woods, Farmington, Mich. 48024)

Original No. 3,266,814, dated Aug. 16, 1966, Ser. No. 391,139, Aug. 21, 1964, which is a continuation of abandoned application Ser. No. 598,585, Nov. 18, 1966. Application for reissue Aug. 4, 1967, Ser. No. 672,405

U.S. Cl. 280—41 **24 Claims**
Int. Cl. B62d *21/14*; **B62b** *1/04, 7/06*

The golf cart of the present invention comprises a seat which has a pair of supporting frames secured at each side

at least one of which is pivotedly secured thereto. A handle is pivoted to the seat to fold with the frames to form a compact unit for storage. A golf club container



is removably secured at opposite sides of the cart with the club receiving end extending upwardly. In addition to carrying the clubs the cart provides a sturdy seat which is always available.

26,537

MOBILE INSPECTION DEVICE FOR TESTING METALLIC MEMBERS FOR LONGITUDINAL AND TRANSVERSE DISCONTINUITIES

David R. Tompkins, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Original No. 3,287,632, dated Nov. 22, 1966, Ser. No. 360,947, Apr. 20, 1964. Application for reissue Oct. 5, 1967, Ser. No. 681,040

U.S. Cl. 324—37 **7 Claims**
Int. Cl. G01r *33/12*



The particular embodiment described herein as illustrative of one form of the invention is an enclosed vehicle having therein apparatus adapted to perform certain magnetic defect-inspection techniques on elongated members such as sections of pipe and the like. By arranging the apparatus in the manner described, sections of pipe to be inspected can be moved in relation to the vehicle and the various inspection devices to obtain indications of defects that may be present in the section being inspected.

26,538

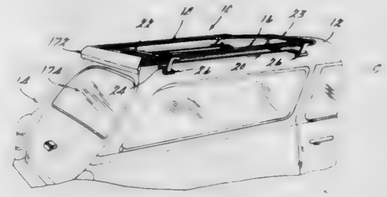
LUGGAGE RACK

John A. Bott, 931 Lakeshore Drive, Grosse Pointe Shores, Mich. 48236

Original No. 3,330,454, dated July 11, 1967, Ser. No. 483,915, Aug. 31, 1965. Application for reissue Dec. 4, 1967, Ser. No. 690,032

U.S. Cl. 224—42.1 **22 Claims**

A luggage rack for carrying luggage or the like on an automotive vehicle comprising a pair of spaced multi-sided load constraining side members, at least one cross member extending laterally between the side members, means on the opposite ends of the cross member and cooperable guideway means on one side of each of the side members for securing the cross member to the side members in a manner such that the cross member is longitudinally movable along the side members, at least one stanchion member for supporting each of the side members, each of the stanchion members having a lower end portion adapted to be fixedly secured to the vehicle, means for securing the upper ends of the stanchions to one side of the adjacent of the side members other than the sides thereof along which the guideway means are located, whereby the cross member may be moved longitudinally of the side members



without interfering with the stanchions, the last mentioned means including screw means extending between the upper ends of the stanchions and the side members and disposed out of longitudinal alignment with the guideway means, a transversely extending wind deflector adapted to direct a flow of wind toward a rear portion of the automotive vehicle, and means for supporting the wind deflector on the rearward terminal ends of side members independent of the cross rail.

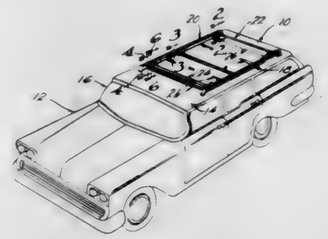
26,539

LUGGAGE RACK

John A. Bott, 931 Lake Shore Drive, Grosse Pointe Shores, Mich. 48236

Original No. 3,253,755, dated May 31, 1966, Ser. No. 376,778, June 22, 1964. Application for reissue Dec. 4, 1967, Ser. No. 689,731

U.S. Cl. 224—42.1 **26 Claims**



A luggage rack adapted to be mounted on a generally horizontally extending surface portion of an automotive vehicle comprising a pair of spaced substantially straight parallel load constraining side rails extending longitudinally of the vehicle and adapted to be fixedly secured to the surface portion thereof, each of the side rails having an elongated guideway formed on the inner side thereof and extending longitudinally thereof, sliding means longitudinally slidable along the guideway of each of the side rails, a cross rail extending transversely between the side rails, the cross rail having means on the opposite ends thereof engageable with the sliding means for securing the cross rail to the side rails, and stanchion means supported on the surface portion and having the upper portion thereof telescopically engageable with the opposite ends of the side rails to block further longitudinal movement of the cross rail.

PATENTS

GRANTED MARCH 4, 1969

GENERAL AND MECHANICAL

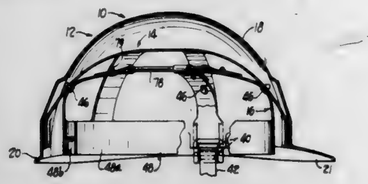
3,430,260

SAFETY HAT SUSPENSION

Tom W. Johnson, Burton, Edward J. Stropkay, Cleveland, and James D. White, Cleveland Heights, Ohio, assignors to Sajar Plastics, Inc.

Filed Dec. 27, 1966, Ser, No. 604,920

U.S. Cl. 2—3 **18 Claims**
Int. Cl. A42b *1/08*



A resilient crown support for a hard shell safety hat having a first suspension with legs connected at their free ends to the shell, a second separate suspension within and beneath the first with an adjustable head band and integral straps, the straps being connected together at their ends below the first suspension and connected intermediate their ends to the legs of the first suspension.

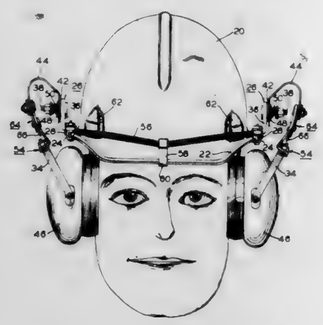
3,430,261

SOUND ATTENUATOR ATTACHMENT FOR A PROTECTIVE HELMET

Charles E. Benner, Grosse Pointe Woods, Mich., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 1, 1967, Ser. No. 619,631

U.S. Cl. 2—3 **6 Claims**
Int. Cl. A42b *1/08, 100;* **A42c** *5/04;* **H04n** *1/05*



An attachment for a protective helmet, providing sound attenuating ear muffs swivelled on horizontal pivots removably attached to the brim of the helmet, the muffs being spring-pressed to the ears of the wearer when in use, and rotatable about the pivots between an operative position to an inoperative position according to whether or not the wearer desires ear protection.

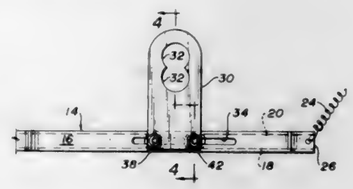
3,430,262

WELDER'S FACE SHIELD MOUNTING BRACKET FOR SAFETY HATS

Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.

Filed Sept. 12, 1966, Ser. No. 578,688

U.S. Cl. 2—8 **7 Claims**
Int. Cl. A42b *1/00;* **F16p** *1/00*



A band or bow having a generally U-shaped cross section is held in wrapped around relation to the outwardly flared rim of a safety helmet. The band is apertured to support a pair of brackets at any desired position forwardly or rearwardly of the sides or lateral extremities of the helmet. Each bracket is provided with a plurality of holes for receiving conventional friction bolt assemblies to enable a welder's face shield to be secured to the brackets at a preselected one of a plurality of vertical positions.

3,430,263

UNIVERSAL STOP PIN FOR HEAD PROTECTIVE EQUIPMENT

William E. Newcomb, Warwick, R.I., assignor to Welsh Manufacturing Company, a corporation of Rhode Island

Filed July 19, 1967, Ser. No. 654,536

U.S. Cl. 2—8 **3 Claims**
Int. Cl. A42b *1/00*



A pivotal bolt is keyed to an arm carrying a fixed stop means and the bolt is received in an aperture in head protective equipment that includes a head encircling strap assembly which is mounted on the pivotal bolt, and a stop member having a portion to engage the strap assembly and another portion engaging the fixed stop means.

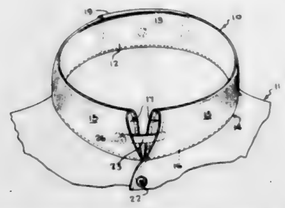
3,430,264

COLLAR HAVING A TUBE-LIKE CONSTRUCTION

Cornelius Beukenkamp, Jr., 993 Park Ave., New York, N.Y. 10028

Filed May 6, 1966, Ser. No. 548,234

U.S. Cl. 2—141 **1 Claim**
Int. Cl. A41b *1/12, 3/12, 3/04*



A collar comprising a neckband, a pair of rectangular sections secured along the outer surface of the neckband at their upper and lower edges. Said rectangular sections extend from the front of the collar toward the rear of the collar. A flap is positioned between the rectangular sections at the rear of the collar. Said rectangular sections and said flap form with said neckband a continuous tube-like construction.

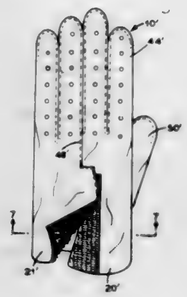
3,430,265

GLOVE CONSTRUCTION

Gerald V. Mazza, 752 Westminster Road, Brooklyn, N.Y. 11230

Continuation-in-part of application Ser. No. 634,367, Apr. 27, 1967. This application Feb. 26, 1968, Ser. No. 708,280

U.S. Cl. 2—162 **1 Claim**
Int. Cl. A41d *19/00*



A glove construction that provides for the back portion thereof to be split to permit the glove to be easily put on and taken off the hand of the wearer. The split edges of the back portion are arranged in overlapping relation and the opposing surfaces thereof are provided with a Velcro nylon tape closure; whereby selected surface areas of the overlapping split edges may be releasably and adjustably interconnected for adjusting the width of the glove to the size of the wearer's hand to insure a skin tight fit of the glove when it is in use.

3,430,266

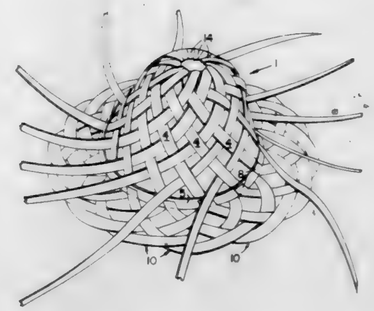
HAT STRUCTURE

Leo George Andrian, 1465 Vista Road, P.O. Box 145, El Cerrito, Calif. 94530

Filed May 8, 1967, Ser. No. 636,971

U.S. Cl. 2—193 **6 Claims**
Int. Cl. A42c *3/00*

A light-weight, ventilated protective sun hat, which is also decorative, and which is formed from a plurality of strips of relatively thin material assembled in inter-



woven fashion to give the general appearance of a palm frond hat formed from natural palm branches.

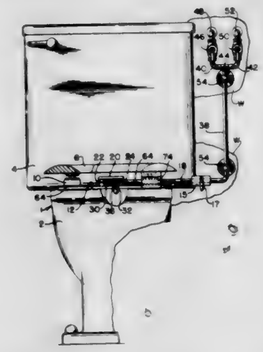
3,430,267

BIDET FOR ATTACHMENT TO CONVENTIONAL COMMODES

Frances M. Van Houten, 3009 Speedway, Wichita Falls, Tex. 76308

Filed Feb. 20, 1967, Ser. No. 617,206

U.S. Cl. 4—6 **10 Claims**
Int. Cl. A47k *3/22, 11/08*



An apparatus of the general character of a bidet, which is adapted for use with conventional commodes. The apparatus is attached to the commode and has a conduit system associated therewith which connects to the conventional hot and cold water lines of the water system of a bathroom. The water to the present apparatus is controlled by valves by which to regulate the temperature of the water and which regulate the discharge of the water into the commode or to the bidet. Provision is also made to prevent contamination of the water system.

3,430,268

BIDET SYSTEM

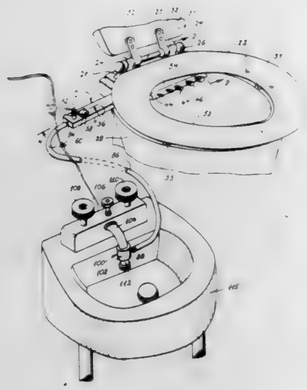
Joseph Zoberg, 590 Winthrop Road, Teaneck, N.J. 07666

Filed Sept. 26, 1967, Ser. No. 670,745

U.S. Cl. 4—7 **8 Claims**
Int. Cl. A47k *3/22, 11/08*

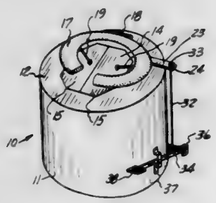
The disclosure describes a bidet appliance adaptable for mounting on a toilet seat or bowl to emit a spray of

water of desired temperature. The water temperature can be regulated by a water diverter mounted on a hot and cold water mixing faucet. The appliance has nozzles at



spaced locations of different size and can be adjustably positioned with respect to the toilet bowl for best location and different size.

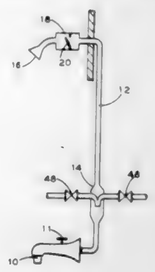
3,430,269
PORTABLE TOILET
Thomas T. Bradshaw, Fort Myers, Fla., assignor to Sani-Jon of America, Inc., Warren, Mich.
Filed Nov. 3, 1966, Ser. No. 591,848
U.S. Cl. 4—144 **4 Claims**
Int. Cl. A47k *11/02, 13/00*



A portable toilet container having an upper opening normally covered by at least one downwardly swingable door, with a normally upwardly extending toilet seat hinged to the container and located above and connected to the door so that movement of the seat into a horizontal plane causes the door to open and upwards movement causes the door to close. The seat is held upwardly by a plunger pressing against the bottom of the seat, with the lower end of the plunger extending through a U-shaped bracket, located within the container, with a coil spring surrounding the plunger portion within the bracket and abutting the bracket and a shoulder formed upon the plunger to spring press the plunger upwardly against the seat.

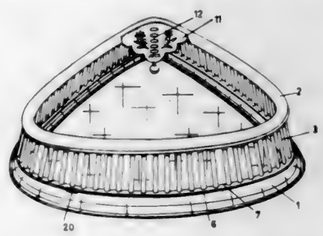
3,430,270
PLUMBING FITTINGS
Guillermo Jose Vanegas, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,772
U.S. Cl. 4—145 **10 Claims**
Int. Cl. E03c *1/04*

A diverter valve for use in combination with a shower and bathtub. The system includes a valve between the shower head and the bathtub spout which prevents air from being drawn through the shower head and into the



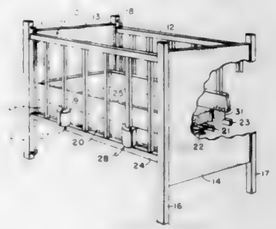
water which is flowing through the bathtub spout when the diverter is in the tub-fill position.

3,430,271
CHILD'S PLAY PEN
Marie-Louise Junod-Delle, 1384 Suchy, Vaud, Switzerland
Filed Apr. 18, 1967, Ser. No. 631,788
U.S. Cl. 5—93 **5 Claims**
Int. Cl. A47d *13/06;* **E04h** *17/16, 17/02;* **B21f** *27/00*



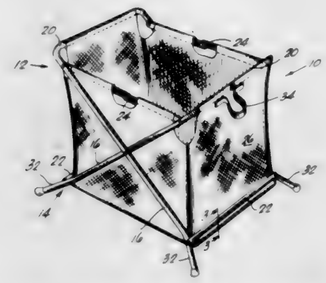
A child's play pen comprising a base by which the apparatus can rest on the ground, the base comprising a tube closed on itself in the form of a ring, the apparatus furthermore comprising an upper part removably connected to the base by securing means disposed on the upper periphery of the tube.

3,430,272
DEVICE FOR PROTECTING OCCUPANT OF INFANT'S CRIB
William O. Thorn, Jr., 5551 Tallawanda Drive, Fairfield, Ohio 45014
Filed June 16, 1967, Ser. No. 646,691
U.S. Cl. 5—93 **3 Claims**
Int. Cl. A47d *7/00, 7/03, 13/06, 7/02*



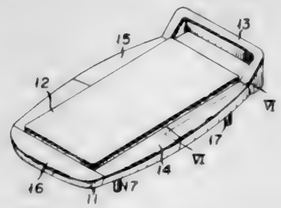
In a crib of the type having a frontal gate of the kind which is raised and lowered, a combination of an internal bumper and bumper supports is provided for the protection of the infant-occupant. The bumper is installed so as to define a protective compartment bottomed by the mattress. Novel bumper supports maintain the vertical positioning of the bumper.

3,430,273
COLLAPSIBLE PLAYPEN
Eleanor M. Stillwaugh, 12010 Gladhill, La Mirada, Calif. 90638
Filed July 3, 1967, Ser. No. 650,834
U.S. Cl. 5—98 **5 Claims**
Int. Cl. A47d *7/00;* **A47c** *17/70*



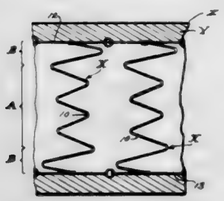
A collapsible playpen which uses its fabric sides and the base thereof to retain the device in the open position.

3,430,274
BED
Minoru Ikeda, Tokyo, Japan, assignor to France Bed Co., Ltd., Shibuya-ku, Japan, a corporation of Japan
Filed Jan. 5, 1967, Ser. No. 607,565
U.S. Cl. 5—181 **3 Claims**
Int. Cl. A47c *17/86*



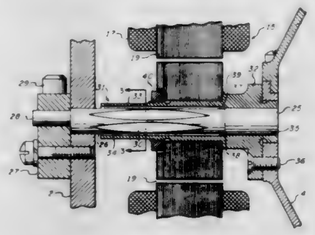
A bed having side boards and a footboard extending outwardly of the mattress to avoid undue heaviness of the bedclothes covered on a person lying thereon an occasional slipping off of the bedclothes from the mattress. These boards can be separable from the mattress and detachable into several parts when it is not used.

3,430,275
DUAL FIRMNESS SPRING FOR BEDDING AND THE LIKE
Melvin N. Janapol, Los Angeles, Calif., assignor to Wortso Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 30, 1967, Ser. No. 627,258
U.S. Cl. 5—351 **4 Claims**
Int. Cl. A47c *27/00*



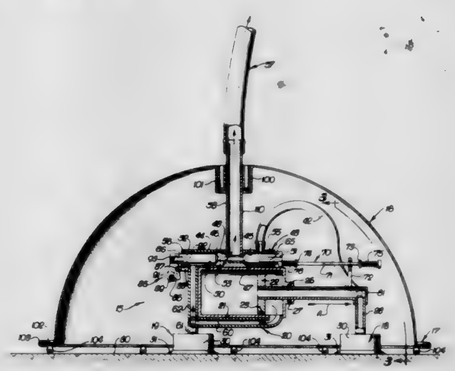
This invention relates to furniture springs and the like and particularly to bedding springs that are employed for the support of a layer of padding adapted to engage and comfortably carry the body weight of a person resting thereon. The posture of the resting person can vary widely and when the person reclines a bed or mattress is used and which is made up a multiplicity of spring coils, each of which is the subject of this invention, it being a general objecto to provide an improved spring coil having dual firmness; an initial softness and a subsequent hardness. In accordance with this invention the softness and hardness are incorporated in the single spring coil, presenting a pillow-like surface without resort to soft padding alone and presenting an underlying firmness despite the softer surface action.

3,430,276
TORSION BAR SUSPENSION FOR RATE GYROSCOPES
Paul E. Ashley and Clair G. Sutter, Phoenix, Ariz., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,333
U.S. Cl. 74—5 **4 Claims**
Int. Cl. G01c *19/24*



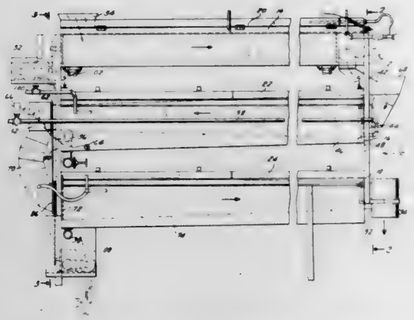
A suspension for the rotor bearing frame of a rate gyroscope of the torsion rod type having an elongated tubular member closely overlying substantially the entire length of the torsion rod for limiting or restraining radial movements of the rotor bearing frame of the gyroscope under excessive shock loads.

3,430,277
AUTOMATIC VACUUM POOL CLEANER
Robert Ortega, 4171 Calhoun Drive, Huntington Beach, Calif. 92647
Filed May 25, 1967, Ser. No. 641,239
U.S. Cl. 15—1.7 **12 Claims**
Int. Cl. E04h *3/20*



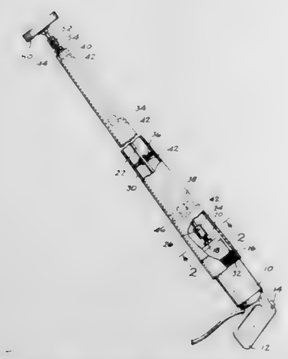
The invention is an automatic cleaner for swimming pools and the like which travels at random over the bottom and up the walls, the movement being in increments achieved by the use of spaced suction cup mechanisms shiftably interconnected and alternately actuated, the actuation and the cleaning of the surfaces being performed by water vacuum.

3,430,278
CLEANER FOR MEAT PRODUCTS
Wallace F. Walter, Omaha, Nebr., and Karl Oberdorfer, Council Bluffs, Iowa, assignors to Unexcelled, Inc., a corporation of New York
Filed Oct. 16, 1967, Ser. No. 675,420
U.S. Cl. 15—3.13 11 Claims
Int. Cl. A22c *17/16, 17/08*



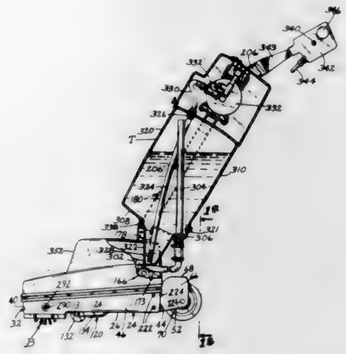
A continuous cleaner for meat products such as pork or beef hearts, stomachs, tongues or the like, having a first section that deslimes the material, a second section that scalds the material and a third section that chills the material. The meat products automatically pass from one section to the next and as they pass through any one section they are continuously subjected to the operation performed therein. Bypass means are provided at the head of the scalding section to permit meat products that do not require desliming to enter the cleaning process at the start of the scalding operation after the desliming is completed.

3,430,279
POLISHER FOR HIGH VOLTAGE ELECTRIC LINES
Norman Hintze, Jerome, Idaho 83338
Filed May 23, 1966, Ser. No. 552,024
U.S. Cl. 15—23 4 Claims
Int. Cl. A47l *25/00*; A46b *13/02*; B24b *29/00*



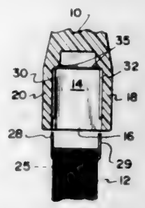
An elongated, electrically nonconducting shaft is coupled at its inner end releasably to the driven shaft of an electric drill motor and is supported at longitudinally spaced intervals by bushings mounted in an elongated, electrically nonconducting housing threaded at its inner end to the drill motor housing. Thrust set collars on the shaft abut the innermost and outermost bushings, and a brush is secured to the outer end of the shaft for polishing high voltage electric lines.

3,430,280
DEVICE FOR GENERATING FOAM FOR A CARPET AND FLOOR SCRUBBING MACHINE
Daniel A. Arones, Wayzata, Minn., assignor to Advance Machine Company, Spring Park, Minn.
Original application Oct. 22, 1965, Ser. No. 501,154, now Patent No. 3,346,896, dated Oct. 17, 1967. Divided and this application May 22, 1967, Ser. No. 640,202
U.S. Cl. 15—50 4 Claims
Int. Cl. A47l *11/282, 11/34, 11/40*



The device includes a tank mounted on the handle of a carpet scrubbing machine, a wall of the tank having a pocket formed therein and extending outwardly of the wall. An air compressor is carried by the handle. The cross-sectional area of the pocket of the tank is substantially less than the area of the wall from which it extends. An air inlet tube is provided which is connected to the compressor and extends into the tank, the lower end of the air inlet tube extended into the pocket whereby foam is generated from a liquid in the pocket for dispersion of the foam into the tank above the level of the liquid. A standpipe is mounted in the tank with the lower end extended outwardly from the lower end of the tank and the upper end positioned closely adjacent the upper end of the tank which receives foam and feeds the foam outwardly of the tank.

3,430,281
STAPLE GUIDE FOR SECURING BRISTLES OF A BRUSH TO A BRUSH HANDLE
John G. Baumgartner, Plano, Ill., assignor to Anchor Brush Company, Montgomery, Ill., a corporation of Delaware
Filed Jan. 22, 1968, Ser. No. 699,696
U.S. Cl. 15—195 2 Claims
Int. Cl. A46b *3/16*; A46d *3/00*



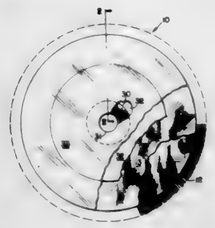
A plastic brush handle has an integrally molded bristle receiving socket in one end of it. Guide grooves are oppositely disposed from one another on opposite walls of the socket. The brush bristles are mounted in the socket by inserting a staple, around which the bristles are looped, and fastening the staple to the brush handle. The grooves act to guide the staple along the walls of the socket until it is fastened to the handle.

3,430,282
ERASER DEVICE
George H. Phillips, Williston, N. Dak. 58801
Filed May 9, 1967, Ser. No. 637,254
U.S. Cl. 15—210 2 Claims
Int. Cl. B43l *21/02*; A47k *7/00*; A47l *25/08*



The invention comprises an elongated eraser device having opposed, outer spongeous surfaces, an elongated chamois skin sleeve surrounding said spongeous surfaces and extending the length of said surfaces, said sleeve having open ends, said sleeve having a zipper along its length connecting the opposing edges of the chamois skin sleeve together to form said sleeve.

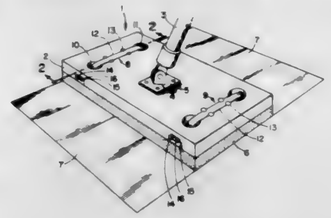
3,430,283
POLISHING BUFF
Edward F. Engel, Henrietta, and Harry S. Scherzer, Fairport, N.Y., assignors to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 463,832, June 14, 1965. This application Aug. 9, 1967, Ser. No. 659,505
U.S. Cl. 15—230.12 11 Claims
Int. Cl. A46b *3/02*; B05c *1/00*



A polishing buff is formed of a base fabric disk of relatively, coarse open weave, having pile material extending away from one face. Plastic material applied to the back face of the disk impregnates interstices in the fabric to anchor the pile in place and stiffen and support the buff which can be formed in a generally dished or curved-edge shape. For greater stiffening and strength, additional layers of plastic can be added to the back of the buff, a reinforcing ring of metal screening can be embedded in plastic around a central arbor hole in the buff, and a fabric backing material can be added to the back of the buff.

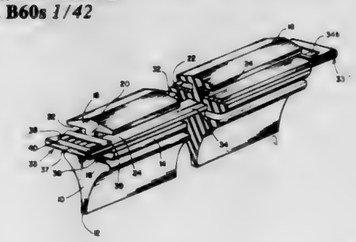
3,430,284
ATTACHMENT MEANS FOR WIPE SHEET MATERIAL
Milton J. Fuerst, New London, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed July 24, 1967, Ser. No. 655,421
U.S. Cl. 15—231 5 Claims
Int. Cl. A47l *13/46*

A mop having a replaceable wiper which is releasably secured to the mophead by strips of resilient material carried by the mophead. The strips are biased against their own resiliency to effect retention of a wipe between



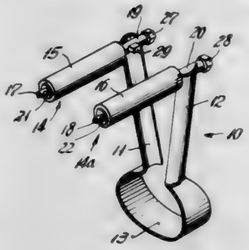
the strips and the mophead. Means are provided to permit easy finger pressure biasing of the strips.

3,430,285
HOLDER FOR WINDSHIELD WIPER BLADE
Edward Rickett, Minneapolis, Minn., assignor to Daco, Inc., Minneapolis, Minn., a corporation of Colorado
Filed Jan. 31, 1968, Ser. No. 701,921
U.S. Cl. 15—250.42 9 Claims
Int. Cl. B60s *1/42*



A holder for a windshield wiper blade includes a pair of metal ribbons which extend in grooves along opposite sides of a resilient wiper blade, providing lateral rigidity but longitudinal flexibility to permit the blade to conform to the curvature of a windshield, with each ribbon having a dimple adjacent its end, and an apertured U-shaped snap clip at each end passing over the dimple to releasably secure the ribbons together on the blade.

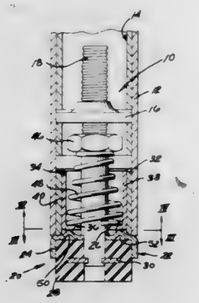
3,430,286
HAND-HELD PAINTBRUSH WRINGER
Victor J. Bownes, 152 Wormwood Road, Fairfield, Conn. 06430
Filed Apr. 10, 1967, Ser. No. 629,590
U.S. Cl. 15—257 8 Claims
Int. Cl. A46l *17/06*



A hand-held device for wringing liquids from articles, for example the bristles of paint brushes or the like, comprising a substantially U-shaped handle having bristle-engaging members projecting laterally of the handle from the ends of the legs of the U and located at one side of the handle, which legs are normally yieldingly urged to

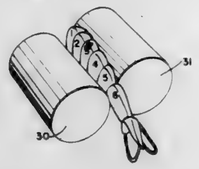
position the members in spaced relation to enable the bristles to be disposed between them and to be moved into engagement with the bristles by the gripping action of the hand on the legs of the U to move them toward one another and to remove material from the bristles as the device is thereafter moved along the bristles.

3,430,287
ADJUSTABLE INDEXING GLIDE FOR FURNITURE LEGS
Lester F. Schroeder, Grand Rapids, Mich., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 13, 1967, Ser. No. 615,420
U.S. Cl. 16—42 **13 Claims**
Int. Cl. A47b *91/06, 91/02*



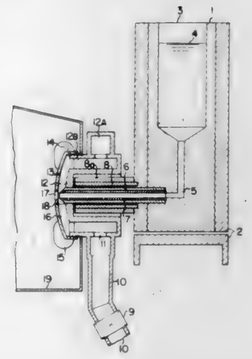
A glide shoe having a threaded upstanding adjustment steed which engages a nut-like mounting member attachable to the leg of an article of furniture, in which a generally tubular cover element telescopes over the adjustment stud and is spring-biased downwardly against the top of the glide shoe to cover and conceal the stud at all times. The top of the glide shoe is embossed to mate at desired degrees of rotation thereof with a complementary emboss on a flange means attached inside the cover element, to thereby form a detenting arrangement which indexes the rotational positions of the glide shoe with respect to the cover element.

3,430,288
APPARATUS FOR INDIVIDUALLY TREATING HEADLESS SHRIMP
James M. Lapeyre, New Orleans, La., assignor to The Laitram Corporation, New Orleans, La., a corporation of Louisiana
Original application May 25, 1965, Ser. No. 458,645, now Patent No. 3,324,504, dated June 13, 1967. Divided and this application Sept. 9, 1966, Ser. No. 592,241
U.S. Cl. 17—2 **12 Claims**
Int. Cl. A22c *29/00*



The invention is directed to an apparatus for treating de-headed and dorsally cut shrimp for the fantail market which apparatus is provided with laterally adjacent rotary peeling surfaces defining a peeling nip between the convergent surfaces. The surfaces and nip are of sufficient length to receive the first 5 abdominal segments of a shrimp so that the 6th segment projects partially beyond the peeling surfaces and is free of effective peeling contact therewith. A means is provided for activating the peeling surfaces and nip to act upon the dorsally cut segments 1 through 5 so that the latter shell segments are removed substantially normal to the axis of the shrimp meat leaving the abdominal shell segment 6 with its connecting uropods and telson substantially intact and attached to the deshelled shrimp meat.

3,430,289
APPARATUS FOR PREPARING HIGH PURITY FINE POWDER OF LOW-MELTING METALS
Michinosuke Aikawa, Tokyo-to, and Mirei Kojima and Chushichi Takahashi, Annaka-shi, Japan, assignors to Toho Aen Kabushiki Kaisha, Tokyo-to, Japan
Filed Nov. 1, 1965, Ser. No. 505,861
U.S. Cl. 18—2.5 **1 Claim**
Int. Cl. B29c *23/00*

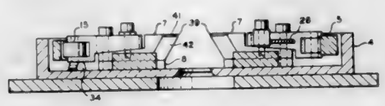


An apparatus for preparing a high purity fine powder of a metal selected from the group consisting of zinc, lead, tin, cadmium, antimony, bismuth, aluminum and similar metals having a relatively low melting point. A crucible of refractory material has a uniform diameter nozzle connected to the lower end of the chamber therein below the level thereof so that molten metal is ejected through the nozzle by the pressure of the metal in the crucible. A nozzle box surrounds and supports the nozzle, and means are provided for supplying air under pressure of at most 1.5 kilograms per centimeter. The air supply means comprises an apertured cap adjustably mounted on the nozzle box in front of the nozzle with the cap and nozzle forming a ring-shaped cap air chamber inside of the cap. A ring-shaped inner air chamber is provided in the nozzle box which opens into the cap air chamber, and an outer ring-shaped air chamber around the nozzle box opens into the inner ring-shaped chamber. Air under pressure is supplied to the outer air chamber. A chamber is provided in front of the cap to recover the powdered metal.

3,430,290
APPARATUS FOR SEALING AND SEVERING PARISONS
William G. Kinslow, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,335
U.S. Cl. 18—5 **7 Claims**
Int. Cl. B26d *5/16;* **B29c** *17/07*

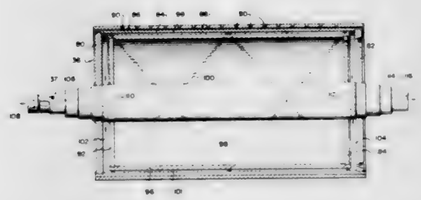
Heat softened hollow plastic parisons are closed at one end, preparatory to blow molding, by means of at least

two pointed cooperating closing elements which have leading edges disposed adjacent their flat upper faces. These elements slope back from the leading operative edges toward the upper face and toward a bottom face. The sur-



face sloping from the leading edge toward said upper face is tapered or chamfered in an angle of less than 90° included angle of the horizontal, that is with respect to the upper face of the blade.

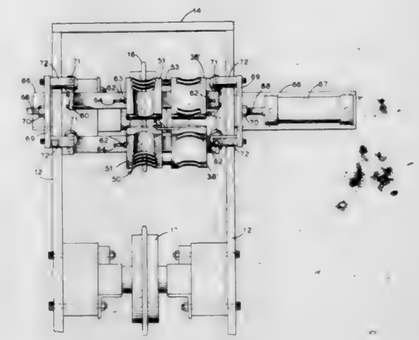
3,430,291
MACHINE FOR CONTINUOUSLY FORMING AN ELONGATED CLEATED RUNNER OF PLASTIC MATERIAL
Charles F. Hlinka, Franklin Park, Ill., assignor to Tenex Corporation, a corporation of Illinois
Filed Dec. 6, 1965, Ser. No. 511,964
U.S. Cl. 18—10 **8 Claims**
Int. Cl. B29d *7/14*



A processing machine for producing an elongated web of plastic material with a pattern impressed into the top surface of the web and with integral elongated cleats extruded transversely from the lower surface of the web is provided by a pair of spaced rollers that calender the web material to a desired thickness, impress the pattern in the top surface, and extrude the elongated cleats from the web material. The roller in which extrusion is effected is defined by three concentric shells, the outermost having recesses for defining the extruded projections and the other two defining a jacket through which heated water is circulated for maintaining an elevated temperature. The innermost ends of the extrusion recesses are vented to effect accurate extrusions and the exterior surface of the middle shell is shaped to provide both heat transfer to the outer shell and vent channels for the extrusion recesses. The other roller is maintained at a lower temperature and has a shallower impression pattern defined on its surface.

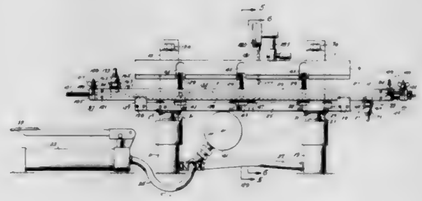
3,430,292
APPARATUS FOR THE CONTINUOUS FORMATION OF TUBULAR ARTICLES
Joseph F. Bauman and Stanley P. Rette, Trenton, N.J., assignors to Acme-Hamilton Manufacturing Corporation, Trenton, N.J.
Filed Apr. 28, 1967, Ser. No. 634,673
U.S. Cl. 18—19 **9 Claims**
Int. Cl. B29c *17/00*

Apparatus for the manufacture of hollow plastic articles of indefinite length which have a major portion of the length thereof of one longitudinal sectional configuration and minor portions of the length thereof of another longitudinal sectional configuration, to thereby provide individual hollow articles having at one or both ends thereof a



molded configuration different from that of the portions thereof intermediate the ends thereof.

3,430,293
COLD MOLDING OF NYLON ON CAN CONVEYOR ROPE
Darral V. Humphries, Allentown, and Raymond H. Lester, Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,865
U.S. Cl. 18—17 **8 Claims**
Int. Cl. B29h *5/00*

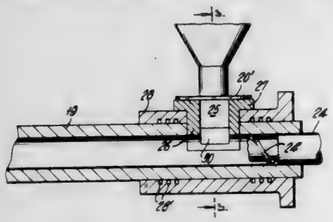


7. A molding device for plastic comprising:
(a) at least two mold sections biased toward each other by a predetermined biasing pressure from a biasing means,
(b) heating means to heat the said mold sections,
(c) detecting means to measure a predetermined movement of said two mold sections toward each other when plastic between said sections is sufficiently heat softened for proper shaping, and
(d) means to forcibly move said mold sections toward each other to finally shape said plastic after said predetermined movement is measured.

3,430,294
MACHINE FOR INJECTION-MOLDING OF PLASTICS AND THE LIKE
Ulrich Gerwalt, Nuremberg, Germany, assignor to The New Britain Machine Company, New Britain, Conn., a corporation of Connecticut
Filed Aug. 31, 1966, Ser. No. 576,333
U.S. Cl. 18—30 **13 Claims**
Int. Cl. B29f *1/03*

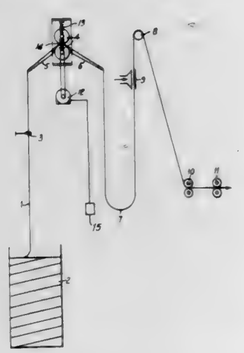
The invention contemplates an improved plasticizing-cylinder construction, specially configurated at the feed opening or port so as to replaceably receive a selected one

of a variety of feed-conduit inserts, each of which is so constructed as to provide an optimum feed relation with the plasticizing screw, depending on the nature of the material to be processed. By this means, not only is the feed



passage shaped for optimum feeding, but also the feed passage may be selectively fixed or subjected to intermittent or continuous motion, as needed for optimum feeding of particular materials.

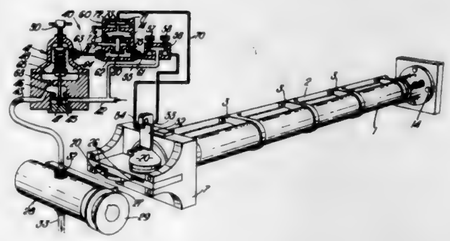
3,430,295
PROCESS OF OPENING TOW
Olaf George Dixon, 3 Lillington Road, Leamington Spa, Warwickshire, England
Filed Mar. 29, 1966, Ser. No. 538,360
Claims priority, application Great Britain, Apr. 1, 1965, 13,810/65
U.S. Cl. 19—65 **7 Claims**
Int. Cl. D01h *5/74;* **D01b** *3/00*



The invention is a process for the production of cigarette filters which comprises passing the tow through the nip of a pair of rollers, at least one of which rollers is driven, and spreading the tow into a band while it hangs freely in the form of a loop. Preferably, the tow is subject to control presseure while passing between the rollers and the drive of the rollers is controlled in respect of its speed so as to maintain the freely hanging loop of constant length.

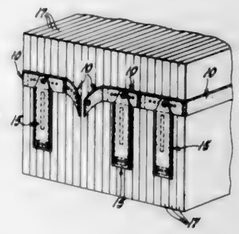
3,430,296
OSCILLATING DRIVE FOR DOFFER COMB
John K. P. Mackie, Belfast, Northern Ireland, assignor to James Mackie & Sons Limited, Belfast, Northern Ireland, a British company
Filed Apr. 24, 1967, Ser. No. 633,095
Claims priority, application Great Britain, Apr. 29, 1966, 19,029/66
U.S. Cl. 19—106 **13 Claims**
Int. Cl. D01g *15/46*

A doffer comb assembly for a textile machine comprising a doffer comb supported by a shaft mounted to turn under torsional control to constitute a resonant system and having pneumatically operated driving mechanism for producing repetitive mechanical impacts on arms extending laterally from the shaft by means of



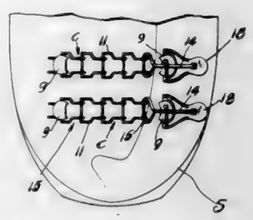
diaphragms supplied with compressed air by way of a rotary valve, the air pressure being adjusted in accordance with the amplitude of oscillation in such a way as to maintain the amplitude substantially constant.

3,430,297
STORING PHONOGRAPH RECORDS
Jerilynn H. Weier, 37275 Ilene Drive, Mount Clemens, Mich. 48043
Filed Oct. 30, 1967, Ser. No. 678,989
U.S. Cl. 24—17 **8 Claims**
Int. Cl. B65d *63/10;* **G09f** *3/12*



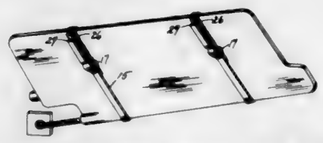
Means and method for storing a collection of phonograph records are disclosed comprising forming via a band having ends and releasable fastening means, a closed loop about a plurality of said records in their holders to retain the latter together in a bundle and carrying on said closed loop, via a container, a tag bearing information concerning the records in said bundle which tag may be removed from said container without undoing said fastening means.

3,430,298
SKI BOOT SNAP FASTENERS
Tyrus R. Knoy, 403 Cass Ave., Bay City, Mich. 48706
Filed June 19, 1967, Ser. No. 647,029
U.S. Cl. 24—69 **4 Claims**
Int. Cl. A44b *21/00;* **A43b** *23/00*



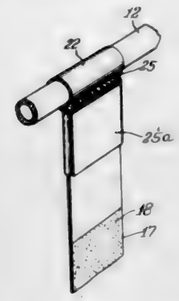
Ski boot snap fastening means and elimination of laces.

3,430,299
ADJUSTABLE STRAP CONSTRUCTION
Daniel B. Copen, Flushing, N.Y., assignor to Peerless Plastics, Inc., New York, N.Y., a corporation of New York
Filed Feb. 16, 1967, Ser. No. 616,726
U.S. Cl. 24—73 **1 Claim**
Int. Cl. A44b *21/00;* **B65d** *63/16, 67/02*



A unitary length of strap having a first looped end retaining a pair of metallic rings, the opposite end thereof having a surface, two adjacent areas of which are provided with mutually selectively engageable and pile fabrics.

3,430,300
FASTENER FOR MEDICAL TUBES AND THE LIKE
Mildred Doan, 422 W. Melrose St., Chicago, Ill. 60657
Filed Apr. 20, 1967, Ser. No. 632,236
U.S. Cl. 24—73 **5 Claims**
Int. Cl. A44b *21/00;* **A61m** *25/02*



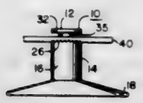
Disclosed herein are two forms of fasteners, each being a flexible strip of material, such as cloth. Adhesive means on one end of the strip releasably fastens the strip to a human body or other object. The other end of the strip is formed to be folded around a tube and secured in place.

3,430,301
CUPBOARD HOOK
Hellen E. Venus, R.F.D. 3, David City, Nebr. 68632
Filed July 17, 1967, Ser. No. 653,758
U.S. Cl. 24—73 **4 Claims**
Int. Cl. A44b *21/00;* **A47g** *1/16*



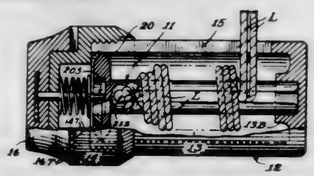
A hook having its shank and its lower portion disposed in the same plane as those upper portions of the hook which are offset to at least one side of said shank, for mailing in a flat envelope.

3,430,302
GARMENT BUTTON
Bruce V. Reagan, Jr., La Jolla, John S. Notchev, San Diego, and Leonard O. Cederwall, El Cajon, Calif., assignors of fifty percent each to Lancea Corporation, San Diego, and Bruce V. Reagan, Jr., La Jolla, Calif.
Filed Nov. 21, 1966, Ser. No. 595,774
U.S. Cl. 24—108 **10 Claims**
Int. Cl. A44l *1/34*



A garment button having a tube portion with a washer shaped entrance portion for receiving a stud having a pointed end with a shoulder portion that terminates in a flat radial surface. The shoulder portion has a diameter larger than the opening in said washer shaped entrance portion, and when the stud is inserted in said tube portion, the radial flat surface abuts against the inside surface of said washer shaped entrance portion. The tube portion and washer shaped entrance portion have a thickness allowing the washer shaped entrance portion to expand outwardly and move in a radial arc so that said shoulder portion and said flat surface can move through the smaller opening in said washer shaped entrance portion.

3,430,303
LACE WIND
Donald E. Perrin, 14445 Woodlawn Ave., Dolton, Ill. 60419, and Gayle S. Wakefield, 16325 California Ave., Markham, Ill. 60426
Filed Aug. 11, 1966, Ser. No. 571,763
U.S. Cl. 24—117 **12 Claims**
Int. Cl. A43c *11/00*

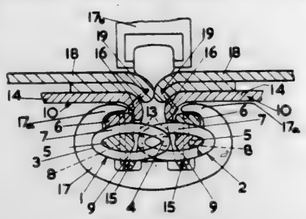


A shoe lace coiler for piggy-back mounting upon a shoe is disclosed for coiling and releasably holding the lace tightly drawn upon the shoe. The coiler comprises a coiling motor in the form of a spindle having a length several times its diameter and having a slot for receiving the lace ends in gripping relation, a housing journaling the rotor therein to define an annular lace storage chamber, the housing having a window for lace travel, and a winding control engageable with the rotor and the housing for turning the rotor in a lace take-up direction, the control including a ratchet wheel rotatable with the rotor and selectively engageable with ratchet teeth on the housing for holding the rotor against reverse rotation.

3,430,304
SLIDING CLASP FASTENER STRINGERS
Eric Swainson, Sutton Coldfield, England, assignor to Lightning Fasteners Limited, Birmingham, England, a corporation of Great Britain
Filed Jan. 19, 1967, Ser. No. 610,289
Claims priority, application Great Britain, Jan. 31, 1966, 4,183/66
U.S. Cl. 24—205.1 **12 Claims**
Int. Cl. A44b *19/00*

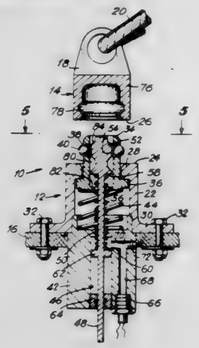
A sliding clasp fastener having a stringer tape with apertures through which coupling elements of the fastener

project. The tape has a fold adjacent the apertures and a portion of the tape extending from the fold conceals parts of the elements. This tape portion is not secured to the



elements. An abutment provided between this tape portion and the elements, the abutment engages the tape at the fold to prevent movement of the fold away from the coupling heads of the elements.

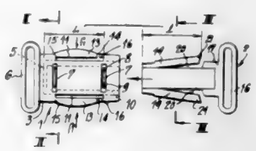
3,430,305
RELEASABLE CONNECTORS
Ted Geffner, 48 Park Ave. E., Merrick, N.Y. 11566
Filed May 19, 1967, Ser. No. 639,853
U.S. Cl. 24—211 **11 Claims**
Int. Cl. B66f *11/00;* **B66c** *1/10*



A releasable connector structure for releasably connecting entities such as a boat and a dock to which it is moored, an aircraft and the ground, a spaceship and its launching pad, and the like. The releasable connector has a pair of connector units which are respectively attached to the entities and which are releasably locked to each other in order to connect the entities together. The locking of the connector units to each other is brought about by way of movable lock members, such as spheres, received in a groove of one connector unit and held in the latter by a piston slidable in the other connector unit. A retracting means of this other unit can be retracted so as to release the spheres for movement out of the groove, and thus it becomes possible to disconnect the connector units from each other. The retracting means for retracting the piston which holds the locking spheres in their groove can be either manually or explosively actuated.

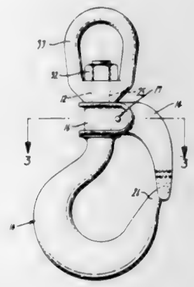
3,430,306
SEPARABLE ELEMENT CONNECTING DEVICE
Georges Henri Tareau, Paris, France, assignor to Tarwil-Rosoflex, Paris, France, a French company
Filed May 1, 1967, Ser. No. 635,093
Claims priority, application France, June 23, 1966, 66,615
U.S. Cl. 24—230 **10 Claims**
Int. Cl. A44b *19/02*

A separable element connecting device is provided having a female tubular cover closed at one end and having two wings along its two edges which wings are capable of being elastically thrust inside two slots, and a male element having two retractable elastic tongues diverging from its longitudinal edges and at least partially penetrating locking apertures in the female cover adjacent the



two slots, so that when the male element is placed in the female cover the elastic tongues pop through the locking apertures adjacent the wings, and so the device may be unlocked by depressing the wings thereby depressing the elastic tongues.

3,430,307
SAFETY HOIST HOOK
Claude W. Burnham, 4017 Edison Ave., Sacramento, Calif. 95821
Filed Dec. 20, 1967, Ser. No. 692,137
U.S. Cl. 24—241 **3 Claims**
Int. Cl. B66c *1/34*

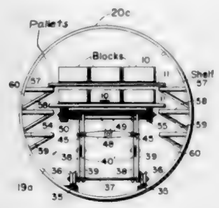


A hook including a safety arm mounted on a shank extension of the hook and rotatable into and out of bridging relationship with the throat of the hook, and a spring loaded safety pin slidably mounted in the arm for transversely engaging a recess on the shank to lock the arm in bridging relationship wherein the pin and mount therefor are axially tapered to provide a wedging, locking action between the shank recess, pin and pin mount.

3,430,308
MATERIALS HANDLING AND TREATING SYSTEM
Jerold H. Van Alsburg, 131 Rio Vista Place, Santa Fe, N. Mex. 87501
Filed Aug. 25, 1966, Ser. No. 575,141
U.S. Cl. 25—2 **1 Claim**
Int. Cl. B28b *15/00;* **F27b** *9/38;* **F26b** *25/06*

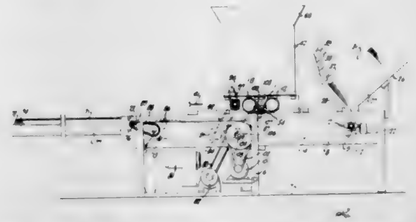
For curing cement blocks at high temperatures and pressures, use row of horizontal cylindrical autoclaves with inner shelves and track and with connections to steam manifolds at different pressure levels, conveyor belt and selectively placed live roller curve carries loaded pallets to tiltable loading end of conveyor car on said track, conveyor chain on car is lowered to deposit pallets on shelves and later raised to remove pallets from shelves,

the car being removed before autoclave is closed and placed on track on a platform which in turn can be moved



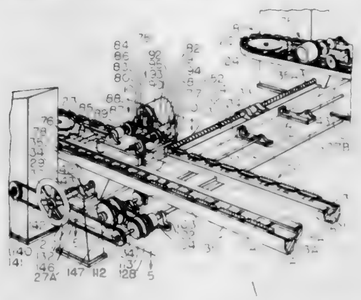
on transverse track to position conveyor car at selected autoclave for the loading and the unloading operation.

3,430,309
AUTOMATIC TILE FORMING MACHINE
Leon H. Bates, 9690 Broadmoor, Dublin, Calif. 94566
Filed Aug. 22, 1966, Ser. No. 573,978
U.S. Cl. 25—43 **4 Claims**
Int. Cl. B28b *5/00*



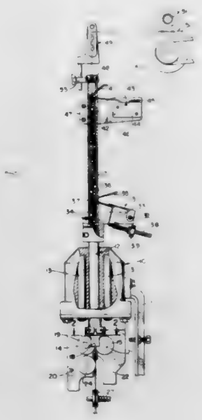
An automatic tile forming machine has a hopper holding a cementitious mixture discharged on to subjacent pallets carried by a chain conveyor from a feeding frame individually releasing the pallets. A roller entirely within the hopper turns toward the hopper discharge against a downwardly inclined screed plate having one portion within the hopper extending substantially to the roller and another portion outside the hopper discharge for screeding and trowelling mixture leaving the hopper on the pallets.

3,430,310
DIFFERENTIAL DRIVE MECHANISM FOR TENTERING MACHINE
James M. Richbourg, Greenville, S.C., assignor to Bevis Industries Inc., Providence, R.I., a corporation of Florida
Filed Feb. 8, 1967, Ser. No. 615,017
U.S. Cl. 26—57 **6 Claims**
Int. Cl. D06c *3/00;* **F16h** *37/00*



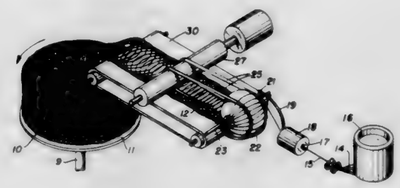
Differential drive mechanism to provide different relative speeds on oppositely located rotating mechanisms.

3,430,311
LOW TENSION DELIVERY FOR STUFFER CRIMPER
Billy Steve Harris, Doylestown, Pa., assignor to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,662
U.S. Cl. 28—1 **2 Claims**
Int. Cl. D02g *3/00*



A stuffer crimper comprising an elongated tube forming a crimping and setting chamber. Feed rolls feed yarn for crimping into one end of said tube and advance the yarn as a core to a discharge point. A feeler wire extends into the tube at the discharge point to rest upon the end of the core and actuates a switch which controls the withdrawal motor. A choke wire extends into the tube in advance of the discharge end of the core to compact the core and exert controlled back pressure in the crimping zone. The core between the choke member and the feeler wire is confined by the tube but is under substantially no back pressure so that it is free to open up and become more pervious for cooling.

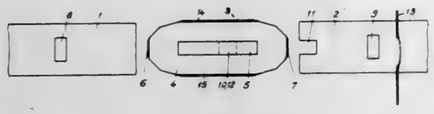
3,430,312
FIBER WINDING MACHINE
Warren Wendell Drummond, 4173 Timberlane Drive, Allison Park, Pa. 15101
Continuation of application Ser. No. 281,861, May 16, 1963, which is a continuation-in-part of application Ser. No. 834,973, Aug. 20, 1959, now Patent No. 3,120,689, dated Feb. 11, 1964. This application Jan. 31, 1967, Ser. No. 613,393
U.S. Cl. 28—1 **7 Claims**
Int. Cl. D02g *3/00*



Apparatus for forming a ribbon of partially overlapped yarn loops including a pair of hemispherical shells mounted for rotation about a common axis and spaced apart to provide a central opening therebetween through which a driving member extends to engage the inner surfaces of the shells for rotating the same. A rotating yarn guide lays loops of yarn around the shells as they rotate

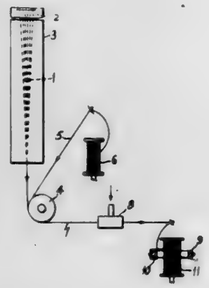
to form a ribbon which is then stripped from the shells. Means are provided to sever the loops of yarn in the area of the central opening between the shells.

3,430,313
HEDDLE FRAME
Bernhard Robert Koch, Horgenberg, Switzerland, assignor to Grob & Co. Aktiengesellschaft, Horgen, Switzerland
Filed May 10, 1967, Ser. No. 637,377
U.S. Cl. 28—46 **5 Claims**
Int. Cl. D03j *1/14;* **D03c** *9/06*



A coupling device **3** is provided to facilitate the transfer of heddles **13** from an auxiliary rod **2** to a heddle carrying rod **1** of a heddle frame or vice versa. The coupling comprises a spring plate **4** having turned over edges to engage with the edges of the rods **1** and **2**, and projections **6** and **7** to snap into holes **8** and **9** in the rails **1** and **2**. A guide piece **5** spaced from the plate **4** engages with the opposite sides of the rods **1** and **2** to the plate.

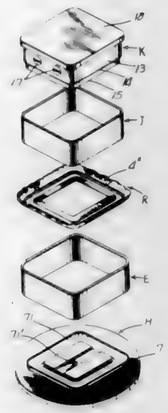
3,430,314
METHOD OF BULKING TEXTILE YARNS
Leslie W. Sayers, Coventry, England, assignor to Courtaulds Limited, London, England, a British company
Filed Sept. 29, 1965, Ser. No. 491,141
Claims priority, application Great Britain, Oct. 7, 1964, 40,849/64
U.S. Cl. 28—72 **2 Claims**
Int. Cl. D02j *1/08;* **D04b** *39/00*



One or more bundles of shrinkable filaments and one or more bundles of unshrinkable or less shrinkable filaments are combined by interlacing using a fluid jet. The composite filamentary bundle obtained is incorporated in a woven or knitted fabric which is then subjected to conditions bringing about shrinkage of the shrinkable filaments.

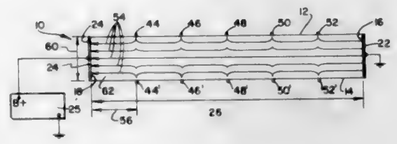
3,430,315
METHOD OF MANUFACTURING CLOTH-COVERED BELT BUCKLES AND TOOL ASSEMBLY USED THEREIN
Hachiro Mitsui, 700 Inada, Fuse, Osaka, Japan
Filed Sept. 9, 1966, Ser. No. 578,191
U.S. Cl. 29—3 **6 Claims**
Int. Cl. B21d *53/46*

A method of manufacturing cloth-covered belt buckles and a tool assembly therefor. The annular cloth covering is first secured to an annular face core by stretching the hole in the cloth and inserting the inner peripheral edge of the face core through the stretched hole and then releasing the cloth. The inner peripheral edge of the core is then pressed toward and against the rear surface of the face core by means of a die assembly while holding the core in a lower die to clamp the inner peripheral edge of the cloth between the inner peripheral edge and the face core. The cloth covering is then drawn through the hole



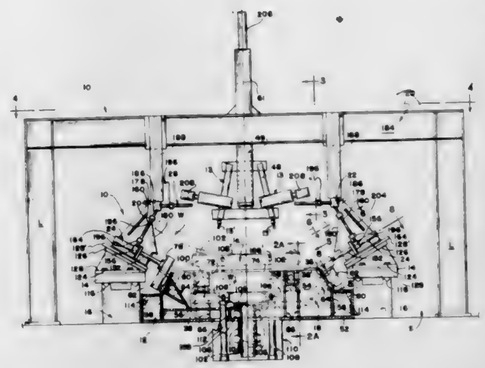
in the center of the face core and stretched over the front surface of the face core, and then over the outer peripheral edge of the face core and then laid against the rear surface of the face core. An annular back core is then placed against the cloth over the rear surface of said front core and the outer peripheral edge of said face core is bent inwardly and over and against said back core by means of another die assembly to press said back core tightly against the face core with said cloth held between the back and face cores.

3,430,316
METHOD FOR POLARIZING PIEZOELECTRIC MATERIAL
Hugo W. Schafft, Des Plaines, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 23, 1967, Ser. No. 640,742
U.S. Cl. 29—25.35 **7 Claims**
Int. Cl. B01j *17/00;* **H04r** *17/00*



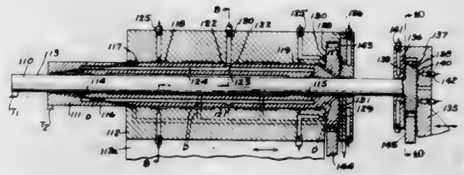
The method involves placing an electrode on each of two opposing surfaces of the piezoelectric body and disposing a number of thin spaced conductors on the lateral surface thereof. When a DC voltage is applied between the electrodes, equipotential planes are induced through the conductors to define piezoelectric sections which are polarized by the electric fields between such planes.

3,430,317
COMBINED APPARATUS FOR POSITIONING, HOLDING AND OPERATING ON A WORKPIECE
Ranoldo H. Grimoldi and Joseph E. Powers, Napa, Calif., assignors to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Mar. 27, 1967, Ser. No. 626,133
U.S. Cl. 29—26 **27 Claims**
Int. Cl. B23b *39/06*



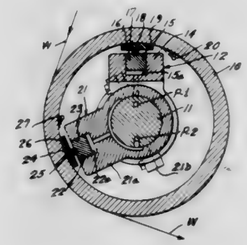
An apparatus for precisely orienting a workpiece in a fixed position relative to a reference point on an apparatus which reference point is determined by the intersection of a pair of axes lying on the same plane and thereafter holding the workpiece in said position during a work performing operation. The apparatus properly orients and maintains the desired orientation of the workpiece thereon by means of a first series of workpiece positioning and holding elements acting along one axis and a second series of workpiece positioning and holding elements which act along the other intersecting axis. After precise positioning of the workpiece in the apparatus, the required operations such as milling and drilling of the workpiece are performed by other devices associated with the apparatus and during a portion of such operations the holding function of certain of the positioning and holding elements can be taken over by the work performing members.

3,430,318
MACHINE TOOLS AND INSTRUMENTS
Myron L. Greenberg, Union Lake, and Gordon H. Porath, Detroit, Mich., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 10, 1967, Ser. No. 622,228
U.S. Cl. 29—27 **21 Claims**
Int. Cl. B23b *7/00, 9/00*



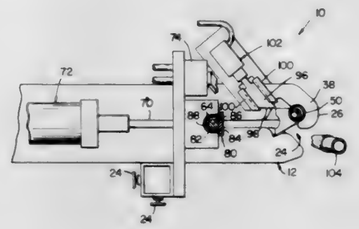
The machine tool and instrument disclosed herein comprises three coaxial members adapted to rotate relative to one another about a common axis. At least two of the members are adapted to support work engaging tools or instruments. The first and second members have complementary annular surfaces as do the second and third members and at least some portions of these surfaces extend in the direction other than axially. A plurality of circumferentially spaced pads are provided on each set of said complementary surfaces and a restrictor is associated with each pad. Fluid is supplied under pressure to each pad to its respective restrictor and flows continuously between the surfaces so that forces on the members are balanced by pressure in the pads providing a separation of the surfaces and retain the members in predetermined radial position relative to one another and in accurate, stable relation to one another.

3,430,319
NONDEFLECTION SUPPORT FOR WEB CARRYING ROLL
Borg Skaugen, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Aug. 15, 1966, Ser. No. 572,425
U.S. Cl. 29—116 **5 Claims**
Int. Cl. B21b *13/00*



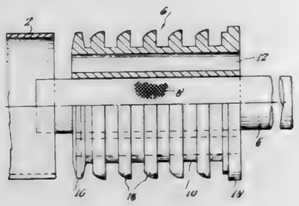
A rotary roll shell supported interiorly along its length at circumferentially spaced locations such as by a sliding flexible shoe supported by piston in a cylinder carried on a stationary axially extending shaft.

3,430,320
BAG CLOSING APPARATUS
William F. Knuppel, Boyes Hot Springs, Calif., assignor to Hydrabone Equipment Division John Mohr & Sons, Milwaukee, Wis.
Filed Apr. 26, 1967, Ser. No. 633,919
U.S. Cl. 29—33.5 **16 Claims**
Int. Cl. B65b *51/04*



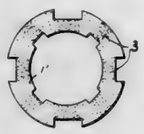
Apparatus for closing the neck of a bag with a U-shaped, bendable clip wherein the bag neck is moved into a clip-receiving location in a slot normally closed by a shiftable gate. The gate opens to allow the bag neck to pass to the location and then returns to its normal position, following which a ram forces a clip onto the bag neck and against cam means on the gate to bend the sides of the clip and thereby close the bag neck.

3,430,321
MEANS FOR ASSEMBLING TOGETHER IN COAXIAL RELATION TWO PARTS OF DIFFERENT DIAMETER
Stanley Lewis Lyons, London, England, assignor to Hall Harding Limited, London, England, a company of Great Britain and Northern Ireland
Filed Dec. 17, 1965, Ser. No. 514,545
U.S. Cl. 29—129 **6 Claims**
Int. Cl. B60b *7/06;* **B21b** *31/08;* **B29c** *17/00*



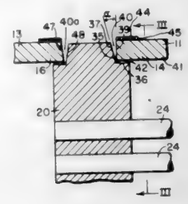
1. A coupling assembly for connecting in coaxial driving relation a hollow tubular member and a solid shaft, comprising:
a resiliently deformable plug molded about said shaft and adapted to have at least portions thereof inserted into said tubular member,
said plug having a plurality of annular tapered projections, said tapered projections increasing progressively radially outwardly as a function of axial distance in the direction of plug insertion into said tubular member and said tapered projections being deformable upon insertion into said tubular member,
said plug including a leading annular projection of a diameter smaller than the internal diameter of said tubular member for guiding said plug into said tubular member, and said plug including an annular trailing end projection having a diameter larger than the internal diameter of said tubular member so as to constitute an abutment limiting insertion of said plug and said shaft into said tubular member.

3,430,322
METHOD OF FORMING A BEARING
Rudolf Henle and Roland Scheufler, Neckarsulm, Germany, assignors to Karl Schmidt G.m.b.H., Neckarsulm, Germany
Filed Feb. 14, 1966, Ser. No. 527,000
Claims priority, application Germany, Feb. 16, 1965, Sch 36,545
U.S. Cl. 29—149.5 **5 Claims**
Int. Cl. B21d *53/10, 43/28;* **B23p** *13/04*



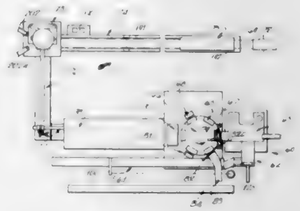
Method of forming a bearing comprising taking a bearing blank which has a surface generally disposed to define a sliding contact surface, subjecting such bearing to strain hardening along selected localized regions extending onto said surface and thereafter subjecting the surface to a cutting operation of limited depth to form a finished sliding contact surface having microscopic undulations with a relatively large period to amplitude ratio.

3,430,323
WELDING METHOD
Francis X. Brown, Broomall, and Samuel W. Wismer, Jr., Springfield, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 12, 1965, Ser. No. 471,121
U.S. Cl. 29—157.3 **9 Claims**
Int. Cl. B21d *53/02;* **B21k** *29/00;* **B23p** *15/26*



A method of joining a disc-like member at its periphery to an open-ended shell structure by explosive welding. The explosive material is formed as an annular band and in a manner to effect a detonation wave that is propagated toward the annular end of the shell.

3,430,324
RESISTOR WRAPPING MACHINE
Bernard A. Berger, Montreal, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Sept. 20, 1966, Ser. No. 580,755
U.S. Cl. 29—203 **22 Claims**
Int. Cl. H01c *17/00;* **B31f** *13/00*

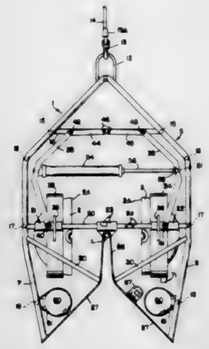


An apparatus for wrapping components having flat metal cores, such as electrical resistors, with a blank of insulating material. An indexing turret having component holding fixtures is surrounded by work stations, one of which is provided with a component feeding device, which, after each index of the turret, automatically loads a component into one of the fixtures with the core projecting radially outward from the turret. At another of the work stations, a wrapping device is provided to receive the core of each component on each indexing, and the wrapping device is simultaneously fed with a heated blank which is then folded about the core before the next indexing of the turret.

3,430,325
APPARATUS FOR SECURING WARNING MARKERS TO CABLES
Wesley G. Lematta, 8510 Patterson Place, Vancouver, Wash. 98664
Filed June 27, 1966, Ser. No. 560,481
U.S. Cl. 29—203 **8 Claims**
Int. Cl. B23p *19/00, 19/04;* **B21d** *39/02*

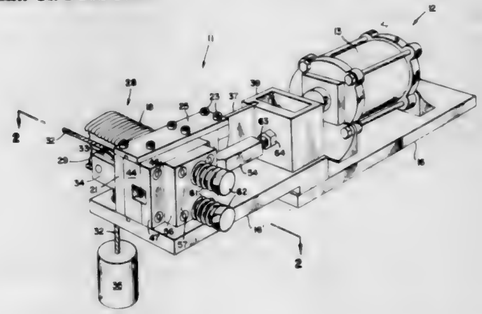
1. Apparatus for the securement of warning markers to portions of elevated cables, said apparatus comprising,
a frame adapted to be airlifted into engagement with a portion of elevated cable,
cable guide means carried by said frame accurately aligning said frame on said cable portion,

marker supporting means carried by said frame and transversely positionable relative to said cable portion,



pressure responsive means operatively linked with said marker supporting means for positioning the marker supporting means adjacent the cable portion for securement by said marker supporting means of a warning marker thereto.

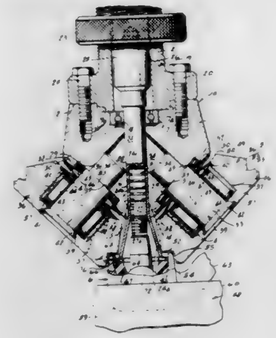
3,430,326
APPARATUS FOR APPLYING BUNDLING CLIPS
William Geisler and Norman R. Clark, San Francisco, Calif., assignors to Fibreboard Corporation, San Francisco, Calif., a corporation of Delaware
Filed Feb. 7, 1967, Ser. No. 614,446
U.S. Cl. 29—211 **9 Claims**
Int. Cl. F16b *2/24*



Resilient bundling clips of U-shaped configuration are driven towards the edge of a stack of flat articles by a pneumatically operated clip setting blade. Before the articles are contacted, the arms of the clip are wedged apart by a spreader element having inclined surfaces which are initially in the path of the clip. The spreader is withdrawn sidewardly by means travelling with the blade so that the clip may continue onto the stack and snap into position thereon.

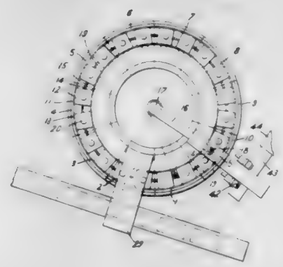
3,430,327
SWEDGING TOOL
Edward J. Herbenar, Detroit, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Application Mar. 8, 1967, Ser. No. 621,561, which is a continuation-in-part of application Ser. No. 503,709, Oct. 23, 1965. Divided and this application Feb. 29, 1968, Ser. No. 709,420
U.S. Cl. 29—243.52 **11 Claims**
Int. Cl. B32p *19/00;* **B21d** *37/00*

A tool especially adapted for preloading joint components in a socket, locking a socket closure or component retainer at a position in the socket to maintain a desired preload on the components and obtaining the locked position for the retainer by deforming socket material over both faces of the retainer. The socket material can also



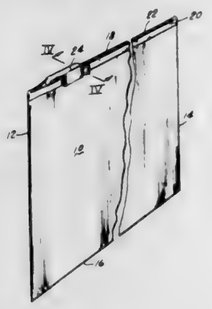
be simultaneously deformed to provide a groove for anchoring a dust cover or boot on the socket. The tool has a rotating head with depending inclined studs carrying swedge rollers around the socket but sufficiently tilted to avoid contact with socket stems or the like.

3,430,328
METHODS AND APPARATUS FOR TREATING GLASS SHEETS
John Ernest Powell, Birmingham, England, assignor to Triplex Safety Glass Company Limited, London, England, a corporation of Great Britain
Filed Aug. 19, 1965, Ser. No. 480,942
Claims priority, application Great Britain, Aug. 19, 1964, 33,937/64
U.S. Cl. 29—407 **16 Claims**
Int. Cl. B23p *19/04, 17/00;* **B23q** *17/00*



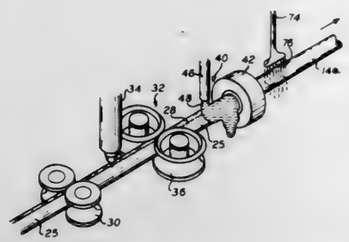
A method of conveying glass sheets to and away from a series of equispaced operating stations set up in a circular path, comprising the steps of securing each glass sheet by suction on one chassis of a series in fixed spaced relation and running on a circular track through the stations, advancing the chassis in a regular step by step movement to present each sheet to be operated on at the respective station, precisely setting each sheet on its chassis by vertical displacement into a horizontal plane related to the respective operating tool for completion of the allotted operation.

3,430,329
METHOD OF FORMING FASTENER ASSEMBLY
Steven Ausnit, 124 E. 61st St., New York, N.Y. 10021
Original application June 10, 1965, Ser. No. 462,821, now Patent No. 3,324,520, dated June 13, 1967. Divided and this application Nov. 21, 1966, Ser. No. 595,830
U.S. Cl. 29—408 8 Claims
Int. Cl. B21f *45/18*; B23p *11/00*; A44b *19/00*



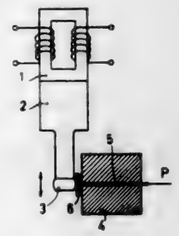
The present invention is a method of installing a slider on a pair of flexible closure strips. More particularly, the disclosed embodiment of the present invention is a method of inserting a pair of joinable fastener strips into respective channels of a slider, each channel being defined by a separating finger and a respective side wall of the slider, by placing the side walls of the slider on opposite external sides of the fastener strips and the retaining finger between the fastener strips and pressing the side walls of the slider into contact with the external sides of the fastener strips. In a preferred exemplification of the present invention the slider also includes a bearing flange extending from a lower portion of one side wall, and the disclosed method includes the further step, during pressing of the side walls, of positioning the flanges under one of the fastener strips.

3,430,330
METHOD OF MAKING ALUMINUM SHEATHED COAXIAL CABLE
Oscar G. Garner, Westfield, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Dec. 30, 1965, Ser. No. 517,706
U.S. Cl. 29—429 9 Claims
Int. Cl. B23p *19/00*; B23k *31/06*



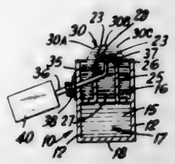
This specification discloses a method of making metal sheathed coaxial cable with plastic foam insulation. The outer conductor is formed as a longitudinally seamed tube of larger diameter than the plastic insulation of the core and is welded while at its large diameter, and the cable is then drawn through a stationary die which reduces the diameter of the sheath sufficiently to squeeze the plastic insulation. The welding and sizing are done at closely spaced stations to that restraint at the welding station damps movement of the sheath as it enters the die. The sheath is flooded with lubricant as it enters the die and the lubricant is removed before the sheath reaches the apparatus for pulling the cable through the die. The squeeze of the foam is limited to a value that maintains a minimum structural return loss.

3,430,331
APPARATUS AND PROCESS FOR ULTRASONICALLY WELDING A WIRE TO THE SURFACE OF AN OBJECT
Henricus Petrus Cornelis Daniels and Theodor Peter Johannes Botden, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,837
Claims priority, application Netherlands, Sept. 30, 1963, 298,591/63
U.S. Cl. 29—470.3 13 Claims
Int. Cl. B23k *27/00*



A method of, and apparatus for, welding a first wire-shaped body perpendicular to a planar surface of a second body by means of ultrasonic vibrations. The wire-shaped body is fixed within a bore in an anvil with one end exposed. The planar surface of the second body contacts the exposed end and is caused to vibrate in a direction parallel to the contact face by means of an ultrasonically vibrating element having a welding tip which is free to glide across the second body upon formation of the weld.

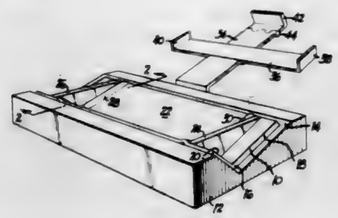
3,430,332
PRODUCTION LINE SOLDERING WITH APPLICATION OF ULTRASONIC ENERGY DIRECTING TO MOLTEN SOLDER
Kalman Roczey-Koller, Brossard, Quebec, Canada, assignor to Electrovert Manufacturing Co. Ltd., Montreal, Quebec, Canada
Filed Apr. 1, 1966, Ser. No. 539,367
U.S. Cl. 29—471.1 10 Claims
Int. Cl. B23k *31/02*



A method and apparatus for soldering or tinning workpieces by passing the workpieces through a standing wave of molten solder includes the application of ultrasonic energy directly to the standing wave. A static pressure is applied to a body of molten solder to cause the molten solder to flow upwardly through an upright nozzle which has an orifice elongated transversely of the direction of movement of the workpieces, with the solder

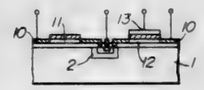
overflowing the edges of the nozzle to form a standing wave with return of the solder to the body of solder. An ultrasonic transmitter or "horn" is disposed within the standing wave and immersed therein, and is energized through a transmission member extending through a wall of the solder container and connected at one end to a source of ultrasonic energy and at the other end to the ultrasonic transmitter or horn.

3,430,333
METHOD FOR BEDDING PANELS INTO FRAMES
Loran M. Hodgen, Elkhart, Ind., assignor to Excel Corporation, Elkhart, Ind., a corporation of Indiana
Filed Mar. 2, 1966, Ser. No. 531,297
U.S. Cl. 29—472.9 8 Claims
Int. Cl. B23k *31/02*



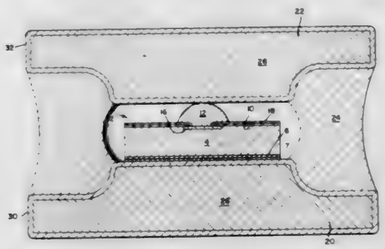
A frame and panel assembly and method for making the same is provided. The frame has a generally L-shaped cross-section with two legs merging at an apex corner. The method comprises the steps of first forming dams extending transversely across the interior surface of the frame at two locations spaced along the length thereof. The frame is placed and retained in a filling position wherein the legs of the frame extend upwardly from the apex corner and at acute angles relative to a horizontal reference so that the interior surface of the frame can hold liquid between the dams. The interior is at least partially filled with liquid bedding material which is curable by heat to a solid condition whereby the bedding material adheres to the frame and to a panel. A marginal edge of a panel is placed in the interior of the frame closely spaced from the interior frame surface so that the panel edge becomes immersed in the liquid bedding material. The liquid bedding material is then heated to cure it to a solid form. The marginal edge of the panel may be placed in the frame before or after filling the frame with liquid bedding material.

3,430,334
METHOD OF MANUFACTURING INTEGRATED CIRCUITS
Kikuo Douta, Hachioji-shi, and Haruo Matumaru and Takeo Nishimura, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 31, 1966, Ser. No. 539,124
Claims priority, application Japan, Apr. 1, 1965, 40/18,634
U.S. Cl. 29—577 2 Claims
Int. Cl. H01l *1/16, 7/00, 1/24*



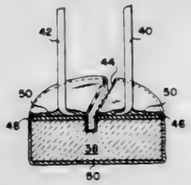
When an electrically resistive material deposited on a silicon oxide layer laid on a semiconductor body is subjected to an etching process to be formed into resistors, the silicon oxide and the semiconductor body also are subject to being etched. The silicon oxide and the semiconductor body are protected from the etching process by applying an anticorrosive resin on the silicon oxide preliminarily to the deposition of the electrically resistive material in a reverse pattern of the pattern of the resistors to be formed by the etching.

3,430,335
METHOD OF TREATING SEMICONDUCTOR DEVICES OR COMPONENTS
Allen Gee, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 8, 1965, Ser. No. 462,357
U.S. Cl. 29—588 6 Claims
Int. Cl. H01l *1/10, 7/24, 7/34*



Method of preventing or reducing high-voltage high-temperature breakdown in glass packaged oxide-protected diffused junction diodes in which either or both the glass package or the diode is exposed to the vapor of phosphorus pentoxide or arsenic trioxide or phosphorus oxychloride at elevated temperature.

3,430,336
METHOD OF MAKING A THERMISTOR
John W. Riddel, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,563
U.S. Cl. 29—612 4 Claims
Int. Cl. H01c *7/04*



This invention is directed to a method of mounting a thermistor to a supporting substrate by covering the thermistor with a coating of enamel. The coating of enamel is also used to secure electrical terminals to the thermistor. A preferred enamel for this purpose comprises a mixture of alkali-boro-aluminum silicates, chromium oxide, clay, bentonite, feldspar, sodium nitrite, and borax.

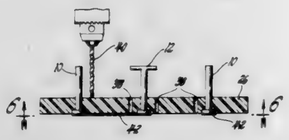
3,430,337
METHOD OF MAKING AN ARMORED CABLE
William D. Kelly, 12 Blodgett St., Clarendon Hills, Ill. 60514
Filed Feb. 28, 1967, Ser. No. 619,225
U.S. Cl. 29—624 3 Claims
Int. Cl. H01b *13/22*
Methods of forming armored electrical cable. Insulated

electrical wires to be armored are placed in previously formed grooves in a sheet of metal and the latter is bent



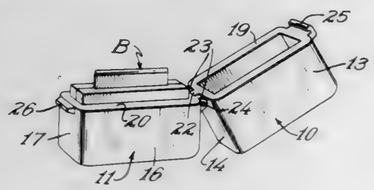
and locked around the wire tightly to enclose the same and form an armored electrical cable.

3,430,338
MAKING A WELDED CIRCUIT ASSEMBLY
James H. Flaherty, Hales Corners, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 11, 1964, Ser. No. 388,860
U.S. Cl. 29—626 **4 Claims**
Int. Cl. H05k *3/30*



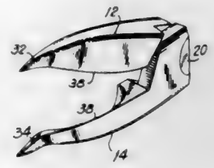
Terminal studs are welded to a nickel sheet and then partially encapsulated with epoxy to form a support for the sheet. Circuit paths are formed by etching the sheet and components are welded to the studs.

3,430,339
CASE CUTTER
Robert H. Hobson, 5301 Edina Industrial Blvd., Edina, Minn. 55424
Filed May 16, 1967, Ser. No. 638,844
U.S. Cl. 30—2 **7 Claims**
Int. Cl. B67b *7/30;* **B26b** *1/00*



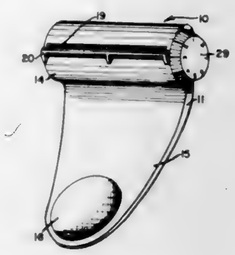
The invention comprises a simple case cutter for use in opening corrugated paper containers and for other uses. It comprises a pair of hollow generally rectangular elongated housing sections hinged at one end to fold from edge abutting relation to end to end relation. A blade holder is detachably secured in one section to substantially fill the same. This blade holder comprises a pair of blocks hingedly connected along longitudinal edges. One block has its inner surface recessed to accommodate a single edged razor blade, enclosing the thickened edge of the blade and holding the opposite cutting edge projecting from, and parallel to, the edges of the blocks. The inner surface of the other block is recessed to accommodate the blade so that a corner of the cutting edge projects from the blocks. When in edge abutting relation, the blade is completely enclosed within the two sections. When in end to end relation, the other section serves as a handle and a portion of the blade is exposed for cutting purposes.

3,430,340
SAFETY CUTTING INSTRUMENT FOR PEDICURE
David R. Perles, 399 Delavan Ave., Byram, Conn. 10573
Filed June 21, 1967, Ser. No. 647,837
U.S. Cl. 30—28 **3 Claims**
Int. Cl. A45d *29/02, 29/18;* **A61b** *17/32*



The cutting instrument may be either clippers or scissors, with short blades for cutting toenails. To avoid ingrown toenails the blades have guard portions which are dull and which are cut away so that they do not meet even when the blades are brought into cutting relation by means of the handles. The guard portions when viewed in plan with the instrument in usual upright position are offset from the cutting portions of the blades. This prevents or discourages trimming of the sides of a nail.

3,430,341
DISPOSABLE MULTI-BLADED SAFETY RAZOR
William M. Choate, 1000 E. Roger Road, Tucson, Ariz. 85705
Filed Sept. 8, 1966, Ser. No. 577,986
U.S. Cl. 30—40 **1 Claim**
Int. Cl. B26b *21/24, 21/54*

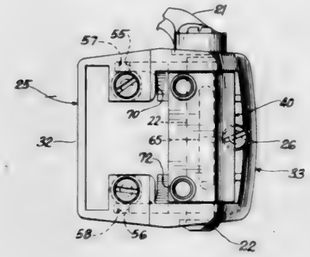


A disposable multi-bladed safety razor comprising a substantially cylindrical blade magazine having a longitudinal blade guide slot in its side wall and a longitudinally extending blade guard arranged adjacent and beneath said longitudinal blade guide slot, a multi-bladed element having flexible blades with sharpened shaving edges revolvable carried in said blade magazine, and knob means associated with said blade magazine and said multi-bladed element for revolving said multi-bladed element in said blade magazine.

3,430,342
ADJUSTABLE CLIPPER HEAD
John F. Wahl, Sterling, Ill., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Mar. 29, 1967, Ser. No. 626,826
U.S. Cl. 30—201 **4 Claims**
Int. Cl. B26b *19/02, 19/20*

An adjustable head for a hair clipper wherein the stationary comb blade of the clipper may be moved forwardly and rearwardly with respect to the movable cutter blade so that the length of hair cut by the clipper may be

varied with precision. The adjustable head includes a generally rectangular stationary frame member having a plurality of bearing and guiding surfaces, and an irregular member of substantial length having cooperating bearing and guiding surfaces adapted to slide back and forth with-



in the frame member. The stationary comb blade is mounted on the irregular member, and a lever means is provided for imparting forward and rearward movement to the irregular member and thus to the associated clipper blade.

3,430,343
CUTTER
Kan Ishizaki and Hajime Noto, Tokyo, Japan, assignors to Shingu Shoko, Ltd., Inaho-cho, Otaru Hokkaido, Japan
Filed Jan. 3, 1967, Ser. No. 606,716
U.S. Cl. 30—276 **3 Claims**
Int. Cl. B26b *7/00;* **B67b** *9/04*



This invention relates to a cutter, and more particularly, to a bush or vine cutter comprising an outer barrel, a driving shaft rotatably supported by the barrel and extending through the barrel, a rotary blade member fitted to one end of the driving shaft, a prime mover fitted to one end of the barrel opposite to the rotary blade member and connected to another end of the driving shaft, and handles fitted to the barrel, said handles being positioned so that an operator can handle the cutter freely and easily under any hazards.

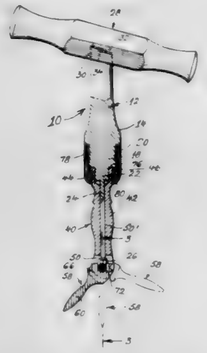
3,430,344
PRECISION DENTAL ATTACHMENT
Nafiz Sekendur, Kew Gardens, N.Y. (1684 Hanover St., Teaneck, N.J. 07666)
Filed Sept. 26, 1967, Ser. No. 670,651
U.S. Cl. 32—5 **7 Claims**
Int. Cl. A61c *13/22, 13/26*

A precision dental attachment for use with periodontally involved teeth and for the replacement of missing teeth. The attachment includes a female threaded collar portion formed on or attached to a metal coping as used in procelain fused-to-metal dental restorations. The threaded collar portion on one coping is precisely positioned to align with a like female collar portion of an adjacent metal coping so that when the threaded collars are joined by a threaded stud they precisely position the



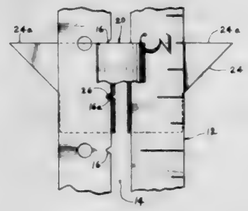
copings which as they are threadedly advanced on the common threaded stud bring the collars into a contiguous relationship.

3,430,345
HOLDER FOR DENTIST'S INSTRUMENTS
Julio Oscar Abreu, 312 Brinsmade Ave., Bronx, N.Y. 10465
Filed Dec. 19, 1966, Ser. No. 608,233
U.S. Cl. 32—46 **2 Claims**
Int. Cl. A61c *3/02*



A dental instrument having a common cross handle into which a variety of tools may be interchangeably and selectively fitted. The handle is socketed to removably receive one end of an elongated body formed with a depending rod. Another elongated body fits over the depending rod, and a knife device is movably mounted on the bottom end of the other body. Means is provided for joining the bodies.

3,430,346
SEWING GAUGE
Arthur Dritz, Belle Harbor, N.Y., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed July 7, 1967, Ser. No. 651,750
U.S. Cl. 33—2 **1 Claim**
Int. Cl. A41h *1/00*



A sewing gauge in which the U-shaped slider indicator has an outward rib where it engages an edge of the gauge

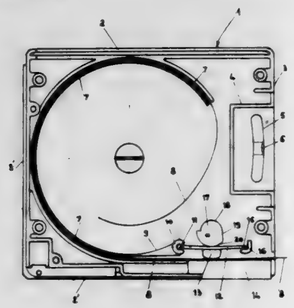
slot and the slot along that edge is formed with a series of spaced notches. The resilience of the bight of the indicator drives the rib into the notches to fix the position of the slider on the gauge at a selected notch.

3,430,347
EXTENSION TRAMMEL
Clarence T. Minnlear, 2308 Happy Hollow Road, West Lafayette, Ind. 47906
Filed Sept. 15, 1967, Ser. No. 667,912
U.S. Cl. 33—27 **4 Claims**
Int. Cl. B43l *11/00*



A beam trammel having a plurality of extension arms also includes a direct reading scale mechanism visible on both sides of the trammel and a helical gear engageable and disengageable with a rack on the beam for fine and coarse adjustment of the movable scriber.

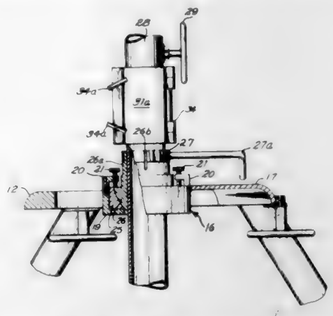
3,430,348
LINEAR MEASURING INSTRUMENTS
Andre Quenot, Besancon, France, assignor to Quenot & Cie S.a.r.l., Besancon, Doubs, France
Filed Dec. 16, 1966, Ser. No. 602,235
Claims priority, application France, May 27, 1966, 63,260
U.S. Cl. 33—138 **6 Claims**
Int. Cl. G01b *3/10*



A tape measure having a level and in which a movable member mounted inside the casing in the vicinity of the outlet wedges the tape against a backing member for locking the tape with respect to the casing, there being a cam mounted in the casing to urge the movable member into its locking position and a leaf spring for urging the movable member into its unlocking position.

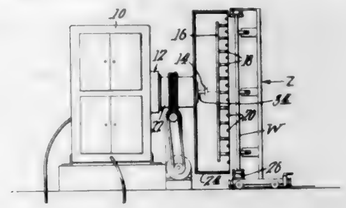
3,430,349
UNDERWATER TRIPOD AND PLUMBING GIMBAL
William J. Bunton, 3345 Eton Ave., La Jolla, Calif. 92037; John A. Beagles, 4814 33rd St., San Diego, Calif. 92116; and Dale E. Good, 1549 Morenci, San Diego, Calif. 92110
Filed Sept. 14, 1966, Ser. No. 579,804
U.S. Cl. 33—180 **5 Claims**
Int. Cl. G01b *5/14*

An aligning device including a tripod supports a removable, adjustable pivot means. A stanchion is guided longi-



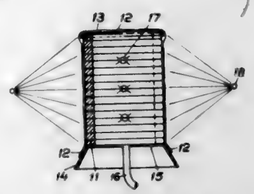
tudinally through the pivot and water is jetted through the stanchion to permit insertion into the ocean floor.

3,430,350
HIGH FREQUENCY DRYING OF SEPARATE PIECES
William N. Bennett, South Miami, Fla., assignor to Fitchburg Paper Company, Fitchburg, Mass., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,819
U.S. Cl. 34—1 **12 Claims**
Int. Cl. F26b *3/34, 11/06;* **B01k** *3/02*



This invention is directed to the uniform drying by high frequency electric fields of segmental or discrete length materials. To prevent the normal field defects at the material ends, the electrodes which apply the field, are mounted upon a turntable which is rotated in parallel with the material which is held stationary or slowly moved in the established field. Alternatively, the field may be electrically rotated. In each case the field is uniformly applied to the material body as well as its ends.

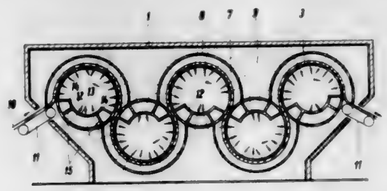
3,430,351
METHOD OF DRYING OBJECTS SUCH AS ELECTRICAL MACHINES AND ELECTRICAL INSULATING MATERIAL
Eric Wennerlund and Sven Lundbäck, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed June 7, 1967, Ser. No. 644,194
Claims priority, application Sweden, June 14, 1966, 8,071/66
U.S. Cl. 34—5 **6 Claims**
Int. Cl. F26b *3/30*



A method of drying objects, particularly electrical machines and electrical insulating material, where such

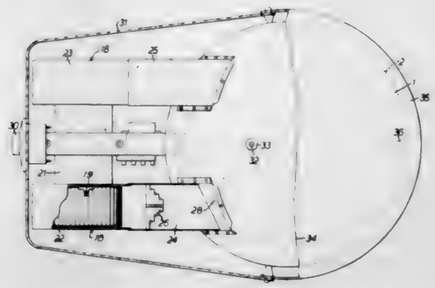
objects are enclosed entirely or partially together with a wall, base or the like in a casing of flexible material in order to obtain a closed space in which the objects are dried under vacuum by means of external and/or internal heating.

3,430,352
METHOD AND APPARATUS FOR THE HEAT-TREATMENT OF MATERIALS WHICH CAN BE STRESSED IN A LONGITUDINAL DIRECTION
Hans Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland
Filed Mar. 1, 1967, Ser. No. 619,752
Claims priority, application Germany, Mar. 2, 1966, A 51,720
U.S. Cl. 34—15 **18 Claims**
Int. Cl. F26b *21/12, 13/06, 3/06*



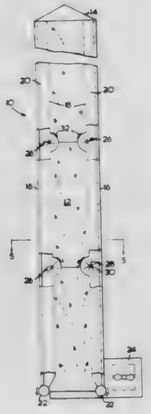
The present disclosure relates to a process and apparatus for the heat-treatment of materials which advantageously can be stressed in the longitudinal direction, wherein the amount of the treatment medium, for example, air, drawn into the sieve drum and/or sieve drums by fan means communicating with the interior of said sieve drum can be controlled by baffle means disposed within said sieve drum. The baffle means are at least partially permeable to the treatment medium, that is, perforations are provided in the baffle means. According to the present disclosure, the free area of the baffle means can be controlled from zero to substantially complete access for the treatment medium.

3,430,353
HAIR DRIER
Cyril Sigfried Selinger, London, England, assignor to Eugene Limited, London, England
Filed June 29, 1967, Ser. No. 649,981
Claims priority, application Great Britain, June 30, 1966, 29,420/66
U.S. Cl. 34—100 **1 Claim**
Int. Cl. A45d *20/26*



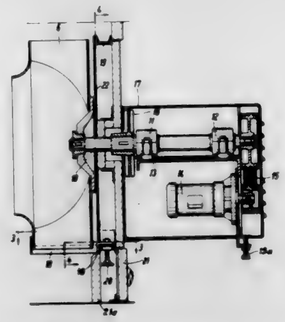
A hair drier in which jets of hot air are directed into the hair and in which currents of hot air are circulated around the hair, a suction passage, leading to two fans, being provided to collect and recirculate the hot air.

3,430,354
GRAIN BLENDER
Oliver H. Meredith, R.R. 6, Thamesville, Ontario, Canada
Filed Oct. 6, 1967, Ser. No. 673,362
Claims priority, application Canada, Apr. 28, 1967, 989,122
U.S. Cl. 34—172 **10 Claims**
Int. Cl. F26b *17/12*



A paddle type blender adapted to be mounted in grain driers to tower configuration where the grain is dried as it proceeds to move downwardly in the tower as a result of the grain being drawn from the bottom of the tower. The blender shifts the drier grain from adjacent warm walls of the tower to be mixed with the wet grain which is remote from the drying medium. The blender is adapted to be turned by the following grain and its speed of rotation is commensurate with the speed at which the grain is removed from the lower end of the tower.

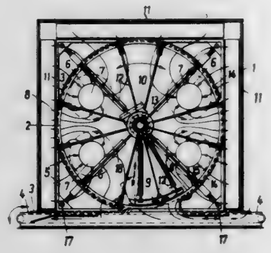
3,430,355
APPARATUS FOR THE HEAT-TREATMENT OF TEXTILE MATERIALS
Heinz Fleissner and Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignors to Vepa AG, Basel, Switzerland
Filed Mar. 21, 1967, Ser. No. 624,887
Claims priority, application Germany, Mar. 21, 1966, A 51,927
U.S. Cl. 34—122 **23 Claims**
Int. Cl. F26b *11/04*



The present disclosure relates to an apparatus for the heat-treatment of textile materials, such as for example, drying, steaming, fiber and dyestuff setting, curing and polymerizing synthetic resins, etc., wherein the fan drives

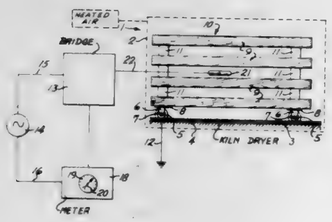
are arranged outside the heat-treatment housing and the fan shaft is not supported in the housing of the apparatus but rather outside said housing by bearing means.

3,430,356
SIEVE DRUM GAS-SOLID CONTACT APPARATUS
Heinz Fleissner and Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignors to Anstalt fur Patentdienst, Vaduz, Liechtenstein
Filed Dec. 20, 1965, Ser. No. 515,000
Claims priority, application Germany, Dec. 21, 1964, A 47,945
U.S. Cl. 34—132 28 Claims
Int. Cl. F26b *11/04*



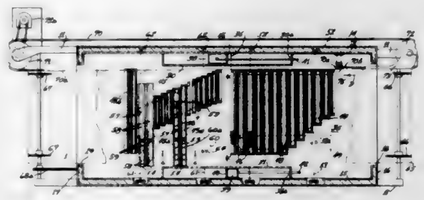
A device for the treatment of all kinds of materials, especially for the drying, cooling, or steaming of materials in a non-woven condition, which may conveniently be supported only on one side thereof, comprising at least one relatively large sieve drum conveyor, each of the sieve drums having several fans distributed, at least opposite one lateral side of the drum, in the direction of travel of the material and near the periphery of the drum, to create a partial vacuum to retain the material being treated upon the sieve drum conveyor. In accordance with one embodiment of the present invention, the fans are concentrated at those portions of the circumference of the sieve drum at which the material being conveyed is traveling in a substantially vertical direction.

3,430,357
METHOD OF DRYING WOOD AND MOISTURE INDICATOR
William D. Perry, Longview, Wash., assignor to Weyerhauser Company, Tacoma, Wash., a corporation of Washington
Filed May 17, 1967, Ser. No. 639,134
U.S. Cl. 34—16.5 8 Claims
Int. Cl. F26b *5/04, 5/00*; G01n *25/56*



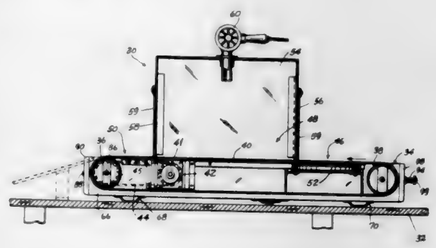
A method of drying dimensioned lumber in a kiln wherein the lumber is stacked on carriage means and heated air is circulated through the kiln. The moisture content of the loads of lumber is monitored by an instrument having a probe connected across one leg of a capacitance bridge. The instrument measures the current flow between the probe and ground, thus indicating the impedance of the wood that is related to the moisture content.

3,430,358
SHRINK TUNNEL WITH CONVEYER AND AIR DIRECTING MEANS
Stanley D. Denker, New Richmond, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed Jan. 30, 1967, Ser. No. 612,501
U.S. Cl. 34—222 14 Claims
Int. Cl. F26b *25/06, 21/02*



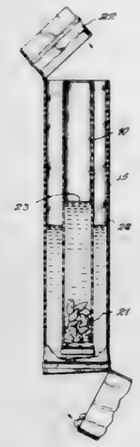
A package shrinking tunnel with air concentrating louvers and nozzles directing high intensity air through the conveyor and in zones obliquely along the conveyor to shrink first one portion of the package wrapper and then progressively other portions.

3,430,359
APPARATUS WITH HEAT CONDUCTIVE BELT
William J. Burke, Ladue, Mo., assignor to Roll-O-Sheets, Inc., St. Louis, Mo., a corporation of Missouri
Filed Feb. 9, 1967, Ser. No. 615,003
U.S. Cl. 34—225 4 Claims
Int. Cl. F26b *25/06, 21/00*



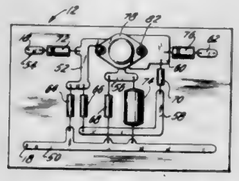
Apparatus for heat shrinking plastic wrapping film about objects of one type or another, such as packages and produce, in which the apparatus is provided with a metallic heat conductive in which the belt has a slight degree of longitudinal elasticity. A heat platen is positioned underneath the belt in heat conductive relation to heat the belt so that articles wrapped with plastic film may be heated to tack the edges of the film together by heat shrinking operations, after which the partially wrapped package is fully heat shrunk in passing through a heat tunnel. The metallic belt has longitudinal metallic strands having a longitudinal spring action which maintains the belt upon a biased roller and a driven roller thereby maintaining tension on the belt. The spring action of the belt and the biasing action of the rollers prevent the belt from being damaged and will also maintain it in proper relationship on the rollers.

3,430,360
OSMOTIC PRESSURE DEMONSTRATION KIT AND METHOD OF MAKING THE SAME
George B. Clark, Poway, Calif., and James A. Kavanagh, Waukesha, Wis., assignors to Aqua-Chem, Inc., a corporation of Wisconsin
Filed May 24, 1967, Ser. No. 640,890
U.S. Cl. 35—18 2 Claims
Int. Cl. G09b *23/24, 23/26*



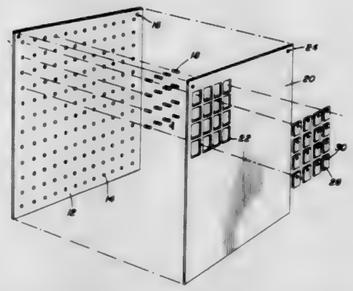
The invention relates to a demonstration or teaching device wherein a semipermeable membrane in the form of a tube is sealed within a plastic tube of larger diameter together with water. Integrally attached to the larger tube is a container for salt. The end of said larger tube may be removed exposing the open end of the membrane tube, and when the salt is dropped into the latter, the water level therein rises above the water level in the larger tube by reason of osmotic pressure until equilibrium is attained. The invention also relates to a method of heat sealing semipermeable membrane tubes by dipping the same in alcohol or other solvent which replaces the water in the areas to be sealed, and then by applying heat to said areas sealing may be effected.

3,430,361
KIT CONSTRUCTION
Ernest M. Deutsch, 245 E. 24th St., New York, N.Y. 10010
Filed Jan. 17, 1966, Ser. No. 521,042
U.S. Cl. 35—19 6 Claims
Int. Cl. G09b *23/18*



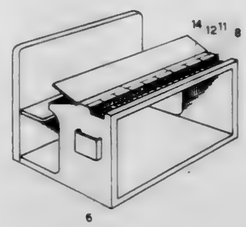
This invention is concerned with a kit construction which provides for a visual presentation of the manner of construction and includes a pre-wired circuit on an electrical chassis, and a replica chassis which provides a pictorial representation of the completed electrical chassis and carries electrical components which are to be transferred to the electrical chassis so that upon completion, the completed circuit on the electrical chassis matches the pictorial represntation on the replica chassis.

3,430,362
MATHEMATIC INSTRUCTION AID
Carol I. Jacobson, 100 Glendale Drive, Tiffin, Ohio 44883
Filed Aug. 24, 1966, Ser. No. 574,727
U.S. Cl. 35—31 7 Claims
Int. Cl. G09b *23/02*



An education device for teaching mathematics which has a board with holes therethrough and a series of apertured masks to overlie the board to expose selected holes therethrough. A series of pegs are also provided to be inserted in the exposed holes and cards with numbers thereon have holes therethrough to facilitate their being mounted on the exposed pegs, to illustrate the relationship between the numbers on the cards.

3,430,363
DEVICE FOR TEACHING ARITHMETIC AND PARTICULARLY THE DECIMAL NUMBER SYSTEM
Maria Della Gala, Via Filippo Ermini 2, Rome, Italy
Filed Apr. 4, 1967, Ser. No. 628,463
U.S. Cl. 35—31 2 Claims
Int. Cl. G09b *19/02*; A47b *19/10*

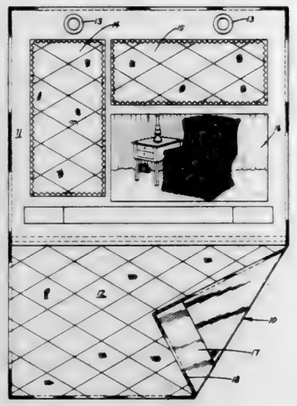


The device comprises a groove and a plurality of rods with a base slidable along the groove which rods support a stack of objects the number of which is written on a tag that is inserted into a slit of the base of each rod said number being expressed in units, in tens or in multiples of ten. Nine objects can be carried by a sleeve which fits said rod and the sleeves can be joined to one another to form a column of several sleeves.

3,430,364
FABRIC DISPLAY DEVICE
Harry Kirschbaum, St. Louis Park, Minn. (2521 Kipling Ave., Minneapolis, Minn. 55416, and Jack Dobbs, New Hope, Minn. (8317 39th Ave. N., Minneapolis, Minn. 55427)
Filed Aug. 11, 1967, Ser. No. 659,902
U.S. Cl. 35—49 7 Claims
Int. Cl. G09f *7/00*; B65d *73/00*

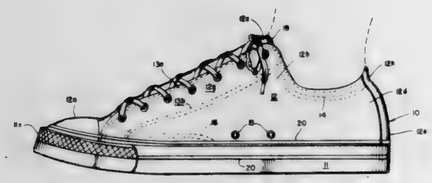
A coordinated display device for exhibiting fabric samples for use in upholstering and slip-covering furniture and the like and facilitating selection of fabrics for such

purposes which includes a number of swatches of fabric of the same pattern but different dominant colors, one of the swatches being of substantially larger size and free hanging to permit feeling of the fabric, the display being



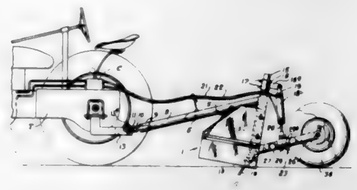
characterized by the presence of a color picture in close proximity to the larger swatch of fabric illustrating a piece of furniture covered in fabric which is preferably of the same pattern and dominant color as the larger swatch.

3,430,365
LOW CUT SPORTS SHOE
John F. Dee, Jr., Notre Dame, Ind.
(52540 Brooktrails, South Bend, Ind. 46637)
Filed Sept. 8, 1967, Ser. No. 666,358
U.S. Cl. 36—2.5 **11 Claims**
Int. Cl. A43b *5/00, 23/26*



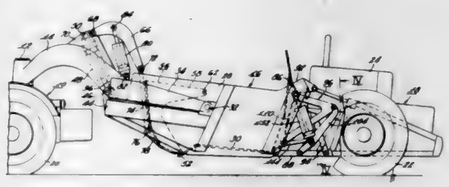
Low cut basketball shoe having resilient sole with friction tread surface, multi-ply fabric cover for toe, instep and heel portions of foot secured to sole, tongue formed as extension of toe covering enclosed by lacing structure drawing covering into close fitting relation to foot. Reinforced rear portion of heel covering generally S-shape in elevation with upper end nearer toe covering than end adjoining sole and at elevation about midway between sole and extended end of tongue. Edges of covering between top of rear heel portion and top of lacing structure S-shaped in elevation, oval in plan and when drawn by lacing in circumferential close-gripping contact prevent foot withdrawal by exteriorly applied forces. Tongue extension of inner toe covering secured to instep covering with filleted interconnection.

3,430,366
EARTH-WORKING DEVICE
J. W. King, Quitaque, Tex., assignor to King Machinery & Sales Co., Inc., Quitaque, Tex., a corporation of Texas
Filed Jan. 17, 1966, Ser. No. 521,009
U.S. Cl. 37—129 **8 Claims**
Int. Cl. E02f *3/76*



An earth-working device having a hydraulically actuated cylinder pivotally secured between movable adjustment members connected to the scoop and the wheel frame pivotally connected behind the scoop, whereby the speed of the blade travel and the height of setting of the blade may be regulated by adjusting the relative positions of the adjustment members.

3,430,367
SCRAPER EJECTOR MECHANISM
Harvey W. Rockwell and Dale W. Hawk, Springfield, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 26, 1966, Ser. No. 581,952
U.S. Cl. 37—129 **6 Claims**
Int. Cl. E02f

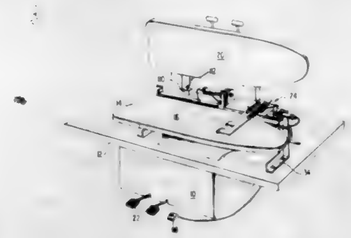


A special linkage supports and guides the ejector structure of an earthmover in a predetermined path through the bowl thereof. The linkage includes a pair of downwardly directed, longitudinally spaced links pivotally connected at their upper ends to the ejector structure and supported from the bowl structure at their lower ends. The hydraulic ram for actuating the ejector structure has one end pivoted to the ejector structure and the other end pivoted to one of the downwardly directed links. The bottom end of the other of the downwardly directed links is guided by two links, one of which pivotally connects to the bowl structure and the other of which pivotally connects to said one downwardly directed link.

3,430,368
GARMENT SPREADER
Nathaniel Lancaster Wright, Jr., P.O. Box 489, Winder, Ga. 30680
Filed Aug. 24, 1966, Ser. No. 574,610
U.S. Cl. 38—21 **32 Claims**
Int. Cl. D06f *71/40, 71/08*

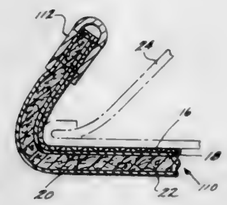
A device for spreading a garment prior to pressing including a pair of spreader elements received in the garment and relatively movable away from each other to spread the garment for pressing. The spreader elements

are mounted on a member which is movable to withdraw them from the garment just prior to the actual pressing



operation. A power system is employed to operate the spreader elements as well as their mounting member.

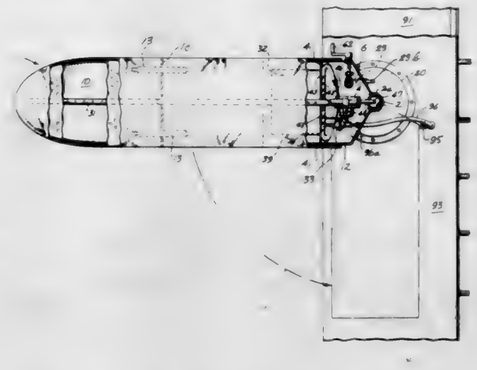
3,430,369
SCREEN FOR GARMENT PRESS
Charles R. Boss, 838 Arlington NE., Grand Rapids, Mich. 49505
Filed July 19, 1967, Ser. No. 654,394
U.S. Cl. 38—66 **7 Claims**
Int. Cl. D06f *71/36, 83/00*



A pressing screen for the upper buck or head of a steam-type garment press, comprised generally of a number of layers of different types of sheet materials secured together at their peripheral edges, in which the layer closest to the press head is of woven wire cloth of sufficiently open weave to pass steam through it with very little resistance and without diffusing it, but which is sufficiently stiff and rigid so as to provide a skeletal support for the remainder of the pressing screen, i.e., the additional layers positioned outwardly of the woven wire cloth. In one embodiment of the present device, the various layers are secured together by a fabric binding which passes around their coterminous peripheral edges and which is secured thereto by machine stitching or the like. Particularly in this embodiment, the open-mesh woven wire inner member should be bendable under normal manually exerted forces, such that this type of device may be secured to the upper buck of a garment press by placing the pressing screen thereagainst and bending the edge portions of the woven wire inner member around the edges of the upper buck, crimping the woven wire member in place and making the pressing screen self-retaining.

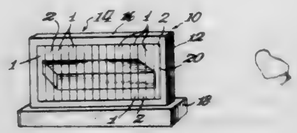
3,430,370
STEAM IRONING BOARD
Doris H. Topliffe, 1710 Brookside Terrace, Tacoma, Wash. 98465
Filed Oct. 2, 1964, Ser. No. 401,134
U.S. Cl. 38—104 **15 Claims**
Int. Cl. D06f *81/08*

1. A steam ironing board comprising a hollow frame having a pervious pressing surface, a boiler, means connecting the boiler and hollow frame including a steam valve openable at will to discharge steam from the boiler into the interior of said frame, a support for said board, boiler and steam valve mounted for rotation about an upright axis, a fixed water supply source and a fixed



drainage pipe, conduit means leading from said supply source to the boiler, and conduit means for leading water of condensation from the interior of the hollow frame to said drainage pipe, in all rotated positions of the board, in each instance.

3,430,371
INTERLEAVED MULTIPLE SLIDING PANEL SIX-MESSAGE DISPLAY DEVICE
John F. Phillips, Country Club Hills, Ill., assignor to National Advertising Company, Bedford Park, Ill., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,590
U.S. Cl. 40—61 **5 Claims**
Int. Cl. G09f *11/06*



The disclosure relates to a display device having three pairs of interleaved flat panels with composite display areas formed by each panel pair being sequentially alternately exposed. Two of the paired panels are movable to provide a display sequence in which one of the movable panels is moved in a first direction to expose a first message; the other of the movable panels is moved in the same direction to expose a second message; and the two movable panels are then moved in the opposite direction to expose a third message. The panels are provided in a replaceable display cartridge which can display six different messages from the display device.

3,430,372
DISPLAY DEVICE WITH REVERSIBLE AND REPLACEABLE FOUR-MESSAGE DISPLAY CARTRIDGE
Robert K. Rutchick, Skokie, Ill., assignor to National Advertising Company, a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,568
U.S. Cl. 40—61 **4 Claims**
Int. Cl. G09f *11/00*

The disclosure relates to a display device having a replaceable display cartridge in which there is provided

two display panels. Both of the display panels are movable with respect to each other and the display cartridge



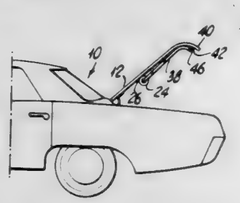
is reversible to provide four separate and distinct displays per cartridge from the same side of the display device.

3,430,373
ANIMATED BARBER POLE
Herman D. Shaffer, 2404 N. Fitzhugh, Dallas, Tex. 75204
Filed Nov. 14, 1966, Ser. No. 593,857
U.S. Cl. 40—126 2 Claims
Int. Cl. G09f *19/12, 11/02*



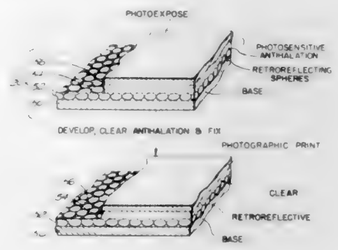
A display device having a housing and a transparent tubular portion. Within the tubular portion is an initially flat sheet of flexible material which has been spirally twisted about the longitudinal axis and is mounted for rotatable movement. The ends of the sheet of flexible material are attached to the housing by the use of spring clamps.

3,430,374
EMERGENCY SIGNAL FOR AUTOMOTIVE VEHICLES
Robert Woodard, Garden City, N.Y., assignor of one-half to Berj A. Terzian, Ossining, and William D. Lucas, Scarsdale, N.Y.
Filed Nov. 15, 1966, Ser. No. 594,455
U.S. Cl. 40—129 4 Claims
Int. Cl. G09f *7/00, 11/24*



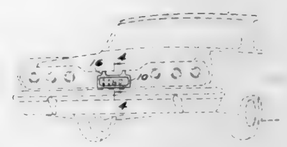
An emergency signal for an automotive vehicle consists of a flexible sheet stored adjacent the underside of the trunk compartment lid of the vehicle. When the trunk compartment lid is raised, the sheet may be extended into a vertical position and has a precautionary message on its side exposed to the view of oncoming traffic. Means are provided to position the uppermost portion of the extended sheet higher than the raised trunk compartment lid to give a larger precautionary message that can be seen and understood from greater distances.

3,430,375
EPISCOPIC PROJECTION PHOTOGRAPHIC ELEMENT
Gerald Altman, 41 Westminster Road, Newton Center, Mass. 02159
Application Mar. 6, 1964, Ser. No. 349,853, now Patent No. 3,331,688, dated July 18, 1967, which is a division of application Ser. No. 249,351, Jan. 4, 1963, now Patent No. 3,269,839, dated Aug. 30, 1966. Divided and this application Aug. 6, 1965, Ser. No. 477,844
U.S. Cl. 40—158 26 Claims
Int. Cl. G09f *1/10, 13/16;* G03c *1/76*



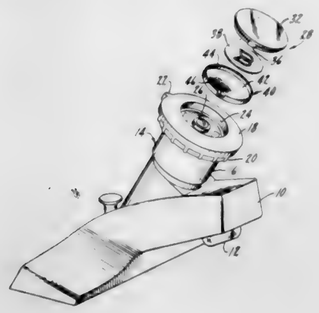
A photographic image is provided with a retroreflective layer and is particularly adaptable in episcopic projection systems.

3,430,376
LICENSE PLATE HOLDER
John S. Drybread, Sr., R. Rte. 4, Box 325, and Dale C. Fritz, 813 S. Franklin St., both of Winamac, Ind. 46996
Filed Aug. 8, 1966, Ser. No. 570,831
U.S. Cl. 40—209 4 Claims
Int. Cl. G09f *7/18*



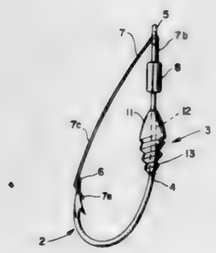
This disclosure relates to an automobile license plate holder adapted to quickly receive a license plate and to carry the same and to permit quick removal of the plate therefrom, and which holder so supports the plate that when the holder is secured to an automobile body the plate carried thereby is clearly exposed to public view. The plate holder is provided with attaching means secured thereto whereby it may be quickly attached to an automobile body to be carried by the body through such attaching means being releasably gripped between relatively shiftable parts of the body such as between the upper edge of the trunk compartment and the shiftable trunk lid or between the upper edge of a windowpane and the upper edge of the window opening. When the plate holder is so attached to an automobile body it overlies an outer surface of the body and it may move over such outer surface during the travel of the automobile but the holder is so formed and the plate is so carried by the holder that neither the holder nor the license plate carried thereby, nor the attaching of the holder to the body or detaching of the holder from the body will mar in any way the outer surface of the body.

3,430,377
BEZEL CAP
Joseph E. Ellison, Amherst, Ohio, assignor to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey
Filed July 3, 1967, Ser. No. 650,828
U.S. Cl. 40—332 9 Claims
Int. Cl. G09f *3/20*



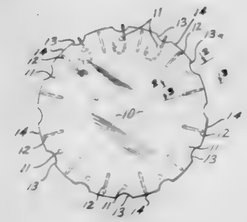
This invention relates to a bezel cap for use in the handle of a faucet, for example a basin or tub faucet, as is conventionally found in a home. In particular, the invention relates to a bezel cap having an indicia bearing member which may be quickly and easily secured between a relatively rigid transparent outer bezel member and an interior relatively resilient cap member.

3,430,378
WEIGHT AND BAIT HOLDER FOR FISHHOOKS
John M. Sweeney, Denver, Colo., assignor to Wright & McGill Co., Denver, Colo., a corporation of Colorado
Filed Nov. 10, 1966, Ser. No. 593,512
U.S. Cl. 43—43.6 3 Claims
Int. Cl. A01k *83/06, 83/00*



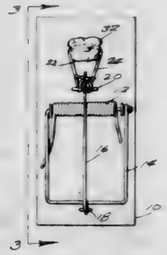
A combined weight and bait holder for a fishhook including a shank having an eyelet at one end and a pointed hook at its opposite end with a weight member secured on an intermediate shank portion, said weight member having a series of V-type threads along its exterior surface tapering inwardly toward the hook point for threaded attachment of a bait in gripping relationship. A weed-guard may be secured to the shank for covering the hook point when desired.

3,430,379
HOLDER FOR FISHHOOKS AND THE LIKE
William M. Wolfrum, 14243 Barrydale, Valinda, Calif. 91744
Continuation of application Ser. No. 493,134, Oct. 5, 1965. This application Feb. 19, 1968, Ser. No. 706,704
U.S. Cl. 43—57.5 12 Claims
Int. Cl. A01k *97/06*



A fishing accessory for safely retaining fishhooks including a pair of plastic disc-like means secured together having spaced pockets to receive the hooks and one of the disc-like means being provided with indentations to retain the hook between the disc-like means within the pockets.

3,430,380
TRIGGER FOR A SPRING-TYPE MOUSETRAP
Russell G. Poff, Rte. 1, Box 17, Riner, Va. 24149
Filed Jan. 13, 1967, Ser. No. 609,139
U.S. Cl. 43—81 1 Claim
Int. Cl. A01m *23/24*

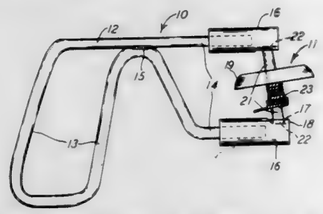


An improved trigger for a spring-type mousetrap in which a pair of wire bait holders are loosely mounted on a staple on the mousetrap base. The bait holders form a pair of bent fingers, one finger of each pair mutually engaging the bait and the other finger of each pair mutually engaging the free end of a lever. Upon the bait being eaten away from the bait engaging fingers, the lever trips to swing a clamp to the trap position.

3,430,381
LAUNCHER FOR SPINNING A TOP
Mark Phipps, Wheaton, Ill., assignor, by mesne assignments, to Western Publishing Company, Inc., Racine, Wis., a corporation of Wisconsin
Filed Oct. 24, 1965, Ser. No. 504,549
U.S. Cl. 46—72 2 Claims
Int. Cl. A63h *1/00, 1/10*

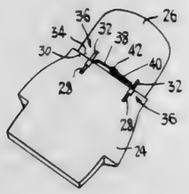
A top launcher having the shape of a gun with a handle and two spaced-apart legs extending therefrom. A top, receivable within the spaced-apart legs, has a central shaft

and a disc disposed intermediate the length of the shaft. The ends of the launcher are constructed to receive the



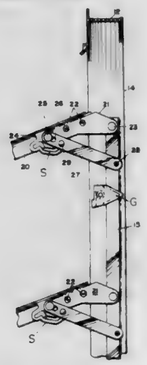
opposite ends of the shaft of the top, for holding and spinning the top prior to its release from the launcher.

3,430,382
AIRCRAFT DOOR ATTACHING AND RELEASE DEVICE
Joseph R. Metz, Ridgefield, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Feb. 13, 1967, Ser. No. 615,798
U.S. Cl. 49—37 **10 Claims**
Int. Cl. E06b *5/00, 5/12, 7/00*



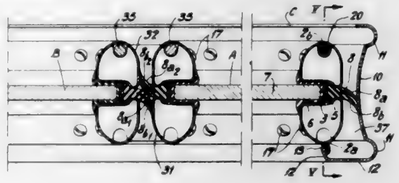
An attaching and release device for aircraft doors or closure panels, comprising separable two-part hinge fittings disposed at one door or panel edge and an adjoining jamb, said fittings having a common release mechanism and each comprising two spaced pin-and-solt connections between the parts, one of said connections being under the control of a releasing slide or draw bolt connected to the release mechanism. Drawing the bolts releases the associated pins from their slots, enabling the remaining pins to leave the remaining slots whereby the door or panel is free of its associated structure.

3,430,383
AWNING WINDOW
Al Brenner, 1700 NE. 105th St., Miami Shores, Fla. 33153
Filed June 8, 1967, Ser. No. 644,643
U.S. Cl. 49—80 **12 Claims**
Int. Cl. E06b *7/08;* **E05f** *17/00*



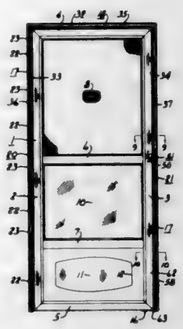
In an awning window having slide bars, vents pivoted to the slide bars at their upper end, interengaging means mounted in the vents and the frame to lock the vents to the frame upon sliding movement of the vents on the frame, links pivoted at one end to the slide bars, the other end having a slot and a pin secured thereon adjacent the slot, vent link guides secured to the sides of the vents, the vent link guides having a pin received by the slot in the link and an elongated inverted S-shape slot receiving the pin of vent links, the S-shape slot having an end portion that is in alignment with the slot when the vents are in their closed position which permits the sliding movement of the vents on the frame and the locking of the vents to the frame by the interengaging means.

3,430,384
WINDOW STRUCTURE
Yves P. M. J. Malenfant, Poissy, Yvelines, France, assignor of one-half to Etablissements J. Danois & Fils, Route d'Andresy, Carrieres-sous-Poissy, Yvelines, France, a company of France
Filed Feb. 23, 1967, Ser. No. 618,127
Claims priority, application France, Mar. 16, 1966, 53,706
U.S. Cl. 49—371 **8 Claims**
Int. Cl. E04b *1/04*



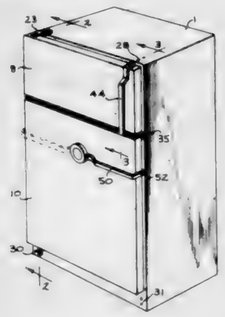
Window structure having an inner pivoted frame formed of profile section to provide an inwardly facing groove in which a glazed panel is mounted and an outwardly facing groove supporting a resilient sealing element for engaging an adjacent portion of the fixed outer frame of the window structure when the inner frame is in closed position.

3,430,385
UNITARY PREHUNG DOOR AND FRAME
Alexander J. Biro, Indiana, Pa., assignor to Season-All Industries, Inc., a corporation of Pennsylvania
Filed Apr. 10, 1967, Ser. No. 629,492
U.S. Cl. 49—380 **13 Claims**
Int. Cl. F16b *5/00, 7/00;* **E04c** *2/38*



A prehung door permanently secured to one side and temporarily fastened to the other side of a door frame for shipment and to be attached to the jamb and lintel of a permanent door frame to function as door opening face trim, and the actual permanent support for the combination screen and storm door.

3,430,386
CABINET HAVING REVERSIBLY MOUNTABLE DOORS
Raymond C. Sandin, Winnetka, Ill., and Charles H. Schmitt, Anchorage, Ky., assignors to General Electric Company, a corporation of New York
Filed June 26, 1967, Ser. No. 648,757
U.S. Cl. 49—382 **4 Claims**
Int. Cl. E05d *7/02, 15/50*



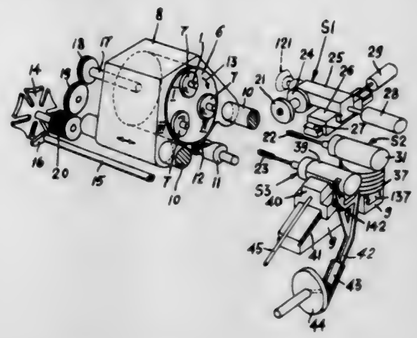
Door mounting structure for reversibly mounting two vertically aligned doors on a cabinet. Upper and lower removably mounted hinge pins are disposed on the top and bottom of the cabinet adjacent a first side thereof. A center support bracket is disposed between the upper and lower doors; the bracket extends over the full width of the cabinet and has threaded openings adjacent both ends thereof. A single cylindrical shaft having an enlarged threaded center section is adapted to be removably disposed within either of the threaded openings in the center bracket. Upon such disposition, the top and bottom sections of the shaft extend into aligned sleeves provided in the upper and lower doors. The doors include pairs of upper and lower sleeves adjacent each side thereof so that the upper and lower hinge pins and the single shaft may be disposed adjacent either side wall of the cabinet, whereby the doors may be opened from either side. At least some of the pairs of sleeves are designed to receive threaded fastening means for securing a handle to the free side of a door.

3,430,387
DRAUGHT EXCLUDERS
Fred Robinson Clapham, Seacroft, Leeds 14, England, assignor to The Schlegel Manufacturing Company, a corporation of New York
Continuation of application Ser. No. 394,990, Sept. 8, 1964. This application June 13, 1967, Ser. No. 645,836
Claims priority, application Great Britain, Sept. 9, 1963, 35,500/63; July 22, 1964, 29,584/64
U.S. Cl. 49—491 **6 Claims**
Int. Cl. E06b *7/23;* **A44b** *21/00*



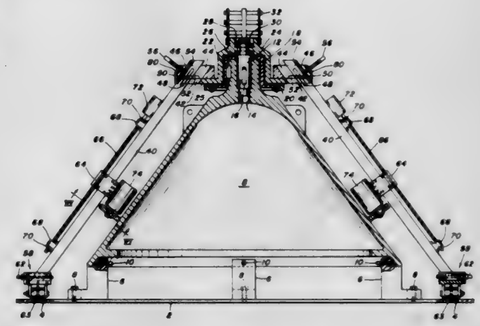
A trim beading is formed with a resilient frame of wire looped back and forth transversely and covered with a flexible material leaving the ends of the wire loops exposed so that when the frame and covering material are bent into a U-shape and the exposed loop ends turned obliquely into the U, the end loops of wire engage the surfaces of a structural edge over which the beading is pressed to hold the beading in place.

3,430,388
AUTOMATIC OR SEMI-AUTOMATIC MULTII SPINDLE GRINDER FOR DIESEL ENGINE FUEL NOZZLES
Gilberta Gabrielli, 83/85, Via Ferrarese, Bologna, Italy
Filed Feb. 8, 1966, Ser. No. 525,979
Claims priority, application Italy, Feb. 11, 1965, 3,268/65; Apr. 22, 1965, 9,396/65
U.S. Cl. 51—3 **7 Claims**
Int. Cl. B24b *5/12*



A multi-spindle grinding machine for diesel fuel nozzles in which a slidable drum-supporting member is axially reciprocated and rotated stepwise to carry therewith a plurality of work spindles which successively pass through three working stations. A grinding device is mounted in correspondence with each work spindle at each working station to effect successive grinding operations of the nozzles carried by the spindles while permitting removal of a finished nozzle.

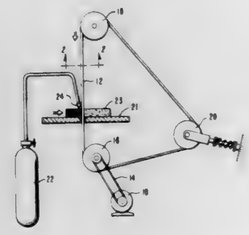
3,430,389
APPARATUS FOR SURFACE-TREATING BLAST FURNACE BELLS AND THE LIKE
John S. Overdeck, 425 McKinley St., Hobart, Ind. 46342
Filed Dec. 30, 1965, Ser. No. 517,656
U.S. Cl. 51—34 **1 Claim**
Int. Cl. B24b *7/00, 9/00;* **B23b** *3/00*



Subject apparatus is intended for surface-treating conical members such as blast-furnace bells and includes a head journaled axially adjacent the apex of the conical member. Means are provided for producing relative mo-

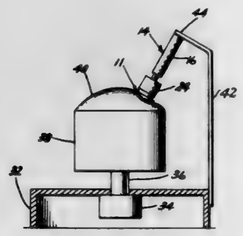
tion between the head and the conical member. At least one guide arm is adjustably attached by one end to the head from which it extends downwardly above and along the outer surface of the conical member. A tool-mounting carriage adapted to carry a grinding wheel or welding head is mounted for movement along the arm.

3,430,390
CUTTING MACHINES AND TOOLS FOR COMPOSITE MATERIALS
Charles E. Wolcott, El Cajon, and Frank J. Filippi, La Mesa, Calif., assignors to Whittaker Corporation, a corporation of California
Filed Dec. 17, 1965, Ser. No. 514,636
U.S. Cl. 51—59 **3 Claims**
Int. Cl. B24b *7/00, 9/00, 21/00*



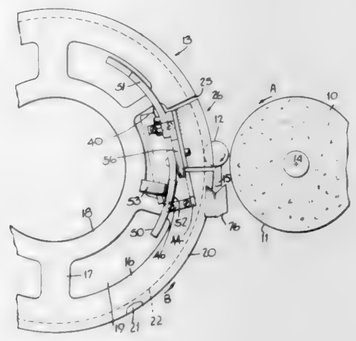
Tools for cutting and machining composite materials having at least two components of widely differing hardness are constructed with an inner load bearing member having high tensile strength with a ductile material affixed to cover the work portion of the member and capable of having imbedded on its surface microscopic particles of the harder component in the composite material.

3,430,391
APPARATUS FOR ALTERING THE POWER OF A CORNEAL CONTACT LENS
Irvin M. Borish, Kokomo, Ind., assignor to Indiana Contact Lens, Inc., Marion, Ind., a corporation of Indiana
Application Oct. 11, 1965, Ser. No. 494,845, now Patent No. 3,360,889, dated Jan. 2, 1968, which is a division of application Ser. No. 248,732, Dec. 31, 1962, now Patent No. 3,238,676, dated Mar. 8, 1966. Divided and this application Mar. 17, 1967, Ser. No. 623,947
U.S. Cl. 51—105 **11 Claims**
Int. Cl. B24b *5/16, 29/00*



An apparatus for altering the power of a corneal contact lens including a resilient and deformable member having a polishing surface, and a lens holder on which a lens element can be mounted and engaged with the polishing surface. The member in different embodiments respectively is held stationary and driven by a motor. The lens holder in different embodiments respectively mounts the lens element in a manner to be held stationary, free to rotate and driven. In one embodiment, two adjacent deformable members are provided and the lens is engaged with the polishing surfaces of both of the members in the region between adjacent portions of the members.

3,430,392
CENTERLESS GRINDING MACHINE WITH AN AUTOMATIC FEED THROUGH THE MACHINE
Daniel J. Howles, Jamestown, N.Y., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 21, 1966, Ser. No. 603,611
U.S. Cl. 51—103 **19 Claims**
Int. Cl. B24b *5/18*



A centerless grinder for successively moving workpieces axially between a grinding wheel and a regulating wheel. The regulating wheel has circumferentially extending, axially spaced guide means forming successive positions for workpieces, and has an indexing member also with guide means matching the regulating wheel guide means in two mating positions on axial movement by an actuating member to receive workpieces and to shift workpieces axially.

ERRATA

For Class 51—205 see:
Patent No. 3,430,396

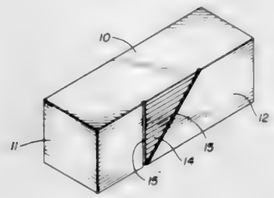
For Class 51—283 see:
Patent No. 3,430,399

For Class 51—289 see:
Patent No. 3,430,400

For Class 51—331 see:
Patent No. 3,430,401

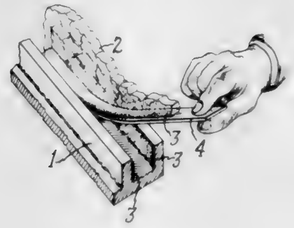
3,430,393
MEANS FOR INDICATING WEAR OF BALL MILL LINING BRICKS AND THE LIKE
Benjamin D. Landes and Ray Paricio, Golden, Colo., assignors to Coors Porcelain Company, Golden, Colo., a corporation of Colorado
Continuation-in-part of application Ser. No. 492,818, Oct. 4, 1965. This application Sept. 15, 1966, Ser. No. 587,355
U.S. Cl. 52—105 **2 Claims**
Int. Cl. E04b *1/00, 5/04;* **E04c** *2/09*

A machine provided with lining bricks which have a face exposed to wear and side and end surfaces which equal the thickness of the bricks and are concealed by adjacent bricks, said thickness defining surfaces having applied thereto wear indicating means. Said means comprise a right angle triangular design in which one of the right angle edges is perpendicular to the exposed face of the brick and located at a distance from the adjacent parallel edge of the thickness defining surface to which the design is applied, the other of its right angle side



edges being coincident with and visible at the exposed face of the brick, both said side edges being equal in length to the thickness of the brick. The length of the visible edge of the triangular design changes progressively as the exposed face becomes worn and at all times equals the thickness of the brick.

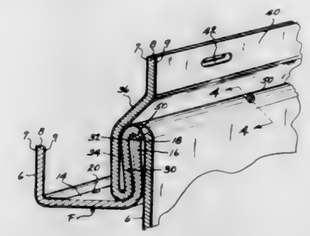
3,430,394
FRAME DEVICE WITH A STRIP FOR REMOVING BROKEN GLASS FRAGMENTS AND SEALING MATERIAL
George F. Johnston, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed June 9, 1967, Ser. No. 645,010
U.S. Cl. 52—127 **7 Claims**
Int. Cl. E06b *7/22;* **E04g** *23/02;* **E04c** *2/54*



A metal strip is arranged along the inner surface of a frame in which a glass pane is secured by sealing material so that removal of broken glass from the frame is achieved by tearing out the metal strip.

3,430,395
ELECTRICALLY GROUNDED, LAPPED SIDING
Jack I. Lashkow, Cleveland, Ohio, assignor to Weather-Tite Division of The Pacific Coast Company, Bedford, Ohio, a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 607,984
U.S. Cl. 52—173 **1 Claim**
Int. Cl. E04h *14/00;* **E04d** *1/04*

An interlocking laminated lap siding panel for external wall sheathing for buildings wherein each panel includes a planar body portion having an outer weather surface and including top and bottom linear edges. The bottom edge is formed into an elongated inwardly and upwardly extending re-entrant bottom hook flange. The top edge includes a first reverse bend directed outwardly and downwardly of the body portion to form a re-entrant notch portion for receiving the bottom hook flange of a like adjacent panel in interlocking engagement therewith. The first reverse bend in the top edge has a plurality of downwardly directed protuberances formed therein at the top of the notch portion. The bottom hook flange



terminates in an upper linear edge adapted to contact such protuberances on a like adjacent panel to form an electrical connection therewith whereby electrical continuity is provided between such panels by the metal-to-metal contact therebetween.

3,430,396
BOWLING SHOE CLEANER
William D. Emerson, Canoga Park, Calif., assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed Oct. 5, 1965, Ser. No. 493,011
U.S. Cl. 51—205 **1 Claim**
Int. Cl. B24d *5/00, 7/00*

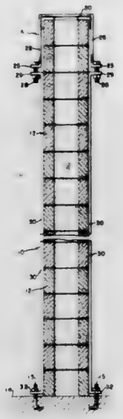


A shoe cleaner, highly desirable for keeping the soles of bowling shoes free and clean of dirt and debris, embodying an article shaped in accordance with a playing member of an athletic game, and carrying an abrasive to remove any form of dirt or debris by hand manipulation.

3,430,397
TWO-WAY WALL BRACE
James P. Ellis, 1381 Blakely Road, East Aurora, N.Y. 14052
Filed Feb. 6, 1968, Ser. No. 703,457
U.S. Cl. 52—227 **1 Claim**
Int. Cl. E04c *5/08, 3/10*

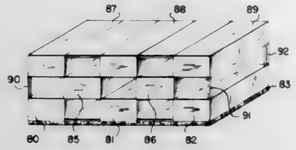
A tension strut device adapted to be applied to a building wall experiencing either inwardly or outwardly bowing forces applied thereagainst; said device comprising length-adjustable strut members running vertically along the opposite sides of the wall and interconnected across the top of the wall by a cap device; each strut member having

hook means at its bottom end for hooking said device to ground anchor bolts or the like; the device being thereby



adapted to apply compression forces to the wall resulting in forces tending to keep the wall rigid against forces applied thereto from either side of the wall.

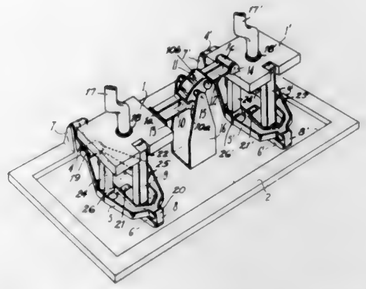
3,430,398
MODULAR BUILDING CONSTRUCTION
Raymond E. Green, Cleveland, Ohio, assignor to Trygve Hoff & Associates, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 13, 1967, Ser. No. 622,671
U.S. Cl. 52—236 **1 Claim**
Int. Cl. E04b *1/348, 1/35;* **E04h** *1/00*



A building construction including a plurality of prefabricated, modular, box-shaped units in the form of rectangular, parallelepipeds that are vertically stacked (with their longitudinal axes parallel), in checkerboard overlapping, off-set relation to form a building, with all units on each floor being laterally spaced from each other a distance less than the width of a unit. In one form of the invention, the outermost units on certain floors above the first floor are supported on a diagonally adjacent unit on the floor therebelow and on vertical columns interposed between such outermost units and a unit therebelow.

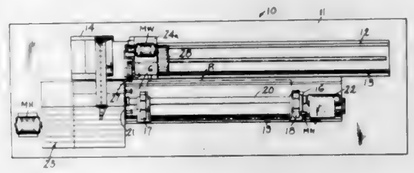
3,430,399
METHOD FOR THE SURFACE TREATMENT OF GLASS
Henri Jules Chaumont, Brussels, Belgium, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed June 29, 1965, Ser. No. 467,982
Claims priority, application France, July 16, 1964, 981,851
U.S. Cl. 51—283 **2 Claims**
Int. Cl. B24b *1/00, 7/00, 9/00*

Method for grinding and polishing sheet glass. A rubbing block is driven in an orbital path by novel linkage which applies to the block a force inclined to the rubbing surface and which passes through a point between the inertia center of the block and the projection of that center on the rubbing surface. As a result deleterious effects of rapidly reversing component forces otherwise tending to tilt the block in planes normal to the rubbing surface, are obviated. The linkage also acts automatically



to create and apply to the rubbing block, a vertical component force equal and opposite at each instant to the vertical component of the inclined force, so that effective pressure of the block upon the glass is uniform over its area.

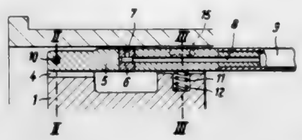
3,430,400
METHOD OF ALIGNING MILL ROLLS FOR GRINDING THEREOF
Alfred T. Parrella, Newtown, and Gene R. Gagliardi, Bethany, Conn., assignors to Farrel Corporation, Ansonia, Conn.
Original application Nov. 17, 1964, Ser. No. 411,774, now Patent No. 3,391,497, dated July 9, 1968. Divided and this application Sept. 26, 1967, Ser. No. 680,281
U.S. Cl. 51—289 **9 Claims**
Int. Cl. B24b *1/00*



This disclosure relates to the alignment of the axis of a mill roll on a grinding machine with the path of travel of a grinding wheel along the length thereof. Initially the axis of the roll on journal supports is unknown. The roll is first positioned such that one side thereof is parallel to the path of travel. Then the diameters of the roll at opposite ends thereof is detected. The difference in diameters, if any, is a measure of the misalignment of the roll axis. The roll is then moved transverse of its axis a distance proportional to the difference in detected diameters to effect alignment of the roll axis.

3,430,401
HONING TOOLS
Friedrich Nagel, deceased, late of Nurtingen, Wurttemberg, Germany, by Peter Nagel and Wolf Nagel, both of Hindenburgstr. 56, Nurtingen, Wurttemberg, Germany, and Ursel Fischer, Ahornweg 9, Nurtingen, Wurttemberg, Germany, heirs
Filed Sept. 17, 1965, Ser. No. 489,463
U.S. Cl. 51—331 **5 Claims**
Int. Cl. B24b *9/02, 49/00, 51/00*

A honing tool with radially adjustable, spring-loaded bars between two adjacent honing stones on the circumference of the tool. A radially directed jet bore in each one of said bars for emitting a measuring jet; an air



feeding channel in each one of said bars and stops on said tool for limiting the stroke of said bars.

ERRATA

For Class 52—105 see:
Patent No. 3,430,393

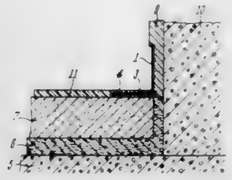
For Class 52—127 see:
Patent No. 3,430,394

For Class 52—173 see:
Patent No. 3,430,395

For Class 52—227 see:
Patent No. 3,430,397

For Class 52—236 see:
Patent No. 3,430,398

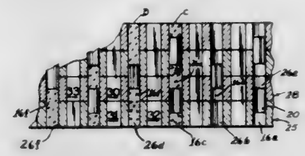
3,430,402
FLOOR WITH BASEBOARD
Kurt Gaiser, Im Gewand Schloss 4, Stuttgart, Germany
Filed Jan. 11, 1965, Ser. No. 424,757
Claims priority, application Germany, Jan. 17, 1964, G 39,638; Apr. 10, 1964, G 40,326
U.S. Cl. 52—287 **23 Claims**
Int. Cl. E04b *1/00, 5/00, 7/00*



1. A floor covering arrangement, comprising:
a baseboard assembly, said baseboard assembly including a baseboard made of a synthetic resin material and a base adapted to extend at substantially right angles to said baseboard,
and a floor covering of a synthetic resin material cast in situ, said floor covering intimately engaging with the base of said baseboard assembly, said base being embedded within said cast floor covering below the upper surface thereof.

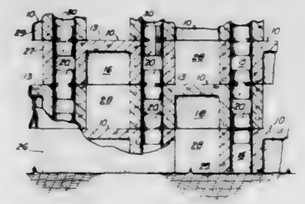
3,430,403
WALL CONSTRUCTION METHOD AND APPARATUS
George B. Muse, Calhoun, Ga. 30701
Filed Apr. 19, 1966, Ser. No. 543,634
U.S. Cl. 52—437 **3 Claims**
Int. Cl. E04b *2/18, 2/20;* **E04c** *1/10*

A wall structure comprising a plurality of horizontal courses of blocks. The blocks of each course are positioned in abutting end-to-end relationship. Each block defines a centrally positioned circular aperture extending vertically therethrough and vertical grooves in each end surface of a radius equal to the radius of its aperture. As the wall structure is assembled, metal sleeves of a radius equal to the radius of the block apertures are inserted into the apertures in a manner such that a portion of each



sleeve protrudes from the block, and the blocks of the next course of blocks are positioned with their grooves abutting the sleeves. When the structure is complete, mortar is poured through the openings defined by the aligned apertures, grooves and sleeves to rigidify the structure.

3,430,404
APERTURED WALL CONSTRUCTION
George B. Muse, Hillcrest Drive, Calhoun, Ga. 30701
Filed Mar. 20, 1967, Ser. No. 624,378
U.S. Cl. 52—439 **2 Claims**
Int. Cl. E04b *2/46;* **E04c** *1/08, 1/10*

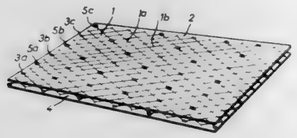


Apertured wall construction comprising a series of building blocks or bricks rigidly connectable to each other. Each block defines an aperture extending therethrough from top to bottom adjacent each of its ends. The block of each course of blocks in the wall are disposed in spaced, end to end disposition and the blocks of the course next above are positioned to overlap the spaces. A sleeve is positioned in each aperture of the blocks of a course of blocks to protrude from the top surface from each block and the blocks of the course of blocks next above are positioned with their apertures disposed about the sleeves. After the wall has been assembled in this manner, mortar is poured through the aligned apertures from the top of the wall, which passes through the aligned apertures of the blocks and the sleeves disposed therewithin.

3,430,405
THERMAL PROTECTION ARRANGEMENT AND ELEMENT THEREFOR
Robert Oscar Alder, Talence, Roger Jean Francois Baudet, La Courneuve, Claude Paul Baudier, Bordeaux Cauderan, and Michelle Marcelle Gasset, Villeneuve-St-Georges, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Sept. 12, 1966, Ser. No. 578,871
Claims priority, application France, Sept. 14, 1965, 31,380
U.S. Cl. 52—573 **3 Claims**
Int. Cl. E04b *1/68, 1/98, 2/28*

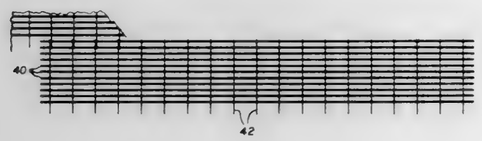
A thermal protection arrangement for a structure to be protected against a high temperature heat source, comprising a protective plate disposed between the heat

source and the structure to be protected, and a substantially flat metallic wire-netting disposed between the protective plate and the heat strucure, the wires of which netting intersect in the "warp and weft" fashion of a fabric, some of the intersections of some parallel wires being fixed to the structure to be protected, and some of the intersections of some other wires parallel and non-



adjacent to said first wires being fixed to the protective plate, relative movements of the structure with respect to the plate being thus permitted. Such an arrangement prevents expansions caused by heat from causing detrimental damage either to the structure to be protected or to the protective arrangement. Moreover, the fixing of the wire-netting to the structure at different points greatly reduces the heat transfer from the plate to the structure.

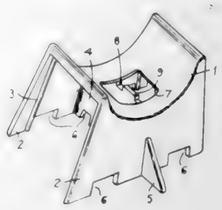
3,430,406
REINFORCING MAT FOR USE IN CONSTRUCTING CONTINUOUSLY REINFORCED CONCRETE SLABS
Adolph C. Weber, Creve Coeur, Mo., assignor to Laclede Steel Company, St. Louis, Mo., a corporation of Missouri
Original application May 6, 1963, Ser. No. 278,167, now Patent No. 3,287,475. Divided and this application Sept. 6, 1966, Ser. No. 577,503
U.S. Cl. 52—660 **8 Claims**
Int. Cl. E04c *5/04, 2/42*



A mat for reinforcing concrete structures wherein the mat is several times longer than it is wide and is a mesh composed of wires which are protuberated, of greater caliper and length in the longer dimension than in the width direction of the mat, are more closely spaced in the width direction than in the longer dimension of the mat, and project farther beyond the outermost longitudinal wire at one long side than at the other long side of the mat.

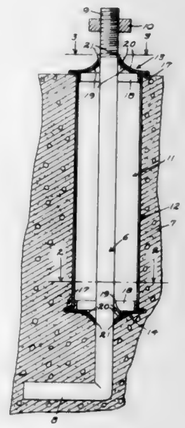
3,430,407
SPACER MEMBERS FOR USE IN REINFORCED STRUCTURES
Ferdinand W. Berry, Latchetts, 108 Woodland Drive, Hove 4, England
Filed Apr. 10, 1967, Ser. No. 629,456
Claims priority, application Great Britain, Apr. 15, 1966, 16,720/66
U.S. Cl. 52—689 **2 Claims**
Int. Cl. E04e *5/16*

This invention relates to spacer members for use in reinforced concrete structures, and in particular to members which are employed to support and locate reinforcements, such as reinforcing rods, in a mould whilst concrete is poured into the mould, the spacer members, together with the reinforcing rods, being permanently cast into the resultant cast structure. The spacer member is moulded from a synthetic plastics material so as to comprise an apertured, concave, reinforcement-receiving



saddle portion carried by an integral framework base portion having a lower interrupted edge on which the spacer member rests when supporting and spacing a reinforcement from the base of the mould.

3,430,408
ANCHOR BOLT SHIELD
Hollie Thomas Dean, 107 N. Artizan St., Williamsport, Md. 21795
Filed Apr. 18, 1967, Ser. No. 631,773
U.S. Cl. 52—699 **1 Claim**
Int. Cl. E04b *1/56;* **F16b** *37/02*

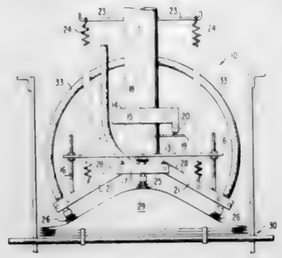


An anchor bolt shield mounted concentrically around a portion of an anchor bolt by cap members which close the ends of the shield and which resiliently and frictionally grip the anchor bolt to support the shield thereon, spaced at desired distances from the anchor bolt ends while concrete is poured and sets around the shield.

3,430,409
AUTOMATIC BAG OPENER
Mario Manfredonia, Glen Cove, and Edward D. Wilcox, Jr., New York, N.Y., assignors to Union Camp Corporation, New York, N.Y., a corporation of Virginia
Filed Apr. 20, 1967, Ser. No. 632,369
U.S. Cl. 53—3 **12 Claims**
Int. Cl. B65b *43/30*

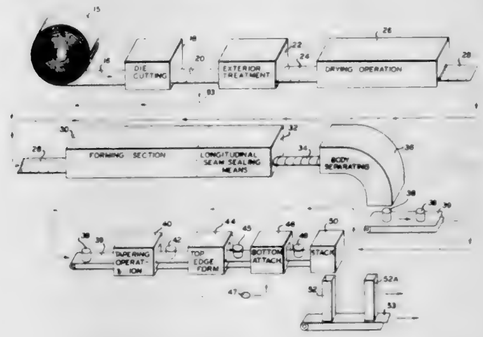
An apparatus for opening the mouth of a bag. A plurality of vacuum cups are positioned adjacent one side

of the bag. A centrally located vacuum cup is retracted causing a portion of one side of the bag to move with it.



The movement of a portion of one side of the bag disrupts the planar parallel relationship between the sides of the bag, thereby opening it.

3,430,410
METHOD FOR MAKING EARED TAPERED CONTAINERS
Raymond A. Heisler, 657 Dakota Trail, Franklin Lakes, N.J. 07417
Filed Nov. 21, 1966, Ser. No. 595,675
U.S. Cl. 53—26 **3 Claims**
Int. Cl. B65b *35/30;* **B65h** *33/00;* **B31b** *1/86*

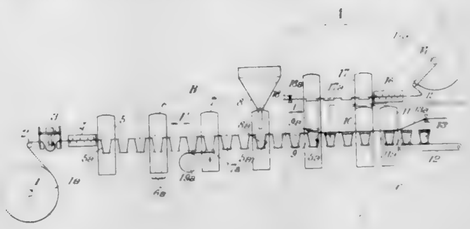


In a method of forming tapered containers and applying ears thereto, an interrupted sequence in which the containers are completed less their bail ears and at this stage are stacked in a nested array. The containers are then shippable to the container user whence they are separated and one at a time are fed to an ear-applying means.

In the production of the tapered container the side is formed into a tube, the seam is welded except for the end rolling portion, and the tube is then tapered after which the bottom is attached and the top curled into a rolled edge.

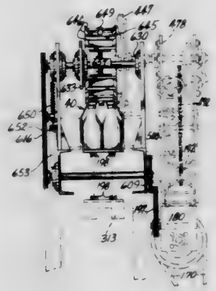
3,430,411
MANUFACTURE OF YOGURT AND SIMILAR FILLED CONTAINERS
Jacques Honoré Gaspard Ollier, 17 Rue General Henrion-Bertier, 92 Neuilly-sur-Seine, France; Georges Frédéric Grosshans, 53bis Rue de Boulainvilliers, 75 Paris, France; and Robert Gaston Masson, 10 Boulevard de Courbevoie, 92 Neuilly-sur-Seine, France
Filed Nov. 25, 1966, Ser. No. 596,870
U.S. Cl. 53—30 **5 Claims**
Int. Cl. B65b *43/08, 3/02*

1. A method of making filled containers which comprises heat forming, from a thermoplastic sheet containers that flare out and are open toward the top, punching out the temporary bottoms of these containers, welding, in place of these bottoms, peelable lids for the finished containers which are turned upside down,



filling said containers through the open ends thereof, welding the future bottoms on the open upper ends of these containers and detaching the filled and welded containers from the sheet that has been heat formed.

3,430,412
PACKAGING MACHINE
Grover C. Currie, Jr., Charlotte, N.C., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington.
Original application Oct. 30, 1962, Ser. No. 234,155, now Patent No. 3,254,470, dated June 7, 1966. Divided and this application Feb. 23, 1966, Ser. No. 529,521
U.S. Cl. 53—48 **1 Claim**
Int. Cl. B65b *21/24*

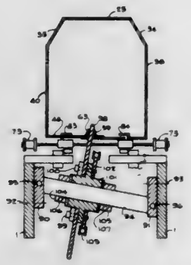


An apparatus for forming a paper blank, into a tubular carton with beveled side panels, around a group of containers which has forming dies on an endless belt mounted above a conveyor for the containers. Each die has a horizontal top portion which contacts a carton top panel, beveled side elements which contact the beveled side panels of each carton, and a spike which engages a finger hole in the cartons.

3,430,413
ROTARY LOCKING MECHANISM FOR WRAPPER-TYPE CARTONS
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Oct. 24, 1966, Ser. No. 588,904
U.S. Cl. 53—48 **10 Claims**
Int. Cl. B65b *11/10, 7/04, 5/06*

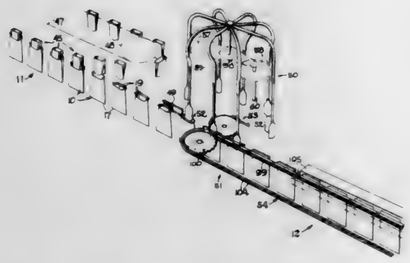
For driving a locking tab formed in a lap panel of a wrapper-type blank through an opening defined by a retaining tab disposed in a contacting lap panel and in coincidential and aligned relationship to the locking tab a rotary element having a radial tab engaging element is synchronized with movement of the blank so that rotation

of the rotary element engages the locking tab at the right instant to perform a locking operation, the rotary element being rotatable about an axis which is disposed at an angle to the planes of the lap panels in which the locking



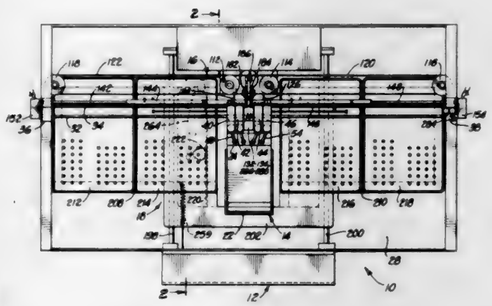
and retaining tabs are formed so that when a locking operation is performed the retaining tab is disposed in a tilted, locking relationship to the locking tab upon the withdrawal of the radial tab engaging element.

3,430,414
MACHINE FOR PACKAGING ARTICLES IN A CONTROLLED ATMOSPHERE
Wilbur G. Ludwig and Richard C. Zimmer, Rockford, Ill., assignors to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,824
U.S. Cl. 53—79 **11 Claims**
Int. Cl. B65b *31/06, 51/10*



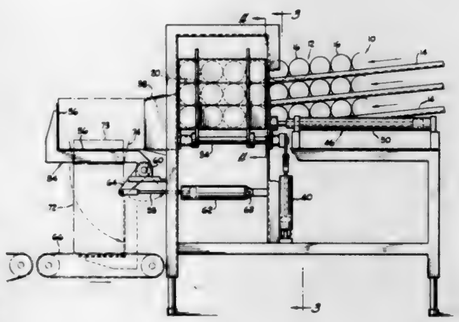
9. In a machine for evacuating and sealing open-ended bags, the combination of, means for supporting a succession of the bags and advancing the same along a predetermined path through evacuating and sealing stations spaced along said path, a series of evacuating nozzles at said evacuating station, a carrier supporting said nozzles for movement along said path with each nozzle alined with the open end of a bag, means for shifting each nozzle into a bag at said evacuating station and subsequently withdrawing the nozzle, a temporary sealer including a backing on one side of the bag path and resiliently compressible sealing pad on the other side, means supporting said backing and said pad for movement into sealing engagement with the open end portion of each bag after a nozzle has been inserted therein and for movement with each bag to said sealing station thereby to close the bag around the nozzle during evacuation and to maintain the vacuum during and after withdrawal of the nozzle, and means at said sealing station for applying permanent seals to each bag while the latter is held between said backing and said pad.

3,430,415
TESTING DEVICE
Robert E. Phillips, P.O. Box 1102, Studio City, Calif. 91604
Filed Oct. 4, 1965, Ser. No. 492,466
U.S. Cl. 53—123 **19 Claims**
Int. Cl. G01n *1/04;* **B26d** *7/06;* **B25b** *35/28*



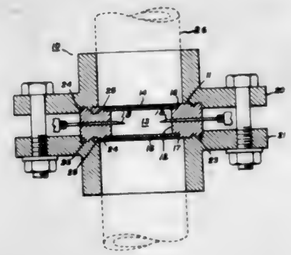
A testing device is disclosed which receives a member containing body fluid specimens, punches a number of specimens from said member, and then distributes said specimens in a plurality of culture trays. The distributing means and trays are constructed so as to make it possible to put the specimens in identical locations in each of the trays.

3,430,416
CASE PACKER ADAPTER
Frank E. Clark, Orinda, Calif., Clyde C. Pugh, South Holland, Ill., and Robert H. von Konsky, San Jose. Calif., assignors to Container Corporation of America, Chicago Ill., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,093
U.S. Cl. 53—159 **2 Claims**
Int. Cl. B65b *5/06, 35/40*



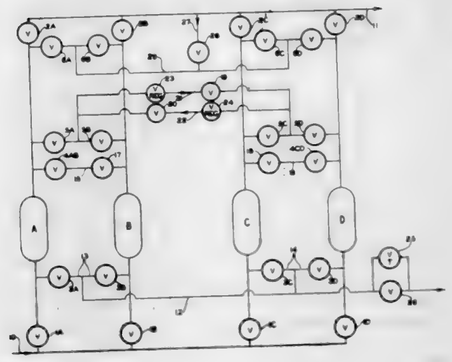
A device for end-loading containers with cans, comprising in combination a chute for rolling cans downwardly; an open-ended arranger for receiving the cans from the chute and grouping them, positioned on their sides, in horizontal rows; an open-ended receiver for receiving cans from the arranger; means for pivoting the receiver from can receiving position through approximately 90° to a can discharging position whereat the cans are extended vertically; a container support for retaining an open-ended container therein; pushers for moving the cans from the arranger to the receiver and from the receiver into the open-ended container. The container support is pivotable so as to move an open-ended loaded container from its horizontal orientation to a vertical orientation with the open end facing upwardly.

3,430,417
GAS SAMPLE ENRICHMENT DEVICE
Robert F. Cree, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 15, 1966, Ser. No. 557,683
U.S. Cl. 55—16 **3 Claims**
Int. Cl. B01d *59/12*



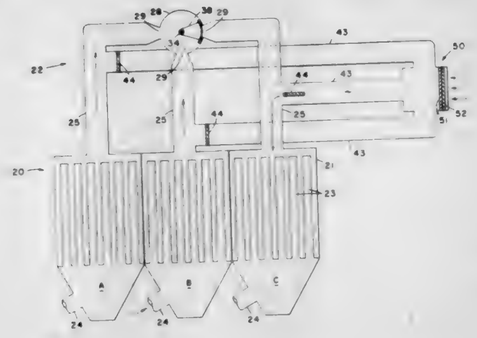
Device and method for removing a carrier gas from the effluent of a gas separation apparatus and for providing an enriched sample of the gas to be analyzed. A pair of membrane gas filters are positioned on opposite sides of a metallic annular member to form a chamber into which the effluent gas, comprising the carrier gas and the gas to be analyzed, is introduced under pressure. The carrier gas flows through the filters and the resulting enriched sample of the gas to be analyzed is removed from the chamber at a point generally opposite from the point of entry of the effluent.

3,430,418
SELECTIVE ADSORPTION PROCESS
John L. Wagner, Lackawanna, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 9, 1967, Ser. No. 659,381
U.S. Cl. 55—25 **9 Claims**
Int. Cl. B01d *53/04*



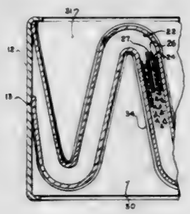
An adiabatic pressure swing process for selectively absorbing components such as carbon dioxide, water and light aliphatic hydrocarbons from admixture with hydrogen gas is provided by at least four adsorbent beds joined in a particular flow sequence.

3,430,419
APPARATUS FOR REVERSE AIR CLEANING OF DUST COLLECTORS
Paul W. Reinecke, Ronald L. Van Sipe, Walter W. Dowd, Donald O. Liske, and Daniel J. Betoski, Alpena, Mich., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed May 3, 1967, Ser. No. 635,762
U.S. Cl. 55—302 **4 Claims**
Int. Cl. B01d *29/24*



An apparatus for reverse air cleaning of bag type dust collectors which have a plurality of separate compartments. A cylindrical discharge chamber is connected to each of the discharge ducts from the compartments of the dust collector, with a single rotary damper being mounted within the chamber to regulate the flow of filtered gases from each compartment. A reverse air duct communicates with each compartment of the dust collector with a reverse air damper mounted in each reverse air duct to control the flow of reverse cleaning air into the compartments. The reverse air dampers are cam operated, being responsive to a cam attached to the shaft on which the rotary damper is mounted. A pulsatory air current generator communicates with the reverse air ducts to provide a pulsatory current of air for cleaning of the filter bags.

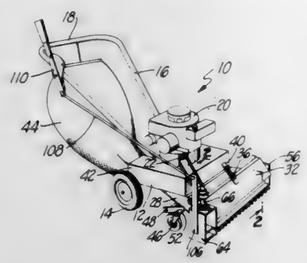
3,430,420
GAS SORPTION UNIT
William E. Gross, 1708 Philadelphia Road, Joppa, Md. 21085
Filed May 18, 1967, Ser. No. 641,419
U.S. Cl. 55—387 **4 Claims**
Int. Cl. B01d *53/18, 51/00, 29/34*



A gas sorbent container, having a pair of compositely formed walls for containing sorption material therebetween and convoluted from one side of a housing to the other and sealed or otherwise attached to cover and base at upper and lower edges. Finger plates are inserted from front and rear to hold convolutions in shape. During filling of the container with gas sorbent material, prior to installation of the top cover, magnetic elements

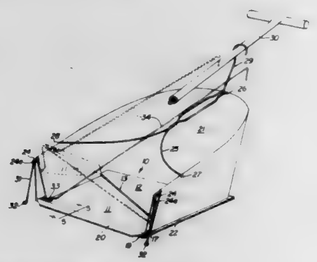
may be used to bow wall segments outward to increase the capacity, the subsequent insertion of finger plates operating to further compact the sorption material.

3,430,421
COMBINED MOWER AND VACUUM DEVICE
Theodore L. Matthews, 6131 Ludlow Ave., Garden Grove, Calif. 92641
Filed Jan. 3, 1967, Ser. No. 606,700
U.S. Cl. 56—23 **8 Claims**
Int. Cl. A01d *43/00, 35/22, 53/06*



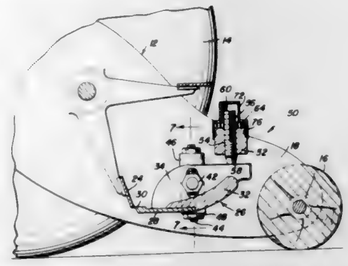
This invention is directed to a combined mower and vacuum device, particularly arranged for the proper mowing and cleaning up of grass and other vegetation grown on lawns and in similar areas. The mower part of the combination comprises a pair of mutually reciprocating cutting bars which carry cooperating blades. The direction of reciprocation is generally transverse to the direction of movement of the combined device. Blades are mounted on and extend forward from the cutter bars so that reciprocation of the cutter bars causes shearing action between the blades. In order to maintain shearing action, the cutter bars and blades attached thereto are stressed in an appropriate direction to cause interengagement of the blades to result in good shear area contact and self-sharpening of the blade edges. The vacuum device is primarily designed to apply vacuum to the zone directly above the cutter bars so as to remove the cut grass. However, the positioning of the vacuum device so that vacuum is applied above the cutter bars produces an unexpected result which comprises the holding of the vegetation in an upright position so that it is properly positioned and restrained to be cut. Thus, the vacuum device both retains the grass in a position to be cut and removes the cut grass.

3,430,422
GRASS CATCHER
Gerald J. Dalton, 459 North 250 East, Kaysville, Utah 84037
Filed Aug. 17, 1966, Ser. No. 573,076
U.S. Cl. 56—202 **5 Claims**
Int. Cl. A01d *35/22, 53/06*



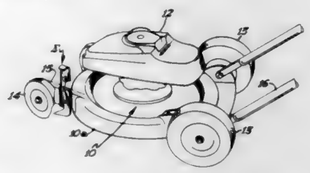
1. A grass catcher comprising:
an enclosure having an open front and top;
a bottom having a movable forward section and a fixed rear section;
hinge means interconnecting said movable section and said fixed section; and
an operating handle formed of a stiff rod having one of its ends pivotally connected to the top of said movable section and extending rearwardly from said connection above the said fixed section and beyond said enclosure.

3,430,423
AUTOMATIC LOCKING CONTROL FOR CUTTER BAR
Edward A. Lavond, 5206 Dove Drive, Fair Oaks, Calif. 95628
Filed Mar. 31, 1967, Ser. No. 627,533
U.S. Cl. 56—249 **15 Claims**
Int. Cl. A01d *53/02*



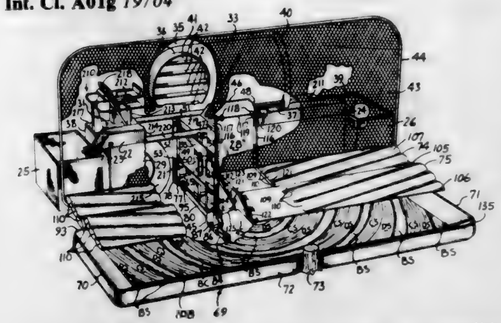
A reel type of lawnmower having a cutter bar in constant locked engagement with the rotating reel blade and automatic means for making wear adjustments in the cutter bar position. A self-locking screw engages the blade holder of the cutter bar to lock the cutter blade in position against displacement away from the reel blades while the screw is maintained under a preselected torsional stress so as to cause the cutter bar to take up wear. Height adjustment of the pivotal axis at one end of the cutter blade reestablishes parallelism between the reel and cutter blades so as to maintain proper contact pressure along the entire cutting edge of the cutter blade.

3,430,424
EDGE TRIMMER
Kenneth N. Hasenbank, Minneapolis, Minn., assignor to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 6, 1965, Ser. No. 477,778
U.S. Cl. 56—255 **1 Claim**
Int. Cl. A01d *55/18*



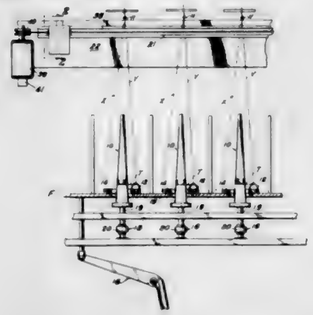
An edging blade mounted on a rotary mower forwardly of the axis of rotation of the cutting blade and lying in a plane intersecting the cutting orbit of the cutting blade, the edging member having a lower forwardly tapered blade portion with an upwardly and rearwardly inclined leading knife edge which is selectively vertically adjustable to positions below and/or above the level of the mower wheels. The inclined leading edge lifts and elevates low lying grass along the edge of a lawn and delivers it to the cutting blade of the mower in a generally upright condition for cutting by said blade.

3,430,425
DEVICES FOR HARVESTING FRUIT AND THE LIKE
Stuart D. Pool and Richard R. Steingas, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,173
U.S. Cl. 56—329 **21 Claims**
Int. Cl. A01g *19/04*



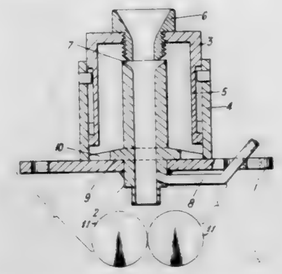
A fruit harvester having a mobile support, an extensible catcher including a conveyor comprising a pneumatically actuated apron, and a fruit shaker for dropping the fruit on the soft apron which has a series of inflated and deflated portions functioning to move the fruit off the catcher and shelves above the catcher to funnel fruit onto the catcher and to reduce the drop impact of the fruit upon the fruit previously dropped on the catcher.

3,430,426
MONITORING DEVICE FOR SPINNING FRAME
Morris M. Bryan, Jr., % Jefferson Mills, Inc., Jefferson, Ga. 30549, and Morris W. Roberts, 2855 Shallowford Road, Chamblee, Ga. 30005
Filed Apr. 18, 1967, Ser. No. 631,790
U.S. Cl. 57—34 **2 Claims**
Int. Cl. D01h *13/26, 13/16, 13/32*



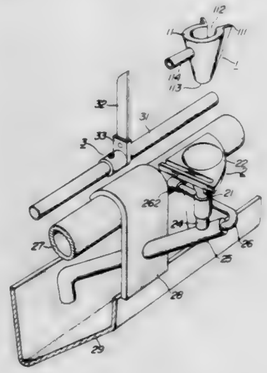
What is disclosed herein is a spinning frame which includes a monitoring means for monitoring the operating condition of each spindle assembly so as to provide an electrical output corresponding to the operating condition of each spindle assembly. The spinning frame is conventional in that yarn defines a substantially conical zone of motion as it passes to the rotating traveler of each spindle assembly and in one embodiment of the invention light reflected from yarn in a conical zone of motion is used to provide the electrical output corresponding to the operating condition of a spindle assembly. In another embodiment of the invention, the operation of a switch means in response to tension of yarn as it passes into a conical zone of motion is used to provide the electrical output corresponding to the operating condition of a spindle assembly. With either embodiment, the electrical outputs may be used to indicate that a spindle assembly is inoperative and may be accumulated by an accumulating means such as a conventional computer to indicate a pattern of operating difficulties indicative of a spindle assembly requiring corrective maintenance.

3,430,427
APPARATUS AND METHOD FOR FORMING COHESIVE FILAMENTARY TOWS
Derek Gabbitus, Allan Stephens, James Brebner, and Anthony Michael Lee, Doncaster, England, assignors to Imperial Chemical Industries, Limited, London, England a corporation of Great Britain
Filed Feb. 6, 1967, Ser. No. 614,198
Claims priority, application Great Britain, Feb. 17, 1966, 7,026/66
U.S. Cl. 57—34 **10 Claims**
Int. Cl. D01h *5/22, 13/30;* **D01d** *11/00*



Filaments obtained by melt spinning a synthetic linear polymer are formed after solidification, into a bundle of about 100 kilo denier or more and introduced between nip rolls via a funnel guide through which a current of compressed air is blown so that its major component of motion is in a direction opposite to that of the movement of the filament bundle, causing filaments to twist and interlace and yield, after compaction, a tow having improved interfilament cohesion.

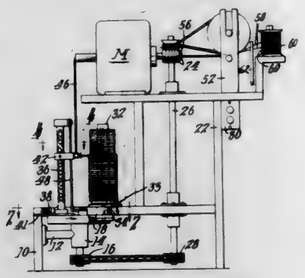
3,430,428
APPARATUS FOR CUTTING A RUNNING YARN IN A CENTRIFUGAL TYPE SPINNING MACHINE
Atsumi Asami, Eitoku Ikee, Eizo Nakashima, and Hirokichi Takata, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed May 8, 1967, Ser. No. 636,886
Claims priority, application Japan, May 9, 1966, 41/28,902
U.S. Cl. 57—34 **2 Claims**
Int. Cl. D01h *13/26, 1/08, 7/74*



An apparatus and method for cutting a running yarn, wherein the running direction of yarn is to be changed

during the spinning in a centrifugal type spinning machine, by allowing said yarn to run in a nearly vertical, inclined state and making a knife move vertically from overhead.

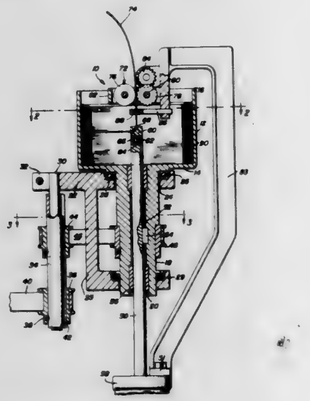
3,430,429
SPINNING AND TWISTING APPLIANCE
John E. De Courcy, 8 Benefit Terrace, Worcester, Mass. 01610
Filed Nov. 6, 1967, Ser. No. 680,734
U.S. Cl. 57—66 5 Claims
Int. Cl. D01h *7/22, 13/12;* D07b *3/08*



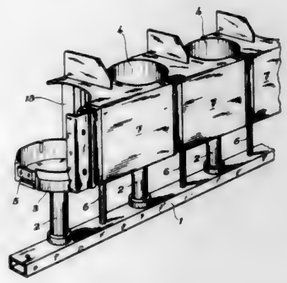
Spinning and twisting appliance which eliminates spinning and twisting inside a limited diameter such as a flier cap or ring and providing for a larger package cutting down on the number of knots per pound and number of doffs per package through the use of a revolving bobbin in association with a revolving traverse both on a rotating platform, and receiving threads to be processed in such a way as to provide for spinning and twisting on the bobbin through an extremely simple mechanism, and using electric stop motion devices for an electric motor which rotates the bobbin and traverse platform.

3,430,430
YARN SPINNING DEVICE
William Kenneth Hope, 523 W. 4th Ave., Gastonia, N.C. 28052
Filed Jan. 4, 1968, Ser. No. 695,662
U.S. Cl. 57—76 7 Claims
Int. Cl. D01h *1/08, 7/74*

A centrifugal yarn spinning or twisting device utilizing a substantially cylindrical yarn container rotating at a relatively high speed together with a centrally disposed yarn guide that is oscillated longitudinally within the container during the high speed rotation of the container for laying the spun or twisted yarn onto the container in an even predetermined arrangement. Conventional drafting rollers are provided for the yarn being spun or twisted with all of the drafting rollers and yarn guide being oscillatable or reciprocable with the container.

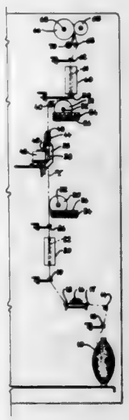


3,430,431
BALLOON RESTRAINER FOR TWO-FOR-ONE TWISTING MACHINE
Klaus Nimtz, Krefeld, Hans Grapp, Krefeld-Forstwald, and Adolf Martens, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed Aug. 4, 1967, Ser. No. 658,413
Claims priority, application Germany, Aug. 11, 1966, P 40,177; Oct. 14, 1966, P 40,585
U.S. Cl. 57—108 11 Claims
Int. Cl. D01h *13/04, 7/86*



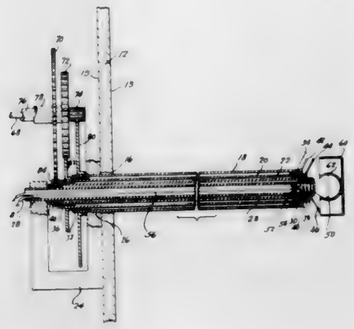
The present invention relates to a balloon restrainer for spindles of two-for-one twisting machines with a thin-walled slotted cylinder mantle supported by a supporting ring which surrounds the spindle at approximately the height of the turntable.

3,430,432
GLASS YARN HAVING CONTROLLED TORSIONAL FORCES
Chester J. Dudzik and Guy E. Perkins, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Original application July 23, 1964, Ser. No. 384,595, now Patent No. 3,348,368, dated Oct. 24, 1967. Divided and this application Aug. 7, 1967, Ser. No. 658,867
U.S. Cl. 57—140 2 Claims
Int. Cl. D02g *1/06, 3/18*



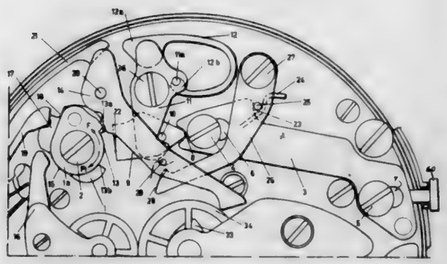
Glass yarn which has been textured to provide therein characteristics of permanent crimp, high stretch and recovery characteristics, and flexibility and strength.

3,430,433
CLOCK WITH AN ILLUMINATED DIAL
Bela I. Sandor, 502 E. Healey St., Champaign, Ill. 61820
Filed Mar. 31, 1967, Ser. No. 627,516
U.S. Cl. 58—50 5 Claims
Int. Cl. G04b *19/34, 19/30*



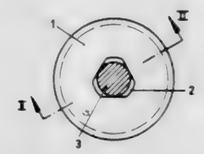
A decorative clock and lighting fixture. The hands of the timepiece are hidden from view, but their relative positions are indicated by casting their shadows upon an illuminated dial face.

3,430,434
ZERO RESET MECHANISM FOR TIMEPIECES MEASURING TIME INTERVALS
Albert Piguet, Le Solliat, Switzerland, assignor to Fabrique d'Horlogerie Lemania, Lugrin S.A., l'Orient, Switzerland, a Swiss company
Filed Jan. 10, 1967, Ser. No. 608,319
Claims priority, application Switzerland, June 14, 1966, 8,576/66
U.S. Cl. 58—74 2 Claims
Int. Cl. G04f *7/04*



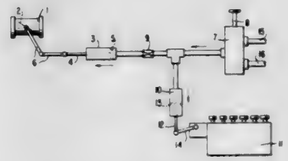
Mechanism for resetting to zero timepieces such as chronometers measuring time intervals having control members subjected to the action of a single setting member and connected to the zero reset member through a cam, a spring pressing this organ against the cam and a lock which can be brought in the trajectory of the member when it is free from the cam, the lock being connected to the control members the position of which defines the position of the lock with respect to the trajectory of the zero reset member.

3,430,435
COLLET
Marcel Dumont, Bienne, Switzerland, assignor to Virola S.A., Bienne, Switzerland, a company of Switzerland
Filed Oct. 10, 1967, Ser. No. 674,297
Claims priority, application Switzerland, Oct. 14, 1966, 14,898/66
U.S. Cl. 58—115 6 Claims
Int. Cl. G04b *17/32*



A collet without a slot for securing a hair spring to the balance staff in which the opening for securing the collet to the staff has a non-circular cross-section.

3,430,436
ENGINE VALVE BRAKE FOR AN INTERNAL COMBUSTION ENGINE PROVIDED WITH AN EXHAUST GAS TURBO-SUPERCHARGER
Otto Bader, Stuttgart-Bad Cannstatt, Hans-Peter Guhne and Karl Sommerfeld, Fellbach, Wurttemberg, and Johannes Chilla, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 24, 1967, Ser. No. 611,391
Claims priority, application Germany, Jan. 26, 1966, D 49,216
U.S. Cl. 60—13 9 Claims
Int. Cl. F02d *9/06*

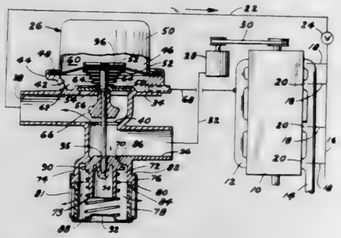


An actuating mechanism for actuating the brake valve of an engine valve brake used in connection with a supercharged internal combustion engine having an exhaust-gas turbo-supercharger, in which the closing of the brake valve by its actuating mechanism is delayed until after the supply of fuel from the injection pump to the internal combustion engine is turned off. In case of use of a fluid pressure medium for the actuating mechanism a throttle may be used as delay element or, in the alternative, a double-piston actuated either in response to the pressure in the line from the supercharger to the internal combustion engine or in dependence in the position of the control rack of the injection pump may be used as delay element. In the event of an electric control circuit for the actuation of the brake valve, a delay relay may be used as delay element.

3,430,437
AUTOMOTIVE EXHAUST EMISSION SYSTEM
Charles W. Saussele, Southfield, and Eugene C. Bettoni, Troy, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Oct. 5, 1966, Ser. No. 584,432
U.S. Cl. 60—30 15 Claims
Int. Cl. F01n *1/14, 3/00;* G05d *9/00*

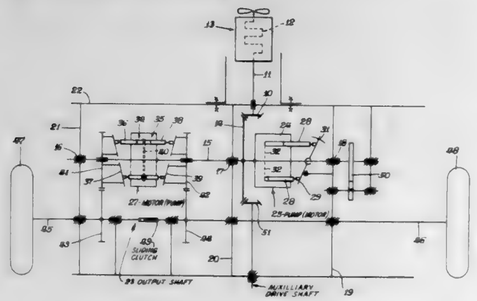
A valving mechanism, employed in combination with an internal combustion engine having intake and exhaust conduitry and an air pump driven in relation to the speed of the engine, directs air delivered by the pump to the ex-

haust conduitry; the valving mechanism includes means responsive to the attainment of a predetermined value of



vacuum in the intake conduitry for discharging substantially all of the air delivered by the pump to atmosphere.

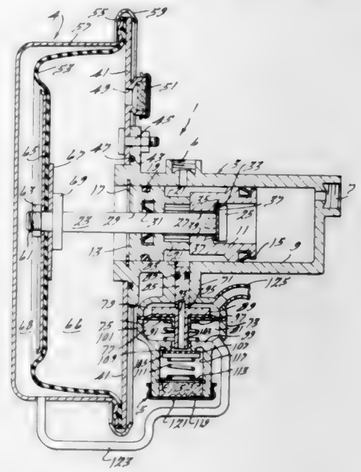
3,430,438
INFINITELY VARIABLE HYDROMECHANICAL TRANSMISSION
Heinz Weiss, Anrath, Germany, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,449
U.S. Cl. 60—53 **7 Claims**
Int. Cl. F16h *39/14, 39/46*



A hydromechanical transmission of the hydraulic-differential type having a variable-displacement hydraulic pump which has a rotatable housing driven by a power input shaft. The wobble plate or rotor of the pump is stationary, so that there is a differential speed between the housing and the stationary wobble plate which will produce an output flow. A drive shaft, which has fluid passageways therein to accommodate fluid output and input flow, connects the pump housing to a rotatable housing of a positive displacement hydraulic motor having dual rotatable wobble plates or power output rotors, which are respectively connected to each end of a split output shaft for driving the traction wheels of a vehicle. The output flow of the pump causes the dual motor rotors to run at a differential speed relative to their housing. Since the motor housing is also rotating at a differential speed to its dual rotors there is an output flow produced back to the pump which restores a portion of the hydraulic power to a mechanical component at the pump.

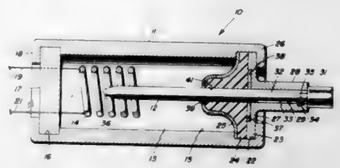
3,430,439
REGULATING DEVICE
Thomas A. Brandon, Jr., Ann Arbor, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Aug. 18, 1967, Ser. No. 662,850
U.S. Cl. 60—54.5 **8 Claims**
Int. Cl. F15b *7/08, 15/10*

Regulating device for use in a vehicular hydraulic brake system having disc brakes on the front wheels and drum brakes on the rear wheels. The device includes a housing having a piston movable therein with an inlet and outlet being formed in the housing on opposite sides of the piston. A pressure differential operated diaphragm



exerts a hold-back force on the piston. The force exerted by the pressure differential diaphragm may be overcome by the control valve operable to reduce the pressure differential on said diaphragm in response to an increase in the inlet pressure above a predetermined pressure.

3,430,440
ELECTRO-THERMAL ACTUATOR
Richard D. Pouliot, Shrewsbury, Mass., assignor to Renriden Corporation
Continuation of applications Ser. No. 286,297, June 7, 1963, Ser. No. 415,851, Nov. 24, 1964, and Ser. No. 477,520, Aug. 5, 1965. This application Dec. 23, 1966, Ser. No. 621,086
U.S. Cl. 60—23 **6 Claims**
Int. Cl. F03g *7/06;* **F01k** *27/00*

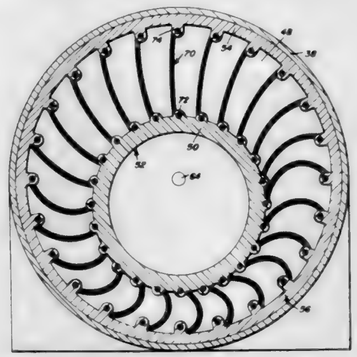


This invention relates to an electro-thermal actuator and, more particularly, to an actuator consisting of a housing containing a thermally-expansible material, a piston slidable in and out of the housing, and an electrically-energized heater for raising the temperature of the material to force the piston out of the housing.

3,430,441
ENGINE FOR CONVERTING ENERGY BY THERMAL EXPANSION OF SOLIDS
John L. Adams, 4563 Via Santa Maria, Santa Maria, Calif. 93454
Filed Sept. 19, 1967, Ser. No. 668,780
U.S. Cl. 60—23 **6 Claims**
Int. Cl. F03g *7/06*

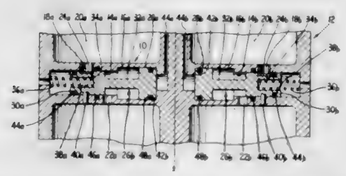
An engine which converts heat energy into continuous rotational mechanical energy by expansion and contraction of bimetallic elements. The bimetallic elements are

pivotally interconnected between eccentrically mounted rotors so that progressive bending and straightening of the elements produces relative rotation of the rotors.



Heating and cooling zones are established in a chamber formed radially between the rotors through which the elements pass so that cyclic expansion and contraction occurs as the rotors rotate.

3,430,442
VALVE MECHANISM
George B. Rabe, Sparta, and Walter B. Grossman, Fair Lawn, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,211
U.S. Cl. 60—39.14 **4 Claims**
Int. Cl. F02c *7/26;* **F16k** *7/14, 17/40*



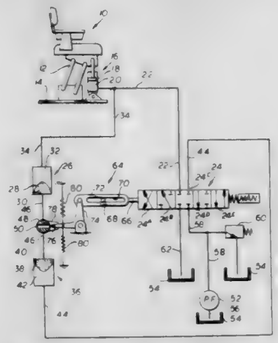
1. In a rocket motor, a valve mechanism comprising:
a housing defining a bore the longitudinal axis of which is transverse to the longitudinal axis of said rocket motor, an inlet extending laterally from said bore, and an outlet extending laterally from said bore and spaced from said inlet longitudinally of said bore;
a shear cup sealingly fixed to said inlet, at least a portion of said shear cup projecting into said bore;
a piston disposed in said bore, said piston having first and second portions slidably engaged with the wall of said bore and a third portion intermediate said first and second portions and having a smaller diameter than the same, said second portion having a recess in which said projecting portion of said shear cup is disposed when said piston is in a first position relative to said bore;
means for releasably holding said piston in said first position;
means for biasing said piston toward said first position;
means for pressurizing said bore at its end adjacent said longitudinal axis of said rocket motor, whereby said piston slides along said bore, sheares said shear cup, and reaches a second position at which fluid can flow through said inlet, around said third portion of said piston, and out said outlet; and
means for arresting movement of said piston at said second position.

3,430,443
LIQUID FUEL COMBUSION APPARATUS FOR GAS TURBINE ENGINES
Leslie Frederick Richardson and David Harding Parnell, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Feb. 17, 1967, Ser. No. 616,981
Claims priority, application Great Britain, Feb. 21, 1966, 7,527/66
U.S. Cl. 60—39.65 **6 Claims**
Int. Cl. F02c *3/24;* **F23c** *7/00;* **F23m** *9/00*



A combustion apparatus for a gas turbine engine has a combustion chamber, from an upstream end of which projects a duct within the chamber, the duct receiving air and vaporized fuel, and having, at its outlet, structure which positively deflects the air-fuel mixture in a direction which has an upstream component towards the end wall, and has a radial component. The end wall of the chamber is shaped so that, when the mixture encounters it, it is caused to flow into two vortices, the first of which is small and circulates within the confined space between the duct wall and the upstream end wall and constitutes a pilot vortex, and the second vortex passing into the combustion zone.

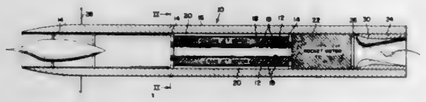
3,430,444
VARIABLE VOLUME ACCUMULATOR SEAT SUSPENSION
Ronald C. Kamp, Wilmette, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,353
U.S. Cl. 60—51 **13 Claims**
Int. Cl. B60n *1/02;* **F16m** *13/00;* **F15c** *4/00*



A suspension for a vehicle seat having a seat assembly supported by a linkage from the vehicle, a single acting

hydraulic ram pivotally secured between the assembly and the vehicle, a first accumulator with its hydraulic chamber communicating with the ram, a second accumulator with its gas chamber capable of communicating with the gas chamber of the first accumulator, valve means for connecting and disconnecting said gas chambers, and means for transferring gas between the gas chambers when the valve means is positioned to connect them.

3,430,445
COMBINED ROCKET-RAMJET AIRCRAFT
E. Quimby Smith, Jr., Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Continuation-in-part of application Ser. No. 11,934, Feb. 29, 1960. This application Oct. 30, 1962, Ser. No. 234,585
Int. Cl. F02k *9/04*
U.S. Cl. 60—245 **1 Claim**



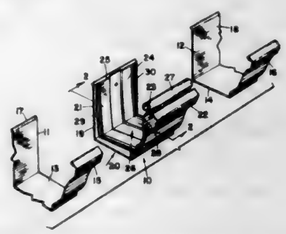
1. A combined rocket-ramjet aircraft comprising:
(a) an outer tubular casing having a forward opening to atmosphere providing a ram air inlet and having an aft opening connected to a nozzle providing an exhaust outlet;
(b) a ramjet sustainer motor and a rocket booster motor mounted adjacently within the casing and longitudinally disposed in that order between the inlet and outlet;
(c) the ramjet motor having a tubular configuration so as to define an axial air passage therein and being of smaller outer diameter than the inner diameter of said casing so as to define an annular air passage therebetween;
(d) the rocket motor and the ramjet motor each comprising a solely end-burning solid propellant, with the rocket propellant having a cylindrical configuration and being of the same outer diameter as the inner diameter of said casing so as to completely fill said casing in a radial direction;
(e) said rocket propellant thus directly contacting the inner surface of said casing so as to close the annular air passage formed between the outer surface of the tubular ramjet motor and the inner surface of said casing until such time as the rocket motor propellant has been consumed during operation of said aircraft.
(f) said rocket motor being so arranged within said casing as to occupy a region which becomes a combustion chamber for the ramjet motor when said rocket propellant has been consumed;
(g) the casing thus acting to preclude any burning other than end-burning of said rocket motor propellant; and
(h) an inhibitor coating on those surfaces of said tubular ramjet motor propellant which define said ram air passages;
(i) said coating acting to preclude any burning other than end-burning of said ramjet propellant and thus prevent any radial enlargement of either or both of the axial and annular air passages in said ramjet motor, such enlargement, when allowed to occur, tending to produce excessive air pressure in said combustion chamber after said rocket propellant has been consumed to correspondingly increase the possibility of ramjet engine flame-out.

3,430,446
EXTERNAL BURNING RAMJET ENGINE
Robert W. McCloy, Urbana, Ill., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 20, 1964, Ser. No. 361,628
U.S. Cl. 60—270 **7 Claims**
Int. Cl. F02k *7/10*



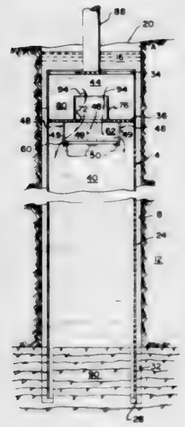
1. In an external burning ramjet engine wherein the improvement comprises:
a main body portion;
said body portion including a front downwardly inclined ramp;
a rear upwardly inclined ramp;
said forward inclined ramp and said rear inclined ramp being interconnected by an upper and lower central portion;
said upper central portion being inclined downward at its forward end;
said lower central portion being substantially horizontal;
a cowl spaced from said lower central portion to form an air passageway therebetween;
said cowl fixedly secured to said body portion by a pair of side plates;
said cowl having a horizontal portion parallel to said lower central portion of said body;
said cowl having a downwardly extending ramp at its rear end;
fuel injection means located at the rearmost portion of said horizontal portion;
said cowl spaced from said main body in such a manner that air entering said passageway is compresed by a first shock wave that is formed when air contacts the leading edge of said main body;
said entering air being reflected and forms a second shock wave when said air impinges on the leading edge of said cowl;
said entering air is again reflected horizontally through said passageway;
as the air reaches said fuel injection takes place and the burning gases expand over said rearward ramps thus producing lift and thrust.

3,430,447
EAVESTROUGH CONNECTOR
Harry Edgar Boniface, 80 London St. N., Hamilton, Ontario, Canada
Filed Dec. 6, 1966, Ser. No. 607,344
Claims priority, application Canada, Dec. 9, 1965, 947,364
U.S. Cl. 61—15 **7 Claims**
Int. Cl. E02b *9/04*



This invention pertains to a connector for securing the ends of abutting eavestrough sections together, the connector comprising inner and outer members which are hingedly joined together and embrace the end of each eavestrough section; a deformable flange on the inner member is forced into an open bead on the outer member to clamp the connector to the eavestrough section.

3,430,448
APPARATUS AND METHOD FOR REMOVING CUTTINGS
Grover C. Gauntt, Jr., Itasca, Robert G. Isaacs, Roselle, and Robert L. Martin, Park Forest, Ill., and James P. Walton, Santurce, Puerto Rico, assignors to Case Foundation Company, Roselle, Ill., a corporation of California
Filed July 12, 1967, Ser. No. 652,898
U.S. Cl. 61—40 **10 Claims**
Int. Cl. E21d *1/00, 5/00;* **E21b** *21/00*



A core-barrel provided with teeth at one of the ends thereof for cutting into and penetrating bedrock or other sub-surface material in the production of caissons by rotation of the core-barrel. The core-barrel is equipped to serve as a pump which is designed to act in response to the vertical reciprocation of the core-barrel to pump water down through the core-barrel to remove cuttings in the sub-surface adjacent the teeth of the core-barrel, to place cuttings in suspension and to prevent the cuttings from building up between the core-barrel and sub-surface material. This reduces surface friction at the teeth and along the sides of the core-barrel and thereby reduces the power required for drilling. The pump action is provided by means of a float valve that opens and closes a port in the core-barrel in response to reciprocation of the core-barrel.

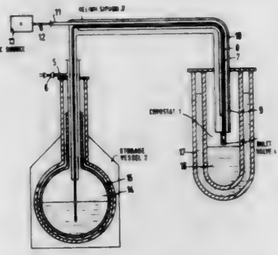
3,430,449
ANCHOR BOLTS AND METHOD FOR FIXING SAME IN DRILL HOLES ESPECIALLY IN FRIABLE ROCK
Rudolf Novotny, 22 Ostpreussenstr., 43 Essen, Germany, and Fritz Schuermann, 8 Am Kronenberg, 4321 Winz-Niederwenigern, Germany
Filed Oct. 31, 1966, Ser. No. 590,629
Claims priority, application Germany, Nov. 27, 1965, B 84,734
U.S. Cl. 61—45 **2 Claims**
Int. Cl. E21d *20/00, 21/00;* **F16b** *13/06*

The method of fixing an anchor bolt in a drill hole, especially in friable rock, by means of a mixture of polyester resin with a viscosity of the order of 10 poises with a finely granulated filler in an amount in the ratio of the order of 100 to 400% of the weight of the resin and a hardener, placed in the drill hole, the anchor bolt being smooth and there being an annular clearance between the anchor bolt and the drill hole of the order of 1.5 mm. The drill hole is closed at its outer end by the conformation of the anchor bolt. Positioning of the anchor bolt is effected



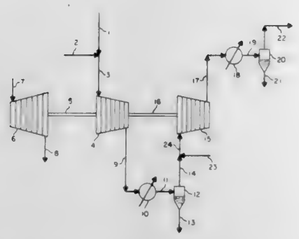
at a rotational speed of the order of 150 to 750 r.p.m. and at a mechanically exerted pressure of about 900 kg. An anchor bolt of elongate tubular form filled with stiffenable material and with an exterior smooth form and having a conically thickened head closing the outer end.

3,430,450
APPARATUS FOR REPLENISHING LIQUID HELIUM IN A CRYOSTAT FROM A STORAGE VESSEL
Günther Bogner, Erlangen, and Gustav Klipping, Berlin, Germany, assignors to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., Gottingen, and Siemens Aktiengesellschaft, Berlin, Germany, both German corporations
Filed July 25, 1967, Ser. No. 655,903
Claims priority, application Germany, July 29, 1966, M 70,402
U.S. Cl. 62—45 **18 Claims**
Int. Cl. F17c *7/02, 5/04*



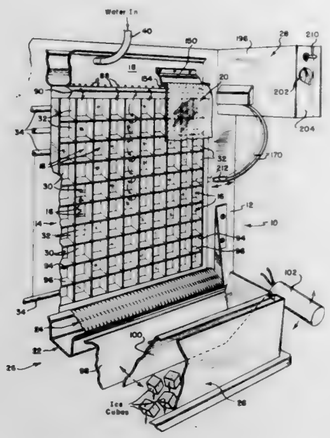
A helium siphon has one end in a storage vessel and its other end in a cryostat for transferring liquid helium from the storage vessel to the cryostat. An inlet valve at the other end of the helium siphon in the cryostat controls the flow of liquid helium into the cryostat. A superconducting magnetic coil device in operative proximity with the valve in the cryostat controls the operation of the valve in accordance with the conducting condition of the superconducting coil device, the conducting condition being determined by the level of liquid helium in the cryostat. An exhaust outlet including an overflow valve is in the storage vessel for maintaining a substantially constant overpressure therein.

3,430,451
COMPRESSION OF GASEOUS STREAMS CONTAINING CARBON MONOXIDE
Dinshaw D. Mehta, New York, N.Y., and Axel Christensen, Stamford, Conn., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,182
U.S. Cl. 62—85 **16 Claims**
Int. Cl. F25b *47/00*



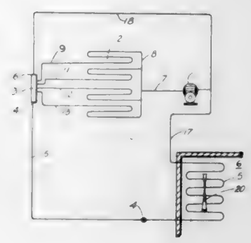
Gaseous streams containing carbon monoxide, such as methanol synthesis gas, are compressed in centrifugal type compressors having carbon steel structural elements. A liquid oil is injected into the gaseous stream prior to compression in the centrifugal compressor, in order to provide an oil film on the carbon steel elements of the compressor and thereby prevent the reaction of carbon monoxide with the carbon steel, which could result in carbonyl formation and corrosion of the compressor internals.

3,430,452
ICE CUBE MAKING APPARATUS
Alvin N. Dedricks, Manitowoc, and Lester A. Mueller, Kewaunee, Wis., assignors to The Manitowoc Company, Inc., Manitowoc, Wis., a corporation of Wisconsin
Filed Dec. 5, 1966, Ser. No. 599,234
U.S. Cl. 62—138 **29 Claims**
Int. Cl. F25c *1/10, 1/12*



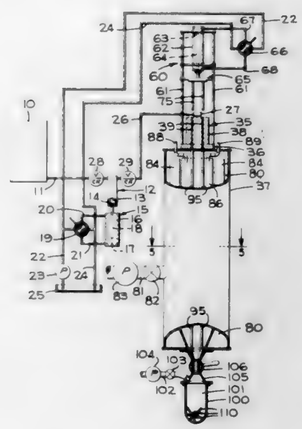
A waterfall type of frozen product making device is provided wherein the liquid starting material is introduced at the top of a freezing grid which directs the water in a tortuous path toward a sump. The frozen product collects on the freezing grid and is sensed by suitable means to defrost the grid whereupon the frozen product is discharged therefrom into a bin. Control means associated with the bin are provided to control the operation of the device to insure a constant supply of frozen product.

3,430,453
REFRIGERANT CONDENSER ARRANGEMENT
John P. Norton, St. Louis, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Jan. 24, 1967, Ser. No. 611,300
U.S. Cl. 62—196 **4 Claims**
Int. Cl. F25b *39/04, 41/00*



The present invention relates to fluid condenser systems and more particularly relates to condenser arrangements including at least two different fluid paths and cooperative valve means for simultaneously controlling the flow conditions in a stream of pressurized vaporizable-condensible working fluid passed through condenser means and regulating the effective condensing area in response to change in condition of the fluid emitted from the condenser.

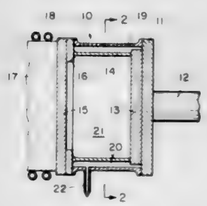
3,430,454
APPARATUS FOR INTRODUCING SUBSTANCE INTO VACUUM CHAMBER
Lewis F. Ginnette, Cupertino, Calif., and William R. Scalf, Richmond, Ind., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 627,245
(Filed under Rule 47(a) and 35 U.S.C. 116)
U.S. Cl. 62—353 **10 Claims**
Int. Cl. F25c *1/12;* **F26b** *5/06, 5/10*



A substance is continuously introduced into a freeze drying vacuum chamber without loss of vacuum therein. The substance in liquid form is pumped into cylindrical

chambers of a heat exchanger, each of said chambers terminating at an opening into the vacuum chamber. The substance is frozen into a set of rod segments which are forced by reciprocable pusher rods partially through said openings. Succeeding sets of rod segments are formed, each set partially pushed through said openings and forcing the preceding set the rest of the way through the openings on each stroke of the pusher rods so that the openings are always sealed by frozen rod segments.

3,430,455
THERMAL SWITCH FOR CRYOGENIC APPARATUS
Robert W. Stuart, Wakefield, and Walter H. Hogan, Wayland, Mass., assignors, by mesne assignments, to 500 Incorporated, Cambridge, Mass., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,237
U.S. Cl. 62—383 **10 Claims**
Int. Cl. F25d *3/12;* **F25b** *9/00;* **G05d** *23/00*



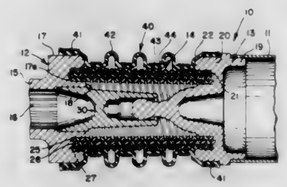
A thermal switch is provided which automatically engages or disengages a thermal connection between two bodies. Heat is transfered first by metal-to-metal contact and then by gas conduction, the making or breaking of the contact being achieved through the use of metals having different coefficients of thermal expansion.

3,430,456
EXTENSION UNIT FOR AUGER
Donald E. Stricker, Rte. 1, St. Paul, Minn. 55111
Filed July 10, 1967, Ser. No. 652,084
U.S. Cl. 64—1 **10 Claims**
Int. Cl. F16c *1/00, 3/00;* **F16b** *7/10*



A telescopic extension unit for an ice auger or similar hole drilling tool to permit progressive extension of the auger shank as the hole being cut is deepened. The end of the auger shank is secured in a slidable retainer contained within a tubular housing and rotatable therewith. Latching means are provided at spaced intervals along the length of the housing to lock the retainer and auger at any of several given positions relative to the housing while permitting operation of the auger at each of the latched positions, each representing an increment of increased length of the auger assembly.

3,430,457
UNIVERSAL JOINT HAVING UNIQUE BOOT MEANS
Thomas A. Gee, Allen Park, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 26, 1967, Ser. No. 612,010
U.S. Cl. 64—15 **6 Claims**
Int. Cl. F16d *3/52, 3/56, 3/66*



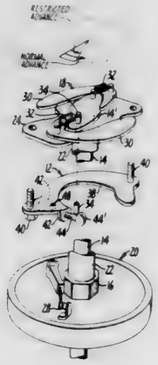
A flexible sealing boot and retention arrangement for a spring-pack type of universal joint. The flexible boot is generally maintained in a desired shape during operation of the universal joint by individual bands which maintain substantial portions of the boot immediately adjacent to the internal spring-pack while providing convolutions for necessary elongation and contraction of the boot.

3,430,458
DEVICE FOR TRANSMITTING ROTARY MOVEMENT AND METHOD FOR MANUFACTURING THE SAME
Georg Titt, 5 Westendstrasse, 808 Furstenfeldbruck-Buchenau, Germany
Filed Dec. 30, 1966, Ser. No. 606,468
U.S. Cl. 64—15 **17 Claims**
Int. Cl. F16d *3/56;* **B21f** *37/00*



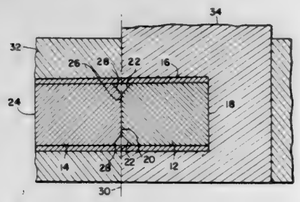
A device for transmitting rotary movement between an inner member and an outer member which surrounds and is spaced from the inner member to define therewith an annular space in which the device is located. The device has a plurality of transmission means situated in and distributed along the annular space between the inner and outer members with the plurality of transmission means wedged against these members to transmit rotary movement therebetween, and each transmission means transmitting rotary movement in an opposite direction from an immediately preceding and an immediately following transmission means.

3,430,459
ADJUSTABLE ADVANCE LIMITER FOR IGNITION SYSTEMS
Raymond Roger Hill, 362 E. Beach, Inglewood, Calif. 90302
Filed Dec. 21, 1967, Ser. No. 692,533
U.S. Cl. 64—25 **2 Claims**
Int. Cl. F16d *5/00*



An advance limiter for conventional automotive ignition systems which essentially comprises a flat plate with threaded brackets for receiving an adjustment screw, said plate being mounted to the distributor for regulation of the maximum advance developed by the governor.

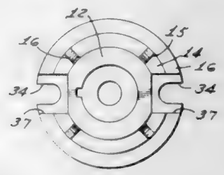
3,430,460
FATIGUE-RESISTANT SHEAR PIN
Thomas W. E. Hankinson, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 28, 1967, Ser. No. 619,903
U.S. Cl. 64—28 **5 Claims**
Int. Cl. F16d *9/00;* **B23g** *9/00;* **B21k** *1/44*



A shear pin having a hollow shaft fitted with two plugs with chamfered ends that abut at the plane where shear is to occur on overload.

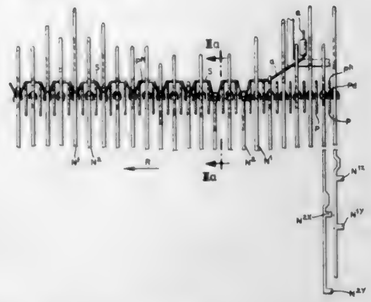
3,430,461
BLADE ADAPTER
Carol Clark Boylan, Cass City, Mich., assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed May 18, 1967, Ser. No. 639,539
U.S. Cl. 64—28 **5 Claims**
Int. Cl. F16d *7/02;* **A01d** *55/18*

An adapter unit for the purpose of fastening blades diametrically across a power shaft for a lawn mower and designed to adapt to a plurality of blades having fastening holes centrally thereof and torque transmission apertures at various distances on either side of said center, said plate being designed for direct attachment to said blade or for the transmission of torque through slidable ele-



ments which can position at varying positions relative to the center of the plate.

3,430,462
METHOD AND APPARATUS FOR KNITTING RUN-RESISTANT FABRIC
Max Bruno Nebel and Erhard Max Nebel, Wiesbaden, Germany, assignors to Hanes Corporation, a corporation of North Carolina
Division and continuation-in-part of application Ser. No. 347,735, Feb. 27, 1964, now Patent No. 3,319,440, dated May 16, 1967. This application Mar. 31, 1967, Ser. No. 627,350
U.S. Cl. 66—42 **22 Claims**
Int. Cl. D04b *15/80, 9/38*

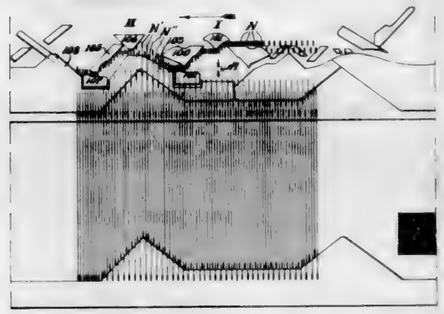


Method and apparatus for knitting run-resistant fabric from at least two yarns, which alternate walewise of the fabric, and in which one yarn is formed into alternate plain stitches in selected wales and into floats in the intervening wales, and in which the next succeeding yarn is formed into plain stitches in the intervening wales and into elongated loops in the selected wales, with the elongated loops being doubled with the next succeeding plain stitches in the selected wales throughout the fabric.

3,430,463
METHOD AND APPARATUS FOR MAKING RUN-RESISTANT KNITTED FABRIC
Max Bruno Nebel and Erhard M. Nebel, Wiesbaden, Germany, assignors to Hanes Corporation, a corporation of North Carolina
Continuation-in-part of application Ser. No. 173,419, Feb. 15, 1962. This application Aug. 17, 1962, Ser. No. 217,554
Claims priority, application Germany, Feb. 18, 1961, N 19,623
U.S. Cl. 66—42 **27 Claims**
Int. Cl. D04b *9/46, 15/32*

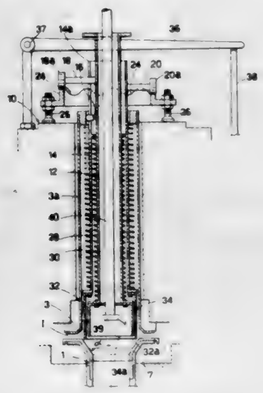
Method of knitting run-resistant fabric for ladies' hosiery and the like where, in the knitting sequence, a first course of fabric is formed entirely of relatively small, plain knit stitches, and then a second course is formed of relatively large spaced tuck loops and intervening stitches. The length of yarn per course of the first knit course in the sequence is about 70% or less of the length of yarn per

course of the second knit course. As a result, spaced stitches in the first knit courses are robbed of yarn to such



extent that they recede into their respective previous stitches.

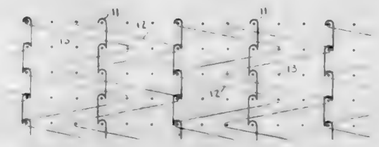
3,430,464
TUBULAR HOSIERY TENSIONING DEVICE
Aramis Mazzi, Florence, Italy, assignor to Solis Societa a Responsabilita Limitata, Florence, Italy, an Italian corporate body
Filed Apr. 13, 1967, Ser. No. 630,657
Claims priority, application Italy, Apr. 19, 1966, 8,805/66
U.S. Cl. 66—153 **9 Claims**
Int. Cl. D04b *15/88, 27/34, 35/00*



A tubular hosiery tensioning device includes two resilient sleeves which are arranged to engage with their ends the knitted fabric alternately and thereby hold the fabric under tension at all times. In a modification one sleeve merely prevents the fabric from slipping back when the other sleeve is retracted.

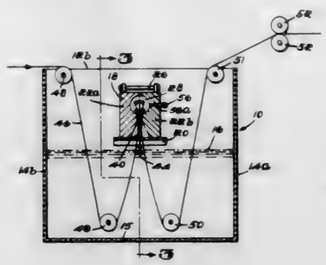
3,430,465
WARP KNIT FABRIC
Stephen L. Porter, Bridgewater, Va., Calvin Auville, Charlotte, N.C., and Allen R. Winch, New York, N.Y., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 508,609, Aug. 5, 1965, which is a division of application Ser. No. 795,858, Feb. 26, 1959, now Patent No. 3,208,451, dated Sept. 28, 1965. This application Dec. 15, 1967, Ser. No. 691,026
U.S. Cl. 66—193 **7 Claims**
Int. Cl. D04b *21/00, 23/08, 23/10*

A lightweight, soft fabric which conforms readily to contoured surfaces and is characterized by a pinning strength in excess of about 2 pounds, hence is well adapted for utility as a sanitary napkin cover fabric, comprising a plurality of sets of continuous filament cellulose acetate



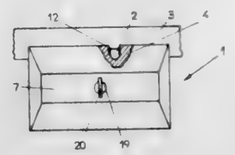
yarns knit into an open construction characterized by less than full set threading in the chain yarns, and a stitch pattern in the transversely extending yarns at least several needle spaces wide.

3,430,466
WET PROCESSING APPARATUS
Fritz Peter, Shrewsbury, Mass., assignor to Rodney Hunt Company, Orange, Mass., a corporation of Massachusetts
Filed Aug. 1, 1967, Ser. No. 657,702
U.S. Cl. 68—184 **8 Claims**
Int. Cl. D06f *7/04, 35/00, 39/08*



An apparatus for subjecting a continuous length of material such as for example a textile web to a fluid treatment. The apparatus includes a treatment zone defined in part by two spaced opposed walls. Both the material to be treated and a high velocity stream of processing fluid are passed between the opposed walls, with either a reed member or a plurality of appropriately positioned control jets being employed to alternately direct the fluid stream first towards one wall and then towards the opposite wall, thereby imparting both corresponding lateral movement and a gentle beating action to the material passing through the treatment zone.

3,430,467
LOCK
Gustave P. Wirth, Chemin de Maillot, Beure, Doubs, France
Filed Dec. 27, 1966, Ser. No. 605,068
Claims priority, application France, Dec. 27, 1965, 43,793
U.S. Cl. 70—67 **4 Claims**
Int. Cl. E05b *67/38;* **E05c** *1/04, 3/04*



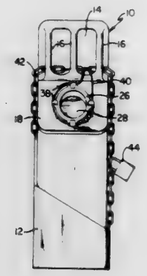
Lock, particularly adapted for use with valises, briefcases and bags, having a fixed container element and a

cover in which a clasp rigid with the cover cooperates with a movable latch member in the fixed section which has a notch facing the clasp in the open position of the lock, the member being able to move with respect to the clasp to bring the lock in its closed position in which the notch no longer faces the clasp.

3,430,468
LOCKING MECHANISM FOR CONTAINER LID

Leonard Joseph, 128 Ash, Denver, Colo. 80220

Filed Apr. 27, 1967, Ser. No. 634,315
U.S. Cl. 70—164 2 Claims
Int. Cl. B65d 55/12, 55/14

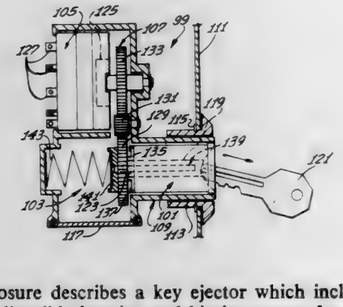


The objective of the invention is to provide a means for locking a container lid adapted to be threadably attached to the container, on the container so that it can not be removed to permit removal of the contents of the container, the invention comprising the modification of the container lid to provide channels on its periphery and a flexible cable passing through the channels, the construction permitting securing the lid in any radial position against rotation by locking the flexible cable to a stationary member on the can.

3,430,469
KEY EJECTOR

Bernie M. Baxter, 2027 W. Berridge Lane, Phoenix, Ariz. 85017, and Donald L. Cheney, 1319 E. Howell St., Seattle, Wash. 98122

Filed July 19, 1967, Ser. No. 654,512
U.S. Cl. 70—388 7 Claims
Int. Cl. E05b 17/12, 65/12, 17/04

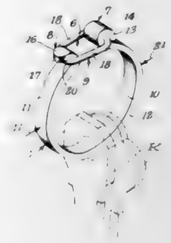


This disclosure describes a key ejector which includes an axially collapsible housing and biasing means for urging the housing toward an extended position thereof. A key is suitably secured to the key ejector and extends therethrough so that upon insertion of the key into the lock, the housing is axially collapsed and the biasing means is compressed or cocked. Thus, whenever the key is unrestrained by the lock or the user, the biasing is automatically operative to expand the housing and eject the key from the lock. In another form of the invention, the key ejector is embodied as a permanent part of a vehicle ignition.

3,430,470
KEY HOLDER

Ronald T. Muckleston, P.O. Box 689, Bakersfield, Calif. 93302

Filed Mar. 27, 1967, Ser. No. 626,287
U.S. Cl. 70—459 2 Claims
Int. Cl. A44b 15/00

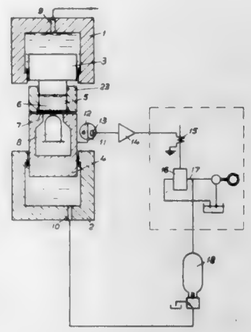


A key holder having a circular ring formed of spring metal of rectangular cross-section with a gap therein defined between two ends, one of which is formed as an outwardly directed eye and the other as a hook, also outwardly directed. A closed wire link is pivotally engaged in said eye and is swingable into hooking engagement with the hook to close said gap when the mentioned ends of the ring are resiliently pressed toward each other so the link may hook onto the hook after release of the pressure on the ring ends and, thereby, close the gap.

3,430,471
HYDRAULIC PRESS WITH LIGHT-SENSITIVE CONTROL MEANS

Paul Larsson, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Dec. 20, 1966, Ser. No. 603,314
Claims priority, application Sweden, Dec. 20, 1965, 16,452/65
U.S. Cl. 72—29 6 Claims
Int. Cl. B21b 37/06; B21d 22/10

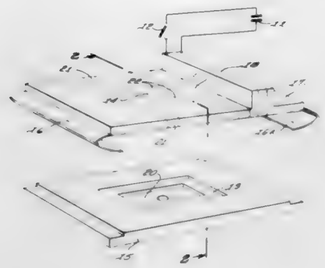


A hydraulic press has a frame connected to one of the pistons which can hold a piece of paper of varying shape between a tubular light source and a plurality of photocells arranged in a line; the signal from the photocells being used to control a valve which controls the movement of the piston according to a selected program.

3,430,472
MAGNETIC DEVICE FOR FORMING SHEET METAL

Harold P. Furth, Princeton, N.J., assignor to Advanced Kinetics, Inc., Costa Mesa, Calif., a corporation of California

Substituted for abandoned application Ser. No. 273,621, Apr. 17, 1963. This application Aug. 25, 1967, Ser. No. 674,030
U.S. Cl. 72—56 1 Claim
Int. Cl. B21d 26/02; B21j 5/04

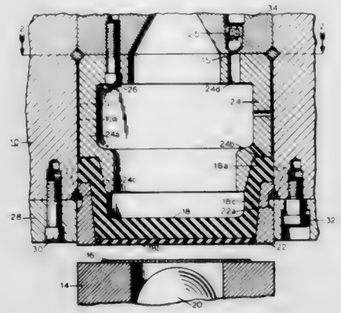


The present disclosure provides a device for magnetic forming of sheet metal between two parallel plates of conductor which are used as the two halves of a plane parallel high current transmission line. During the current pulse, the magnetic field within this forming system tends to be parallel to the plane of the sheet metal unidirectional and highly uniform in strength so that high uniformity in the forming process can be achieved.

3,430,473
MOUNTING CONSTRUCTION FOR DIAPHRAGM IN FORMING PRESS

Bobbie L. Edwards, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 21, 1967, Ser. No. 662,008
U.S. Cl. 72—63 13 Claims
Int. Cl. B21d 22/10, 25/18

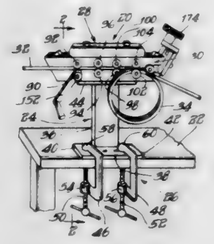


A diaphragm and mounting assembly for a fluid forming press. The lip of the diaphragm is sealed against the chamber wall by a tapered surface which forces it outward as the diaphragm cartridge is inserted. The cartridge is locked in by compressing a snap-ring into a groove formed in the sleeve.

3,430,474
APPARATUS FOR FORMING COILS

Morley Mann, 12 Interstate Road, Addison, Ill. 60101

Filed Jan. 10, 1967, Ser. No. 608,409
U.S. Cl. 72—135 10 Claims
Int. Cl. B21f 3/02; B21d 7/02

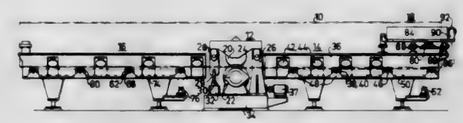


There is disclosed an apparatus for forming coils from tubing, wire and the like. This apparatus is portable and hand operable so as to be especially suitable for use in laboratories, small shops and the like. In the specific embodiment disclosed herein, the apparatus comprises a head structure having sets of tubing driving rollers at opposite sides thereof adapted to be driven in opposite directions for directing the tubing against a deflecting roller selectively positioned at opposite ends of the head structure. A handle is selectively positioned at opposite sides of the structure for driving the rollers. Clamping means is provided for securing the apparatus to an edge of the table or the like and for adjustment for selectively presenting opposite sides of the head structure facing outwardly from the table.

3,430,475
ROLLER DIE BENDING MACHINE FOR FINISHING LONGITUDINAL TUBULAR EDGES INCLUDING GUIDING MEANS PROJECTING INTO A GAP THEREBETWEEN

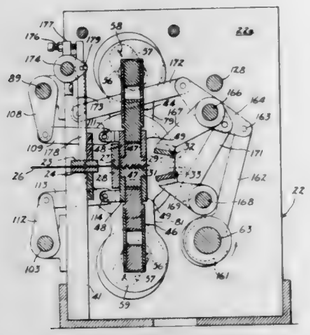
Bo Mauritz Lindmark, Trollbacken, Sweden, assignor to A. B. Broderna Hedlund, Stockholm, Sweden, a corporation of Sweden

Filed Dec. 7, 1966, Ser. No. 599,883
U.S. Cl. 72—179 7 Claims
Int. Cl. B21d 5/14, 39/02; B23k 9/02



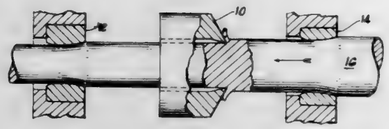
The invention relates to roller die bending machines for finishing the marginal portions of sheet metal blanks having been bent in a prior operation to tubular shape but still having the marginal portions at edges of said portions to be welded together unbent and substantially plane. The machine comprises a roller die unit, roller beds ahead of and behind said unit for guiding the blank through said unit. The roller beds comprise guiding and supporting rolls engaging the opposite edges of said marginal portions and projecting into a gap therebetween. The rolls keep the edges in mutual alignment ahead of the roller die unit and behind the latter, whereby accurate finish bending and straight parallel edges after bending is obtained. High quality welded tubes may thus be manufactured.

3,430,476
CORRUGATING MACHINE
William J. Duda, Elmwood, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Nov. 14, 1966, Ser. No. 594,032
U.S. Cl. 72—190 6 Claims
Int. Cl. B21b *21/00*; B21d *13/02*



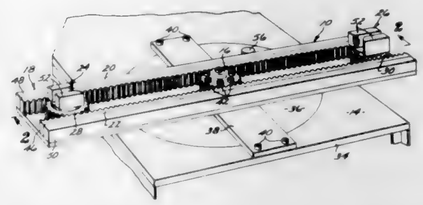
Disclosed is a machine for corrugating foil diagonally with respect to the web direction of the foil comprising a pair of complementary dies movable between open and closed positions and operable upon closing to form at least one corrugation extending from one edge of the foil to an opposite edge, gripper means operable in timed relation to the die motion to hold the foil against movement when the dies are out of engagement with the foil, means to move the dies and the foil relative to the gripper means in the web direction, said relative movement being a result of first and second components including a first component of feed in one direction and a second component of feed in a direction substantially normal thereto. Also disclosed is a method of corrugating sheet stock including presenting with a pair of mating dies a preliminary groove of the stock, reworking preliminary groove with finishing dies, and gripping and initiating a subsequent preliminary groove before the reworking of the initial preliminary groove is completed.

3,430,477
METHOD AND MEANS FOR SURFACE FINISHING OF STEEL
Norman N. Breyer, Chicago, Ill., assignor to La Salle Steel Company, Hammond, Ind., a corporation of Delaware
Continuation of abandoned application Ser. No. 268,906, Mar. 29, 1963. This application June 27, 1967, Ser. No. 649,194
U.S. Cl. 72—275 4 Claims
Int. Cl. B21c *1/20*



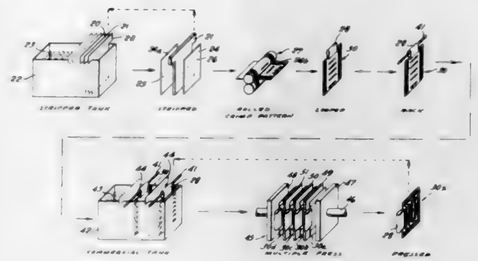
The method for removing surface metal from steel bars and rods by the use of a combination of dies comprising a lead die, a finishing die and a shaving tool between the lead die and the finishing die for removal of surface metal and in which the amount of reduction taken by the lead die is at least equal to the difference between the surfaces of the work and the center or the out-of-roundness of the metal and in which the amount of reduction that is taken in the finishing die is increased until the undesirable characteristic of barberpoling is no longer experienced but in which the amount of reduction is at least 4 percent.

3,430,478
APPARATUS FOR BENDING AN ELONGATED ELEMENT
Ray E. Arnold, San Diego, Calif., assignor to Brawley Steel Co., San Diego, Calif., a corporation of California
Filed Feb. 14, 1967, Ser. No. 616,063
U.S. Cl. 72—298 4 Claims
Int. Cl. B21d *11/02, 11/04, 5/04*



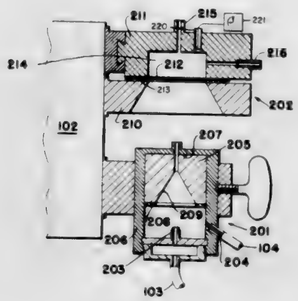
An apparatus having a pair of opposed gear racks engaged upon a central fixed gear, and further having a pair of holders on opposite sides of the central gear for holding the opposite extremities of an elongated element which is to be bent, the holders each including a rack gear engaged upon the gear racks so that rotation of the gear racks about the central fixed gear causes relative longitudinal movement of the gear racks, thereby rotating the rack gears of the holders and bending the element in two places simultaneously, the distance between the bends being governed by the distance between the central gear and the holders, and the degree of bend being determined by the degree of rotation of the gear racks.

3,430,479
APPARATUS FOR SIMULTANEOUSLY PRESSING A PLURALITY OF CATHODE SHEETS
Marion S. Bell, Anthony Allan Montrose, and Bill Hugh Spoon, El Paso, Tex., assignors to Phelps Dodge Refining Corporation, New York, N.Y., a corporation of New York
Filed Apr. 17, 1967, Ser. No. 631,378
U.S. Cl. 72—400 7 Claims
Int. Cl. B21j *7/16, 11/00*



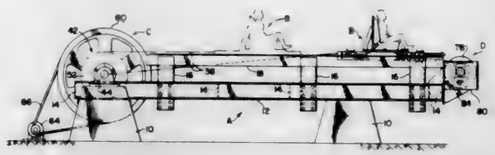
Apparatus for simultaneously pressing a plurality of cathode sheets, each having a layer of electrolytically deposited metal on both sides, for use in electrolytic refining of metal, such as copper, comprising a multiple platen press with platen face tooling to exert forces on both sides of the sheet to stress the metal beyond its elastic limit at adjacent spaced points over substantially its entire planar area.

3,430,480
APPARATUS FOR TESTING WEARABILITY OF FABRICS
Nestor W. Pandell, Waccabuc, and Robert W. Knebel, Rochester, N.Y., assignors to Cluett, Peabody & Co., Inc,. Troy, N.Y., a corporation of New York
Filed July 27, 1967, Ser. No. 656,550
U.S. Cl. 73—7 10 Claims
Int. Cl. G01n *3/56, 19/02*



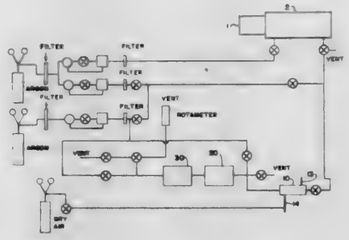
The abrasion resistance of fabric is tested by striking one side of the fabric with high-velocity abradant particles and determining and recording the time taken for the abradant particles to wear through the fabric. The sensing is done by detecting a pressure change in a closed chamber on the side of the fabric opposite the source of abradant particles.

3,430,481
DYNAMIC TEST MACHINE
Marvin S. Shinbaum, Springfield, and John S. Strance, Drexel Hill, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Nov. 16, 1966, Ser. No. 594,874
U.S. Cl. 73—12 5 Claims
Int. Cl. G01n *3/08*



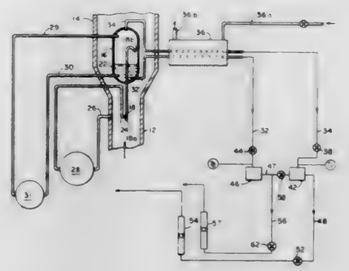
An improved dynamic test machine of the type including: a guideway along which a test vehicle is movable between first and second positions; a winding reel having a contoured winding surface connected through an elongated flexible tension member with the test vehicle; power means selectively connectable to the winding reel for rapidly rotating the reel to wind up the tension member and, considering the contour of the winding surface, applying a predetermined acceleration to the test vehicle to move it from the first position toward the second position. The machine is provided with the improvement which includes braking means including a rotatable drum member provided with actuable means for selectively applying a braking force to the drum member and a second elongated flexible tension member having one end connected to the drum and wound thereon and the other end connected to the test vehicles.

3,430,482
AUTOMATIC BOMB DETECTOR
Andrew Dravnieks, Park Forest, and Martin J. Salkowski, Downers Grove, Ill., assignors to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Administration
Filed July 20, 1967, Ser. No. 655,267
U.S. Cl. 73—23.1 10 Claims
Int. Cl. G01n *31/06, 31/08, 33/22*



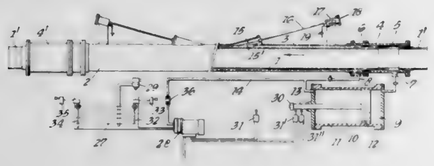
This invention relates to a bomb detector for identifying the presence of dynamite, for example, in an airplane. The basic method detects the presence of ethylene glycol dinitrate vapor in air. The essential steps are selective adsorption of the vapor on a surface, desorption of the vapor and a timed passage through a short, chromatographic partition column, followed by passage through a vapor detector which emits an identifying signal.

3,430,483
DETERMINATION OF VAPOR QUALITY
Lawrence G. Clawson, Dover, and Marvin B. Ziering, Newton Highlands, Mass., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 25, 1966, Ser. No. 532,527
U.S. Cl. 73—29 4 Claims
Int. Cl. G01n *31/00, 11/00*



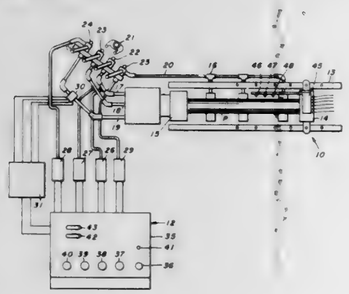
Apparatus for determining the vapor quality of wet steam utilizing a sampler and a liquid-vapor separator. The vapor portion is condensed and then recombined with the liquid portion. Measurement of liquid flow at various points in the system and that of conductivity due to impurities provides the vapor quality of the original sample.

3,430,484
LAND OR UNDERWATER PIPE LINE
Gerard F. Wittgenstein, Postbox Montchoisi, Lausanne, Switzerland
Continuation of application Ser. No. 492,417, Oct. 4, 1965. This application Aug. 8, 1967, Ser. No. 659,202
Claims priority, application Switzerland, Oct. 7, 1964, 3,892/64; Dec. 8, 1964, 15,487/64
U.S. Cl. 73—40.5 13 Claims
Int. Cl. G01n *3/08*; F16l *55/10*



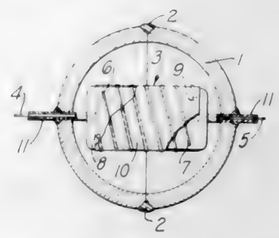
A pipeline of which at least a section of the conduit for the passage of a product to be transported is located in a tubular envelope with an interspace between the conduit and envelope being filled with previously chemically treated and neutralized water and connected to a water supply reservoir. An automatic pressure sensitive device for pressurizing the water relative to the pressure in the conduit is connected by means affording separate communication with the conduit and the interspace. A member integral with the pressure sensitive device controls positionally the actuation and stopping of various apparatus controlling the flow of the product in the conduit and of a pump exhausting previously chemically treated and neutralized water from the supply reservoir and injecting it into the interspace. At least one wire is tensioned along the upper surface of the envelope containing the water and terminates in sealed boxes. At least one discharge valve connects the interspace with the outside atmosphere.

3,430,485
APPARATUS FOR MONITORING THE OPERATION OF A PRESSURE-TESTING MACHINE AND RECORDING THE RESULTS
Edwin B. Henry, Jr., Mt. Lebanon Township, Allegheny County, Donald G. Schindler, Whitehall Borough, and William L. Zemberry, Swissvale Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Apr. 7, 1967, Ser. No. 629,221
U.S. Cl. 73—49.6 15 Claims
Int. Cl. G01m *3/04*



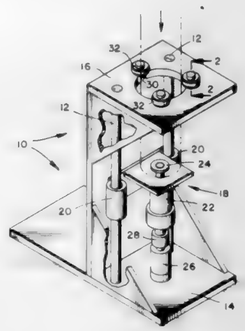
An apparatus for monitoring the operation of a pressure-testing machine to assure that items tested are held at the specified pressure for the specified time. The apparatus marks a tally sheet to record the pressure and time to be used in the tests, and numbers the sheet for identification. It counts the number of items tested and the number which are acceptable, and marks each item as to whether it is acceptable or rejected. The apparatus is designed to be tamper-proof.

3,430,486
MEMBRANE-SHIELD FOR SOIL HYGROMETER
Lorenzo A. Richards, P.O. Box 424, Riverside, Calif. 92502
Filed July 31, 1967, Ser. No. 657,293
U.S. Cl. 73—73 6 Claims
Int. Cl. G01n *25/56*



An enclosure whose wall acts as a membrane and a shield, within which hygrometers can be buried in field soil for accurately measuring the relative water-vapor pressure depression in the soil immediately exterior to the membrane-shield.

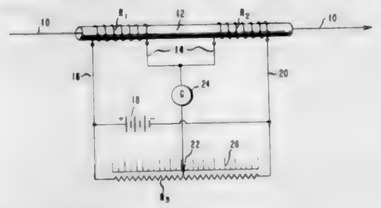
3,430,487
PROPELLANT SPIN EVALUATION APPARATUS
Kenneth G. Thorsted and Louis C. Renner, China Lake, and Joseph A. Schmidt, Ridgecrest, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 10, 1967, Ser. No. 652,660
U.S. Cl. 73—117.4 4 Claims
Int. Cl. G01m *15/00*



Thrust of solid propellant motor is measured while spinning about its axis, providing information pertaining to the effects of spin speed on grain support, inhibiting problems, and general motor performance.

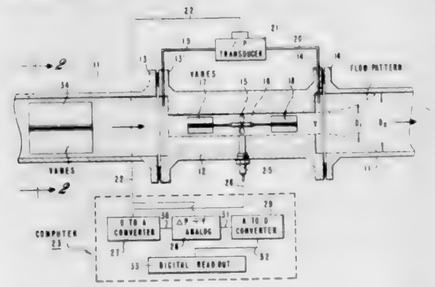
3,430,488
CALORIMETRIC YARN DENIERING APPARATUS
John Seymour Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 7, 1967, Ser. No. 614,454
U.S. Cl. 73—160 5 Claims
Int. Cl. G01l *5/04*

An apparatus for measuring the denier of a yarn moving at a constant speed employs a calorimetric principle based on heat absorbed and transported by the yarn. A pair of electrically energized wire coils which are axially spaced and serially connected function to supply and detect heat absorbed by the yarn moving through the coils.



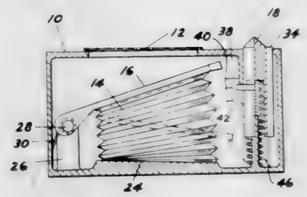
A bridge circuit measures the changes in the ratio of coil resistance as a result of heat transported by the yarn and this ratio is then related to yarn denier.

3,430,489
MODIFIED TURBINE MASS FLOW METER
Raymond H. Pfrehm, Houston, Tex., assignor to Esso Research and Engineering Company
Filed Jan. 30, 1967, Ser. No. 612,703
U.S. Cl. 73—231 7 Claims
Int. Cl. G01f *1/06*



A tubular bore choke is arranged in a conduit through which fluid is flowed with a turbine located in the choke; differential pressure sensing means upstream and downstream of the choke, the downstream sensing means being located in the horizontal cross-sectional plane of the vena contracta, a digital output sensor for the turbine, and a computer means to which said several sensing means are connected, allows obtaining of a quotient proportional to mass flow rate which is converted to digital output in terms of mass throughput.

3,430,490
DEPTHOMETER
John R. Byers, Thu Dau Mot, Vietnam, assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 27, 1965, Ser. No. 428,584
U.S. Cl. 73—300 6 Claims
Int. Cl. G01f *23/00, 23/16, 23/14*



1. In a depthometer comprising:
a generally rectangular body;
said body having an opening therein allowing ingress and egress of fluid;
perforated means covering the opening in said body;
retractable indicators slidably mounted in said body;
means for holding said retractable indicators above said body in an extended position;
pressure responsive means within said body; and
means on said indicators for engagement with said pressure responsive means, whereby upon said pressure responsive means being activated by fluid flow into the body through the opening in said body, the means on said indicators are engaged, retracting said indicators into said body in a sequential manner providing depth indications.

3,430,491
DISPOSABLE CLINICAL THERMOMETER
Leigh R. Gignilliat III, 359 Sheridan Road, Winnetka, Ill. 60093
Filed Dec. 27, 1966, Ser. No. 604,689
U.S. Cl. 73—358 13 Claims
Int. Cl. G01k *11/00*

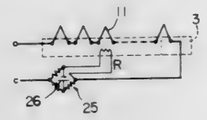


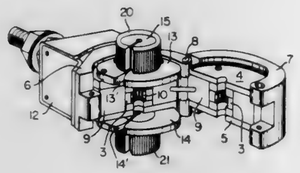
There is provided a clinical thermometer formed with an absorbent backing layer and a nonabsorbent upper layer having a plurality of perforations. Each of the perforations defines pockets containing a substance capable of melting at a predetermined temperature. The entire set of layers is enclosed within a transparent covering. In use the maximum temperature to which the thermometer has been exposed can be determined by the melting of the substances within the respective pockets and absorption into the backing layer.

3,430,492
APPARATUS FOR MEASURING CONTINUOUSLY THE TEMPERATURE OF TRAVELING YARN
Ryoso Matsumoto, Toyonaka-shi, Osaka-fu, and Hisao Watanabe, Chigasaki-shi, Japan, assignors of one-half to Teijin Limited, Osaka, Japan and one-half to Tokyo Seiko Co., Ltd., Tokyo, Japan, both corporations of Japan
Filed Oct. 18, 1965, Ser. No. 496,773
Claims priority, application Japan, Dec. 25, 1964, 39/73,251
U.S. Cl. 73—361 8 Claims
Int. Cl. G01k *5/52*

An apparatus for continuously measuring the temperature of a traveling yarn. A heat conductive hollow cylindrical member is provided, only the inner peripheral surface of which is electrically nonconductive. The cylindrical member is splittable with respect to the axis through

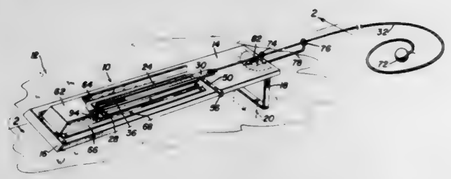
which a yarn passes. A plurality of thermocouple elements are connected in series and disposed completely





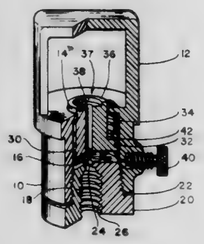
around the inner periphery of the cylindrical member concentrically of said axis.

3,430,493
PORTABLE BALL-DRIVING PRACTICE RANGE
Daniel L. Wall, Sr., 183 Beulah Ave., Athens, Ga. 30601
Filed Jan. 24, 1966, Ser. No. 522,730
U.S. Cl. 73—379 **6 Claims**
Int. Cl. G01l *5/06*



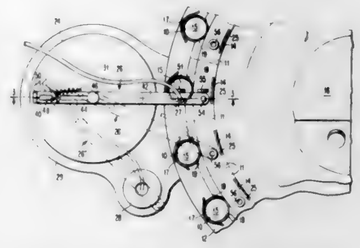
A practice device for use in sports which requires driving a ball, where a tethered ball is used to measure the potential distance and angular direction of flight of the driven ball had it not been tethered.

3,430,494
PNEUMATIC CLAMP
Denzel J. Dockery, G–4142 Fenton Road, Flint, Mich. 48507
Filed Oct. 9, 1967, Ser. No. 673,662
U.S. Cl. 73—420 **7 Claims**
Int. Cl. G01l *19/06*



A pneumatic clamp having a hollow body and an arm designed to embrace an outlet valve of a gas tank between the arm and body. A piston in a cylinder of the body has a bore through it to connect pressure from the outlet valve to the interior of the cylinder. Pressure within the cylinder forces the piston into a sealing contact with the outlet of the embraced valve. The cylinder communicates with a gauge to measure the pressure. A bleed valve in the side of the body releases the pressure in the cylinder when it is desired to detach the clamp from the outlet valve after this valve is closed.

3,430,495
LIQUID SAMPLE SUPPLY APPARATUS
Helmut W. Bürge, Mountain View, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 22, 1966, Ser. No. 581,219
U.S. Cl. 73—423 **6 Claims**
Int. Cl. G01n *1/60*



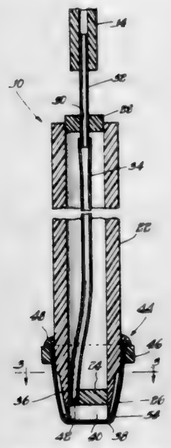
An apparatus to supply liquid samples sequentially to an analyzer. The samples are contained in a series of cups mounted upon a turntable. In the present disclosure the turntable rotates at a uniform speed without stopping. The liquid take off tube is mounted on an arm which slides and pivots in a horizontal plane so that it remains engaged with each sample cup during the sample taking period.

3,430,496
CONTAMINATION SAMPLER
Stacy C. Swanberg, Ralston, Nebr. (5419 W. 28th St., Topeka, Kans. 66614), and Donald C. Bohlsen, 3717 N. 85th Ave., Omaha, Nebr. 68134
Filed Mar. 27, 1967, Ser. No. 626,670
U.S. Cl. 73—425 **2 Claims**
Int. Cl. G01n *1/00*



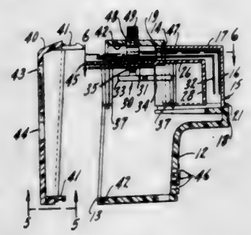
The contamination sampler disclosed in this application provides a convenient means for checking the radiation level of physical facilities in which radiation contamination is a constant threat. The sampler provides an efficient means by which "swipe" samplings; that is, rubbing an absorbent material over a surface, are taken and preserved for future analysis.

3,430,497
FILTER PROBE
Francis J. Tenczar, Chicago, Ill. (P.O. Box 919, Evergreen Park, Ill. 60642)
Filed May 3, 1967, Ser. No. 635,782
U.S. Cl. 73—425.6 **3 Claims**
Int. Cl. G01n *1/14*



A microanalytical sampling device having a submersible chamber covered on one side by a filter and opening into a fluid-withdrawing passageway through an aperture of lesser area than the filter.

3,430,498
INSTRUMENT CASE CONSTRUCTION
Clarence J. Goodwin, La Salle, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 26, 1967, Ser. No. 633,848
U.S. Cl. 73—431 **4 Claims**
Int. Cl. G01p *1/02*



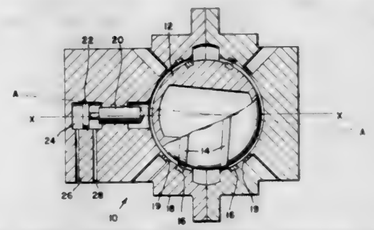
A housing for instruments in which the parts simply snap-fit together. The mechanism enclosed within the housing is mounted on a dial plate which is slidably mounted within a pair of guide members projecting from the walls of the housing.

ERRATUM

For Class 74—5 see:
Patent No. 3,430,276

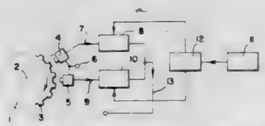
3,430,499
FREE ROTATING GYRO ALIGNMENT APPARATUS
Robert J. G. Craig, Malibu, Calif., assignor to Teledyne Systems, Inc., Hawthorne, Calif.
Filed Oct. 20, 1965, Ser. No. 498,271
U.S. Cl. 74—5.1 **5 Claims**
Int. Cl. G01c *19/24*

An alignment system for use with free rotating, fluid supported gyros employs a pin coincident with a predetermined alignment axis, which is selectively energized in response to applied signals. Appropriate take offs sense



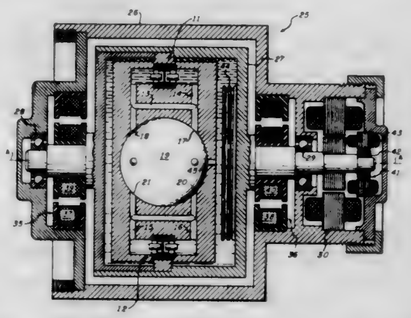
deviation of the rotational axis of the alignment axis, in response to which the rotor can be realigned.

3,430,500
ROTATION-RESPONSIVE VOLTAGE SOURCE
Carl-Erik Granqvist, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden
Continuation-in-part of application Ser. No. 247,723, Dec. 27, 1962. This application Feb. 3, 1966, Ser. No. 524,756
Claims priority, application Sweden, Jan. 22, 1962, 702/62
U.S. Cl. 74—5.4 **6 Claims**
Int. Cl. G01c *19/54, 19/28*



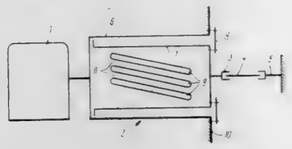
A speed control arrangement for a slowly rotating member includes a toothed wheel and cooperating pick-off for producing voltages in phase quadrature. A constant carrier frequency is modulated by each of the pick-offs with a frequency proportional to the speed of rotation of the wheel. The modulated signals are further individually modulated by the phase quadrature outputs of a further reference frequency source. The two twice modulated carrier frequency components are combined to produce a control signal indicative of both the speed and direction of rotation of the wheel.

3,430,501
COMPENSATION APPARATUS FOR INERTIAL DEVICES
Willis G. Wing, Glen Head, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,771
U.S. Cl. 74—5.6 **8 Claims**
Int. Cl. G01c *19/28*



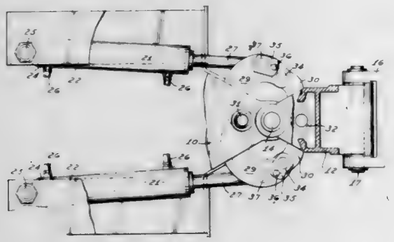
A fluid rotor gyroscope having apparatus that compensates for undesirable effects due to angular acceleration and angular vibration.

3,430,502
MECHANISM CONVERTING TORSIONAL VIBRATION INTO LINEAR ONE
Eduard Yakovlevich Filatov, Ulitsa Vernadskogo 59, kv. 100, and Vadim Eduardovich Pavlovsky, Vinogradny pereulok 8, kv. 6, both of Kiev, U.S.S.R.
Filed July 20, 1967, Ser. No. 654,896
U.S. Cl. 74—89 **2 Claims**
Int. Cl. F16h *29/02*



A device to change torsional vibration to axial vibration comprising two nested cylinders one end of the inner cylinder being connected to a chuck to hold the workpiece to which axial vibration is to be transmitted, and being constrained against rotation. The other end of this cylinder being secured to the adjacent end of the outer cylinder. The end of the outer cylinder that is nearest to the chuck being fixed to the machine, each of the cylinders being provided with parallel helical slits defining elastically deformable areas, the helical slits in the two cylinders having equal pitch but in opposite sense so that, as the ends of the cylinders that are secured together are oscillated the chuck is caused to vibrate axially.

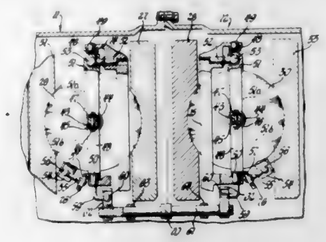
3,430,503
BACKHOE SWING MECHANISM
Harry A. McLaughlin, Lathrup Village, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,137
U.S. Cl. 74—105 **5 Claims**
Int. Cl. F16h *21/44*



A backhoe swing mechanism comprises a pair of double acting hydraulic cylinders mounted on the main frame and linkage connecting each cylinder with the swing frame. Each connecting linkage consists of a first link pivoted to the main frame and a second link extending between the first link and the swing frame.

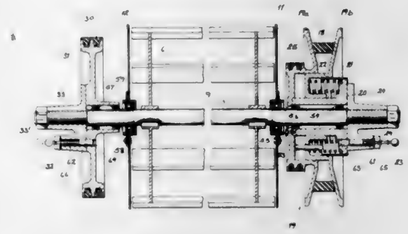
3,430,504
TRANSMISSION
Frank Dickenbrock, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,682
U.S. Cl. 74—200 **8 Claims**
Int. Cl. F16h *15/08*

1. In a transmission, a housing, first and second spaced support spiders grounded to said housing, first and second friction roller units, said friction units each including a power input race, a power delivery race and a friction roller for transmitting torque between said races, the power input races being disposed adjacent each other and intermediate said spiders, common means for driving both input races disposed intermediate said input races, a support sleeve supported in both of said spiders and extending axially through said spiders toward said power delivery races, respectively, an input race support sleeve rotatably supported upon said first-mentioned support sleeve and positioned between said spiders and beneath said input races, a power delivery shaft driven by both of said power delivery races and supported for rotation within said first-mentioned support sleeve, a roller carrier for



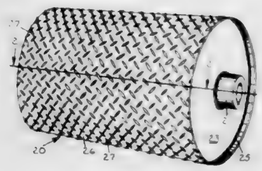
rotatably supporting the roller of each of said units, respectively, a mooring mast supported in each of said spiders, respectively, means forming a swivel connection between each of said carriers and its respective mooring mast, a cradle supported in each of said spiders, respectively, for rotation about the longitudinal axis of said cradles, respectively, a control arm carried by each of said cradles, respectively, said control arms operatively connecting said respective cradles to said carriers, respectively, for controlling the position of said carriers in response to rotation of said cradles, and common means for simultaneously rotating said cradles to control the position of both of said carriers.

3,430,505
VARIABLE-SPEED DRIVE FOR AGRICULTURAL IMPLEMENT
Klaus Oliva, Neustadt, Saxony, Christian Noack, Guttau, and Gotthard Lange, Lobau, Germany, assignors to VEB Kombinat Fortschritt, Neustadt, Saxony, Germany, a corporation of Germany
Filed June 7, 1966, Ser. No. 555,814
U.S. Cl. 74—230.17 **6 Claims**
Int. Cl. F16h *55/56*



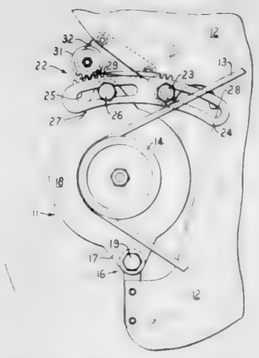
Variable speed drive for the beater drum of a threshing machine in which speed-reducing transmissions are connected by a clutch with a variable-speed Reeves pulley by selectively operable clutches adapted to drive the shaft of the machine directly or via the transmission.

3,430,506
DRIVING PULLEY FOR A BELT CONVEYOR
Guthrie B. Stone, Honeoye, N.Y., assignor to Stone Conveyor Company, Inc., Honeoye, New York
Filed June 13, 1967, Ser. No. 645,696
U.S. Cl. 74—230.5 **3 Claims**
Int. Cl. F16h *55/38*



An unlagged conveyor belt pulley having a metallic driving surface with integrally formed projections.

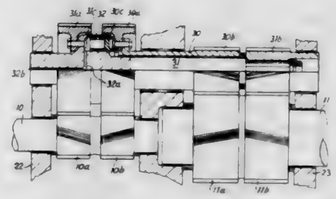
3,430,507
APPARATUS FOR POSITIONING A BELT DRIVEN GENERATOR
Paul L. Hurst, Canton, and Joseph Oswald, Tremont, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 10, 1967, Ser. No. 629,553
US. Cl. 74—242.15 **4 Claims**
Int. Cl. F16h *7/10*



Apparatus for positioning a tensioning member against a flexible continuous drive means to provide proper tension in the drive means. Pinion and rack means operable to vary the position of the tensioning member to apply a preselected tensioning force against the drive means. Locking means operable to maintain the preselected tensioning force of the tensioning member against the drive means.

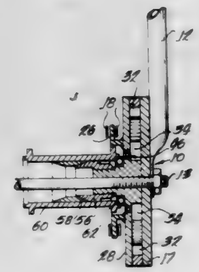
3,430,508
POWER TRANSMISSION GEARING
Joseph Albert Pope, Bramhall, William Lowe, Dukinfield, and Geoffrey Hender Stuart Ellis, Wilmslow, England, assignors to Mirrlees National Limited, a British corporation
Filed Feb. 28, 1967, Ser. No. 623,794
Claims priority, application Great Britain, Feb. 28, 1966, 7,466/67
U.S. Cl. 74—410 **15 Claims**
Int. Cl. F16h *57/08*

Power transmission gearing comprising two coaxial common gear members coupled by other gear members to form a plurality of parallel gear trains wherein some of the other gear members are arranged in a coaxial group of at least two axially movable gear members and embodying helical gears whereby the working load creates opposed axially directed forces between the gear members



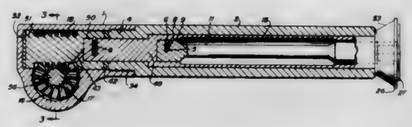
of each group to provide a reaction force opposed to the original axially directed force.

3,430,509
DRIVE ASSEMBLY
Alexander Couris, 11 S. Milwaukee Ave., Wheeling, Ill. 60090
Filed May 9, 1967, Ser. No. 638,193
U.S. Cl. 74—413 **9 Claims**
Int. Cl. F16h *1/20*



A drive assembly for a chain driven cycle having a sprocket which is actuated by the chain and which has an internally toothed gear that drives an external gear through a plurality of idler gears. The external gear is fixed to, and rotates with, a coaster of a conventional coaster brake system that actuates the drive wheel of the cycle.

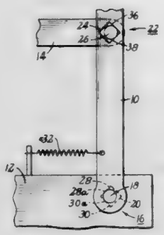
3,430,510
ANGLE HEAD EXTENSION FOR WRENCHES
Otto Hendrickson, P.O. Box 5316, Canyon Crest Station, Riverside, Calif. 92507
Filed Aug. 15, 1967, Ser. No. 660,782
U.S. Cl. 74—425 **10 Claims**
Int. Cl. F16h *1/20*



Two helical gears are integral with a shaft, one end of which terminates in a square portion for the receipt of socket attachments. The gears are maintained in axial spatial relation to each other and angularly related to align each tooth on each of the gears with a corresponding tooth on the other gear along the same helical path. The helical gears are driven by a worm-screw gear with an axis oriented perpendicular to the axis of the aforementioned shaft and held in meshing engagement with the helical gears. One end of the worm screw gear abuts an end of a hollow housing along a thrust bearing surface while the other end of the worm screw is terminated

along the interior length of the housing against an interiorly located bearing abutment. This end of the worm screw contains a square or polygonal cavity into which mates a squared or polygonal shaft portion of a rigid shaft coaxially positioned within the hollow housing which forms a handle for manipulation of the extension. Alternatively, a flexible or twistable shaft may be employed in lieu of the rigid shaft. Further, a concentric hollow shaft and flexible shaft may be employed in the housing with hollow shaft drivingly engaging the worm screw and the flexible shaft drivingly engaging the hollow shaft adjacent the worm screw thereby enabling the torque exerted by the extension to be measured by the use of a dial and pointer gauge associated with the ends of the hollow shaft and flexible shaft remote from the worm screw by measuring the amount of twist displacement of the flexible shaft with respect to the hollow shaft to which it is connected. Thus, the angle attachment permits fastening of a bolt orientated perpendicular to the housing length and further allows the user to measure the torque applied to a fastener. Each type of shaft or shaft assembly has a socket in the outer end thereof for driving engagement with a wrench or another extension.

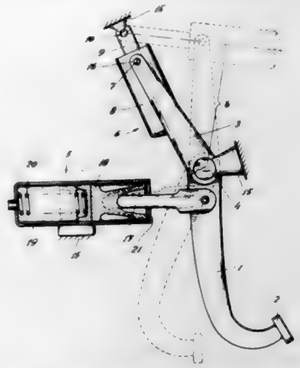
3,430,511
LINKAGE ARRANGEMENT FOR INSTRUMENTATION APPARATUS
Hoel L. Bowditch, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass.
Filed June 6, 1966, Ser. No. 555,388
U.S. Cl. 74—469 **1 Claim**
Int. Cl. G05g *1/00*



A motion-transmitting linkage arrangement for use in industrial process instruments such as a chart recorder or the like, the linkage arrangement providing reduced backlash effects so as to assure accurate motion transmittal, the linkage comprising a plurality of elongate elements interconnected serially by pivot means arranged to accommodate motion in a predetermined common plane, each pivot means including a circular pin on one element fitted into a square hole in the next element, there being secured to one element a spring to urge that element in a direction to press the pins at the ends of that element against two adjacent side walls of the square hole engaged by those pins.

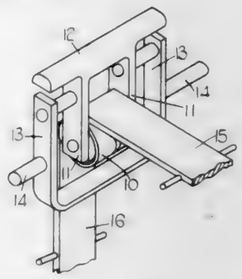
3,430,512
CLUTCH ACTUATING MECHANISM
Felix Wössner, Schweinfurt am Main, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt am Main, Germany
Filed Apr. 28, 1967, Ser. No. 634,596
Claims priority, application Germany, May 14, 1966, F 49,210
U.S. Cl. 74—512 **8 Claims**
Int. Cl. G05g *1/14*

A pneumatic or hydropneumatic auxiliary spring is interposed between the pedal lever of a clutch actuating mechanism and the supporting car body in such a manner that the spring initially slightly resist clutch disengaging movement of the lever, but thereafter assists such movement with a torque which increases with displacement



of the lever from its normal inoperative position. A valved throttling passage in a piston of the spring prevents sudden clutch engagement.

3,430,513
DEVICES FOR TRANSLATING FORCES
Owen Napier Lawrence, Wimbledon, London, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed July 5, 1967, Ser. No. 651,170
U.S. Cl. 74—519 **1 Claim**
Int. Cl. G05g *1/04*

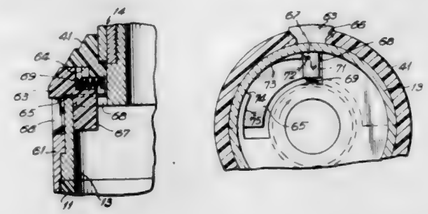


A device for translating forces comprising levers acting upon an element so as to transmit forces thereto, the element being mounted upon a fixed body through pairs of arms, one lever having applied thereto a force and in addition a further force which is a proportion of the force applied to other lever.

3,430,514
SWITCH FOR BATTERY HANDLE
Irving A. Speelman, Roslyn Heights, N.Y., assignor to Propper Manufacturing Co. Inc., Long Island City, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 576,339, Aug. 31, 1966. This application Aug. 7, 1967, Ser. No. 662,264
U.S. Cl. 74—527 **10 Claims**
Int. Cl. G05g *5/00*

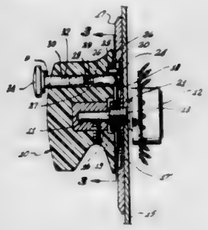
A power controlling switch for a battery handle having at least two "on" positions and one "off" position in which a releasable positive action detent prevents inadvertent switch advancement away from the "off" position to the first of the "on" positions and away from any "on" position to a succeeding "on" position without hindering direct

return to the "off" position from any of the "on" positions. The positive action detent also limits switch advancement on each operation thereof to a single indexing cycle



as the switch is moved away from the "off" position toward any succeeding "on" position to prevent inadvertent bypass of any "on" position in the advancing direction.

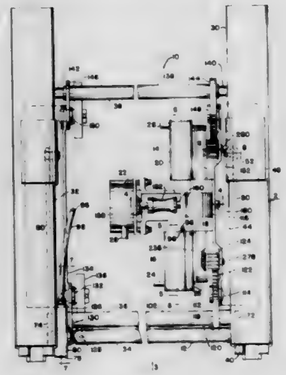
3,430,515
ADJUSTMENT KNOB FOR ELECTRIC DEVICE
James F. Lawrence, Jr., Santa Ana, Calif. (2952 Randolph St., Costa Mesa, Calif. 92626)
Filed Nov. 14, 1966, Ser. No. 594,246
U.S. Cl. 74—527 **7 Claims**
Int. Cl. G05g *1/12, 5/06*



A knob which can be mounted on the shaft of the tuning device, also includes structure whereby it provides detent operation without any external structure.

3,430,516
SIX-WAY SEAT ADJUSTER
Joseph Pickles, Bloomfield Hills, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan
Original application Aug. 23, 1965, Ser. No. 481,548. Divided and this application Aug. 18, 1967, Ser. No. 663,925
U.S. Cl. 74—665 **8 Claims**
Int. Cl. F16h *37/06*

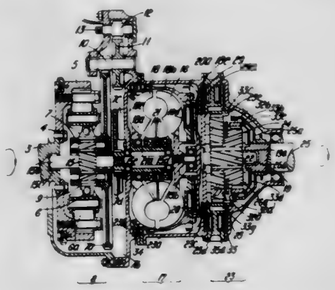
Drive mechanism for a seat adjuster assembly comprising a reversible drive motor, drive shaft structure connected to the drive motor including a resilient portion, a horizontal drive structure including a rotatably mounted output shaft, a sleeve rotatably mounted on the output shaft, a pinion secured to the sleeve for rotation therewith engaged by the drive shaft structure, a clutch member secured to the output shaft for rotation therewith, a clutch collar positioned on the sleeve for movement axially thereof but restrained against rotation with respect thereto, and solenoid structure engaged with said clutch collar for selectively moving the clutch collar longitudinally of the sleeve while allowing a relative rotation between the clutch collar and solenoid structure, front and rear vertical drive structure, each including a rotatably mounted output shaft having a worm portion engaged with a worm gear, which worm gear has a pinion portion, a clutch member secured to each of the output shafts for rotation therewith, a sleeve rotatably mounted on one of the output shafts between the clutch members, a pair of clutch collars positioned on the sleeve for movement axially with respect thereto but restrained against relative rotation engageable with said clutch members and separate solenoid structures engaged with said clutch collars for moving the clutch collars axially of the sleeve while allowing relative rotation between the clutch



collars and solenoid structures and worm gear means secured to the sleeve for rotation therewith and engaged with the drive shaft structure.

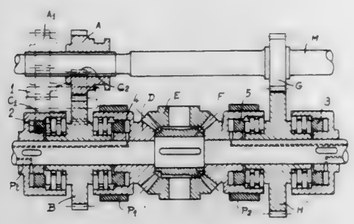
Mechanical structure for providing six-way adjustment, including separate or simultaneous vertical movement of the front and rear and horizontal movement, of a seat is also disclosed in combination with the drive mechanism.

3,430,517
VEHICLE TRANSMISSIONS
Paul Wilhelm Glamann, 5A Lehmbacher Weg, D–5062 Forsbach, Cologne, Germany
Filed Dec. 29, 1966, Ser. No. 605,655
Claims priority, application Germany, Jan. 7, 1966, G 45,662/66; Mar. 17, 1966, G 46,326/66
U.S. Cl. 74—674 **8 Claims**
Int. Cl. F16h *37/06*



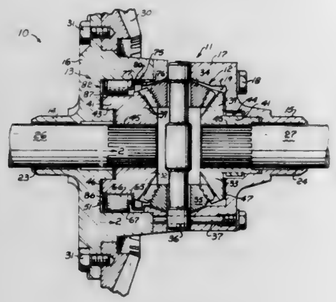
A vehicle transmission and control therefor having a primary planetary gear set with a first output connected to drive an engine supercharger and a second output connected through a hydrodynamic torque converter to drive a second planetary gear set having two reduced ratio speeds in one direction of rotation and one ratio in the opposite direction. A hydrodynamic brake is provided on the output of the torque converter as is a clutch for locking up the converter.

3,430,518
DIFFERENTIAL-ACTION CHANGE-SPEED MECHANISMS
Jean Auriol, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed May 12, 1967, Ser. No. 638,095
Claims priority, application France, May 31, 1966, 63,485
U.S. Cl. 74—705 4 Claims
Int. Cl. F16h *37/06*



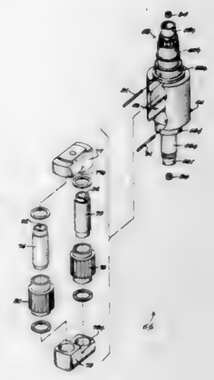
Change-speed mechanism of the type comprising a primary shaft provided with pinions rotatably driven from said shaft, and a secondary shaft provided with free pinions adapted to mesh with the pinions of said primary shaft and be locked with respect to said secondary shaft by means of coupling devices, said change-speed mechanism being characterised in that said secondary shaft is provided with a differential action device consisting of a planet-wheel carrier secured to said secondary shaft and of a pair of free sun gears adapted to be either locked against rotation by means of braking members, or locked to said free pinions of said secondary shaft by means of coupling devices.

3,430,519
DIFFERENTIAL WITH TEMPERATURE COMPENSATING CLUTCH
Daniel W. Roper, Rochester, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 17, 1967, Ser. No. 609,932
U.S. Cl. 74—711 14 Claims
Int. Cl. F16h *1/44*



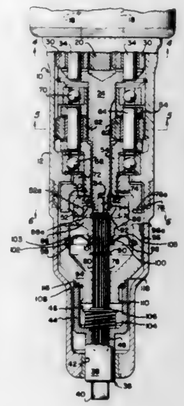
This application discloses a differential wherein a clutch is operative to drivingly connect the differential gear carrier with one of the side gears of the differential in response to relative rotation therebetween. The clutch is actuated to drivingly connect the carrier and side gear by a viscous shear fluid coupling which acts in opposition to a bimetal spring which resists actuation of the clutch by the viscous shear coupling.

3,430,520
SPUR DIFFERENTIAL UNIT
Charles J. Gantzer, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Original application Dec. 28, 1964, Ser. No. 421,483, now Patent No. 3,365,981, dated Jan. 30, 1968. Divided and this application July 28, 1967, Ser. No. 656,828
U.S. Cl. 74—714 6 Claims
Int. Cl. F16h *1/42*



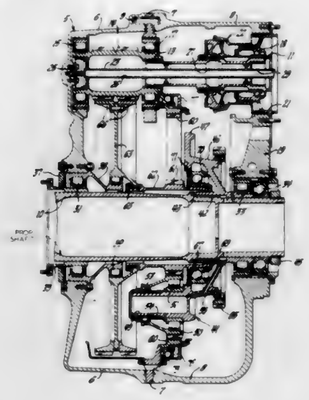
A gear differential having interengaging elongated pinions which are rotatably mounted in supporting blocks, the pinions and the blocks defining a unit which is releasably secured in a diametrical cavity in a carrier shaft by centrally disposed pins in the carrier shaft releasably engaging the support blocks.

3,430,521
POWER-OPERATED TOOL HAVING TWO-SPEED ROTARY OUTPUT
Melvin L. Kulman, Sayre, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 19, 1967, Ser. No. 647,144
U.S. Cl. 74—750 16 Claims
Int. Cl. F16h *3/52*



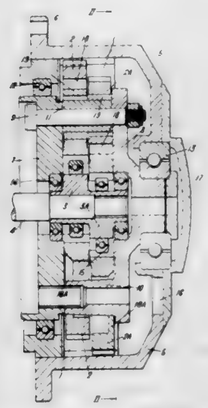
A power-operated tool including a pair of alternatively engageable clutches which, when alternatively engaged, transmit different speed rotation to a driven element, and resilient means operable to cause alternative engagement of the clutches.

3,430,522
REDUCTION GEAR
Cyril M. Hawkins, Indianapolis, Ind., and Truman R. Richardson, Newton Solney, England, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,608
U.S. Cl. 74—801 7 Claims
Int. Cl. F16h *1/28*



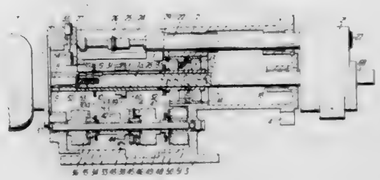
A reduction gear for turboprop engines includes a first gear reduction between an input shaft and the sun gear of a planetary gear. The planet gear carrier is mounted on the propeller shaft, and a non-rotating ring gear mounted in the reduction gear case cooperates with the planet gears. The case is of a light alloy having a substantially different coefficient of thermal expansion from the shafting. The shafts are mounted in radial bearings at both ends of the case but in thrust bearings only at the rear end away from the propeller.

3,430,523
GYRATORY GEARING
Henry E. Merritt, Claverdon, England, assignor to Merritt & Company (Engineering) Limited, Claverdon, England, a British company
Filed Sept. 20, 1967, Ser. No. 669,198
U.S. Cl. 74—805 9 Claims
Int. Cl. F16h *1/28*



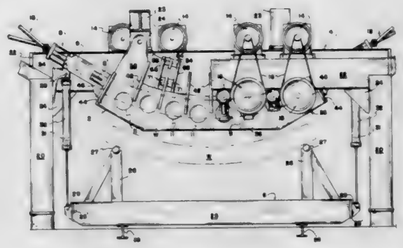
A motorised ground-wheel is driven through reduction gearing of the gyratory type in which an internally toothed annular gear secured to the wheel is driven by a pair of mutually angularly displaced planet gears each of which is mounted eccentrically with respect to the annular gear. The planet gears are driven by eccentrics rotatable about the axis of the annular gear and are constrained to gyrate by means of improved guide pin and roller assemblies which pass through circular apertures in the planet wheels.

3,430,524
DRILLING AND LIKE HEADS
Alan P. L. Thomas, Marston Hall, Marston Green, Warwickshire, England
Filed Sept. 9, 1965, Ser. No. 486,042
U.S. Cl. 77—32.8 7 Claims
Int. Cl. B23b *39/10, 47/18*; F16d *27/08*



A drilling or like head comprising a tool-driving spindle having a screw-threaded portion disposed within and coaxial of, first, a nut with which it meshes and, secondly, a motor-driven sleeve with which it is rotatable and in which it is axially displaceable, and clutch-controlled gearing driven by the sleeve and adapted to rotate the nut in the same direction as but at different speeds from the spindle so as to advance the latter rapidly or slowly, or to terminate the rotation of the nut so as to retract the spindle.

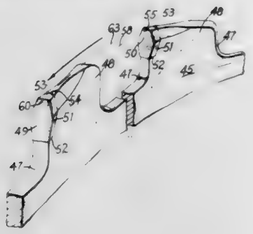
3,430,525
WORKPIECE POSITIONING AND SECURING DEVICE
Joseph E. Powers, Napa, and Dennis W. Sattler, Vacaville, Calif., assignors to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Mar. 27, 1967, Ser. No. 626,134
U.S. Cl. 77—63 17 Claims
Int. Cl. B23b *47/28, 39/16*



A workpiece positioning and securing device comprised of an open ended form and a series of workpiece engaging grapple means specially arranged on said form. The workpiece engaging grapple means are specially oriented on the open ended form in angularly disposed relationship to each other whereby as the workpiece is inserted by appropriate means into the form through the open end thereof one of the grapple means can be operated to loosely hold the workpiece while another of the grapple means can be operated to move the workpiece so as to properly position the workpiece in the form. Thereafter, both grapple means are operated

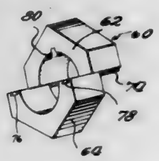
to firmly grip and clamp the workpiece to the form in the finally desired position whereby the workpiece can then be drilled or welded, etc.

3,430,526
SHELL CUTTER
Frank P. Valenziano, Summit, N.J., assignor to Interpace Corporation, a corporation of Delaware
Original application June 30, 1965, Ser. No. 468,302, now Patent No. 3,364,939, dated Jan. 23, 1968. Divided and this application Sept. 19, 1967, Ser. No. 668,878
U.S. Cl. 77—69 **3 Claims**
Int. Cl. B23b *51/04;* **B28d** *1/00*



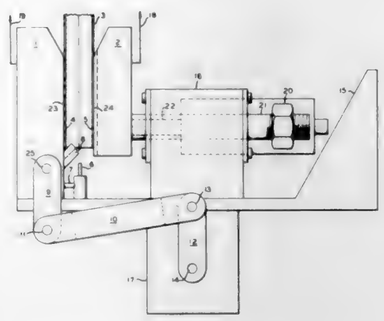
A shell cutter comprising a hollow cylindrical body having cutting teeth with square cutting edges substantially perpendicular to the rotational axis of the cutter and a side cutting edge at each side of each of the teeth, each side cutting edge of a tooth making an obtuse angle with the square cutting edge thereof, said cutting teeth including two sets of cutting teeth, the square cutting edges of one of the sets being shorter than the square cutting edges of the teeth of the other set, the teeth of said one set mounted on the shell to position the square cutting edges thereof axially forwardly of the square cutting edges of the teeth of said other set, said teeth arranged around the shell with a tooth of one set disposed intermediate teeth of the other set.

3,430,527
SPLIT NUT ADAPTER TOOL
Albert Romak, 429 Major Drive, Northlake, Ill. 60164
Filed June 7, 1967, Ser. No. 644,225
U.S. Cl. 81—90 **6 Claims**
Int. Cl. B25b *13/00, 13/02, 13/56*



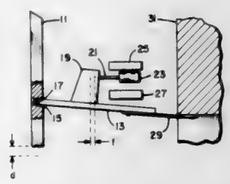
A split-nut adapter tool for adjustment of a longitudinally split sleeve engaging a pair of co-axial, spaced apart threaded rods at the ends thereof such that rotation of the sleeve will vary the axial spacing of the rods one relative to the other, the tool having a pair of separable body portions and a cooperating dovetail joint comprising locking flange and slot portions to enable assembly of the body portions about the collar, and a radially disposed key formation extending from the inner surface of one body portion of the tool to engage the split in the collar. The tool has an external configuration suitable for engagement by means of a standard wrench for rotational adjustment of the collar.

3,430,528
BAG NOTCHING APPARATUS
William R. Eddy, Kansas City, Kans., Lawrence D. Phillips, Bartlesville, Okla., and Elmer C. Beason, Cincinnati, Ohio, assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,869
U.S. Cl. 83—169 **8 Claims**
Int. Cl. B26d *7/08, 7/14;* **B23d** *21/14*



Bag notching apparatus comprising means for spreading the sides of a bag at its mouth and cutting means adapted to engage complementary depressions in one of the spreading means after the sides have been spread apart.

3,430,529
PUNCH TRAVEL DETECTION ARRANGEMENT
William H. McMonagle, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631, 485
U.S. Cl. 83—522 **3 Claims**
Int. Cl. B26d *7/28;* **G06k** *1/04, 1/14*

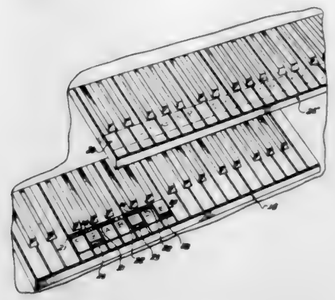


The present invention provides a plurality of signal generating means with one each assigned to each punching mechanism in the system. Each signal generator generates a signal whose amplitude is proportional to the distance that the punch travels, and accordingly when a signal is detected as being in excess of a predetermined amplitude the system interprets the signal to mean that the punch has punctured the web material.

3,430,530
MUSIC SYSTEM
Gerard R. Grindinger, Northridge, Calif., assignor to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 350,349, May 9, 1964. This application Dec. 5, 1967, Ser. No. 688,267
U.S. Cl. 84—471 **3 Claims**
Int. Cl. G09b *15/02*

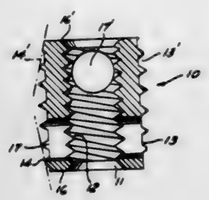
A music system instrument having chordally related pluralities of keys illuminable from beneath to glow in

the same color, keys of different chords being illuminable in different colors. The musical instrument may be played in conjunction with a musical score having horizontally extending color areas corresponding to the colors of the chords. The color areas extend for the duration of the



interval during which the chord corresponding to that color is to be sounded.

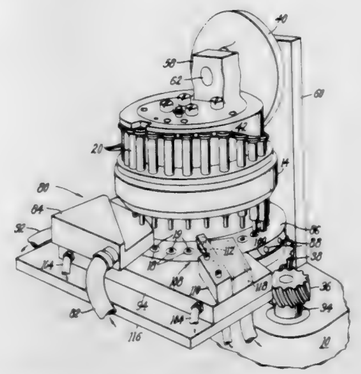
3,430,531
SELF-TAPPING INSERT
Robert W. Bosse, Englewood Cliffs, N.J., assignor to Groov-Pin Corporation, Ridgefield, N.J., a corporation of New York
Filed Oct. 21, 1966, Ser. No. 588,392
U.S. Cl. 85—47 **2 Claims**
Int. Cl. F16b *33/02, 33/06, 25/00*



This invention relates to the art of self-tapping inserts and more particularly to an insert adapted to self-tap screw threads into brittle material into which it is to be anchored comprising a cylindrical sleeve having an axial bore therethrough with an internally threaded surface and having an external surface formed with helically extending lower and upper tapping threads with seating threads intervening between said tapping threads, the sleeve having thread cutting interruptions near each end extending through the associated tapping threads.

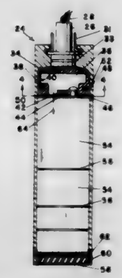
3,430,532
MEANS FOR MAKING PELLETS, PARTICULARLY EXPLOSIVE PELLETS
Jean K. Campbell, Portland, Oreg., assignor to USM Corporation, Boston, Mass., a corporation of New Jersey
Filed July 13, 1967, Ser. No. 653,136
U.S. Cl. 86—1 **14 Claims**
Int. Cl. G09b *15/02*

Apparatus and process for continuously making fibrous articles, especially explosive pellets, of precisely uniform size and weight. A nonexplosive slurry carrying the explosive material is vacuum fed into die cavities, the solid material in the slurry is entrapped therein by being caused to do its own filtering, next trimmed to form intermediate slugs of predetermined size and weight, then



further compressed gradually to substantially final form, and lastly ejected from the respective dies.

3,430,533
AIRCRAFT DISPENSER POD HAVING SELF-SEALING EJECTION TUBES
Harry T. Kifor, Canton, Walter F. Sprick, Akron, Lester W. Musser, Barberton, and Charles R. Levesque, Cuyahoga Falls, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,150
U.S. Cl. 89—1.5 **4 Claims**
Int. Cl. F41f *5/02*

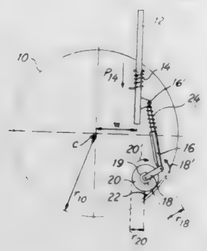


A dispensing pod for supersonic aircraft having self-sealing ejection tubes. Specifically, the piston associated with the ejection tube has a self-locking ring that locks the piston at the open end of the ejection tube after the material from the tube has been ejected so that the blunt end of the piston aligns with the aerodynamic skin of the pod to give good aerodynamic flow properties. The locking ring also limits the movement of the piston down the ejection tube under a gas piston application force.

3,430,534
DEVICE FOR COMPENSATING RECOIL TORQUES IN TANK TURRETS
Sven Birger Ågren, Ornskoldsvik, Sweden, assignor to Aktiebolaget Hagglund & Soner, Ornskoldsvik, Sweden, a corporation of Sweden
Filed Oct. 24, 1967, Ser. No. 677,693
Claims priority, application Sweden, Oct. 27, 1966, 14,743/66
U.S. Cl. 89—42 **4 Claims**
Int. Cl. F41f *19/06*

The recoil torque of a tank turret the gun or cannon of which is excentrically mounted in compensated by means of a swingable arm connected with the cannon by

a telescoping rod or a torsion spring rod, and also connected through a coupling with a driving member such as

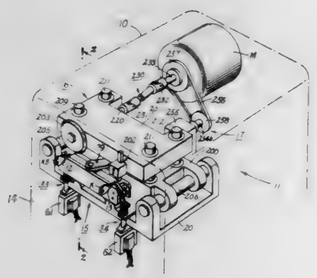


a rotary gear wheel which meshes with a fixed gear crown or similar member.

3,430,535
KEY CUTTER

Walter R. G. Haggstrom, Westminster, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts

Filed Aug. 25, 1961, Ser. No. 133,957
U.S. Cl. 90—13.05 **4 Claims**
Int. Cl. B23c *3/28, 3/35;* **B25b** *1/02*



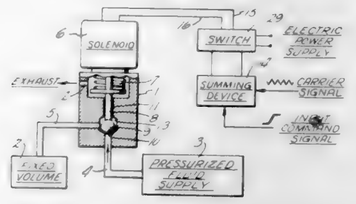
An automatic key cutter for forming cuts in a key blank which correspond with the cuts of a patterned key, including clamp means for holding the blank and the key, a tracer and cutter assembly for following the contours of the key and duplicating such contours in the blank, characterized by series, circuit controlled automatic means for initiating the cutting cycle, the circuit including as conductor portions the bodies of the blank and the key.

3,430,536
TIME MODULATED PNEUMATICALLY ACTUATED CONTROL MECHANISM

John A. Oelrich, Granby, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware

Filed Mar. 21, 1967, Ser. No. 624,875
U.S. Cl. 91—47 **11 Claims**
Int. Cl. F15b *13/02*

Control apparatus having a time referenced electrical carrier signal combined with a variable electrical analogue input signal to provide a single time modulated pulsed electrical output signal. A solenoid connected to a three port valve with the solenoid actuated by the pulsed output electrical signal to operate the three port valve. The three port valve connected to a pressurized gas supply and a pneumatically compliant actuator assembly where the three port valve is operated by the solenoid at a pulse frequency greater than the initial frequency of the complete control system to thereby produce a substantially nonpulsating pressure that is converted by the actuator into a substantially nonpulsating amplified control force

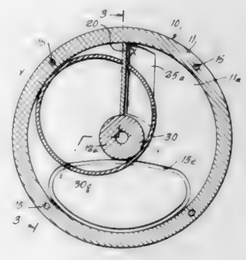


proportional to the variable electrical analogue input signal.

3,430,537
OSCILLATING PISTON METER

Ronald B. Barber, Cheshire, Conn., assignor to Neptune Meter Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 8, 1966, Ser. No. 600,167
U.S. Cl. 91—56 **5 Claims**
Int. Cl. F01c *1/00, 3/00;* **G01f** *3/08*



A fluid meter of the oscillating piston type, including a circularly cylindrical chamber, a circularly cylindrical hub at the center of the chamber, inlet and outlet ports in one or both ends of the chamber, a flow divider separating the inlet and outlet ports and extending between the hub and the chamber wall, a circularly cylindrical piston completely open from end to end and encircling the hub, the piston being slotted from end to end to receive the flow divider, and guide means for the piston, such as pins projecting from both ends thereof and traveling in grooves in both ends of the chamber, the grooves being contoured to maintain the inner surface of the piston in contact with the hub at all positions of the piston, and to maintain the outer surface of the piston in contact with the inner wall of the chamber at all positions of the piston.

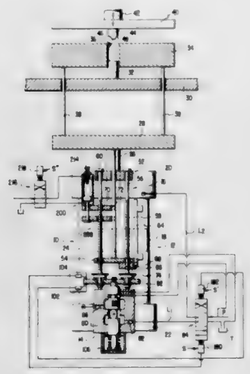
3,430,538
STROKE LIMITING MECHANISM FOR HYDRAULICALLY OPERATED MACHINE

Adolf Weiss, Easton, Pa., assignor to Alpha Press Company, Alpha, N.J., a corporation of New Jersey

Filed June 27, 1967, Ser. No. 649,252
U.S. Cl. 91—361 **13 Claims**
Int. Cl. F15b *13/16, 11/12, 13/042*

A stroke limiting mechanism to enable the movable member of a hydraulically operated machine to be precisely positioned to an accuracy of 0.0005 inch. Hydraulic cylinder and piston means are coupled to the movable member for movement thereof. Flow control means controls hydraulic fluid flow to the hydraulic cylinder and

piston means. An elongated adjustment means carries a pair of stop members which can be relatively adjusted to vary the spacing therebetween. An abutment element carried by the movable member is disposed between the stop members. When the abutment element operatively engages a stop member, the adjustment means is axially displaced to thereby actuate the flow control means which in turn

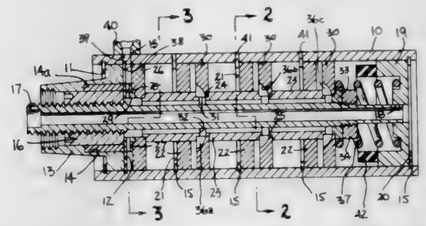


controls hydraulic flow to the cylinder and piston means to stop the movement of the movable member at exactly the predetermined position. An auxiliary stop control means can be coupled with one of the stop members to permit a double stopping of the moveable member. Thus, the moveable member can be stopped in a first predetermined position for a short time interval, then moved to a second predetermined position.

3,430,539
PNEUMATIC TOOL

Richard B. Freeman, Shaker Heights, Ohio, assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 597,997, Nov. 30, 1966. This application Nov. 2, 1967, Ser. No. 680,199
U.S. Cl. 91—411 **3 Claims**
Int. Cl. F15b *11/22, 13/06;* **F01b** *7/04*

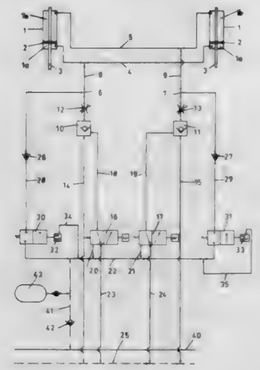


The tool comprises a pressure-holding body in which a plurality of pistons are movably mounted to be displaced as a unit in response to pressurized air directed into the cylinder. Floating baffle plates partition the pressure body into chambers which communicate with individual air ports leading to a common central manifold. The device can be single acting in response to air pressure, with a spring return, or it can be double acting to utilize the air pressure both for advance and retraction of the piston assembly. The device has utilization, for example, as a blind rivet tool or as a clinching tool.

3,430,540
VALVE CONTROL FOR RECIPROCATING PISTON DRIVE WITH RAPIDLY STARTING PISTON STROKE

Alois Peter Linz, Kirkeler Strasse, 6675 Niederwurzbach (Saar), Germany

Filed Oct. 24, 1966, Ser. No. 589,064
U.S. Cl. 91—420 **4 Claims**
Int. Cl. F15b *11/08, 9/17, 13/042*

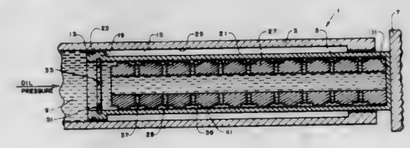


A valve control for a fluid pressure actuated cylinder in which the stroke of the cylinder piston in at least one direction is rapidly started by suddenly unloading the cylinder chamber on one side of the piston only after the cylinder chamber on the other side of the piston is prepressurized to obtain a rapid piston stroke in the direction of the unloaded cylinder chamber.

3,430,541
COMPRESSION ROD ACTUATOR

Robert E. Seamands, Moline, Ill., and Jimmy H. Williams, Bettendorf, Iowa, assignors to the United States of America as represented by the Secretary of the Army

Filed Mar. 28, 1967, Ser. No. 627,252
U.S. Cl. 92—113 **5 Claims**
Int. Cl. F01b *3/00*



The invention is concerned with a compression rod actuator wherein a hollow piston is pressure loaded in compression. A slip-fit, floating member is provided within the hollow piston to add to the column strength thereof without adding to the column load thereby to control excessive buckling stresses of the piston due to extreme axial loading.

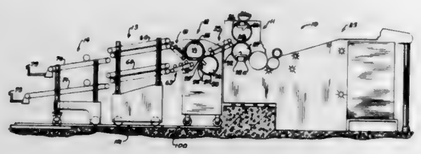
3,430,542
MATERIAL PROCESSING APPARATUS WITH RELATIVELY MOVABLE PROCESSING COMPONENTS

Albert J. Sarka, Fairview Park, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 509,754, Nov. 26, 1965. This application Feb. 24, 1966, Ser. No. 529, 818
U.S. Cl. 93—36 **7 Claims**
Int. Cl. B31b *1/18*

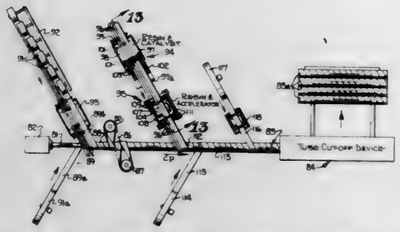
A pair of cylinders define a cutting nip. The cylinders have material engaging portions of plates which are secured to the cylinders and which portions effect cutting

of the material into waste and articles. A stripper mechanism receives the material from the cutting nip and is operable to separate the waste and the articles. The strip-



per mechanism and the rotary cylinders are supported for relative bodily movement to provide for operator access to the cylinders for removing and replacing the plates on the cylinders.

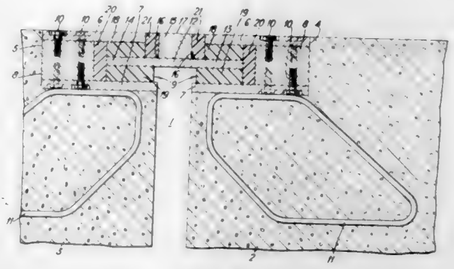
3,430,543
METHOD OF MAKING A WOUND MULTI-PLY PAPER TUBE
McCleery B. Cunningham, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed May 27, 1965, Ser. No. 463,467
U.S. Cl. 93—94 **2 Claims**
Int. Cl. B31c *3/00, 13/00*



A method of making a paper tube by spirally winding a plurality of paper plies on a mandrel with adhesive therebetween and simultaneously winding on the wound paper plies a plurality of plies of paper impregnated with a self-curing resinous material on which are superimposed at least one ply of release material and at least one adhesively coated ply of paper following which the resinous material is permitted to cure to form a tubular core having a hard outer surface when the release material and adhesively coated ply are removed.

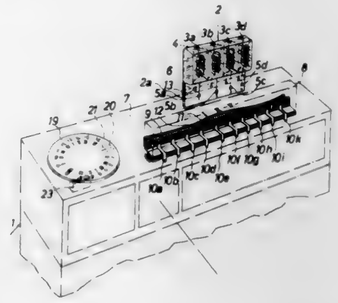
3,430,544
DEVICES FOR SEALING EXPANSION JOINTS IN BRIDGE DECKING
Colin John Berks, London, England, assignor to Expandite Limited, London, England, a British company
Filed Nov. 25, 1966, Ser. No. 596,885
Claims priority, application Great Britain, Dec. 6, 1965, 51,675/65
U.S. Cl. 94—18 **6 Claims**
Int. Cl. E01c *11/10;* **E01d** *19/06*

A device for sealing expansion joints primarily in bridge decking comprises a pair of housings fixed to the decking one on each side of the joint, each housing having in it an open-sided recess with the open sides of the recesses in the two housings directed towards each other. A plate extends across the joint to seal it and has its two opposite side edges held one in each of the recesses, the side edges being sandwiched between layers of rubber or rubber-like material which are held compressed in the recesses to grip the plate and prevent the ingress of dirt or moisture. Movement of the joint is absorbed by distortions of the layers of rubber or rubber-like material, by sliding of the edges of the plate between the



layers of rubber or rubber-like material or by both these occurrences.

3,430,545
PHOTOGRAPHIC CAMERA WITH FLASH UNIT
Richard Wick, Grunwald, near Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Nov. 8, 1966, Ser. No. 592,865
Claims priority, application Germany, Nov. 11, 1965, A 50,758
U.S. Cl. 95—11 **10 Claims**
Int. Cl. G03b *19/04*

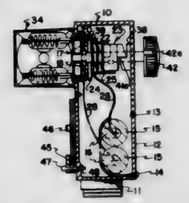


10. In a photographic camera for use with film having $m \cdot n$ frames wherein m and n are whole numbers greater than one and with a built-in or detachable flash unit for use with strip-shaped multiple flash bulb holders having a series of n flash bulbs, in combination, a series of $3n-2$ electrode means each connectable with one of the flash bulbs in a holder, a series of $2n-1$ connections for an equal number of said electrode means, the centrally located group of n successive electrode means being identified by reference symbols and being connectable seriatim into the flash circuit in response to successive manipulations of the film transporting or shutter release means; and frame counter means having a sequence of indicia indicating the serial number of successive film frames and m groups of n symbols each associated with one of said indicia.

3,430,546
MULTI-FLASH, FLASHCUBE ADAPTER ATTACHMENT FOR CAMERAS
Dean A. Holt, 518 19th St., Evanston, Wyo. 82930
Filed Oct. 31, 1966, Ser. No. 590,692
U.S. Cl. 95—11.5 **2 Claims**
Int. Cl. G03b *9/70*

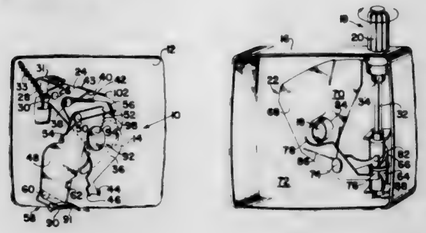
Photographic apparatus comprising a housing having a socket plate to receive a flashcube. Pairs of electrical

contacts are carried by the plate. A cam device fixed to a shaft is provided with non-conductive and conductive portions engageable with the electrical contacts to sequen-



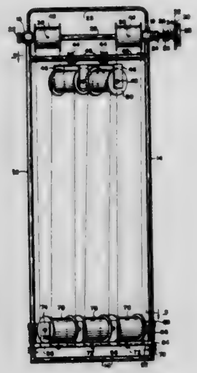
tially connect each pair of contacts into a flash circuit. A reflector fixed to the housing surrounds the socket plate to direct the light.

3,430,547
PHOTOGRAPHIC SHUTTER MECHANISM
Robert L. Norton, Norfolk, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,318
U.S. Cl. 95—60 **12 Claims**
Int. Cl. G03b *9/26*



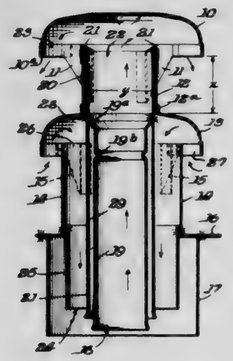
1. A shutter mechanism for photographic apparatus comprising:
- means defining an exposure aperture;
- an opening blade normally blocking the exposure aperture, said opening blade being mounted to pivot on a first pivot axis to unblock the exposure aperture to initiate exposure;
- a closing blade normally unblocking the exposure aperture, said closing blade being mounted to pivot on said opening blade on a second pivot axis spaced from said first pivot axis to close the exposure aperture to terminate exposure;
- spring means for biasing said opening blade toward a light unblocking position and for biasing said closing blade toward a light blocking position;
- first latch means for retentively engaging said opening blade;
- second latch means for retentively engaging said closing blade at a predetermined radial distance from said first pivot axis; and
- an actuating member mounting said opening blade and being mounted on the base member to pivot on a third pivot axis distinct from said first and second pivot axes from a normally closed position over the exposure aperture to a position unblocking the exposure aperture during the exposure interval, whereby rotation of said actuating member to actuate the shutter mechanism draws said opening blade free of said first latch means to initiate exposure and rotation of said opening blade through a predetermined angular displacement draws said closing blade free of said second latch means to terminate exposure.

3,430,548
RACK FOR USE IN DEVELOPING EXCEPTIONALLY WIDE FILM
John L. Jiruska, 530 2nd St., Annapolis, Md. 21403
Filed Sept. 15, 1966, Ser. No. 579,536
U.S. Cl. 95—94 **6 Claims**
Int. Cl. G03d *3/12*



1. A film rack comprising a frame including laterally spaced vertically extending side parts having upper and lower ends, a horizontally extending rotatable shaft adjacent the upper end of said side parts, means for driving said upper shaft, driving spool means carried by said shaft for rotation therewith, upper idler spool means swivelly connected to said frame adjacent the upper end thereof, and lower idler spool means swivelly connected to said frame in vertically spaced relationship below said upper idler spool means, the connections of said idler spool means with said frame being constructed and arranged to enable the respective spool means to freely swivel with respect to each other about individual vertical axes.

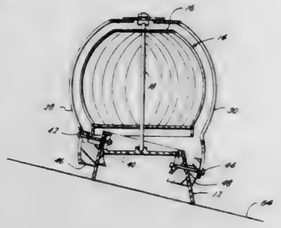
3,430,549
THROUGH-THE-ROOF FLUE AND AIR INTAKE ASSEMBLY
Gerald L. Hershey and Donald A. Johnson, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 13, 1966, Ser. No. 586,422
U.S. Cl. 98—62 **2 Claims**
Int. Cl. F23l *17/04*



A through-the-roof flue and air intake assembly for sealed combustion heaters having concentric air intake and flue exhaust pipes, the flue pipe terminating above

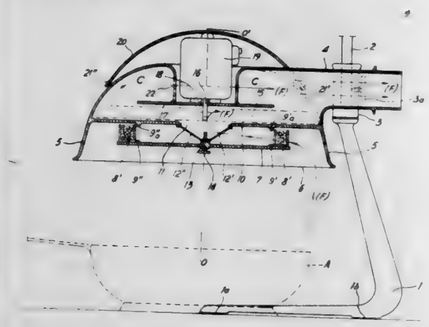
the air intake pipe and both pipes being provided with outwardly-extending caps. The improvement comprises providing an outwardly-exposed section of the flue pipe between the caps where the exposed section has a vertical height of from .5 to 2, or preferably .6 to .9, times its outside diameter. The upper portion of the flue pipe which provides the exposed section can have a larger internal diameter than the portion below the lower cap, the upper portion of the flue pipe preferably providing from 25 to 75% more cross-sectional area than the lower portion thereof.

3,430,550
PLASTIC ROTARY TYPE VENTILATOR
Joel D. Smith, Leslie Clyde Smith, and Leslie Curtis Smith, all of 7425 Victoria, Houston, Tex. 77020
Continuation-in-part of application Ser. No. 548,372, May 5, 1966. This application Oct. 23, 1967, Ser. No. 677,260
U.S. Cl. 98—72 **4 Claims**
Int. Cl. F23l *17/02*



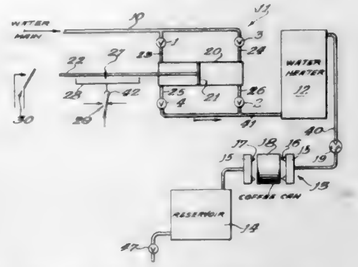
In a rotary ventilator, a turbine is mounted above a draw pipe wherein said turbine rotates on a shaft. The said shaft is supported in bushings at both ends and rotatably positioned by a cross-bar at the lower end. The crossbar is constructed and arranged to pivot and rotate in a plane perpendicular to said draw pipe and the upper bushing is supported by a plurality of external struts. The struts are connected to said draw pipe for pivotal movement of the turbine to thereby position said turbine at an angle to said draw pipe and such that the turbine remains vertical when installed on a roof of no slope or slope of a substantial angle.

3,430,551
PORTABLE MICRO-HOOD
Jean Hauville, 14 Rue des Reculettes, Paris 10, France
Filed May 3, 1967, Ser. No. 635,800
Claims priority, application France, May 9, 1966, 60,806
U.S. Cl. 98—115 **4 Claims**
Int. Cl. F24f *7/06*



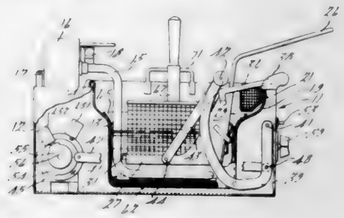
A portable micro-hood comprises a hood and a turbine driven by a motor aspirating gases and vapours. These penetrate in the device by an orifice passing through filters, then are rejected by the turbine in a centrifugal helical movement into an evacuation chamber and into an exhaust integral with a socket which can slide and be blocked at a given height, on a vertical rod prolonging the foot on which is mounted the apparatus. The orifice of the hood can be brought as close as possible to any source of fumes which thus ensure the continuous pick up of the fumes and vapours emitted with the use of less power.

3,430,552
COFFEE MAKING APPARATUS
George B. Renner, Prospect Heights, and Floyd A. Blashfield, Evanston, Ill., assignors to Frank J. Renner, Arlington Heights, and William M. Renner and George B. Renner, Prospect Heights, Ill.
Filed Nov. 8, 1967, Ser. No. 681,419
U.S. Cl. 99—283 **7 Claims**
Int. Cl. A47j *31/00*



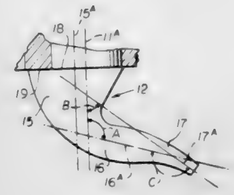
Coffee making apparatus comprises a fluid circuit including a metering device, a water heater, an extractor, and a dispensing reservoir. The can in which the ground coffee is packed constitutes the extracting chamber, and communication with the fluid circuit is made by piercing pins which perforate the can. The metering device comprises a piston in a double ended cylinder having inlet and outlet ports at each end. The movement of the piston and its piston rod actuates switching mechanism which controls solenoid valves associated with the inlets and outlets to effect flow reversal to the cylinder. The movement of the piston rod also actuates a counter switch which controls the number of cycles through a stepping switch and a latching relay, shutting off the flow through the water heater and extractor after a predetermined number of cycles. Operation is initiated by a start switch feeding into the latching relay.

3,430,553
DEEP FAT FRYER
Carmelo V. Di Pietro, 3835 Lincoln Drive, Birmingham, Mich. 48010
Filed Feb. 16, 1968, Ser. No. 706,166
U.S. Cl. 99—336 **13 Claims**
Int. Cl. A47j *29/02, 31/12, 37/12*



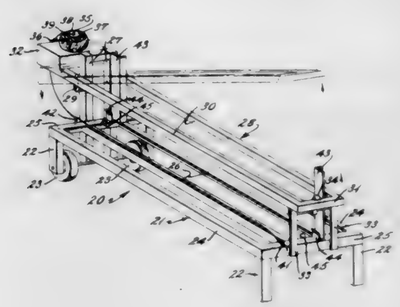
A deep fat fryer having a removable food basket swingable between cooking and drain positions by a timer. An impervious tray swingable with the basket collects particles, and as the basket is raised and tilted a trap door on the tray opens so that the particles drain into a removable filter basket, the shortening returning to the vessel. An additional removable particle collecting tray is provided at the bottom of the vessel.

3,430,554
SELF-STRIPPING WIRE TWISTER HOOK FOR WIRE BALERS
William K. Ralston and Bill R. Littlejohn, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,156
U.S. Cl. 100—31 **4 Claims**
Int. Cl. B65h *13/28*



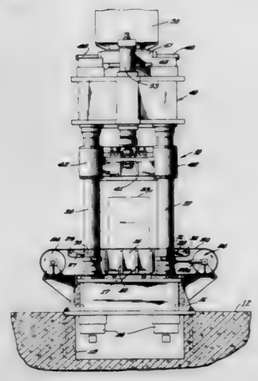
This invention relates to a self-stripping wire twister hook which is to be used in a hay baler. It is the intention of the invention to provide a twister which will dislodge the wire twist from the hook without the use of a separate stripper finger. The hook has a shank portion, a laterally extending portion, and an outer portion extending obliquely in a direction generally outwardly and downwardly from the axis of rotation of the hook.

3,430,555
UNLOADING TABLE FOR BULK CURED TOBACCO
Thurman R. De Bruhl, Rte. 1., Trenton, N.C. 28585
Filed Sept. 27, 1967, Ser. No. 671,052
U.S. Cl. 100—34 **5 Claims**
Int. Cl. B65b *13/18*



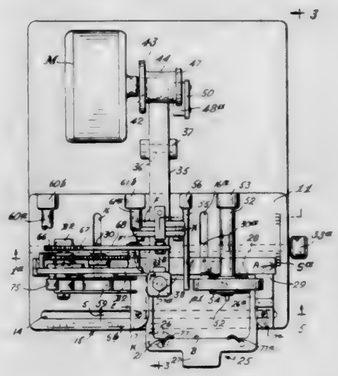
Apparatus used in the removing of bulk cured tobacco from a separable bulk tobacco rack which includes an automatic release for a portion of the rack and a hold-down member for tobacco so that the other portion of the rack can be released. After the bulk tobacco has been removed from the rack, the tobacco leaves are secured together.

3,430,556
ARRANGEMENT FOR A BALING PRESS
Gunnar Stoeng, Oslo, Norway, assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 569,135, Aug. 1, 1966. This application Dec. 6, 1966, Ser. No. 599,561
U.S. Cl. 100—215 **5 Claims**
Int. Cl. B30h *15/30*



A baling press incorporating a conveyor passing over a pressing table to deliver material to the pressing table to be pressed. The baling press includes a cylinder which is formed of pressure-tested and X-ray controlled cast steel and wherein the hydraulic cylinder includes a collar and a ring to align the extended portion of the hydraulic cylinder with that of the press table.

3,430,557
HOT DIE RIBBON INKER STAMPING MACHINES
Alec Peters, Scarsdale, N.Y., assignor to Omni-Card Systems, Inc., Maspeth, N.Y., a corporation of New York
Filed Jan. 25, 1967, Ser. No. 611,596
U.S. Cl. 101—27 **2 Claims**
Int. Cl. B44b *5/00;* **B41f** *1/00, 31/16*

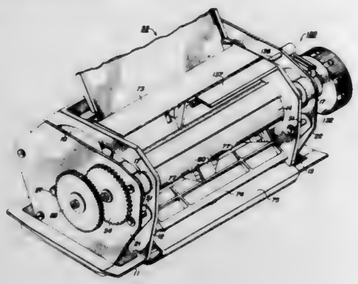


A bed-and-platen, hot-stamping ribbon-inker printing machine having a movable bed for holding a card ruled to define a plurality of indicia-receiving spaces. The platen is devised removably to hold any selected one of a plurality of printing elements. The bed is accurately adjustable to dispose any selected card-space to receive an imprint from the printing element.

3,430,558
SHEET COUNTING SYSTEM IN A REPRODUCTION MACHINE

James R. Cassano, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,558
U.S. Cl. 101—132 1 Claim
Int. Cl. B41l *9/10, 11/08*

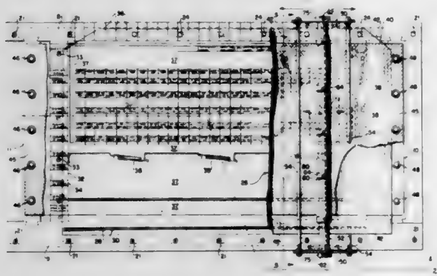


A reproduction apparatus of the pressure-transfer type incorporating a three-way roller bearing support for the rotatable copy drum and driving pressure roll, toggle type force generating means for holding the pressure roll in pressure contact with the copy drum, a foldable paper tray, automatic gripping means for attaching the transfer sheet to the copy drum, means for separating copies from the transfer sheet counting means to record the number of master and copy sheets used, and programming control means adapted at the last copy programmed to release the gripping means whereby the transfer sheet is expelled with the last copy.

3,430,559
VOTE RECORD PACK PRINT DEVICE

Michael T. Moldovan, Jamestown, N.Y., and Eugene Hodson Drew, Greencoast Springs, Fla.; Edward de Belle Drew, administrator, and Sherwood Drew Robinson, administratrix of said Eugene Hodson Drew, deceased, assignors to AVM Corporation, Jamestown, N.Y.

Filed Apr. 7, 1966, Ser. No. 540,935
U.S. Cl. 101—269 2 Claims
Int. Cl. B41f *3/20, 1/28;* B21b *31/08*

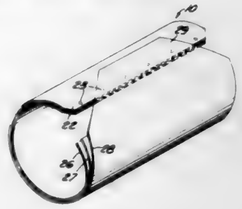


A printing roll assembly having opposite side support plates slidably engaged with the printing bed structure is provided with a transverse beam member which carries at intervals downwardly directed sockets which receive pressure struts carried by a printing roll shaft and the printing roll shaft is mounted in eccentric bearings to allow it to be displaced downwardly toward the printing bed and locked in place with the strut members adjusted to brace the printing roll shaft.

3,430,560
COVER ASSEMBLY FOR IMPRESSION CYLINDER OF PRINTING EQUIPMENT

John B. Nettleman, Long Beach, Calif., assignor to Cowan Pressroom Products, Inc., Hollywood, Calif., a corporation of California

Filed July 19, 1965, Ser. No. 473,016
U.S. Cl. 101—407 7 Claims
Int. Cl. B41l *37/02;* B41f *29/02*

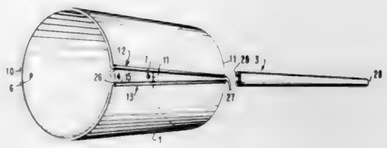


1. A cover assembly readily mountable snugly against the surface of the impression cylinder of a printing press in lieu of conventional make-ready and effective to provide a resilient backup for sheet material while being pressed against rigid type and the like, said cover assembly comprising a plurality of separate nonlaminated superimposed sheets of homogeneous plastic each a few mils thick including an exterior transparent sheet free of fibers and of greater length than the others, means securing one transverse edge of all of said sheets together to provide a mounting margin by which said cover is adapted to be anchored to one edge of the longitudinal depression customarily present along the surface of a printing press impression cylinder, the opposite end of said long sheet being adapted to be gripped and tensioned along the other edge of said longitudinal depression to hold said cover snugly and smoothly in place against the cylindrical surface of an impression cylinder and to hold a sheet of printed material sandwiched between the two outermost sheets with the printed material facing outwardly and readily visible through said transparent outer sheet, and the layers of said resilient plastic material providing a resilient backup for sheet material resting thereagainst while being pressed against the slightly nonplanar surface of indicia-producing means in rolling contact with the sheet material and supported by said cover and impression cylinder.

3,430,561
LOCKING DEVICE FOR ROTARY PLATE CARRIER SHEET

Dayton Mark Simmons, Parchment, Mich., assignor to International Paper Company, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 539,196, Mar. 31, 1966. This application Apr. 22, 1968, Ser. No. 722,892
U.S. Cl. 101—415.1 17 Claims
Int. Cl. B41f *1/28, 21/00;* B41l *21/00*



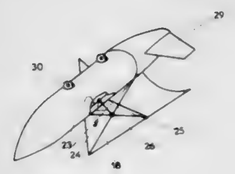
The present invention provides a combination of locking and registry means whereby a carrier sheet having a

printing plate applied thereto is locked on a plate cylinder under uniform tension and with the printing plate aligned in accurate registry. A carrier sheet having registry holes, the carrier sheet having been tapered and crimped to provide lips defined by arcuate fold surfaces, is slipped over registry pins projecting from the surface of a printing cylinder, and the lips of a locking clip, said locking clip having been tapered and crimped to provide said lips, engage the arcuate folds and progressively slide thereover until the carrier sheet is completely engaged and locked under uniform tension.

3,430,562
AIRCRAFT BOMB

Pierre Jean Sautier, Paris, France, assignor to Engins Matra, Paris, France

Filed Nov. 8, 1967, Ser. No. 681,388
Claims priority, application France, Nov. 10, 1966, 83,211
U.S. Cl. 102—4 4 Claims
Int. Cl. F42b *25/06*

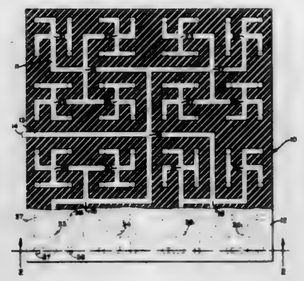


An aircraft bomb comprising a bomb body suspended at its top from an aircraft and having a collapsible wing retracted into a housing therein until the bomb is released, at which time the wing pivots about an axle at its rear end to drop to an inclined position, with respect to the longitudinal axis of the bomb, which is limited by a foldable coupling such that when the wing is extended from the housing to its limited position a diving force is produced by aerodynamic airflow.

3,430,563
FLEXIBLE DETONATION WAVE SHAPING DEVICE

Richard H. F. Stresau, Spooner, Wis., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Aug. 7, 1963, Ser. No. 300,960
U.S. Cl. 102—22 5 Claims
Int. Cl. F42b *3/02;* F42d *1/04*

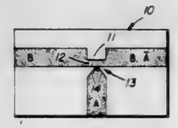


1. A flexible detonation wave shaping device comprising a flexible sheet of inert elastomer configured to a matrix and a flat sheet of flexible sheet explosive embedded in said matrix in a manner to form an explosive network characterized by a plurality of coplanar explosive trains interconnected to a common origin, said sheet of flexible explosive, including said common origin, being embedded in a median area between the opposite surfaces of said sheet of elastomer, said trains each being of equal length and each having at its terminal end an extension comprising a length of explosive configured normal to the surface of said sheet of inert elastomer and terminating substantially flush therewith to thereby form a plurality of termini spaced uniformly over the area of one surface of said elastomer sheet whereby an explosive charge with which the surface is brought into contact is detonated simultaneously at a plurality of points corresponding respectively to said termini in response to a detonation wave applied to the common origin of said network.

3,430,564
EXPLOSIVE GATE, DIODE AND SWITCH

Denis A. Silvia, Shalimar, Fla., and Richard T. Ramsey, Fredericksburg, and John H. Spencer, Leesburg, Va., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 3, 1967, Ser. No. 637,866
U.S. Cl. 102—22 6 Claims
Int. Cl. F42b *3/10*



An improved, all secondary explosive, logic and switching device in which a point contact from an explosive trail with a constricted region of the same or other explosive trail can produce a destructive cross-over, an explosive diode switch or other logic operation.

3,430,565
MOLDED EXPLOSIVE CHARGE WITHIN A SHELL CASING HAVING AN INNER WALL OF ABSORBENT MATERIAL

Helmuth Nolte, Waldkraiburg, Gunther Deckers, Staudach-Egerndach, and Hans Rostock, Aschau, Kreis Muhldorf, Germany, assignors to Nitrochemie G.m.b.H., Aschau, Germany, a corporation of Germany

No Drawing. Filed May 8, 1967, Ser. No. 636,648
Claims priority, application Germany, May 10, 1966, N 28,508
U.S. Cl. 102—24 6 Claims
Int. Cl. F42b *13/12*

Novel explosive charges in a shell casing of improved thermal stability comprised of organic and/or inorganic nitro or nitrate compounds.

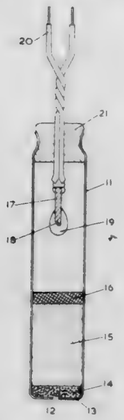
3,430,566
MARINE SEISMIC DETONATOR

Edward Mervyn Patterson, West Kilbride, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Feb. 24, 1967, Ser. No. 618,413
Claims priority, application Great Britain, Mar. 18, 1966, 11,988/66
U.S. Cl. 102—28 6 Claims
Int. Cl. F42b *37/00*

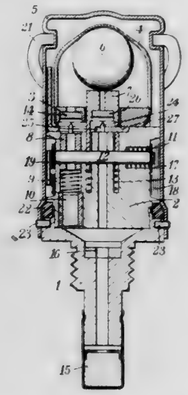
A seismic detonator includes an explosive charge surrounded by a casing having at least one aperture therein which is closed by a water-destructible seal in the form of

a layer of particulate water-gellable colloid. In the preferred embodiment the aperture is in the normally blind



end of the casing and the layer of colloid is pressed into the casing between the aperture and the explosive charge.

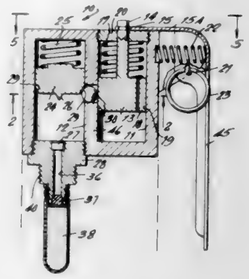
3,430,567
COMBINATION FUZE FOR EXPLOSIVE DEVICES
André Losfeld, 13 Rue Thiebault, 94, Charenton, France
Filed Mar. 7, 1967, Ser. No. 621,327
Claims priority, application France, Mar. 7, 1966, 52,320/66, Patent 1,485,576
U.S. Cl. 102—72 **6 Claims**
Int. Cl. F42c *9/10*



Combination fuze, of simple and inexpensive construction, notable for rifle- and hand-grenades, secured with a single straight arming pin, and provided with a selector to control the explosive device to function at will either on impact-delay, or on impact only, or on delay only, said selector consisting of a flat cut-out rotatable disc housed in a recess in the upper section of the fuze.

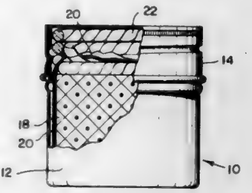
3,430,568
DELAY ACTUATOR
Stanley A. Amster, Pittsburgh, Pa., assignor to Federal Laboratories, Inc., Saltsburg, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1967, Ser. No. 674,865
U.S. Cl. 102—82 **3 Claims**
Int. Cl. F42c *9/06, 9/02*

A delayed action means is described for use with an explosive charge. The device includes two spring loaded pistons, each arranged for sliding in its own hollow cylinder. The first piston is held in position by a mechanical latch. When released, the piston moves to the bottom of



the cylinder at a speed governed by the escape of air through a small hole. At the end of its travel, the first piston releases a second piston wich moves at a fast rate to detonate a charge.

3,430,569
SMOKE CARTRIDGE
Everett D. Crane, Dover, and Burton Werbel, West Orange, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 14, 1967, Ser. No. 631,106
U.S. Cl. 102—90 **7 Claims**
Int. Cl. F42b *27/00*

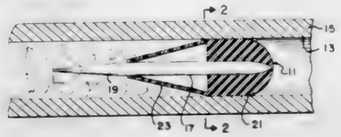


A manually ignited, narrow column colored smoke marker having a metallic foil entirely encasing a smoke pellet and a portion of an igniting cord with the other portion of said cord extending outside of said foil. The smoke composition consists of a mixture of methylaminoanthraquinone, indanthrene, thiourea, potassium chlorate and a binder.

3,430,570
SABOT WITH INTERNAL RADIAL SLOTS
Irwin R. Barr, Lutherville, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed May 25, 1967, Ser. No. 641,206
U.S. Cl. 102—93 **10 Claims**
Int. Cl. F42b *13/16*

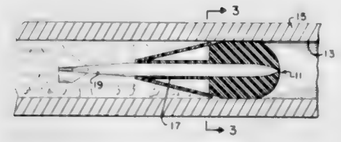
A sabot is disclosed having a cylindrical portion adapted to position the sabot in a gun barrel, an axial bore containing a projectile, and a conical portion having a plurality of longitudinal slots extending radially from the axial bore towards the exterior surface, thereby forming a plurality of wedge-shaped segments. As a high pressure gas propels the sabot and the projectile through the gun barrel, the gas exerts a force in the surface of the conical portion of the sabot which is transmitted through the wedge-shaped segments to the projectile so as to create

a frictional force between the apex of the wedge-shaped segments, the sabot and the surface of the projectile which



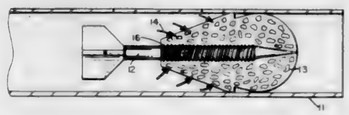
is sufficient to enable the sabot to pull the projectile along therewith.

3,430,571
SABOT
Irwin R. Barr, Lutherville, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed May 25, 1967, Ser. No. 641,207
U.S. Cl. 102—93 **4 Claims**
Int. Cl. F42b *13/16*



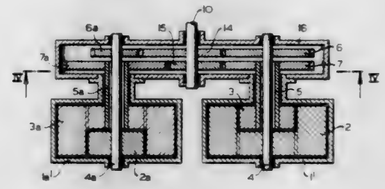
A sabot is disclosed having a cylindrical portion adapted to position the sabot in a gun barrel, an axial bore containing a projectile, and a frusto-conical portion having a plurality of longitudinal slots extending radially from the interior of the sabot to the exterior surface thereby forming a plurality of wedge-shaped segments which are covered by a frusto-conical sleeve of flexible material. As a high pressure gas propels the sabot and projectile through the gun barrel, the gas exerts a force on the flexible frusto-conical sleeve covering which transmits a force through the wedge-shaped segments to the projectile so as to create a frictional force between the bore of the sabot and the surface of the projectile which is sufficient to prevent a relative axial movement between the sabot and the projectile.

3,430,572
DISINTEGRATING SABOT
John R. Hebert, Towson, Md., and Warren A. Waite, Burlington, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 596,193
U.S. Cl. 102—93 **8 Claims**
Int. Cl. F42b *13/16*



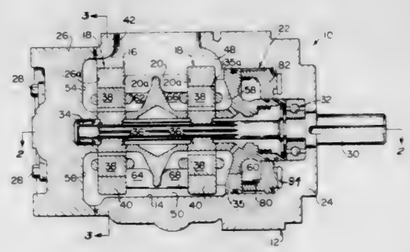
The invention relates to a sabot for a gas propelled projectile. The sabot is constructed in such a manner that it traps a quantity of the propellant gas internally in pores. The pressure of the entrapped gas induces a stress greater than the tensile strength of the sabot material and when the sabot and projectile leave the confines of a muzzle, the sabot explodes and disintegrates.

3,430,573
ROTARY PISTON APPARATUS
Eugen Groeger, Blumberg, Baden, Germany, assignor to Aero-Commerce G.m.b.H., Zug, Switzerland
Filed Sept. 29, 1966, Ser. No. 583,025
Claims priority, application Germany, Oct. 1, 1965, A 50,385
U.S. Cl. 103—129 **10 Claims**
Int. Cl. F04c *1/10*



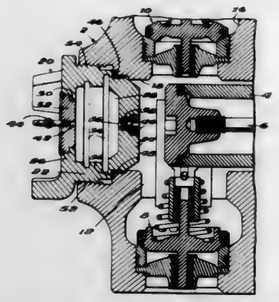
An assembly including at least two rotary piston apparatus each comprising a housing and two coaxial pistons subdividing the housing in a plurality of chambers, and a gear train connecting said pistons with a rotary spindle which can receive driving torque from or transmit driving torque to the rotary piston apparatus. The gear train being arranged to move the pistons of each rotary piston apparatus through a plurality of neutral positions in which the angular speed of both pistons in the respective apparatus is the same and to maintain one pair of pistons in such neutral position when the other pair of piston is out of neutral position and vice versa.

3,430,574
PLURAL ROTARY HYDRAULIC APPARATUS
Joseph Kalman Adelman, Racine, Wis., assignor to Webster Electric Company, Inc., Racine, Wis., a corporation of Delaware
Filed May 17, 1967, Ser. No. 639,120
U.S. Cl. 103—136 **9 Claims**
Int. Cl. F04c *1/02, 11/00*



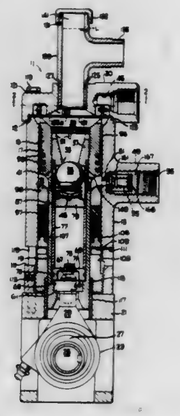
A pair of rotary vane pump units are slidably received in a cylindrical chamber in a pump housing, and are separated by an axially shiftable spacer having sealing and bearing surfaces. The housing includes a common inlet supplying both pumps, and tandem outlets each serving one pump and operable at different pressures. A pressure plate and a pressure ring are disposed in the chamber to the side of the pump units and are separated by a first pressure chamber communicating with one pump outlet. A second pressure chamber, communicating with the other pump outlet, is located at the outer surface of the pressure ring. The resultant loading force applied simultaneously to both pump units is proportional to the highest pump outlet pressure.

3,430,575
CONSTANT THREAD LOAD COVER
Morris Roth, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,670
U.S. Cl. 103—153 12 Claims
Int. Cl. F04b *19/22*



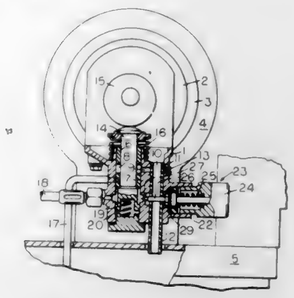
A threaded cover for the valve end of a fluid pump cylinder. The cover is exposed to rapid changes in pressure due to reciprocation of the pump piston or plunger in the cylinder. The effect of these pressure changes on the cover is minimized by providing a hollow unitary cover. The cavity in the cover is substantially coextensive with the screw threads which secure the cover in the housing. A passage conducts fluid through the wall of the cover from the pump cylinder to the cover cavity. A one-way valve in the passage allows fluid flow only into the cover cavity. When the pump is started, fluid is pumped through the passage until the pressure in the cavity is approximately the same as the maximum pressure in the cylinder. The pressure in the cavity causes the cover to expand circumferentially and axially and thereby to resist cyclic loading.

3,430,576
RECIPROCATING PUMP
Lewis Tyree, Jr., 9955 S. Hamilton Ave., Chicago, Ill. 60643
Continuation-in-part of application Ser. No. 551,090, May 18, 1966. This application Mar. 2, 1967, Ser. No. 633,318
U.S. Cl. 103—178 31 Claims
Int. Cl. F04b *21/04, 15/06*



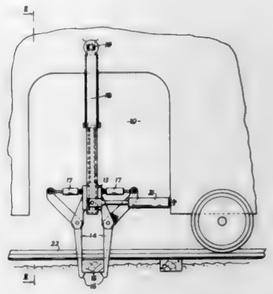
A reciprocating pump especially designed for pumping boiling liquids under superatmospheric pressure which utilizes the pressure of the liquid being pumped to assist the pumping stroke and thus splits the work of pumping between both strokes. The pump design facilitates favorable volumetric efficiency, and a surge chamber may be included to insure this. Illustrated is a pump wherein the intake valve is carried by the piston head and the pumping chamber is toroidal, surrounding the piston rod.

3,430,577
HIGH PRESSURE PUMP FOR SPRAYER
Josef Wagner, 7991 Friedrichshafen-Fischbach, Germany
Filed June 19, 1967, Ser. No. 647,139
U.S. Cl. 103—221 8 Claims
Int. Cl. F04b *21/00, 19/22*



A high pressure pump for a sprayer having a run-off duct within the pump housing connected to a leak-off collecting cross-bore and a pressure regulating valve outlet. The run-off-duct is lined with a detachable liner. The pump cylinder is lined by spaced adhesively fastened sleeves. The space between the sleeves is joined to the cross-bore thus facilitating the collection of leak-off liquid.

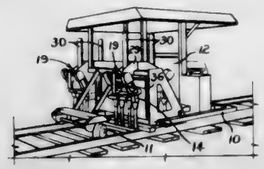
3,430,578
RAILWAY TRACK MAINTENANCE EQUIPMENT
John K. Stewart, Columbia, S.C., assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada
Filed Feb. 16, 1967, Ser. No. 616,553
Claims priority, application Great Britain, Feb. 18, 1966, 7,316/66
U.S. Cl. 104—7 5 Claims
Int. Cl. E01b *33/00, 29/04, 29/14*



Apparatus for lifting a tie of a railway track into pressure contact with the rails of the track and to maintain it in position whilst the tie is spiked to the track, which apparatus has a tie nipping device which is driven into the ballast beneath the tie and automatically caused to grasp the tie and lift it up into pressure contact with the underside of the rails and which, by movement of a single control element, is capable of releasing and replacing the tie back into the ballast after a spiking or

like operation, a hydraulic piston and cylinder arrangement being provided to move the vehicle along the track relative to the tie when held by the nipper device, to align spike working equipment on the vehicle with the holes for receiving the spike.

3,430,579
TAMPING TOOL
William J. Yard, Cavan, South Australia, Australia, assignor to Australian Railway Equipment Supply Company Proprietary Limited, Adelaide, Australia, and Trak-Chief Manufacturing Proprietary Ltd., Cavan, South Australia, Australia
Filed Mar. 10, 1967, Ser. No. 622,274
Claims priority, application Australia, Mar. 15, 1966, 2,897/66
U.S. Cl. 104—12 8 Claims
Int. Cl. E01b *27/16*



A tamping machine for tamping the ballast of a railroad track wherein hydraulic cylinders drive tamping tools downwardly into railroad ballast and then inwardly towards one another while the tools are vibrated.

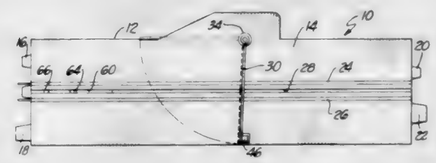
3,430,580
VEHICLE AND SWITCH THEREFOR
Hendrik Johan Edens, 1740 Pharmacy Ave., Agincourt, Ontario, Canada
Filed June 12, 1967, Ser. No. 645,201
Claims priority, application Canada, July 14, 1966, 965,386
U.S. Cl. 104—28 12 Claims
Int. Cl. B61b *1/00;* B61l *27/04, 23/00*



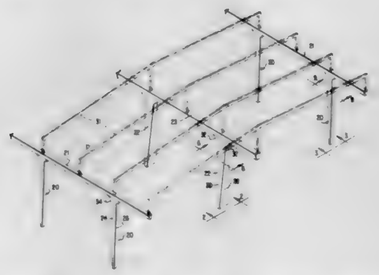
A vehicle switching system in which a rail travelling vehicle, having four castor mounted support wheels, travels off the rails onto a flat roadbed in a switch. Converging side walls of the switch then push against side guide wheels of the vehicle to push the vehicle sideways as it progressed through the switch, until the support wheels align with one of two sets of exit rails at the exit end of the switch. The guide wheels compress inwardly to accommodate the converging side walls and may be locked in either of two blocking positions to control which exit rails the vehicle will be pushed into alignment with.

3,430,581
BRAKE TESTING DEVICE
Warren L. Truesdell, Los Angeles, and Kenneth L. McQuary, Torrance, Calif., assignors to Eldon Industries, Hawthorne, Calif., a corporation of California
Filed Feb. 1, 1966, Ser. No. 523,994
U.S. Cl. 104—60 12 Claims
Int. Cl. A63h *30/00, 18/16;* A63f *9/14*

The invention is directed to a subtrack gate in a slot car track which is adapted to open and allow a slot car to pass when said car is moving at below a preselected speed and under the control of an operator. The gate is controlled by an eccentric arm and cam, which is spring-loaded.

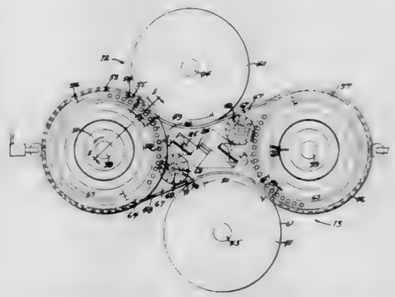


3,430,582
RAILWAY SUPPORTING BOX BEAM BUILDING CONSTRUCTION
Weldon F. Appelt, 2102 Quenby, Houston, Tex. 77005, and William H. Mason, P.O. Box 1112, Houston, Tex. 77001
Filed Aug. 11, 1967, Ser. No. 659,978
U.S. Cl. 104—124 8 Claims
Int. Cl. E01b *25/22;* E04c *3/32;* B66b *9/16*



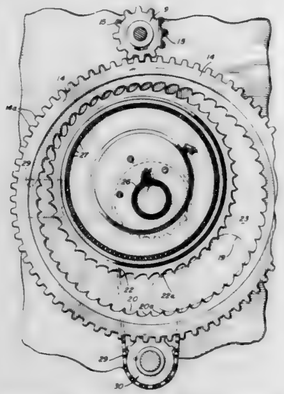
A building construction having a craneway wherein the support columns and the craneway beams are all of the hollow box beam type construction.

3,430,583
WAFERIZING MACHINE
Stuart D. Pool, Naperville, and James Morkoski, Clarendon Hills, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,190
U.S. Cl. 107—8 16 Claims
Int. Cl. B02c *11/08;* B30b *15/34, 15/26*



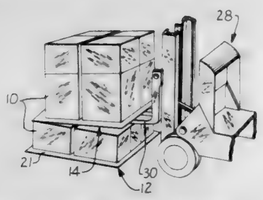
A machine for pressing hay in a closed-end die into a cohesive self-sustaining wafer. A rotatable wafer wheel cooperatively arranged with a press wheel for squeezing hay therebetween at extreme pressures and an endless flexible band cooperative with the wafer wheel for maintaining a dwell-time pressure function in sequential order to form cohesive self-sustaining wafers of hay.

3,430,584
ROTARY COMPRESSOR-TYPE HAY PELLETER
Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, a corporation of Wisconsin
Filed Dec. 28, 1965, Ser. No. 518,759
U.S. Cl. 107—8 **2 Claims**
Int. Cl. A23n *17/00*



This invention relates to a hay pelleter which includes a pair of mating eccentrically mounted, rotatably supported gears into which material to be compressed is introduced. The gears are brought into mating engagement and defined between adjacent pairs of mating teeth in an area which decreases in size for compressing the material introduced therein into a pellet. The meshing engagement of the teeth acts to shear off a quantity of material from the main body of material.

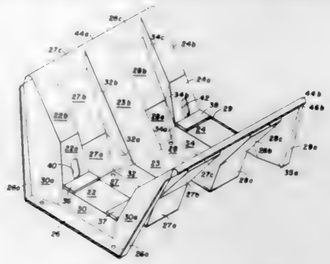
3,430,585
MATERIAL HANDLING PALLET
Arthur F. Grant, East Cleveland, and Robert G. Eggers, Eastlake, Ohio, assignors to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 25, 1967, Ser. No. 678,074
U.S. Cl. 108—51 **1 Claim**
Int. Cl. B65d *19/00, 19/38*



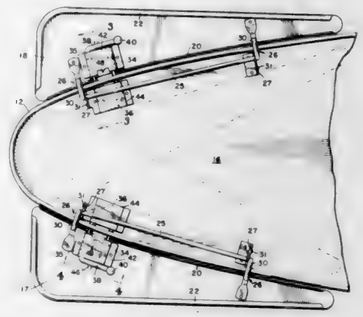
A material handling pallet providing a support sheet having a topside for receiving material to be handled and an underside, a plurality of elevator members being secured to the underside for maintaining the sheet in a raised position from a supporting surface and to enable insertion thereunder of lift forks.

3,430,586
NESTABLE, CORRUGATED FORKLIFT AND SLING PALLET
William N. Oswald, Dallas, Tex., assignor to Standard Manufacturing Company, Inc., Dallas, Tex., a corporation of Texas
Filed May 22, 1967, Ser. No. 639,946
U.S. Cl. 108—55 **18 Claims**
Int. Cl. B65d *21/00, 19/08*

A material handling system for airborne ordnance such as bombs, rockets, and napalm which is carried on externally mounted, multiple weapon racks including a general purpose, lightweight cradle formed from a unitary sheet that is corrugated for strength and fully nestable to conserve space. A number of accessories are also disclosed for use with the cradle so that the cradle can be adapted to handle substantially all weapons now used by tactical aircraft.

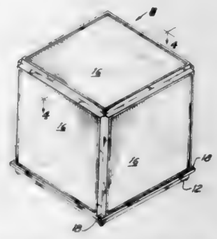


3,430,587
IRONING TABLE TOP
Dwain D. Conley and Philip E. Bender, Oneida, Tenn., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Jan. 13, 1967, Ser. No. 609,100
U.S. Cl. 108—78 **6 Claims**
Int. Cl. A47b *1/04*



An ironing table top having extension wings at the tapered end thereof. The extension wings are hinged to the underside of the ironing table top for movement between a retracted position underlying the top and an operative position projecting outwardly from the opposed edges of said top.

3,430,588
NESTABLE STOOLS
Paul O. Heyer, 531 E. 81st St., New York, N.Y. 10028
Filed June 16, 1967, Ser. No. 652,647
U.S. Cl. 108—91 **4 Claims**
Int. Cl. A47b *7/02;* **A47c** *3/04*



This invention relates to six identical stools each having four legs disposed in a pinwheel sequence, said stools being nestable to form a cube. Also, a base or tray for the cube may be provided to keep the cube furniture away from the floor surface.

3,430,589
MACHINE FOR ALIGNING STRIPES OF FABRICS WOVEN ON CIRCULAR LOOMS
François Paul Andrault, La Chapelle-Saint-Luc, France, assignor to Societe Anonyme Financiere & Auxiliaire du Textile, Paris, France
Filed Mar. 15, 1967, Ser. No. 623,394
Claims priority, application France, Mar. 25, 1966, 55,021
U.S. Cl. 112—2 **6 Claims**
Int. Cl. D05b *23/00*



The machine for aligning stripes according to the invention comprises:

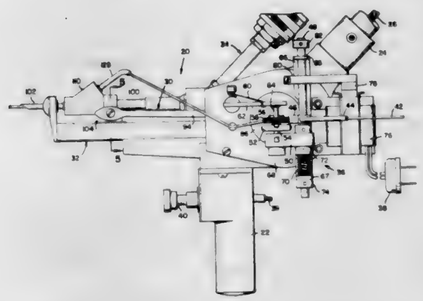
A unit for feeding the fabric in a flat position and consequently in double thickness;

A unit for cutting the fabric along a fold line, that is to say along a generator-line;

A shifting unit comprising a shift guide against which the cut marginal portion of only one of the two layers of fabric is intended to pass, the position of said shift guide being preferably adjustable and such that said marginal portion follows a path which is longer than the path followed by the marginal portion of the other layer of fabric by a distance equal to the width of one stripe, whereupon the two layers are again brought one against the other with their stripes in register; and

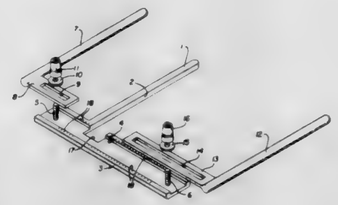
A sewing machine, preferably of the hosiery seaming and shearing type, which is adapted to join the layers of fabric thus aligned.

3,430,590
PNEUMATICALLY FED TUFTED TEXTILE MACHINE
Glenn Looper, Box 86, Dalton, Ga. 30720
Filed Nov. 7, 1966, Ser. No. 592,555
U.S. Cl. 112—80 **10 Claims**
Int. Cl. D05c *15/08*



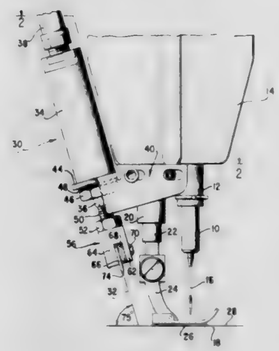
A rug mending machine is provided with a compressed air arrangement to hold the yarn taut in the needle, and with an adjustable yarn feed mechanism that can be adjusted either in discrete steps or continuously between a high and a low loop position. Means are disclosed for providing a controlled spin to the air stream in the needle and for guiding the needle with reference to an existing pattern on the backing.

3,430,591
PLEAT SEWING GUIDE
Svava Kendall, 2853 Tulare Ave., Richmond, Calif. 94804
Filed June 7, 1967, Ser. No. 644,186
U.S. Cl. 112—146 **7 Claims**
Int. Cl. D05b *35/08*



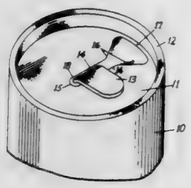
The pleat sewing guide is adjustable to determine the correct spacing and desired depth of pleat on drapery and the like. A flat sewing guide is provided at one end thereof with a transverse head or a cross-head elongated which latter has a channel in its top and a pair of threaded guide pins extended from the channel spaced on opposite sides of the sewing guide leg; a pair of movable or adjustable legs are spaced on the opposite sides of the fixed sewing guide; one of the adjustable legs is adjusted to indicate the depth of the pleat and the other leg is adapted to engage the next preceding pleat to determine the spacing of the pleats.

3,430,592
BLADE MOUNTING FOR IMPACT CUTTERS
Richard A. Florczak, Belleville, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 20, 1967, Ser. No. 669,149
U.S. Cl. 112—252 **5 Claims**
Int. Cl. D05b *65/00;* **B26b** *7/00, 3/00*



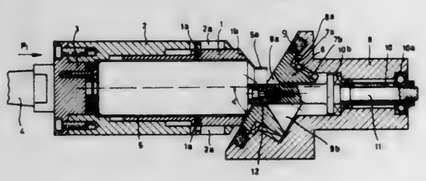
This disclosure relates to an impact cutter for sewing machines and particularly to an improved cutter blade mounting which permits self-aligning of the cutter edge of the cutter blade with its cooperating ledger surface and also provides a resilient connection between the cutter blade and its carrier.

3,430,593
METHOD OF MAKING A CAN WITH INTEGRAL PULL TAB
Ralph J. Stolle, Lebanon, and Elton G. Kaminski, Sidney, Ohio, assignors to The Stolle Corporation, Sidney, Ohio, a corporation of Ohio
Original application Mar. 15, 1965, Ser. No. 439,559, now Patent No. 3,322,297, dated May 30, 1967. Divided and this application Apr. 10, 1967, Ser. No. 629,452
U.S. Cl. 113—120 **2 Claims**
Int. Cl. B21c *23/10;* **B21d** *51/44;* **B65d** *17/24*



The method of making a can having an integral tear tab formed on one end thereof by impact-extrusion-forming the can body and simultaneously forming a tear tab extending from one end thereof, and thereafter forming score lines in the said end.

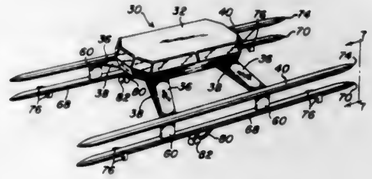
3,430,594
PROCESS FOR REDUCING THE END OF A TUBULAR METALLIC BODY AND DEVICE FOR CARRYING OUT THIS PROCESS
Gilbert Dolveck, Beaurepaire, France, assignor to Boxal Beaurepaire S.A., Beaurepaire, Isere, France, a French company
Filed June 5, 1967, Ser. No. 643,520
Claims priority, application Switzerland, June 7, 1966, 8,189/66
U.S. Cl. 113—1 **4 Claims**
Int. Cl. B21d *51/44, 51/54;* **B21b** *19/04*



Process for reducing the end of a tubular metallic body by applying the body by at least a part of the cross section of its end on a planar surface forming a matrix inclined relative to the axis of the body by an angle corresponding to that of the shrunken section desired, rotating the body and/or the surface and simultaneously axially moving the body and/or the surface parallel to the axis of the body in a direction tending to crush the body onto the surface. Application of this process to the fabrication of an aerosol bomb by giving to the reduced part the shape of a chimney or of a collar of a diameter less than that of the body and connected to it by a part of a generally truncated part and placing in the chimney a distribution valve, the other end of the body being closed after introducing the aerosol.

3,430,595
WATERCRAFT
Harry Werner Tulleners, 292 Finch St., Urbana, Ohio 43078
Filed Feb. 20, 1967, Ser. No. 617,157
U.S. Cl. 114—61 **24 Claims**
Int. Cl. B63b *1/14, 35/36*

A watercraft adapted to travel upon a smooth surface or upon a wavy surface while maintaining a load carrier portion of the watercraft relatively level. A lower pontoon and an upper pontoon are attached to the load carrier portion of the watercraft at each of opposite portions thereof. The lower pontoons are adapted to normally



travel upon the surface of the water and to normally support the watercraft. The upper pontoons do not normally engage the water. The upper pontoons engage the water and assist in support of the watercraft only during travel of the watercraft upon a wavy surface.

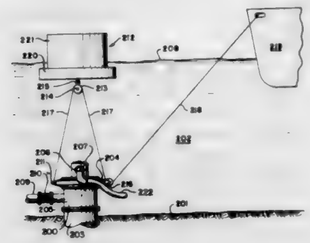
3,430,596
ANCHOR
James H. Hysaw, 302 Summit St., Lawton, Okla. 73501
Filed Nov. 6, 1967, Ser. No. 680,919
U.S. Cl. 114—208 **10 Claims**
Int. Cl. B63b *21/24*



A lightweight boat anchor expressly constructed to survive rigorous endurance needs either in or out of the water. It will withstand stress and strain, will minimize high loss difficulties and will reduce the hazard of stumbling over the anchor while in transit. Experimental use has shown this anchor to be reliable and safe. Some boat owners use anchor chains without a suitable release on the boat. In an emergency such an uncontrollable arrangement can be hazardous. The disclosed anchor and its pull responsive and collapsible features serves to solve the problems commonly encountered.

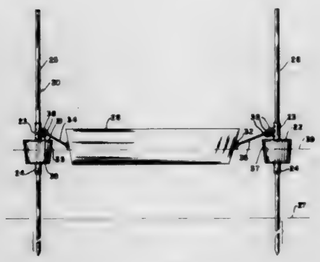
3,430,597
ONE-POINT MOORING SYSTEM FOR LOADING OR UNLOADING FLUIDS INTO OR FROM A SHIP
Henricus J. Zunderdorp, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,222
Claims priority, application Great Britain, Sept. 21, 1966, 42,252/66
U.S. Cl. 114—230 **9 Claims**
Int. Cl. B63b *21/00, 21/52, 51/02*

A one-point mooring system for ships including fixed and rotatable mooring parts on the floor of a body of water, a spring buoy positioned over the mooring parts and a mooring cable extending between the buoy and the rotatable parts and having a free end connectable to a ship. The other end of the cable is secured to the buoy or the rotatable part. Suitable pulleys on the rotatable



part and buoy cooperate with the cable so that mooring forces from the ship are translated to the buoy which is pulled under water thereby absorbing energy and relieving the strain on the mooring parts.

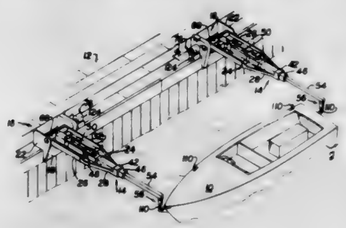
3,430,598
MOORING DEVICE
Joseph E. Soderberg, Warren, Minn. 56762
Filed Nov. 20, 1967, Ser. No. 684,112
U.S. Cl. 114—230 **2 Claims**
Int. Cl. B63b *21/00*



The invention comprises a mooring device for mooring a boat having an upright pair of shafts adapted to be inserted upright into the lake bottom in spaced parallel rotation to one another, with the upper portions of the shafts projecting above the surface of the lake, a pair of air tight containers acting as floats, said containers each having a vertical bore to slideably receive the said shafts, rope attaching means on each of said containers, said shafts being spaced further apart from one another than the length of said boat, rope means attached to the front of the boat may be attached to one of said containers and the rope means attached to the rear of said boat may be attached to the other of said containers, and said container will float upward and downward on said shaft in response to changes to the lake surface while maintaining said boat moored between said shaft.

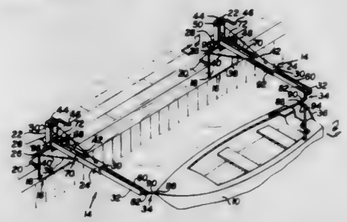
3,430,599
MOORING DEVICE
Edward Lezak, 50 E. Barclay St., Hicksville, N.Y. 11801
Filed Dec. 11, 1967, Ser. No. 689,517
U.S. Cl. 114—230 **7 Claims**
Int. Cl. B63b *21/00*

A mooring device for securing boats to a dock including a bendable boom that is extendable over the water. The boom is operated from the dock and includes structure for securing a boat to it. The boom includes a mechanism to cause it to bend intermediate its ends. As the



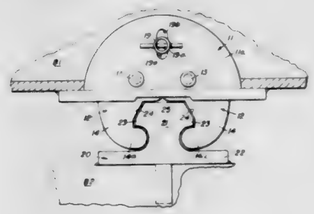
boom bends it moves the boat towards and away from the dock.

3,430,600
MOORING DEVICE
Edward Lezak, 50 E. Barclay St., Hicksville, N.Y. 11801
Filed Dec. 11, 1967, Ser. No. 689,518
U.S. Cl. 114—230 **5 Claims**
Int. Cl. B63b *21/16*



A mooring device for securing small boats to a dock including a boom that is vertically pivotable and extendible over the water. The boom includes means for securing the boat to it and structure operable from the dock to cause the boom to extend and retract in length for moving the boat toward and away from the dock.

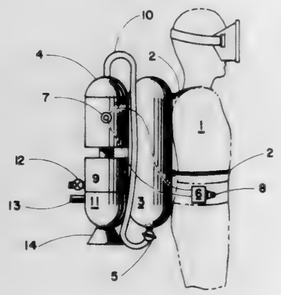
3,430,601
BARGE COUPLING ASSEMBLY
Theodore F. Thompson, 409 S. 12th St., Davenport, Iowa 52803
Filed Jan. 24, 1967, Ser. No. 611,342
U.S. Cl. 114—235 **4 Claims**
Int. Cl. B63b *21/58*



A coupling assembly for barges comprising a vertical anchoring bar fixed to one barge and a coupling unit mounted on the adjacent end of another barge. The coupling unit has a pair of pivoted levers respectively terminating at one end in coacting jaws between which the anchoring bar is receivable, and the opposed edges of their opposite ends have sufficient lateral clearance therebetween to accommodate pivotal opening and closing of

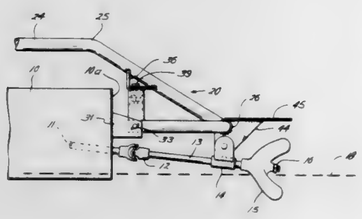
the jaws. The levers are normally spring-biased to open the jaws, and the jaws are locked in closed position by a metal tube which is insertable between the spaced lever ends. The tube is laterally deformable in response to a predetermined, mechanical, outward pressure exerted on the jaws to thereby release them from locked position.

3,430,602
UNDERWATER PROPULSION SYSTEMS EMPLOYING N_2O
Leonard Greiner, Palo Alto, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 16, 1967, Ser. No. 616,530
U.S. Cl. 115—6.1 **9 Claims**
Int. Cl. B63c *11/00;* **A63b** *35/00*



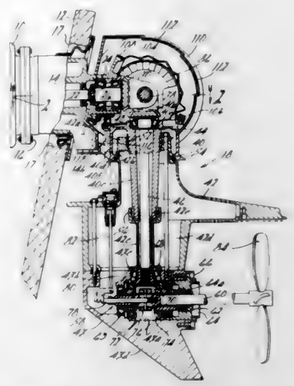
An underwater swimmer propulsion system in which nitrous oxide (N_2O) is decomposed and mixed with water to provide a working fluid consisting primarily of N_2, O_2, and steam. The working fluid drives a prime mover and is cooled to condense the steam. The presence of toxic quantities of nitric oxide (NO) is prevented by control of combustion chamber temperature and by washing of the exhaust gases which are then used for breathing by the swimmer.

3,430,603
STEERING APPARATUS FOR A SWAMP BOAT
Sammie M. Parish, Box 1576, Orange, Tex. 77630
Filed Feb. 6, 1967, Ser. No. 614,328
U.S. Cl. 115—35 **6 Claims**
Int. Cl. B63h *25/42*



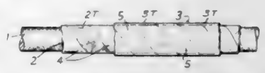
In boats adapted to operate in swamps and marshes, the preferred steering apparatus comprising a tiller connected to the propeller and drive shaft by a bushing for arcuately moving on a guide the propeller and shaft while imparting power to the propeller through a universal joint in the shaft and further including means permitting the propeller and drive shaft to swing upwardly to ride over obstacles in the swamp.

3,430,604
INBOARD-OUTBOARD DRIVE
Kenneth R. Pike, Hartford, Quentin I. Wilcox, West Bend, and Allen E. Cooper, Hartford, Wis., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Jan. 24, 1967, Ser. No. 611,402
U.S. Cl. 115—41 **8 Claims**
Int. Cl. B63h *21/26*



An inboard-outboard drive assembly for a boat wherein the gear means interconnecting the horizontal drive shaft from the inboard power unit and the vertical drive shaft of the outboard propulsion unit is centered on the pivotal axis of the propulsion unit so that the pivotal movement of the propulsion unit is accompanied by readjustment of the relative angular positions of the various gears of the interconnecting gear means. Also, an inboard-outboard drive unit which includes a damping assembly comprising a shaft, an elastomer sleeve member bonded to the shaft, and a socket member receiving the sleeve member with a frictional sliding fit. The shaft is rotated in response to pivotal movement of the propulsion unit so that the initial upward pivotal movement of the propulsion unit is absorbed by yielding of the elastomer member, whereafter the elastomer member breaks loose within the socket to provide a frictional sliding resistance to further pivotal movement of the propulsion member.

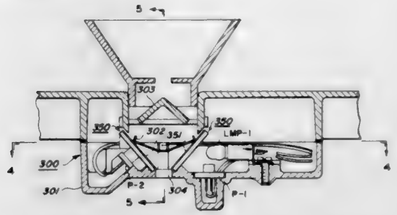
3,430,605
VISUAL INDICATORS
Francis Harold Wood, Watford, England, assignor to Elliott Brothers (London) Limited, London, England
Continuation-in-part of application Ser. No. 206,467, June 29, 1962. This application Dec. 17, 1964, Ser. No. 419,076
Claims priority, application Great Britain, June 29, 1961, 23,618/61
U.S. Cl. 116—129 **9 Claims**
Int. Cl. G09f *9/00, 11/24*



1. A visual indicator for producing a display which is capable of exciting the parafovea of the human eye of an observer, comprising a first element, a second element, the second element being adapted to be nearer an observer than the first element, said first and second elements each having a series of spaced parallel visible bands, the two series of bands being in similar patterns, the second element having the spaces between the bands transparent, synchronous driving means operatively coupled to said elements for moving both together in synchronism, the bands being inclined to the direction of movement of the

elements, and means operatively coupled to the said driving means for moving one said element relative to the other.

3,430,606
ELECTROSCOPIC PARTICLE SENSOR
Donald L. Pease, Marion, and Henry A. Twist, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 694,950
U.S. Cl. 118—637 **6 Claims**
Int. Cl. G03g *13/08*

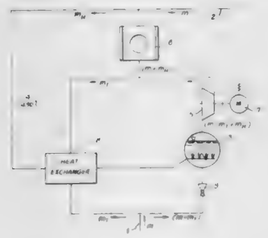


Apparatus for monitoring the density of electroscopic toner powder images wherein electrically conductive light transmissive electrodes are utilized as a xerographic photoreceptor simulator for cyclically developing and cleaning a toner powder image on the electrode surface and sensing the density thereof at a predetermined time by passing a light beam through the electrodes and developer material into a photosensor.

3,430,607
METHOD OF GROWING OYSTERS BY USING A PARTICULATE GYPSUM OYSTER BED COVERING
Earl R. Derouen, Little Rock, Ark., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Mar. 2, 1967, Ser. No. 619,931
U.S. Cl. 119—4 **6 Claims**
Int. Cl. A01k *61/00*

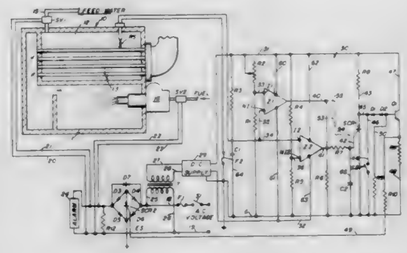
Oyster beds are extended and new beds are built by distributing gypsum on the bottom of a body of water adapted to the growth of oysters. The gypsum used is the by-product gypsum produced in the manufacture of phosphate products by the acidulation of phosphate rock with sulfuric acid.

3,430,608
METHOD OF INDIRECT STEAM GENERATION
Richard Stroehlen, Nuremberg, Germany, assignor to Maschinenfabrik Augsburg-Nuremberg, Aktiengesellschaft, Nuremberg, Germany
Filed Feb. 28, 1967, Ser. No. 619,257
Claims priority, application Germany, Mar. 2, 1966, M 68,591
U.S. Cl. 122—31 **5 Claims**
Int. Cl. F22b *1/12*



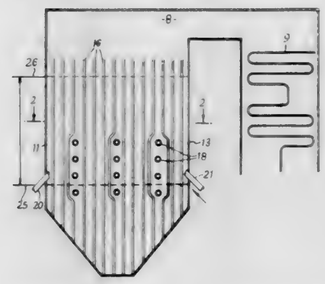
This invention relates to a method of indirect steam generation where feed water and heating steam are admitted into a direct-contact evaporator to produce saturated steam which is supplied to a compressor and, thence, passed into a superheater, part of the steam leaving the superheater being useful steam (e.g. for power generating purposes) and the other part heating steam used to evaporate feed water at a rate corresponding to the useful steam flow.

3,430,609
SYSTEM FOR DETECTING AN ABNORMAL OPERATING CONDITION
John E. Bennett, 4395 White Acres Road, Clarence, N.Y. 14031, and Clarence E. Bennett, 149 Burlington Ave., Rochester, N.Y. 14619
Filed Oct. 20, 1967, Ser. No. 676,797
U.S. Cl. 122—448 **14 Claims**
Int. Cl. F22b *37/42;* **F22d** *5/26*



A system by which a preset condition, such as abnormal temperature, pressure, etc. within an element can be detected so that a device to which the element is responsive can be positively shut down until the condition has been corrected. The system includes a pair of differential amplifiers, the inputs of which are interconnected to a number of voltage divider circuits for establishing a common output signal only when the abnormal condition is detected by a sensor forming a leg of one of the voltage divider circuits. A manual reset is provided and the circuitry of the system embodies fail-safe features to ensure reliable operation.

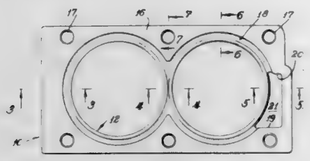
3,430,610
STEAM RAISING BOILERS AND PROCESS FOR IMPROVING THERMAL EFFICIENCIES OF SUCH BOILERS
Walter Halliwell, Bolton, and Frank Pitts, Kersal, England, assignors to Magnesium Elektron Limited, Swinton, Manchester, England
Filed Jan. 10, 1967, Ser. No. 608,407
Claims priority, application Great Britain, June 3, 1966, 24,873/66
U.S. Cl. 122—479 **7 Claims**
Int. Cl. F22g *5/00*



The process of and apparatus for regulating the steam temperatures of an oil-fired steam raising boiler by injecting magnesium particles, which pass a 1/16" sieve and

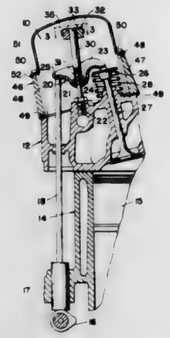
are retained on a 100 B.S. sieve, into the combustion chamber of the boiler at a particular direction relative to the fuel injection nozzles which fire the boiler, thereby to form on the surface of a predetermined section of the combustion chamber walls a heat-reflecting layer of magnesium oxide.

3,430,611
CYLINDER HEAD GASKET ASSEMBLY WITH FLUID-COOLED COMBUSTION SEALING RINGS
Jerome G. Belter, Mount Prospect, Ill., assignor, by mesne assignments, to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed June 13, 1967, Ser. No. 645,813
U.S. Cl. 123—41.82 **6 Claims**
Int. Cl. F16k *41/00;* **F16j** *15/00;* **F02** *1/36*



A cylinder head gasket assembly including combustion sealing rings for sealing the gases of combustion in an internal combustion engine and containing a channel through which coolant flows to remove heat from the combustion sealing rings during operation of the engine.

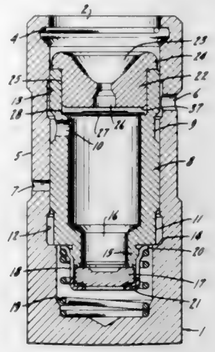
3,430,612
ROCKER ARM STUD GIRDLE
John J. Ansteth, 19400 Riverside Drive, Birmingham, Mich. 48009
Continuation-in-part of application Ser. No. 578,876, Sept. 12, 1966. This application Dec. 26, 1967, Ser. No. 701,516
U.S. Cl. 123—90 **26 Claims**
Int. Cl. F01l *3/24;* **F02b** *75/20*



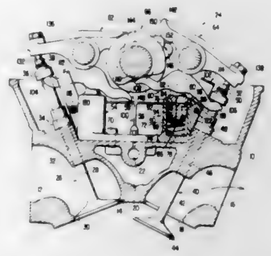
An elongated girdle bar and a plurality of stud support nuts are structurally assembled with the rocker arm studs of an internal combustion engine to eliminate deflection and vibrations in the engine valve operating components.

3,430,613
CHROME-PLATED METERING VALVE
William I. Barnes, Birmingham, Mich., assignor to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey
Filed June 26, 1967, Ser. No. 648,857
U.S. Cl. 123—90 **5 Claims**
Int. Cl. F01l *1/22;* **F16k** *15/00*

The device disclosed comprises a hollow hydraulic tappet, to the interior of which lubricant is conducted from the engine in which the tappet is positioned. Lubricant fluid is discharged from the hydraulic tappet toward the valve operating means and furnishes lubrication to the valve operating means including the rocker arm and associated parts. The tappet disclosed is associated with a hollow pushrod which leads to the rocker arm which moves an engine valve. Means are provided in the tappet to meter the flow of lubricant to the pushrod. This means comprises a generally flat chrome plated disk provided on one face or on each face with a ring-like raised portion which is shaped with a gap or open space in the ring. The ends of the ring are separated. A seat for the disk is provided within the tappet about the opening through which lubricant flows to the pushrod. When the disk is seated on the seat, lubricant can flow outwardly to the pushrod only through the gap between the ends of the ring and it is metered by the size of the gap between the ends of the ring. In usual practice, the disk is chrome plated on both faces irrespective of the precise disposition of the rings.

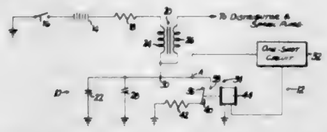


3,430,614
DESMODROMIC DRIVE ARRANGEMENT
George B. K. Meacham, Pontiac, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 7, 1967, Ser. No. 651,719
U.S. Cl. 123—90 **29 Claims**
Int. Cl. F01l *1/30, 1/18*



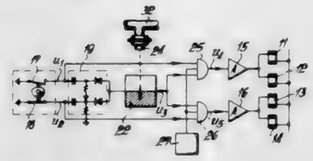
This invention relates to an engine valve arrangement in which the valve is positively opened and positively closed. The mechanism for closing the valve comprises a rocker arm, a movable fulcrum structure arranged to bias the rocker arm toward a camming mechanism in order to bind the camming mechanism, rocker arm and valve together to operate as a unit. The multiple fulcrum structure comprises spring means and dashpot apparatus arranged to produce a resistance to movement away from the camming mechanism that is proportional to engine speed.

3,430,615
ELECTRONIC SPEED CONTROL DEVICE FOR AN ENGINE
Leon A. Chavis, Detroit, Mich., assignor to Mallory Electric Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 24, 1967, Ser. No. 611,323
U.S. Cl. 123—102 **11 Claims**
Int. Cl. F02p *11/06*



The present invention is a control device in the form of a limit switch circuit for limiting the speed at which an engine may be driven. The limit switch circuit operates on pulses fed to it from the ignition coil and condenser of the engine's ignition system and converts those pulses to a square-wave signal. The limit switch circuit includes a relay operated by the square-wave signal when the average of the signal exceeds a threshold value equivalent to the desired maximum speed of the engine. When the relay operates, it connects the ignition coil and condenser combination to a point of reference potential to thereby reduce the level of the ignition pulses to stop ignition. The limit switch circuit also includes a one-shot circuit comprised of a pair of transistors cross-coupled by a capacitor and operable to convert the input pulses into the square-wave signal.

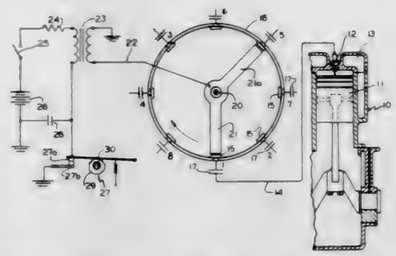
3,430,616
FUEL INJECTION CONTROL SYSTEM
Otto Glöckler, Renningen, and Wolfgang Reichardt, Stuttgart-Rohr, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany
Filed Nov. 2, 1967, Ser. No. 680,144
Claims priority, application Germany, Nov. 11, 1966, B 89,785
U.S. Cl. 123—119 **13 Claims**
Int. Cl. F02m *51/06, 61/14*



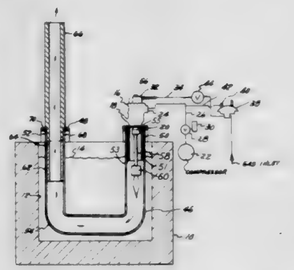
The operating time of electrically controlled fuel injection valves is determined by the opening time of AND-gates connected to the valves, and having, as their input, pulses from a monostable multivibrator, the pulse period of which depends on an operating parameter of the engine, as well as a gating pulse derived from a signal generator, preferably having a contactless or low power input, and synchronized with the speed of the engine; to prevent injection of fuel during downhill coasting, a blocking impulse may be applied to the AND-gates through a third input.

3,430,617
APPARATUS FOR SCAVENGING EXHAUST GASES
John L. Elberson, R.D. 1, Verona, N.Y. 13478
Filed Apr. 18, 1967, Ser. No. 631,664
U.S. Cl. 123—148 **4 Claims**
Int. Cl. F02p *9/00*

An ignition system for clearing the exhaust of internal combustion engines of unburned gases has means for providing a spark at each cylinder conventionally at the commencement of its power stroke and also for providing an additional spark at each cylinder momentarily during the first half of its exhaust stroke. Such ignition means include dual ignition systems separately timed, dual ignition systems using a common distributor, and a single ignition system having a double contact arm in the distributor, one arm furnishing the power spark and the other the scavenging spark.



3,430,618
IMMERSION HEATING APPARATUS
Joseph A. Kozma, Jr., 766 Whippers in Court, Bloomfield Hills, Mich. 48013
Continuation-in-part of application Ser. No. 478,889, Apr. 11, 1965. This application Oct. 11, 1967, Ser. No. 674,557
U.S. Cl. 126—360 **12 Claims**
Int. Cl. F24h *1/20*

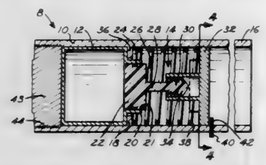


A tubular heating unit is mounted within a furnace adapted to contain liquid metal. The heating tube is supported with an inlet and an outlet above the normal operating level of the bath and an intermediate portion immersed within the bath. A flame producing nozzle mounted within the inlet directs the heating flame through the intermediate portion of the tube and toward the outlet. A short tubular shield surrounds the nozzle at the inlet and forms a dead air space to locally insulate the heating tube at and above the normal operating level of the bath. A ceramic liner mounted within the outlet provides localized insulation for that portion of the heating tube associated with and above the normal operating level of the bath at the outlet and cooperates with the heating tube to form a socket for a removable exhaust stack.

3,430,619
LAUNCHER USING A VAPORING LIQUID AS A PROJECTILE PROPELLING MEANS
Bernard Silver and Christian C. Bolta, Alexandria, Va., assignors to The Susquehanna Corporation, a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 449,999
U.S. Cl. 124—11 **26 Claims**
Int. Cl. F41b *11/06;* **F41c** *1/04;* **F17c** *9/02*

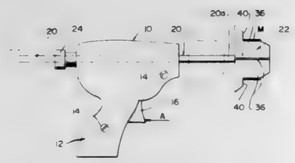
A launcher for propelling a projectile, comprising a housing for receiving the projectile and a closed container communicating with the interior of the housing and en-

closing a liquid having a boiling point at ambient pressure below the ambient temperature. Suitable means are provided for selectively opening the container to rapidly



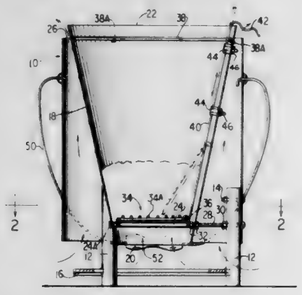
expose a substantial surface of the liquid to the housing interior, thereby effecting flashing of the liquid to rapidly produce a pressurized vapor for ejecting the projectile from the housing.

3,430,620
MISSILE LAUNCHING TOY
Dhu Aine J. Davis, % Hermetic Coil Co., Inc., 303 Delles Road, Wheaton, Ill. 60187
Filed June 21, 1966, Ser. No. 559,240
U.S. Cl. 124—27 **2 Claims**
Int. Cl. F41f *1/00;* **F41b** *15/00;* **A63h** *27/00*



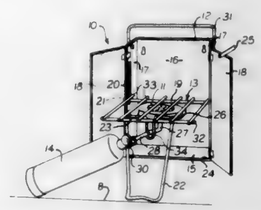
A missile launching toy which has a launching mechanism to which is imparted simultaneous rotational and rectilinear movement from a cocked to an extended position. The launching mechanism has a launching head on which a missile is mounted loosely such that the missile will be launched in a continuation of the simultaneous rotational and rectilinear movement of the head when the head reaches its extended position. The missile is formed of an open ended section of a relatively thin lightweight cylindrical body and is mounted on the launching head with the axis of the cylinder on line with the rectilinear movement of the launching head so that the missile spins about its axis as it is launched from the head.

3,430,621
PORTABLE COOKING GRILL
Leete P. Doty, 75 Meeting House Lane, Fairfield, Conn. 06430
Filed Apr. 10, 1967, Ser. No. 629,628
U.S. Cl. 126—25 **4 Claims**
Int. Cl. A47j *37/07;* **F23h** *13/06*



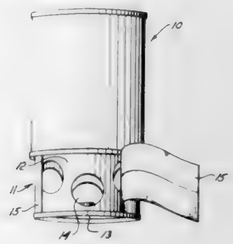
A portable outdoor-type of grill or cooking unit in which an inverted hollow frustum-shaped member having a tiltable grate in the lower portion thereof is air-insulated from an outer casing or housing. The grate may be readily tilted by a hand-operated rod to empty ashes.

3,430,622
PORTABLE COOKING STOVE
Milo E. Webster, Huntington Hills, Rochester, and Joseph K. Locke, Pittsford, N.Y., assignors to Bernz-O-Matic Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,975
U.S. Cl. 126—38 **3 Claims**
Int. Cl. F24c *5/20*



A portable cooking stove having one or more gas burners adapted to burn bottled fuel gas and mounted to a grating which can be swung outwardly from a carrying case into a horizontally extended position for cooking, and retracted into a stowed configuration position within the case for carrying. The carrying case serves as a windshield when the grating and burners are extended into the cooking position, and is so dimensioned as to allow a ready-to-use fuel supply of at least one fuel gas cylinder per burner to be carried within the case when the grating and burners are stowed.

3,430,623
SELF-HEATING CONTAINER
Glenn M. Hoch, 1114 Apple Drive, Mechanicsburg, Pa. 17055
Filed June 14, 1967, Ser. No. 646,097
U.S. Cl. 126—262 **3 Claims**
Int. Cl. A47g *23/04*

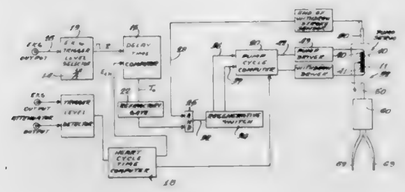


A food container having an attached heating element for heating the contents of the container is disclosed. The heating element houses a charge of solidified fuel and is provided with a series of ventilating holes in its side walls. A removable sealing strip surrounds the side walls and covers the holes while the container is in storage. Score lines are printed on the sealing strip along which the strip is folded to form a tripod stand on which the bottom of the fuel container rests during heating of the contents of the food container.

ERRATUM

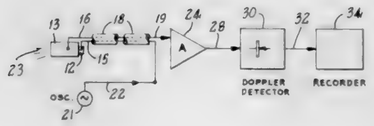
For Class 126—360 see:
Patent No. 3,430,618

3,430,624
DELAY TIME COMPUTER FOR HEART PUMP SYSTEM
William J. Flanagan, Denver, Colo., and David Q. Lee, Rockford, Ill., assignors, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 577,680
U.S. Cl. 128—1 **9 Claims**
Int. Cl. A61m *5/14;* **A61h** *31/00*



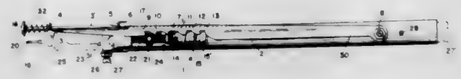
A heart pump system includes a triggered function generator for generating a variable delay which defines the time that a heart pump stroke should be delayed from the R wave of a patient's EKG waveform. The delayed time is computed from the function $10.21\sqrt{R-R}+K$, where $R-R$ is the cardiac period, and K is a manually set constant. The system includes a two-channel cycle time computer for counting time between R waves, in each of two channels, alternatively. The cycle time computer controls a pump cycle computer along with the output of the delayed time computer. A withdraw stroke sensor prevents the delay time computer from operating the pump cycle computer sporadically, by means of a gate. The pump cycle computer is controlled by a regenerative switch to operate the pumped stroke driver of a blood pump during one portion of the cycle, and operate the withdraw stroke driver of the blood pump in another part of the cycle.

3,430,625
ULTRASONIC FLOWMETER FOR MEASURING BLOOD FLOW
Francis D. McLeod, Jr., Scotia, N.Y., assignor to Mennen-Greatbatch Electronics, Inc., Clarence, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,018
U.S. Cl. 128—2.05 **6 Claims**
Int. Cl. A61b *5/02;* **G01f** *1/00*



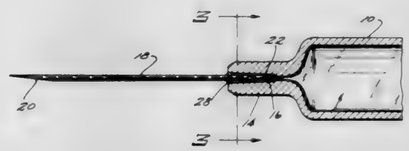
This invention includes process and apparatus for measuring the velocity of fluids in a conduit, especially the velocity of blood in a remote point of an animal or human circulatory system. After an incision is made at a convenient accessible location in a conduit or blood vessel, a pair of transducers are moved from such point of incision and is connected to an ultrasonic transmitter vessel to a desired location. A cable connected to the transducers leaves the conduit or blood vessel at the point of incision and is connected to an ultrasonic transmitter and to Doppler measuring means. The difference in frequency between the outwardly radiating wave from one of the transducers and the frequency of the wave reflected back by the particulate matter in the fluid or the blood as detected by the other transducer determines the fluid or blood flow rate by the Doppler principle.

3,430,626
SELF-TRIGGERED VETERINARY ATTACHMENT
Erick H. Bergman, Cereal, Alberta, Canada (R.R. 2, Lumby, British Columbia, Canada)
Filed Aug. 8, 1966, Ser. No. 571,065
U.S. Cl. 128—218 **3 Claims**
Int. Cl. A61m *5/20;* **A61d** *7/00*



A tubular apparatus that will hold and automatically discharge a veterinary syringe on contact by means of a compressed spring which is actuated by a trigger mechanism, with provision for adding an extension member to facilitate the remote injection of an animal.

3,430,627
HYPODERMIC NEEDLE
Walter Kitaj, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed June 10, 1963, Ser. No. 286,548
U.S. Cl. 128—221 **16 Claims**
Int. Cl. A61m *5/18;* **C09j** *5/06*

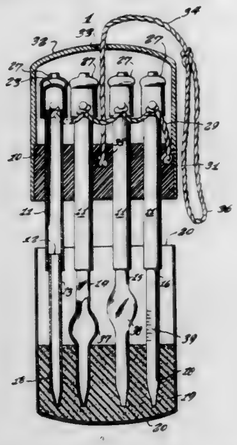


1. A hypodermic syringe comprising a glass barrel having a bore at one end thereof, a steel cannula having one end located within said bore and communicating with the interior of said barrel and a seal disposed within the space between said cannula and said barrel and bonding said cannula to said barrel within said bore, said seal being the reaction product of a composition consisting essentially of a branched polyol having a molecular weight of about 400 to 700, an organic polyisocyanate and a curing agent consisting of an organic nitrogen-containing compound having at least one active hydrogen atom per molecule, said curing agent being present in an amount to react completely with the available isocyanate groups.

3,430,628
PLURALITY OF ASPIRATORS
Reatha L. Wiggins, 205 W. 112th St., Apt. 2W, New York, N.Y. 10026
Filed Feb. 23, 1965, Ser. No. 442,226
U.S. Cl. 128—276 **7 Claims**
Int. Cl. A61m *1/00;* **B67c** *3/16*

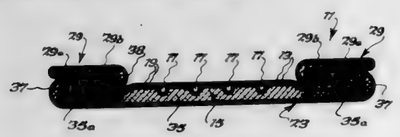
An assembly of a plurality of pipettes for collecting samples of liquids. Each pipette is separately secured to one end of an individual flexible tube. The other end

of the flexible tube is provided with means for producing and maintaining suction for filling the pipette to the de-



sired level and retaining the liquid therein. The flexible tubes are secured in a suitable holder.

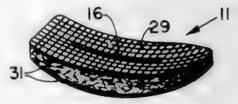
3,430,629
DISPOSABLE DIAPER
James A. Murphy, Toronto, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada,
Filed Oct. 11, 1965, Ser. No. 494,573
Claims priority, application Canada, Aug. 17, 1965, 938,396
U.S. Cl. 128—284 **14 Claims**
Int. Cl. A61f *13/16;* **A61l** *15/00*



A disposable diaper is formed with an elongated pad of loose fibers of cellulosic material formed as a single integral layer with a longitudinally extending portion of greater thickness than adjacent flanking portions extending in the same direction. This layer is substantially homogeneous with fiber-to-fiber contact providing direct wicking of fluid among the fibers and distribution of fluid between the respective portions and also facilitating flow of fluid in all directions in the pad. The pad is wrapped in an envelope of permeable material such as wet strength tissue. The diaper is formed in an economical and continuous manner by a method including the step of forming an integral, single layer pad by air-laying the fibers on a continuously moving sheet.

3,430,630
SANITARY NAPKIN
Donald R. Megison, Springfield Township, Hamilton County, and Stanley Barton, Greenhills, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 27, 1966, Ser. No. 545,689
U.S. Cl. 128—290 **11 Claims**
Int. Cl. A61f *13/20;* **A61l** *15/00*

A sanitary napkin adapted to assume a lateral upwardly concave conformation when worn. The napkin comprises a preformed core of longitudinal and lateral arcuate shape which is constructed of fibers of absorbent material held in an integrated or unified condition. A longitudinally extending depression of narrow width and a depth of at least about $\frac{1}{32}$ inch is located centrally of the upper surface of the core. The depression in associa-



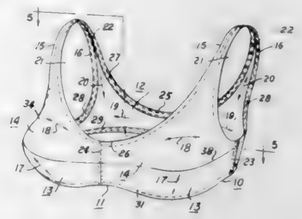
tion with the balance of the structure imparts a directed flexure property to the napkin to assure that lateral compression in use will cause the aforesaid lateral upwardly concave conformation to occur.

3,430,631
SURGEON'S DRAIN
Daniel J. Abramson, 2800 Greenvale St., Chevy Chase, Md. 20015
Filed Jan. 12, 1966, Ser. No. 520,134
U.S. Cl. 128—350 **3 Claims**
Int. Cl. A61m *27/00*



A surgical drain comprising a first tube of thin, soft, flexible material and having a substantially elliptical or arcuate cross-section, and a second, separately formed tube of substantially the same length positioned coextensively along and bonded to a surface of the first tube for its entire length, said second tube having substantially the same wall thickness but being formed of a different and relatively more rigid material than said first tube and having a substantially circular cross-section, thereby permitting irrigation and suctional withdrawal through the rigid second tube regardless of a possible collapsed condition of the more flexible first tube.

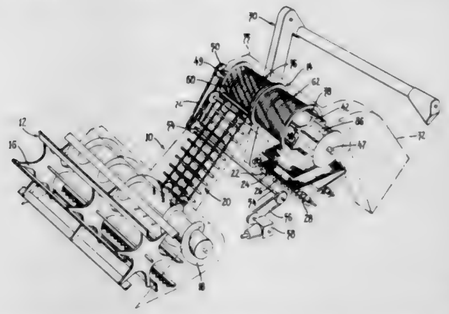
3,430,632
BRASSIERE
Emily James and Robert W. Henson, Greenville, Tex., assignors to Henson-Kickernick, Inc., Greenville, Tex., a corporation of Minnesota
Filed Feb. 3, 1967, Ser. No. 613,951
U.S. Cl. 128—425 **7 Claims**
Int. Cl. A41c *3/00*



A brassiere of endless construction having sufficient elasticity to permit donning thereof by stepping thereinto

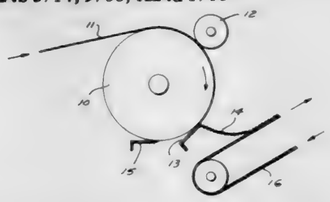
or by slipping over the shoulders and freedom of movement of the body when properly positioned while adequately supporting the breasts without undue confinement.

3,430,633
CONICAL THRESHING ASSEMBLY
Alexander H. Mark, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Oct. 18, 1965, Ser. No. 497,002
U.S. Cl. 130—27 **5 Claims**
Int. Cl. A01f *7/06;* **A01d** *41/12*



A threshing assembly including a conical concave enclosing a cylinder having axially extending peripheral bars. Spiral guide bars are mounted on the inner surface of the concave to cooperate with the cylinder bars and cause the material to advance axially to the larger discharge end of the threshing unit during the threshing operation.

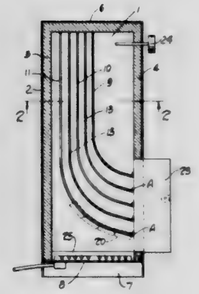
3,430,634
METHOD OF MAKING A RECONSTITUTED TOBACCO SHEET HAVING IMPROVED FILLING POWER
William P. Schweitzer, Palm Beach, Fla., and Nathan Flaxman, Elizabeth, N.J., assignors to Kimberly-Clark Corporation, a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 630,976
U.S. Cl. 131—140 **2 Claims**
Int. Cl. A24b *3/14, 9/00;* **A24d** *1/00*



A reconstituted tobacco sheet is formed, and while the sheet is wet and being carried by a rotating support roll, it is doctored off the roll to produce a crepe in the sheet. The dried, creped sheet may then be cut up to produce a filler material for cigarettes or cigars.

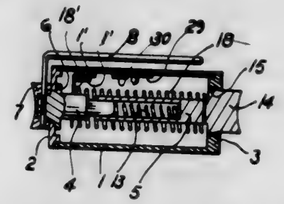
3,430,635
HAIR CURLER OVEN AND METHOD OF CURLING HAIR
Charles L. Kemp and Ingrid L. Kemp, both of 10251 Chesterfield Drive, Parma Heights, Ohio 44129, and Donald J. Hartwick and Gloria J. Hartwick, both of 15324 Holland Road, Brookpark Village, Ohio 44142
Filed May 5, 1965, Ser. No. 453,409
U.S. Cl. 132—7 **4 Claims**
Int. Cl. A45d *19/00*

This invention discloses a method of curling hair which depends upon the preliminary heating of a hair roller or series of rollers to a temperature which is substantially above body temperature, thereafter rolling the strands of hair around each of the rollers, and since the rollers are hollow in this contemplation, same are subsequently subjected to treatment by passing warm air therearound while the hair is rolled on the rollers so that the hair dries during the course of such treatment, resulting in improved curls provided, and in addition the oven in which the rollers are heated is disclosed as including a series of



downwardly depending rods of substantial length upon which a series of rollers may be supported in end-to-end relationship, the oven having means therein to heat the interior and circulate air—and by reason of the position of the heating elements in the oven, effect uniform heating of the rollers. The rollers are positioned so as to be removed one at a time from a suitable opening in the oven through which access may be had to the end of each of the rods upon which such rollers are supported.

3,430,636
HAIR CURLER
Alphonse Compère 11946 Depatie St., Montreal 9, Quebec, Canada
Filed May 17, 1967, Ser. No. 639,105
U.S. Cl. 132—34 **8 Claims**
Int. Cl. A45d *2/14, 2/21*

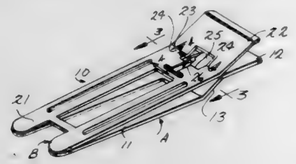


This invention relates to a hair curler which is characterized by the fact that the mesh of hair applied to the curler is automatically wound on the curler upon a simple manual pressure on buttons mounted on the curler ends, is automatically held in position on the user's head upon release of the buttons and can be unwound from the mesh of hair after the hair is curled and is then ready for another curling operation.

3,430,637
PIN CURL CLIP
Otto Koleske, Sunbury, Pa., assignor to Wilson Manufacturing Corporation, Sunbury, Pa., a corporation of New York
Filed July 26, 1967, Ser. No. 656,120
U.S. Cl. 132—46 **8 Claims**
Int. Cl. A45d *8/20;* **A44b** *21/00*

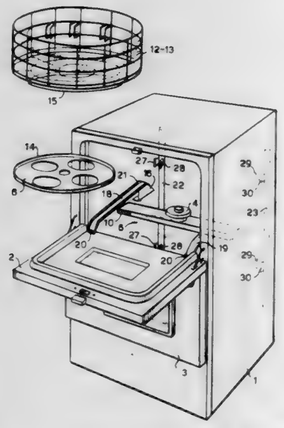
A clamp having a pair of jaws and handle portions on each of the jaws which, when moved toward each other, cause the jaws to open. A spring formed from the mate-

rial of one jaw and operatively connected to the other jaw in a specific manner to hold the clamp assembled and



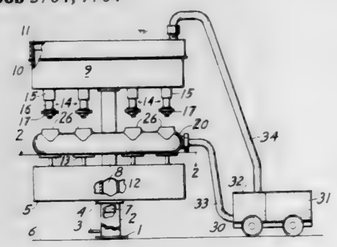
to cause the jaws to close when pressure on the handles is released.

3,430,638
MACHINE WITH SELF-CENTERING ROTATING BASKET FOR WASHING DISHES AND UTENSILS
Giuseppe Brollo, Plaza della Repubblica 32, Milan, Italy
Filed Apr. 11, 1967, Ser. No. 630,118
Claims priority, application Italy, Jan. 13, 1967, 11,434/67
U.S. Cl. 134—112 **4 Claims**
Int. Cl. A47l *15/32*



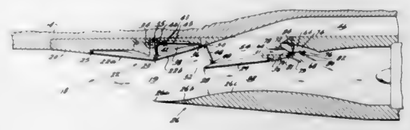
A machine for washing dishes and the like having a disc supporting the basket for the articles to be washed, the disc being rotatably mounted on a coaxial support. The basket is guided and raised by a pair of strips which are located under the basket and connected by hinge means with the closing door of the machine.

3,430,639
CLEANING MEANS FOR LIQUID DISPENSERS
Lee Roberts, Claremont, Calif. (% Pomona Valley Creamery, 4835 Mission Blvd., Ontario, Calif. 91762)
Filed Nov. 8, 1966, Ser. No. 592,766
U.S. Cl. 134—169 **6 Claims**
Int. Cl. B08b *3/04, 7/04*



Closed circuit high pressure means for cleaning and flushing liquid dispensing machines having an overhead tank which contains the liquid to be dispensed and platform means therebeneath for holding the containers to be filled with liquid from the tank.

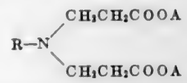
3,430,640
SUPERSONIC INLET
Dean J. Lennard, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Feb. 17, 1964, Ser. No. 345,528
U.S. Cl. 137—15.1 **7 Claims**
Int. Cl. F02c *7/04;* **F02k** *7/10*



1. In a jet engine air intake for supersonic aircraft having a longitudinal axis and including a plurality of transverse, spaced, relatively movable wall members forming a primary intake passage converging to a throat area and thereafter diverging in a diffuser portion to the engine inlet, means for varying the air intake contraction ratio by movement of said wall members and including a gap formed between adjacent wall members, said gap being variable in area to regulate external bypass flow over a wide range of operating Mach numbers to enhance intake pressure recovery, and means for re-routing at least a portion of the bypass flow from said gap back into the primary passage for improved off-design operation.

3,430,641
METHOD OF REDISPERSING DEPOSITS
Theodore R. Newman, Oak Lawn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 16, 1966, Ser. No. 527,766
U.S. Cl. 134—22 **9 Claims**
Int. Cl. B08b *3/08, 9/00*

1. A process which comprises redispersing into aqueous systems loosely adherent deposits made up of nonbonded particulate matter in contact with solid surfaces forming a part of said systems by treatment of said systems with a redispersing agent having the structural formula:

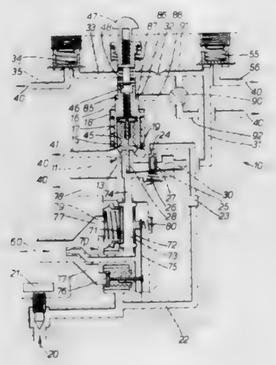


where R is a C_{16}–C_{18} aliphatic hydrocarbon radical and A is a radical selected from the group consisting of hydrogen and alkali metal.

3,430,642
ACCELERATION-RESPONSIVE VALVE ASSEMBLIES
John E. Mack, Redditch, England, assignor to The Hymatic Engineering Company Limited, a company of Great Britain
Filed Oct. 8, 1965, Ser. No. 494,058
Claims priority, application Great Britain, Oct. 8, 1964, 41,114/64
U.S. Cl. 137—39 **7 Claims**
Int. Cl. G05d *1/00, 16/00*

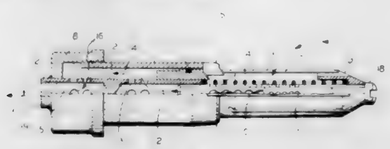
An acceleration-responsive valve assembly for admitting gas from a supply to an output at an output pressure which depends on acceleration and which is required at a given acceleration to rise rapidly from the ambient

pressure to what may be termed the knee pressure and thereafter to increase steadily at a chosen lower rate with further increase of acceleration, including an inertia mass subject to the acceleration, means defining a space referred to herein as a control space, a pilot valve having a moving member acted on by the inertia mass to establish in the control space a control pressure corresponding to the acceleration, means defining a space re-



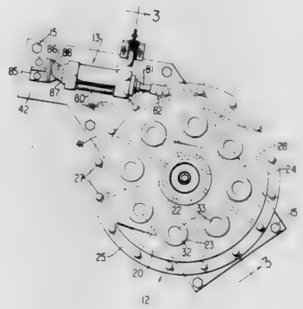
ferred to herein as a knee pressure space communicating with the control space through a restricted orifice, a knee pressure space to exhaust, means responsive to the pressure in the knee pressure space for applying to the pilot valve a force corresponding to the said pressure, and a main servo valve controlling flow from the supply to the output and itself controlled in accordance with the control pressure.

3,430,643
SELF-CLEANING VENTING ORIFICE
Wolfgang K. Heiland, Trevose, Pa., assignor to the United States of America as represented by the Secretary of Agriculture
Filed Mar. 19, 1968, Ser. No. 714,269
U.S. Cl. 137—244 **9 Claims**
Int. Cl. F16k *45/00;* **B05b** *15/02*



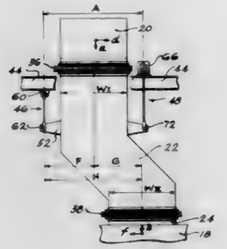
A tubular shaped self-cleaning device for venting fluids and gases between two different pressure potentials comprised of an outer housing, an inner housing, a piston and a compression spring. Secured to the forward end of the inner wall of the outer housing are a plurality of axial, inwardly-extending teeth which align and mate with longitudinal slots on the piston. When these slots are open the compression spring holds the piston in the fully forward position providing a path for fluids or gases to enter the elongated inner housing through perforations in its tubular wall and escape through an orifice outlet at the rear of the inner housing. When the slots are clogged with solid particles, the external pressure overcomes the force of the compression spring and the piston slides to the rear of the housing, thereby automatically cleaning the slots of accumulated material.

3,430,644
ROTARY GATE FOR BOTTOM POUR VESSEL
Richard E. Lyman, Homewood, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,367
U.S. Cl. 137—329.06 **3 Claims**
Int. Cl. F16k *3/08*



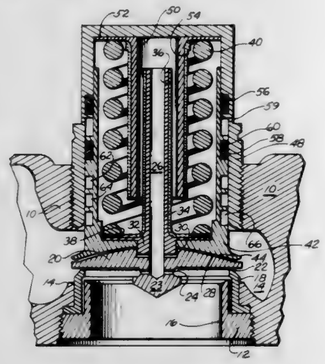
A bottom pour vessel for teeming molten metal has a refractory disc rotatably mounted externally on the bottom thereof. The disc has circumferentially spaced holes adapted to register successively with a discharge nozzle in the bottom of the ladle. The disc is supported in a metal tray secured to the ladle bottom. A spring urges the disc against the nozzle.

3,430,645
DUCT SUPPORT ARRANGEMENT
Gunter J. Stalph, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,148
U.S. Cl. 137—356 **6 Claims**
Int. Cl. F16l *3/16, 27/10, 43/00*



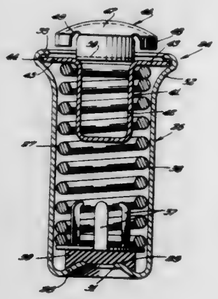
Apparatus for mounting a gas-conducting duct section which is connected by means of expansion joints between pieces of equipment and subject to combinations of both linear and angular motion due to the relative thermal displacements occurring in the equipment. The duct section is supported in a manner that eliminates lateral shear stresses in the expansion joints and that permits accurate computations to be made for the design of bellows employed in the joints. This is accomplished by suspending the duct section from overhead structural steelwork by means of a pivotally attached stiff hanger on one side of the section and one or more spring hangers pivotally attached to the other side or sides thereof.

3,430,646
HOT GAS RELIEF VALVE
Ralph L. Vick, Granada Hills, Calif., assignor to The Bendix Corporation, a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,985
U.S. Cl. 137—375 **1 Claim**
Int. Cl. F16l *7/00;* **F16k** *17/20, 15/00*



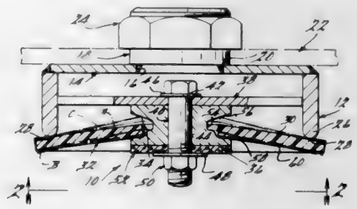
A balanced type of relief valve is shown having specialized construction for dealing with high temperature gases carrying contaminants such as carbon particles and other finely dispersed solids. A poppet is spring-loaded against an annular seat, the spring being contained in a chamber communicating with the inlet through a small, somewhat circuitous passageway. The chamber is partially enclosed by a cap member threaded to the housing and partially by a piston slidable within the cap and movable with the poppet when the inlet pressure is sufficient to open the poppet. A plurality of annular grooves are formed on the surface of the piston, the one most remote from the outlet containing a seal and others nearest the outlet containing ambient gas or air such that when the valve opens, carrying carbon particles, etc., the gas in these grooves is first caused to flow along the mating surfaces of the cap and piston, thus preventing the solid contaminants from collecting on these surfaces and causing the valve to stick.

3,430,647
SAFETY VALVE FOR PROPANE CYLINDERS
Walter T. Suchowolec, De Kalb, Ill., assignor to Turner Corporation, Sycamore, Ill., a corporation of Illinois
Filed June 10, 1966, Ser. No. 560,980
U.S. Cl. 137—377 **7 Claims**
Int. Cl. F16k *17/08, 15/06, 27/00*



1. A valve comprising
a body member made of sheet metal shaped to have a cylindrical outer wall and
a radially inwardly extending wall at one end apertured and embossed to form an integral valve seat,
and a radially outwardly extending retainer portion at the opposite end of said body member,
a disk-shaped sealing member overlying said valve seat inside of said body member,
a seal retainer member made of sheet metal and to which said sealing member is connected on one side and against which a coil spring may be bottomed on its opposite side,
a coil spring having one end bottomed on said seal retainer member inside of said body member,
a spring retainer clip in snap-in assembly with said retainer portion of said body member and having a portion bottoming the other end of said coil spring,
and a cap member having a dome-shaped canopy overlying said body member and including side walls engaging said retainer portion in firm assembly,
said cap member side walls having passages opening sideways to diffuse discharged gases without axial thrust.

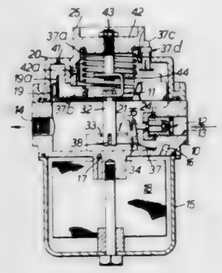
3,430,648
VENT CHECK VALVE
Lawrence A. Botkin, Omaha, Nebr., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 19, 1966, Ser. No. 573,626
U.S. Cl. 137—493 **2 Claims**
Int. Cl. F16k *45/00*



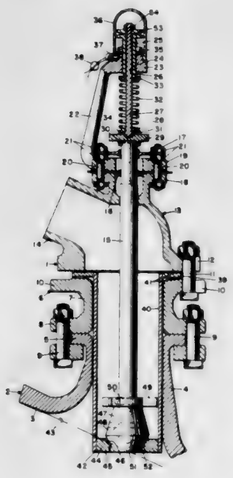
A combination vent check valve assembly comprising housing means defining a first generally radially extending valve seat section, hub means disposed centrally of the housing means and defining a second valve seat section comprising first and second axially spaced, generally radially extending valve seat portions, a valve member extending between the housing means and the hub means and having first and second radially spaced valve portions, the valve member being movable in response to a preselected differential pressure condition between a first position wherein the valve portions are engaged one with the first valve seat section and one with the second valve seat section so as to block communication between the housing and hub means, and a second position wherein either of the valve portions is disengaged from the adjacent of the valve seat sections, whereby to vent one side of the valve member with the opposite side thereof.

3,430,649
CONTROL VALVES
Terence A. Stoten, Barton, England, assignor to George Kent, Limited
Filed Aug. 29, 1966, Ser. No. 575,832
Claims priority, application Great Britain, Oct. 19, 1965, 44,226/65
U.S. Cl. 137—495 **14 Claims**
Int. Cl. F16k *31/14, 31/36*

A fluid control valve device includes operating means for holding a valve member in a normal position to allow fluid to flow over a predetermined pressure range, for moving the valve member in a first direction toward a first seating position in response to a relatively small increase in pressure, for moving the valve member in the opposite direction toward a second seating position in response to a decrease in pressure, and for disconnecting the operating means from the valve member in response to a relatively large increase in pressure, i.e., above said predetermined range, thereby causing said valve member to be seated to shut off fluid flow through the valve device.



3,430,650
RELIEF VALVE
Gilbert E. Cain, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,528
U.S. Cl. 137—535 **2 Claims**
Int. Cl. F16k *17/08, 27/00, 51/00*



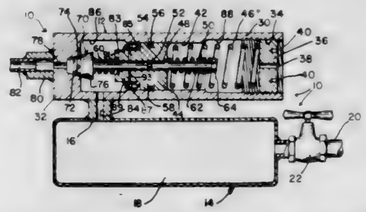
This invention relates to a safety valve adapted for use in a polymerizer and particularly to a safety valve designed to avoid spaces wherein polymerizing material can be deposited or accumulate and thereby foul operation of the valve. The valve includes a sleeve secured to the valve body by a fitting and carrying the valve seat at its input end, and a valve head cooperating with the valve seat. The sleeve provides for mounting the valve head and seat flush with the inner surface of the vessel and for preassembling the valve unit and for assembling the same with respect to existing vessels.

3,430,651
COMPOUND ROTARY VALVE
Edward W. Jackoboice, Grand Rapids, Mich., assignor to Monarch Road Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed Apr. 13, 1967, Ser. No. 630,644
U.S. Cl. 137—596 **13 Claims**
Int. Cl. F16k *11/22*



A hydraulic valve apparatus having a pair of independently actuable internal rotary valve members which are spaced apart by a manifold structure having passages interconnecting the two valve members for fluid flow therebetween. An enclosing housing serves to mount the valve members and provides fluid passages at various positions relative thereto, such that fluid flow through any of a number of such passages may be achieved by controlling the rotary position of each of the internal valve members.

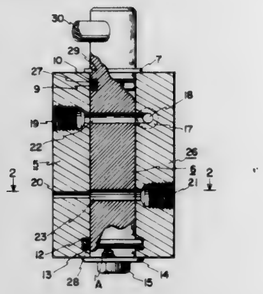
3,430,652
INTERMITTENTLY OPERABLE FLUID BALLAST MECHANISM
Charles R. Struck, Santa Barbara, Calif., assignor, by mesne assignments, to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Aug. 4, 1966, Ser. No. 570,246
U.S. Cl. 137—624.14 **5 Claims**
Int. Cl. F17d *3/00;* **F16d** *31/12, 31/00*



An intermittently operable fluid ballast mechanism including a cylinder adapted for connection to a constant flow of pressurized fluid, a valve seat forming an outlet in one end of the cylinder, a piston in the cylinder biased in the direction of the valve seat, a piston rod extending through and slidable axially within the piston, a cooperating valve member formed on the piston rod, a spring biasing the piston in the direction of the valve seat, another spring mounted on the piston rod between the valve member and the forward end face of the piston and another spring mounted on the piston rod between the rear end face of the piston and a shoulder formed on the piston rod. A buildup in fluid pressure in the cylinder moves the piston away from the valve seat but does not cause the valve member to unseat until the compressive force of the spring mounted on the piston rod between the rear end face of the piston and the shoulder overcomes a sealing force provided by the fluid on the valve member. When such force is overcome the valve member snaps to an open position, thus discharging the fluid through the outlet and causing the piston to move toward

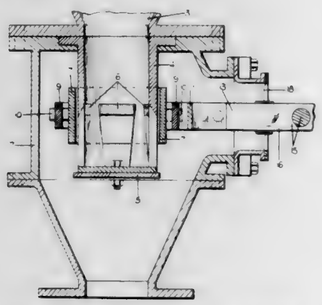
the valve seat which in turn causes a compression of the spring on the piston rod between the forward end face of the piston and the valve member to return the valve member to a seated position.

3,430,653
HYDRAULIC VALVE AND SYSTEM
Ray S. Brimhall, 4604 Idlewild,
Salt Lake City, Utah 84117
Filed Dec. 2, 1965, Ser. No. 530,242
U.S. Cl. 137—625.23 11 Claims
Int. Cl. F16k *11/07, 47/04*



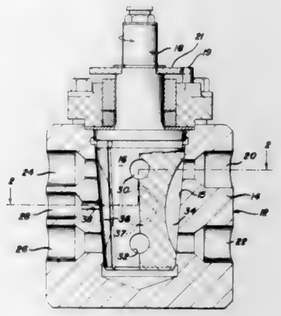
The present invention presents a new and improved four-way valve and system therefor wherein bi-directional flow through a work circuit is accomplished in cooperation with controlled and selective metering at the exhaust point of the valve, at which point unidirectional flow of fluid feeds back to the reservoir of the system containing the valve. Advantageous use is made of through-apertures through the valve spool provided in the valve as well as a pair of mutually spaced surface openings for providing shunting of hydraulic fluid across the spool and into a reverse circuit flow condition. It is to be noted that variable and selective metering is possible at the exhaust point of the valve, and this regardless of direction of flow of the work circuit associated with the valve. The invention also includes the concept of providing corresponding valve means in combination with a pivotable tractor cab, this to provide free-fall braked descent on both sides of the cab's pivot axis.

3,430,654
VALVE FOR CONTROLLING THE RATE OF FLOW OF SOLIDS
Arnold T. Mills, Bulawayo, Rhodesia, assignor, by mesne assignments, to Hilux Holdings Societe Anonyme, Gare, Luxembourg, a corporation of Luxembourg
Filed Mar. 20, 1967, Ser. No. 624,493
U.S. Cl. 137—625.28 7 Claims
Int. Cl. F16k *3/24*



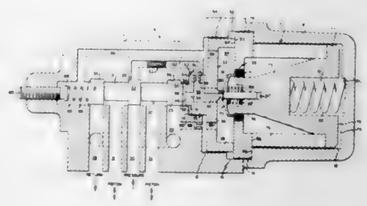
A valve for controlling the flow of solids having a hollow core with slots in its side walls and its axis vertical, a sleeve surrounding the core and spaced from it a distance at least equal to three times the diameters of the largest particles present in the solid material, and means for moving the sleeve up and down so that the sleeve obturates the slots to varying vertical extents.

3,430,655
MONOBLOCK VALVE
Ross H. Forney, Dallas, Tex., assignor to Forney Engineering Company, Dallas, Tex., a corporation of Texas
Filed Apr. 11, 1967, Ser. No. 629,973
U.S. Cl. 137—625.47 6 Claims
Int. Cl. F16k *5/08*; F23c *11/00*



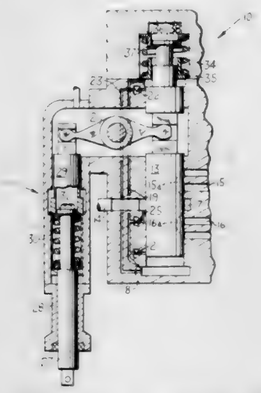
A valve particularly suitable for oil burners comprising a valve body and rotatable valve plug, at least two ports on one side of the valve body and at least three ports on the opposite side of the valve body, two of the last-mentioned ports being opposite the first-mentioned ports, the plug including passageways connecting the body opposing ports when the plug is in one position, and at least one channel connecting said three ports to each other when the plug is in a second position.

3,430,656
POSITIVE CENTERING SERVOVALVE HAVING MOVABLE NOZZLE BLOCK
George W. Hawk, East Aurora, N.Y., assignor to Moog Inc., East Aurora, N.Y., a corporation of New York
Filed Apr. 7, 1967, Ser. No. 629,134
U.S. Cl. 137—625.61 7 Claims
Int. Cl. F15c *3/02*



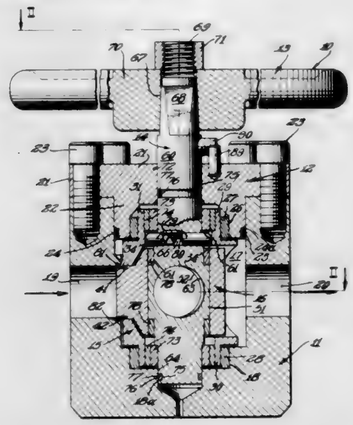
A servovalve having a valve slide the position of which is normally obtained by a balance of a spring force and a fluid force due to pressure in a chamber at one end of the slide but maintained in a null position when there is no signal input and fluid supply pressure is below a predetermined minimum operating level, this being achieved by moving a nozzle block which defines the outer end wall of said chamber abuttingly against said one end of the slide which defines the inner end wall of said chamber.

3,430,657
BALANCING OF GRAVITATIONAL FORCES IN A VERTICALLY DISPOSED VALVE SPOOL
John A. Junck and Roger A. Rice, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 15, 1966, Ser. No. 602,081
U.S. Cl. 137—625.67 3 Claims
Int. Cl. E03b; E03c; F17d



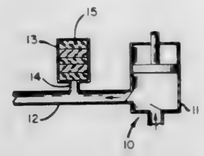
A spool-type valve which is disposed vertically for reciprocation of the spool in two directions from a neutral position and in which the gravitational force tending to move the spool downwardly is balanced by spring force so that valve movement in response to upward and downward bouncing action in a tractor-trailer hitch will be uniform.

3,430,658
FLOW CONTROL VALVE
Richard E. Self, 3221 Brimhall Drive,
Los Alamitos, Calif. 90720
Filed June 14, 1965, Ser. No. 463,739
U.S. Cl. 137—628 7 Claims
Int. Cl. F16k *5/04, 5/18, 39/06*



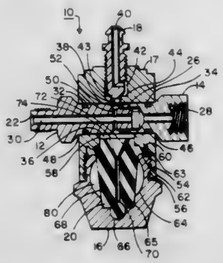
A rotary flow control valve, preferably a ball valve wherein the rotor or ball carries a shiftable poppet member and has a shaft extending therethrough with an eccentric portion to shift the poppet member from a retracted position inside of the rotor to a projected position in sealing engagement with a valve port. The poppet member has a nose carrying a deformable seal which is completely encapsulated in the rotor until the poppet member is shifted by the shaft into sealed engagement with the valve port. The shaft has a selective drive connection with the rotor and stop means are provided to disconnect the drive whereupon the eccentric portion of the shaft will shift the poppet member into its sealed engagement with the valve port. The poppet member in its retracted position does not ride on the walls of the housing chamber receiving the rotor and the rotor need not be tightly sealed in the housing, whereby driving effort for moving the rotor is minimized.

3,430,659
PULSATION SUPPRESSOR
Homer I. Henderson, 2220 Live Oak,
San Angelo, Tex. 76901
Filed Jan. 28, 1966, Ser. No. 523,733
U.S. Cl. 138—26 14 Claims
Int. Cl. F16l *55/04, 9/14, 55/02*



1. In a liquid transmission system including a pulse generating device, a pulsation suppressor comprising:
a housing,
connector conduit means connecting said housing into said liquid transmission system,
a resilient material formed of closed, fluid-tight cells enclosed by flexible cell walls and having a bulk modulus of elasticity of less than 20,000 p.s.i. at 1000 p.s.i. pressure, and
means holding said material within said housing in continuous contact with liquid entering through said connector conduit means.

3,430,660
PRESSURE EQUALIZER APPARATUS FOR HYDRAULIC BRAKE FLUID SYSTEMS
Robert E. Mitton, 349 Spreckles Bldg.,
San Diego, Calif. 92101
Filed Mar. 21, 1966, Ser. No. 536,088
U.S. Cl. 138—30 2 Claims
Int. Cl. F16l *55/04*; B60t *17/00*

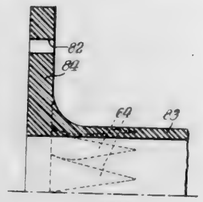


A pressure equalizer apparatus for hydraulic brake fluid systems that has means for neutralizing shock waves occurring in the fluid, and that has means for equalizing the hydraulic fluid pressure applied to the individual braking mechanisms at each wheel.

3,430,661
FLANGED PLASTIC PIPES
John B. Sabine, c/o Sabine Plastics, Inc., P.O. Box 7282,
Mobile, Ala. 36607
Filed June 1, 1965, Ser. No. 460,099
U.S. Cl. 138—109 5 Claims
Int. Cl. F16l *9/14, 13/14, 19/02*

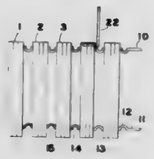
A flanged pipe of fiberglass reinforced plastic material formed in a manner to provide a pipe portion that merges

smoothly into a strong flanged portion that is integral with the pipe portion. The pipe portion comprises a plurality of layers of fiberglass material embedded in solidified plastic material and the flange portion is reinforced



by a certain type of filler disk that is also embedded in solidified plastic material. The connection between the flange portion and the pipe portion is reinforced by fiberglass riser pieces.

3,430,662
FLEXIBLE SEGMENTED TUBE
Stephen Guarnaschelli, Garden City, N.Y. (4608 Wayfarer Place, Orlando, Fla. 32807)
Filed Sept. 21, 1964, Ser. No. 397,809
U.S. Cl. 138—120 **2 Claims**
Int. Cl. F16l *3/02, 7/00;* **H01b** *7/18*



1. In an electrical distribution system a conduit comprising:

a plurality of metal rings having oppositely located flats placed between two shoulders,

means to connect said metal rings at said flats in spaced relation for flexing in one plane only comprising:

a pair of metal strips, said strips having equally spaced transverse corrugations therein,

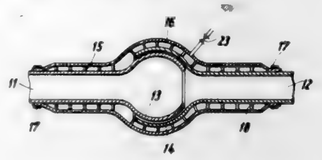
said rings being fixedly connected to said strips between said corrugations, said strips being placed on opposite sides of said rings, whereby said flexing takes place about the edges of said strips substantially only in a plane parallel to said strip, said strips being substantially wider than their thickness.

3,430,663
HOSE LINE FOR SUCKING OFF HOT GASES, PARTICULARLY IN THE VACUUM DEGASSING OF LARGE METAL AND STEEL BATCHES
Adolf Sickbert, Wattenscheid-Eppendorf, Germany, assignor to Friedr. Krupp Huttenwerke Aktiengesellschaft, Rheinhausen, Germany, a corporation of Germany
Filed Apr. 9, 1963, Ser. No. 272,186
Claims priority, application Germany, Apr. 12, 1962, B 66,782; Apr. 18, 1962, B 66,884; Apr. 19, 1962, B 66,915
U.S. Cl. 138—148 **3 Claims**
Int. Cl. F16l *11/12, 11/08, 21/00*

1. A flexible vacuum hose for drawing off hot gases from evacuation vessels which comprises:

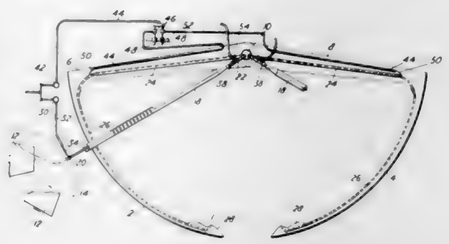
(a) a flexible metallic conduit having an exterior surface and an interior passage for the flow of said hot gases;

(b) a flexible vacuum impervious sheath surrounding the exterior surfaces of said metallic conduit, said sheath having an interior surface which is disposed in continuous spaced relation thereto so as to be thermally insulated therefrom; and



(c) spacing means disposed between said exterior surface of the metallic conduit and said interior surface of the sheath and in abutting contact with said surfaces whereby to establish the said spacing relation therebetween which spacing means includes a plurality of metallic rings disposed at axial stations along said metallic conduit.

3,430,664
LOOMS
Derrick Walter Shimwell, Jurby, Isle-of-Man, assignor to Weaving Research & Textile Commission Agents Limited, a British company
Filed Mar. 23, 1967, Ser. No. 625,480
Claims priority, application Great Britain, Mar. 30, 1966, 14,100/66
U.S. Cl. 139—12 **21 Claims**
Int. Cl. D03d *47/34*

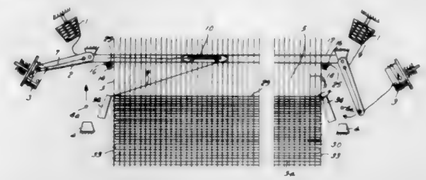


In a needle loom in which weft yarn is supplied from stationary packages to oscillating weft inserting means to be inserted into warp sheds, a reservoir in which the weft can be temporarily stored during its passage from said supply to said inserting means, wherein a reservoir for weft yarn is provided for at least one of the spears or the like, and a gas jet is positioned to blow weft yarn into the reservoir from a supply package, the arrangement being such that weft yarn can be drawn from the reservoir by the spears as and when needed during running of the loom.

3,430,665
WEFT THREAD HOLDING ARRANGEMENT
Rudolf Jager, Frasnacht, Switzerland, Helmut Macho, Konstanz am Bodensee, Germany, and Rudolf Zwiener, Arbon, Switzerland, assignors to Aktiengesellschaft Adolph Saurer, Arbon, Switzerland
Filed Sept. 22, 1967, Ser. No. 669,922
Claims priority, application Switzerland, Sept. 28, 1966, 14,037/66
U.S. Cl. 139—116 **12 Claims**
Int. Cl. D03d *49/50, 41/00;* **D04b** *35/02*

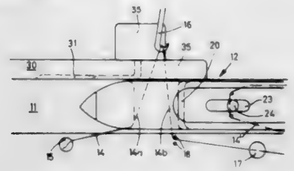
A weft thread of predetermined length released by a weft inserting member in an end position assumed after a pick, is engaged between a face of the weft inserting

member and a control means mounted on the slay whereupon the control means is moved to slide the weft thread onto a face of the slay where the weft thread is gripped by the control means until the slay moves to its



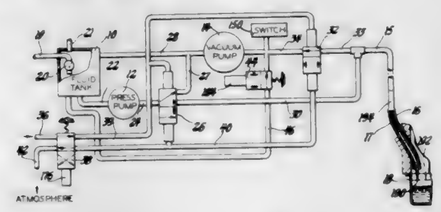
front dead center position in which the control means releases the weft thread which is sucked into a suction nozzle and held while the weft inserting member returns through the warped shed.

3,430,666
ARRANGEMENT FOR TRANSFERRING YARN ON A WEAVING LOOM
Alexis Freihofer, Tann-Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., formerly Casper Honegger, Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed Nov. 28, 1966, Ser. No. 597,284
Claims priority, application Switzerland, Dec. 23, 1965, 17,741/65
U.S. Cl. 139—125 **14 Claims**
Int. Cl. D03d *47/14*



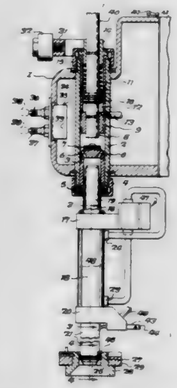
An arrangement for transferring weft yarn on a weaving loom which has a shuttle that introduces the yarn into the shed, which comprises a means that guides an end portion of a yarn to be transferred to the shuttle from one side of the shuttle through an aperture in the shuttle onto the other side, that also holds the yarn on the other side as a loop with its two halves extending from the other side through the aperture to the one side; and that allows the yarn to be drawn away therefrom by the shuttle when the shuttle is introduced into the shed.

3,430,667
LIQUID LEVELING METHOD AND APPARATUS
Walton Hughes, Scotch Plains, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 617,878
U.S. Cl. 141—1 **14 Claims**
Int. Cl. G01f *23/22;* **F16k** *21/18*



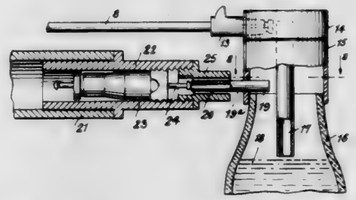
This invention relates to a method and apparatus for establishing a predetermined liquid level in a receptacle such as an automatic transmission sump as demonstrated in the preferred embodiment and more particularly to such a method and apparatus employing a leveling cycle having a level checking phase, a withdrawal phase in the event the existing liquid level is high and an overfilling phase in the event the existing liquid level is low followed by a withdrawal phase to remove excess liquid.

3,430,668
CONTAINER FILLING MACHINE HEAD
James H. Riesenberg, Amherst, N.Y., assignor to Consolidated Packaging Machinery Corp., Buffalo, N.Y.
Filed Aug. 1, 1966, Ser. No. 569,241
U.S. Cl. 141—198 **9 Claims**
Int. Cl. B65b *1/04, 1/30, 57/00*



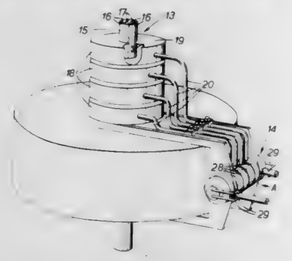
Product level sensing means responsive to the rising level of product in a supported container are associated with a filling head having a filling stem with a product dispensing passage therethrough communicating with a product inlet passage through a product chamber. The filling stem is extended relative to the sensing means for submerged filling of a supported container, and is retractable into the product chamber for displacement of product therefrom through the stem to compensate for the displacement by the stem of product in a supported container.

3,430,669
FILLING MEANS FOR DENTAL SPRAY BOTTLES
Hyman Freedman, 200 W. 58th St., New York, N.Y. 10019
Filed Aug. 20, 1965, Ser. No. 481,352
U.S. Cl. 141—353 **1 Claim**
Int. Cl. B67c *3/28;* **G02b** *5/08*



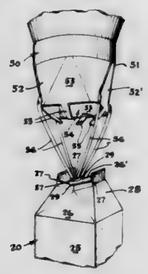
A filling means for a dental spray bottle consisting of a hose leading from a source of liquid under pressure, the hose being provided at its end with a nippled sleeve containing a tire valve. The spray bottle has a cap provided with a radially projecting tube over which the nipple on the sleeve is fitted and the end of the tbe contacts with the stem of the valve and opens the valve to cause a flow of the liquid into the cap and into the bottle to which the cap is attached.

3,430,670
FLUID-HANDLING APPARATUS
Kenneth William Hopkins, Long Ditton, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England
Continuation of application Ser. No. 387,748, Aug. 5, 1964. This application Jan. 26, 1967, Ser. No. 612,051
U.S. Cl. 141—387 **7 Claims**
Int. Cl. B65b *3/00;* **F16l** *39/04;* **F17d** *1/08*



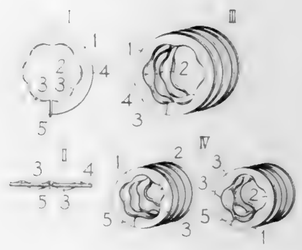
A mooring buoy suitable for the cargo transference of the fluid cargo of tank ships from ship to shore is provided with a manifold arrangement wherein a number of drums are mounted for rotation on a tube forming part of a single point mooring buoy. The tube, which is normally in an up-right position, has its bore partitioned longitudinally and its tubular wall apertured to provide a number of apertured compartments each of which is segregated from the others and represents the end of a pipeline extending to the shore. The drums have no inner wall and form separate compartments with the tube spaced apart from one another axially of the tube. Each drum has an aperture in its outer wall. Accordingly, fluid cargo may be passed in separate streams from pipelines of a ship moored to the buoy into the respective compartments formed by the drums, thence by the apertures in the tube into the respective tube compartments and so in separate streams to the shore. Because the drums, and hence the drum compartments, are spaced apart from one another, there is no common sealing ring between adjacent drums and the tube. Thus, if different products are being supplied to adjacent drums, danger of leakage across a common sealing ring and resultant cross-contamination which would not be detectable until the entire cargo had been unloaded, is avoided.

3,430,671
FILLING NOZZLE
Ralph Mack Lambeth, Chicago, Ill., assignor to A.B.C. Popcorn Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 10, 1966, Ser. No. 519,595
U.S. Cl. 141—392 **7 Claims**
Int. Cl. B65b *1/04, 3/04, 43/26*



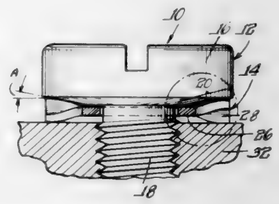
A filling nozzle of a packaging machine used for filling containers having bellows-like collapsible top panels wherein the filling nozzle has a rectangular discharge opening with rigid rod-like members extending downwardly and inwardly from each corner at the lower edge of the discharge opening and terminating at a point adjacent the longitudinal axis of the nozzle for co-acting with and straightening the bellows-like top panels to provide an unobstructed filling opening. Oppositely disposed camming members extending downwardly and inwardly from the lower edge of the rectangular opening of the nozzle can also be provided for engaging and facilitating straightening of the bellows-like top panels.

3,430,672
WAVED FLAT PLATE COIL OR WASHER
Masaharu Kubokawa, No. 2260, 5-chome, Shiina-machi, Toshima-ku, Tokyo, Japan
Filed July 14, 1965, Ser. No. 472,001
U.S. Cl. 151—36 **2 Claims**
Int. Cl. F16b *39/24;* **B21d** *53/22*



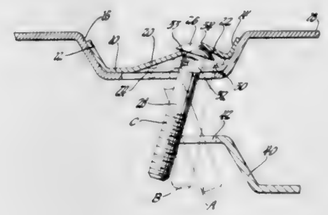
A wavy detent washer comprising a substantially annular ring having adjacent cut ends. The annular ring has a circular outer edge portion disposed in a single plane, and the annular ring is formed with approximately five waves at the inner edge portion running substantially continuously around the entire inner edge portion and perpendicularly to the single plane, and the waves having a height about .5 to 2 times the thickness of the plate and substantially smaller than the length of the waves.

3,430,673
FASTENER UNIT
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,626
U.S. Cl. 151—37 **9 Claims**
Int. Cl. F16b *39/26, 39/28, 39/12*



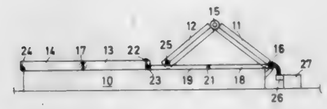
Fastener units consisting of two parts, namely a rotary threaded fastener member such as a screw or nut having in association therewith a toothed lockwasher. More specifically, the invention contemplates a fastener unit of the type set forth above wherein the relative disposition and contour of a clamping surface of the rotary threaded fastener member and washer teeth superimposed thereby are such that when the inner annular body of the washer member is fully clamped against a complementary work surface, the washer teeth will maintain locking impingement with the work surface on one side and the clamping surface of the rotary threaded fastener member on the opposite side.

3,430,674
SLOTTED RETAINER FOR BOLT HEAD
Lothrop M. Forbush, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 13, 1967, Ser. No. 609,080
U.S. Cl. 151—41.7 **1 Claim**
Int. Cl. F16b *41/00*



A bolt head retainer adaptable to receive or release a bolt at one side of the retainer enabling the latter and bolt to serve as a fastening for an element such as a frame.

3,430,675
HATCH COVER
Ulf Sune Ivar Nordh, Goteborg, Sweden, assignor to Associated Cargo Gear AB, Goteborg, Sweden, a corporation of Sweden
Filed Dec. 8, 1967, Ser. No. 689,052
U.S. Cl. 160—188 **7 Claims**
Int. Cl. E04f *3/36*



In a hatch cover comprising four sections adapted to be folded together pairwise, the first pair of sections is hingedly connected to the coaming, whereas the second pair is hingedly connected to a pair of beams, which are adapted to run parallel to the sections of the first pair. Each beam is composed of two hingedly interconnected parts and means are provided to lock, at will, the beams and the sections in the first pair together in such a manner that any pair of sections can be opened and closed independently of the other pair, or both pairs be moved simultaneously.

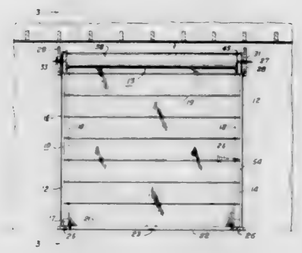
3,430,676
DOOR CLOSURE
Martin Birger Aberg, Lagan, Sweden
Filed Nov. 7, 1966, Ser. No. 592,616
Claims priority, application Sweden, Nov. 12, 1965, 14,664/65
U.S. Cl. 160—202 **5 Claims**
Int. Cl. E05d *15/06, 15/16, 15/26*

The door closure comprises a plurality of telescoping horizontally-extending sections, each section including a base portion with depending legs and being substantially U-shaped in transverse cross section. The legs of the sections are inwardly inclined when the door is opened and the legs of each superposed section resiliently engage an underlying section adjacent the base portion of the underlying section when the door is closed wherein the sections are held together and extend substantially parallel with respect to each other when the door is closed. The door



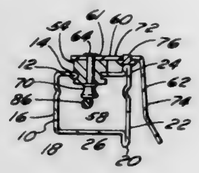
is mounted in a frame having side members which converge and act as guides for the door. In addition, the door is provided with a hoisting means for simultaneously retracting all of the sections and a locking means for locking the door in a closed position and for locking the door in any position in an emergency such as when a lift rope of the hoisting means breaks.

3,430,677
ROLL-TYPE CLOSURE
Ernest E. Pierce, 9525 White Rock Trail, Dallas, Tex. 75218
Filed Dec. 22, 1967, Ser. No. 692,764
U.S. Cl. 160—264 **10 Claims**
Int. Cl. A47g *5/02;* **A47h** *1/13*



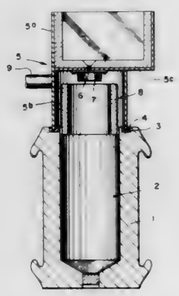
A roll-type closure having a sheet of thin, flexible material wound on a drum for opening and closing a building opening with transverse, widely-spaced reinforcing members in alined pairs on opposite sides of the sheet so as to be capable of having minimum transverse dimensions and strength sufficient only to prevent flexing of said sheet. Enlarged disks at the drum ends and having involute peripheries facilitate drum winding of the sheet without undue deformation, the disk peripheries having recesses for receiving the inner reinforcing members and permitting the inner convolution of said sheet to rest on said peripheries. The reinforcing members and disk recesses are so spaced that the inner members of each outer sheet convolution rest on the underlying sheet convolution medially between its outer reinforcing members.

3,430,678
TRAVERSE ROD ASSEMBLY
Robert S. Steck, 401 Walnut Drive, Streamwood, Ill. 60103, and Harold N. Barnes, 209 Army Trail Road, Addison, Ill. 60101
Filed Oct. 13, 1966, Ser. No. 586,448
U.S. Cl. 160—346 8 Claims
Int. Cl. A47h *5/03, 1/022*



A traverse rod assembly comprising a track having a rectangular cross section with a slot in the top thereof spaced from both vertical walls, with trolleys and guides alike being characterized by drapery hook ears extending to one side of said track to support draperies outside the vertical projection of the track and being supported by the rear flange of said slot and the front wall of said track, the supporting means of said trolleys and glides being capable of following a horizontal curve in said track, and a two-rope rigging system adapted to close a windowed surface or to open optionally either the center or the sides thereof.

3,430,679
METHOD OF VACUUM CASTING EMPLOYING A HIGH TEMPERATURE SEALING COMPOSITION
John J. O'Brien, Watertown, and Ghazi Z. Irbrahim, West Peabody, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Original application July 20, 1964, Ser. No. 383,861. Divided and this application Oct. 6, 1967, Ser. No. 683,054
U.S. Cl. 164—65 5 Claims
Int. Cl. B22d *27/16*



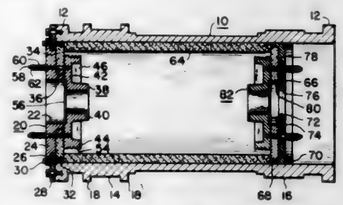
1. In a method of vacuum casting which comprises
(A) providing a metallic casting mold having an annular groove in its upper surface,
(B) depositing a flowable curable sealing composition in said groove, said composition being comprised of an epoxy novolak resin, a liquid resinous polyamide and an amine which is a curing agent for said novolak resin,
(C) embedding the lower edge of a vacuum chamber in the sealing composition residing in the groove of said mold, said chamber having an upper closable aperture,
(D) allowing the sealing composition to cure to form an airtight seal at the juncture of the vacuum chamber and mold,
(E) closing the aperture in said vacuum chamber and evacuating the air therefrom to create a vacuum,
(F) introducing molten metal through the aperture in said chamber and into said casting mold while maintaining the seal at the juncture of said mold and chamber for at least a time until all the metal is introduced, and
(G) subjecting said seal to heat of increasing intensity being conducted from the molten metal through said mold into the area of said seal to thermally destroy the same.

3,430,680
METHOD OF FORMING STRUCTURAL SHAPES FROM MOLTEN MATERIAL BY STREAM CASTING
George R. Leghorn, Apt. E., 1027 20th St., Santa Monica, Calif. 90403
Continuation-in-part of application Ser. No. 538,506, Feb. 11, 1966. This application June 16, 1966, Ser. No. 557,968
U.S. Cl. 164—81 4 Claims
Int. Cl. B22d *23/00, 13/00;* B22c *13/08*



In general, the disclosure is of a continuous casting method whereby a selected metal shape is stream cast by flowing a stream of molten metal in heat-transfer contact with one or more streams of a cooling liquid mold material flowing in the same direction and substantially synchronously with the casting metal, the cooling liquid functioning as a mold for imparting the selected cross-sectional shape to the member that is cast from the molten metal. The flowing stream of liquid mold material may be of tubular form (for shaping the external surface of a tube or rod) or of columnar form (for shaping the interior of a tube) or may comprise a flat stream or a pair of layered, spaced flat streams (for shaping one or both faces of a plate or sheet or foil structure). Cross sectional shape of the metal member to be formed may be determined by the shape of an orifice from which the molten metal is streamed.

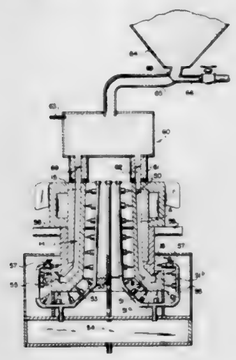
3,430,681
METHOD OF AND APPARATUS FOR MAKING CENTRIFUGAL CASTINGS WITH INTEGRAL HEADS
Walter W. Smith, Kenneth E. Longacher, and Herbert H. Zollar, Dover, Ohio, assignors to The Shenango Furnace Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 3, 1967, Ser. No. 620,562
U.S. Cl. 164—111 6 Claims
Int. Cl. B22d *13/00*



The manufacture of castings having a hollow cylindrical body and integral heads by centrifugally casting

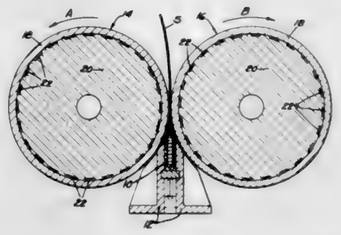
the cylindrical body portion in a hollow refractory lined mold in which the heads are resiliently mounted, the heads having an outer diameter less than the inner diameter of the mold and being provided with intersecting longitudinal slots and circumferential grooves on the outer periphery to promote a strong bond between the heads and the cylindrical body.

3,430,682
APPARATUS FOR LINING A HOT TOP
Walter M. Charman, Jr., Shaker Heights, and Walter R. Beattie, Independence, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,339
U.S. Cl. 164—159 8 Claims
Int. Cl. B28b *19/00;* B29f *5/00;* B22c *25/00*



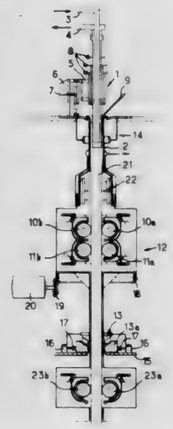
The hot top is lined by inserting a mandrel into the hot top and flowing the lining material from the hot top into the side walls of the hot top opening and by setting the material into a self-sustaining layer by supplying a setting agent from the mandrel.

3,430,683
FEED TIP FOR CONTINUOUS STRIP CASTING MACHINE
Harold W. Hood, Jr., Riverside, Calif., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Jan. 12, 1967, Ser. No. 608,762
U.S. Cl. 164—281 6 Claims
Int. Cl. B22d *11/10, 27/04*



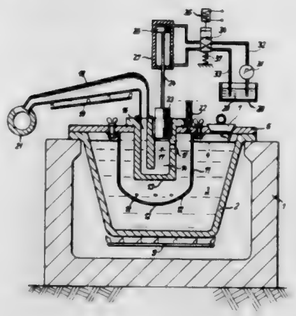
Molten aluminum is fed into the space between two slightly-spaced-apart, water-cooled rolls of a continuous strip casting machine through a feed tip made of fibrous refractory material known as Marinite, that is lined on the inside with fiberglass cloth, which becomes calcined by the molten aluminum. This fiberglass lining prevents the formation of voids in the cast strips.

3,430,684
CONTINUOUSLY ROTATING VERTICAL CASTING MACHINE
Louis Babel, Sauvigny-les-Bois, and Pierre Peytavin, Aulnoye-Aymeries, France, assignors to Societe Civile d'Etudes de Centrifugation
Filed Feb. 28, 1966, Ser. No. 530,680
Claims priority, application France, Mar. 3, 1965, 7,788
U.S. Cl. 164—282 5 Claims
Int. Cl. B22d *11/02*



A rotary continuous casting machine in which the casting descends along a vertical axis and which comprises a cage mounted to rotate about the axis at the same speed of rotation as the casting, and a plurality of pairs of rollers mounted in the cage to swing about parallel axes on opposite sides of said vertical axis and press symmetrically against opposite sides of the casting. At least one pair of rollers is driven and serves to advance the casting, and means are provided to offset the effect of centrifugal force on the rollers.

3,430,685
COLD CHAMBER-PRESSURE CASTING MACHINE WITH SIEVE-LIKE BARRIER FOR PISTON PUMP
Hellmut Drugowitsch, Uzwil, Switzerland, assignor to Gebruder Buhler, Uzwil, Switzerland
Filed Sept. 21, 1965, Ser. No. 489,005
Claims priority, application Switzerland, Sept. 23, 1964, 12,381/64
U.S. Cl. 164—314 8 Claims
Int. Cl. B22d *17/08*



A cold chamber-pressure casting machine is disclosed as including a melt retaining crucible and a piston pump extending into the melt in the crucible. The cylinder of the

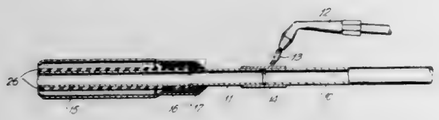
pump has at least one melt feed opening into its bore and below the surface of the melt in the crucible, and above the upper dead center position of the lower end of the piston, the upper portion of the bore has a cross-sectional area greater than that of the piston. This enlarged cross-sectional area has at least one opening into the melt space surrounding the piston pump.

A separating wall is spaced laterally of the body of the piston pump and extends from the region above the melt surface to a level at least as low as the lower end of the piston pump in the melt, the separating wall preferably surrounding laterally the piston pump. The separating wall may have a lower end or may be formed with very small apertures to have a sieve-like construction.

3,430,686
HEAT SHIELD FOR SOLDERING PLUMBING LINES

Richard Grant Parkison and Robert Beaman Duggan, Louisville, Ky., assignors to American Standard Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 31, 1967, Ser. No. 679,452
U.S. Cl. 165—1 **15 Claims**
Int. Cl. F28f *13/14*

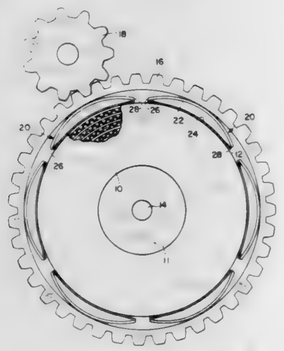


A heat shield for protecting an article subject to destructive temperatures arising from welding or soldering operation consisting of a microencapsulated coolant applied to the surface of the article intermediate the source of heat and the area to be protected. The encapsulant may consist of a polymeric material, for example, wax, having a melting point at a temperature below the destructive temperature of the article in order to release a coolant, such as water, so that the coolant may evaporate from the article during the application of heat thereto.

3,430,687
DRIVING MEANS FOR ROTARY HEAT EXCHANGERS

David J. S. Wardale, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Aug. 1, 1967, Ser. No. 657,653
U.S. Cl. 165—8 **8 Claims**
Int. Cl. F28d *7/10;* **F28f** *13/00, 21/04*

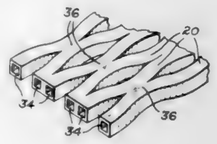


A heat exchanger assembly comprising a rotary heat exchanger formed of a ceramic honeycomb structure driven by means of a ring gear coupled to the heat exchanger rim by a plurality of bow-like spring elements located between the inner surface of the ring gear and the rim of the heat exchanger. Each spring element is in the form of an elastic support member which is maintained in a curved form by means of a thin flexible web extending intermediate its ends, the support member having its convex surface in frictional engagement with the inner surface of the ring gear and the web being in tension and in frictional engagement with the outer rim of the ceramic honeycomb structure along a substantial portion of the web.

3,430,688
LIQUID COOLED GARMENT

Jeremy F. Crocker, Yellow Springs, Ohio, assignor to Webb Associates, Inc., Yellow Springs, Ohio, a corporation of Ohio

Filed Oct. 27, 1966, Ser. No. 590,025
U.S. Cl. 165—46 **3 Claims**
Int. Cl. F28f *7/00*



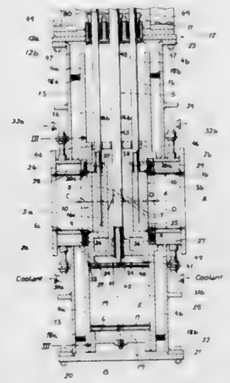
A heat transfer garment comprises a network of flexible tubes joined together at staggered spaced apart locations to prevent relative longitudinal movement of the tubes thus resiliently restraining the tubes from separation and maintaining the garment under tension to press securely against the skin of the wearer over the entire extent of the garment thereby promoting efficient heat transfer from the body of the wearer through the walls of the tube to a fluid running through the interior of the tubes.

3,430,689
FLUID-CONTROL MEMBER

Heinz-Dieter Pantke, Essen-Frintrop, and Herbert Hickmann, Oberhausen, Rhineland, Germany, assignors to Huttenwerk Oberhausen AG, Oberhausen, Germany, a corporation of Germany

Filed Sept. 20, 1967, Ser. No. 669,173
Claims priority, application Germany, Sept. 27, 1966, H 60,599
U.S. Cl. 165—47 **10 Claims**
Int. Cl. F24h *3/00*

A valve for the selective blocking and throughflow of hot gas wherein a cage is linearly shiftable in an elongated housing having a pair of aligned ports connectable in a hot-gas line, the cage being provided with a pair of hollow closure plates alignable with the ports in one position of the cage and adapted to be cammed outwardly upon movement into this position by a wedge arrangement so that the plates engage the valve body around the ports; coaxial tubes extend in the direction of movement of the cage and are slidable in the valve body for circulating water or other cooling liquid through the interiors of these plates, while permitting the transverse displacement thereof by inherent resiliency of the tubes which are rigid with the plates. The cage also carries a cylindrical duct communicating between the ports in another position of the cage and defining therein a water jacket with which another linearly extending pair of coaxial pipes communicates and serves as a stem for shifting the cage; a pair of spring-biased guide plates bears transversely and

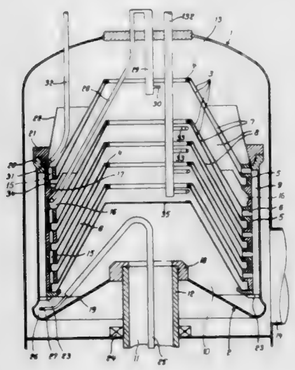


resiliently against the slidable cage along the sides thereof confronting the ports.

3,430,690
CENTRIFUGAL APPARATUS FOR HEAT EXCHANGE

Jean Sciaux, Suresnes, France, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden

Filed Nov. 3, 1966, Ser. No. 591,776
Claims priority, application Sweden, Nov. 8, 1965, 14,373/65
U.S. Cl. 165—88 **5 Claims**
Int. Cl. F28f *5/00;* **F28d** *11/08;* **B01d** *1/22*

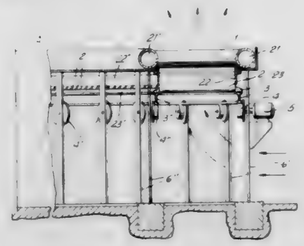


A nest of conical partitions is disposed in a centrifugal rotor coaxially thereof and forms a series of channels of which alternate channels are for passage of the liquid to be treated while the others are for passage of a heating medium, the liquid channels having inlets at the central portions of the conical partitions and having outlets at their outer peripheral portions. The liquid channels include a plurality of first liquid channels, each having its outlet opening into a first annular groove in the rotor, and at least one second liquid channel having its outlet opening into a second annular groove in the rotor, these annular grooves being separated from each other. The heated liquid discharged from the first liquid channels, which constitute a majority of the liquid channels, is pared from the first annular groove and conveyed to the inlet of the second liquid channel through which it flows at a higher rate due to the greater number of the first liquid channels, whereby the liquid is further heated without risk of "burning-on" and is then collected in the second annular groove for discharge from the rotor.

3,430,691
HIGH-CAPACITY AIR-COOLED HEAT EXCHANGER

Günter Schöll, Mulbergerstrasse 21a, Esslingen (Neckar), Germany

Filed Oct. 31, 1966, Ser. No. 590,875
Claims priority, application Germany, Nov. 5, 1965, Sch 37,976
U.S. Cl. 165—122 **10 Claims**
Int. Cl. F28f *13/12*

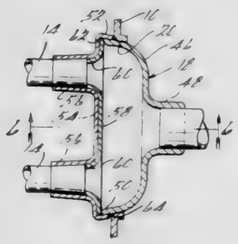


Large-capacity heat exchanger associated with a power plant or the like, the exchanger including a movable impeller whose vanes are mounted on a pair of coaxial circular rails supported by two annular arrays of rollers; some of these rollers are motor-driven to impart rotation to the impeller.

3,430,692
RETURN BEND CONSTRUCTION FOR HEAT EXCHANGERS

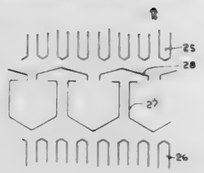
John Karmazin, 3776 11th Ave., Wyandotte, Mich. 48192

Filed June 16, 1967, Ser. No. 646,653
U.S. Cl. 165—134 **5 Claims**
Int. Cl. F28f *9/12, 9/04, 19/00*



An improved connector for connecting the ends of tubes of a heat exchanger which provides for increased strength and durability consisting of a cap portion fastened to an elongated member having two tubular projections integrally formed therewith and further provided with an insert member which is substantially coextensive with and overlies the inner surface of the elongated member and also is integrally formed with tubular projections which are of a length less than those on the elongated member. The composite assembly is securely fastened together by the overlying clamping action of the peripheral portion of the elongated member over the terminal edge of the cap, between which the insert is securely affixed.

3,430,693
HEAT EXCHANGE ELEMENT WITH CONDENSATE COLLECTOR
Gustaf C. Egenvall, Lidingo, Sweden, assignor to Johnson Construction Company AB, Stockholm, Sweden, a company of Sweden
Filed Apr. 14, 1966, Ser. No. 542,659
Claims priority, application Sweden, June 16, 1965, 7,947/65
U.S. Cl. 165—166 4 Claims
Int. Cl. F28f *3/00*; F28b *9/08*; B01d *53/00*



The present invention is concerned with a heat exchange element intended for use in condensing gaseous media, said element comprising a number of heat-exchange lamellas each comprising two lamella sections joined together, preferably welded, or defined by packing, the heat-exchange lamellas presenting heat transfer surfaces, and so arranged side by side, with vertical side edges, that one or more flow channels for the medium to be condensed appear between opposing heat transfer surfaces, and further channel-forming members for collecting the condensate formed in the flow channels.

3,430,694
PLATE STRUCTURE FOR HEAT EXCHANGERS
Olof Cardell, Strandvagen 1, Sollentuna, Sweden
Filed Nov. 3, 1966, Ser. No. 591,794
Claims priority, application Sweden, Nov. 9, 1965, 14,409/65; Jan. 24, 1966, 883/66; Sept. 26, 1966, 12,929/66
U.S. Cl. 165—166 3 Claims
Int. Cl. F28f *3/10*

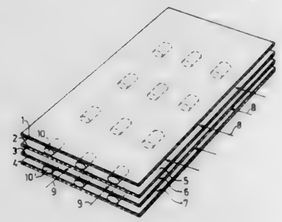
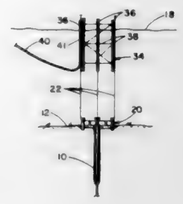


Plate structures for heat exchangers composed of parallel sheet metal members at small mutual distances to form shallow flow passages for the heat-exchanging media may be manufactured by interconnecting said members by electrical resistance welding of distance pieces between the members. The shape of the contact surfaces of the distance pieces and the sheet metal members and the mass of said pieces must not differ from certain relative values to avoid disadvantages in welding and during the subsequent use of the heat exchanger. The radius of curvature of the contact surfaces of the distance pieces should be greater than half the distance between the sheet metal members, because otherwise the mass of the distance piece is too small to obtain a correct weld produced by electrical resistance welding. Suitable distance pieces are obtained by cutting wires having elliptic cross section. Also metallic tablets are usable.

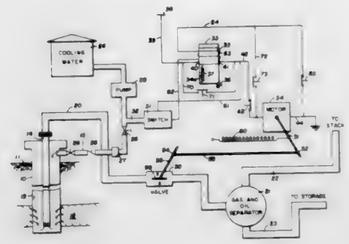
3,430,695
METHOD AND APPARATUS FOR INSTALLING UNDERWATER WELLHEAD SUPPORT
Jack L. Hubbard, Springdale, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Continuation of application Ser. No. 520,591, Jan. 14, 1966. This application Nov. 8, 1967, Ser. No. 681,600
U.S. Cl. 166—.5 14 Claims
Int. Cl. E21b *33/035, 43/01*; E21c *19/00*



1. A base platform assembly to be located on a subaqueous bottom, beneath a body of water comprising: a base platform, means associated with said base platform for spacing the lower ends of a plurality of primary guidelines with respect to each other and with respect to an upstanding conductor pipe to be set in the formations underlying a subaqueous bottom, said plurality of primary guidelines being adapted to extend to the surface of a body of water in which said base platform assembly is to be located to position said base platform assembly and the upstanding conductor pipe with respect to each other and a wellbore extending into the formations underlying the subaqueous bottom; a plurality of upstanding leg guides of said base platform assembly fixedly spaced outward of said means for spacing the lower ends of a plurality of primary guidelines, each of said leg guides being adapted to coact with one of a plurality of spaced legs of a wellhead support structure to locate a wellhead support structure with respect to a conductor pipe to be set in the wellbore extending into the formations underlying a subaqueous bottom with the upper end of the conductor pipe located beneath the surface of the body of water; and a plurality of secondary guidelines, one end of each of said secondary guidelines being secured to said base platform at spaced intervals outward of said plurality of primary guidelines and adapted for extending to the surface of a body of water in which said base platform assembly is to be located to guide a wellhead support structure through the body of water to contact the legs of the wellhead support structure with said upstanding leg guides.

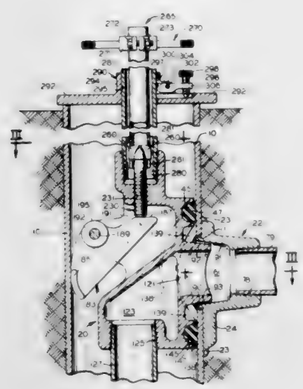
3,430,696
SHUT-OFF CONTROL FOR AN IN-SITU COMBUSTION PRODUCTION WELL
Walter W. Cummings, Bakersfield, Calif., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 2, 1966, Ser. No. 598,848
U.S. Cl. 166—53 2 Claims
Int. Cl. E21b *43/12, 43/24*

This specification discloses the closing of a production well leading from a subterranean formation undergoing in-situ combustion for the recovery of a hydrocarbon from the formation upon the failure while the well is producing of a cooling water supply for maintaining the well at a desired temperature. A signal is created upon failure of the cooling water supply. In response to the signal, steps are taken to close the product line from the well. Closing of the well may be effected after a predetermined time following the failure of the cooling water supply. If the cooling water supply is resumed during the predetermined time, the steps taken to close the well are cancelled. Closing of the well may also be effected substantially immediately upon failure of the cooling water supply. If the cooling water supply is resumed within a predetermined time, steps may be taken to reopen the well. Means for creating the signal include a switch



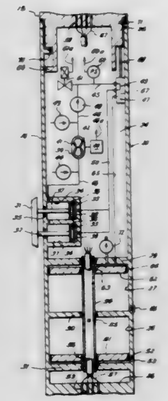
responsive to pressure in the cooling water line and means for closing the well in response to the signal include a valve in the product line from the well, a motor which controls the position of the valve, and timer means for operating the motor for a predetermined time after operation of the switch.

3,430,697
PIPE CASING SIDE CONNECTOR
William Wellstein, P.O. Box 430, Fostoria, Ohio 44830
Filed Aug. 16, 1965, Ser. No. 479,916
U.S. Cl. 166—85 17 Claims
Int. Cl. E21b *33/03, 33/128*; F16l *19/06*



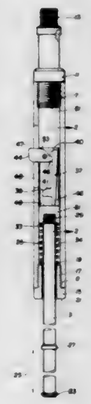
A pipe casing side connector for use in a well system having a casing with a hole therein, wherein: an outer connector member having a duct aligned with the casing hole is fixed to the exterior of the casing; an inner connector member disposed within the casing and having a duct aligned with the duct in the outer connector member and releasably sealingly connected thereto; and a rotary means for operating a pivoted lever on the inner member urges the duct of the inner member into sealing engagement with the duct of the outer member. Also a locking means releasably attached to an elevational positioning means or lift pipe affixed to the inner member holds the duct of the inner member in an aligned position with the duct in the outer member when the duct of the inner member is being urged into or out of sealing engagement with the duct of the outer member.

3,430,698
SELECTIVELY OPERABLE ANCHORING SYSTEM
Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 651,348
U.S. Cl. 166—212 21 Claims
Int. Cl. E21b *23/04*



The particular embodiment described herein as illustrative of one form of the invention is directed to anchoring apparatus for well tools. To accomplish this, the disclosed tool includes a selectively-operable hydraulic system for moving a wall-engaging member into and out of its retracted and extended positions. Means are also provided to disable the anchoring tool without loss of hydraulic fluid upon application of tension to the suspension cable.

3,430,699
ANCHORABLE AND RELEASABLE WELL TOOL
Perry J. De Cuir, Star Rte. A, Box 39–D, New Iberia, La. 70560
Filed Dec. 14, 1967, Ser. No. 690,645
U.S. Cl. 166—217 20 Claims
Int. Cl. E21b *23/00, 11/00*



An anchorable and releasable well tool is provided for being set by a wireline suspended setting tool having a position sensing and triggering means and a depending connecting rod with an enlarged bottom flange and a suitable driving shoulder. The well tool comprises an internal and external mandrel, the external mandrel having radially extendable slips for engaging a cavity in the

well casing (affording the anchoring), and a plurality of depressions for cooperating with mating protrusions on the internal mandrel. The internal mandrel includes a radial resilient setting means (such as a plurality of depending arms or bows) for grasping the flange on the rod when driven downward by the driving shoulder thereon, and protrusions for allowing the slips to remain radially inward during setting and for pushing the slips anchorably outward into the desirable cavity in the casing where anchoring is to occur. The slips are anchored in the casing by these protrusions upon the upward movement of the internal mandrel, which also allows the radial resilient setting means to release the setting tool for extraction from the casing. The sensing and triggering means senses and acts on the connecting rod of the setting tool at the desirable time to cause this anchoring to occur. The setting tool unanchors the well tool in a substantially reverse manner from the anchoring procedure for subsequent lowering and setting in a new location, if desired.

3,430,700

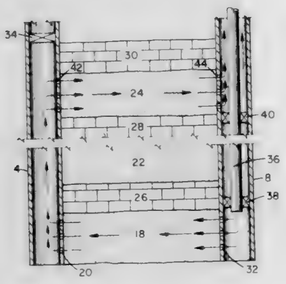
RECOVERY OF PETROLEUM BY THERMAL METHODS INVOLVING TRANSFER OF HEAT FROM ONE SECTION OF AN OIL-BEARING FORMATION TO ANOTHER

Abdus Satter and David R. Parrish, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Dec. 16, 1966, Ser. No. 602,395

U.S. Cl. 166—256 **8 Claims**

Int. Cl. E21b *43/24, 43/20*



After finishing one thermal recovery project, the heat from one stratum is extracted to be used in a superjacent or subjacent stratum. In the case of oil recovery by means of steam injection the heat is extracted not by flow from the producing wells, but by flow from the injection wells, such fluids having been originally injected into the producing wells. In effect the injected fluids are "backed up" to the hotter injection wells. With pay zones that have been subjected to forward or direct combustion the flow of cooler fluid is reversed, i.e., said fluids enter the burned out pay zone, via the injection wells backing the heat out of said zone into the producing wells. The resulting hot fluid may then be transferred to another oil bearing zone penetrated by said producing wells or removed therefrom and introduced into pay zones penetrated by still other wells.

3,430,701

TREATING INHOMOGENEOUS SUBTERRANEAN FORMATIONS

James R. Canada, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Dec. 23, 1966, Ser. No. 604,349

U.S. Cl. 166—269 **4 Claims**

Int. Cl. E21b *43/16, 33/124, 33/127*

This application discloses means for treating, through a well, a subterranean formation having permeability inhomogeneities. A treating fluid is flowed from perforations between packers, all built into a downhole tool, and onto



a portion of the formation while the tool is being moved vertically within the well.

3,430,702

TRACTOR MOUNTED ROD WEEDER

J W Hamby and Franky D. Mills, both of 2905 W. 7th St., Plainview, Tex. 79072

Filed Mar. 10, 1966, Ser. No. 533,145

U.S. Cl. 172—44 **5 Claims**

Int. Cl. A01b *39/18, 33/08*



A rod weeder for mounting intermediate the front and rear wheels of a tractor and which is powered by the tractor power take-off so that the operator of the tractor may view the weeding action of the rod weeder at all times. The depth of the rod of the rod weeder is readily adjustable. Provision is made for enclosing the primary working mechanism within dust cases to prevent the gearing from being exposed to the action of dirt and grit. The rod weeder and the mechanism associated therewith is readily assembled onto a tractor and readily removed therefrom in a minimum of time.

3,430,703

SCARIFYING AND SCRAPING IMPLEMENT

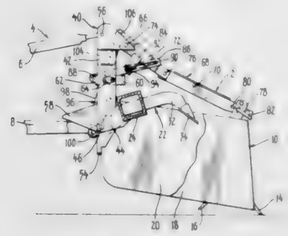
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.

Filed Mar. 20, 1967, Ser. No. 624,557

U.S. Cl. 172—136 **10 Claims**

Int. Cl. A01b *49/02;* **E02f** *3/76*

A scarifying and scraping implement in which the scarifying tool pivots relative to a scraper blade between earthworking and inoperative positions. In the earthworking position, the maximum working depth of the scarifying tool is determined by the height of the scraper blade, and a hydraulic ram is interconnected with the scarifying tool and scraper blade for both raising and



lowering the scraper blade to vary the working depth of the scarifying tool, and for moving the scarifying tool between its earthworking and inoperative positions.

3,430,704

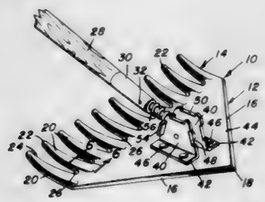
COMBINATION YARD AND GARDEN TOOL

Michael Alosi, 365 N. Pine St., Susanville, Calif. 96130

Filed Aug. 24, 1966, Ser. No. 574,729

U.S. Cl. 172—372 **3 Claims**

Int. Cl. A01b *1/06;* **A01d** *7/00*



A multipurpose hand-tool for garden and yard use, characterized by a blade having a V-shaped component for digging, furrowing, hoeing, cutting and weeding, and a companion toothed portion for scraping, diversified raking needs, soil penetration and aeration and scooping up weeds and debris, an elongated push-pull handle for stand-up use, and a pair of brackets fixed atop the blade. These brackets have marginal keeper seats for a spring-loaded cleat providing an adjusting and retaining latch capable of changing and holding the handle in selected angular positions.

3,430,705

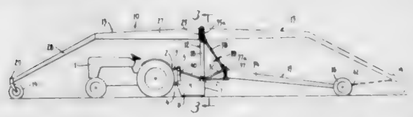
LAND LEVELING IMPLEMENT

Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.

Filed Feb. 23, 1966, Ser. No. 529,418

U.S. Cl. 172—780 **6 Claims**

Int. Cl. E02f *3/12, 3/62, 3/76*



A land leveling implement for attachment to a tractor comprises forwardly and rearwardly extending wheel supported frame sections interconnected by a central section. The central section pivotally supports a scraper which is connected to the tractor three-point hitch. The implement includes a screw jack for adjustment of ground clearance. The front frame section may be pivoted to the rear for transport and lost motion connections between frame sections and between the implement and tractor enable lifting of the scraper for transport.

3,430,706

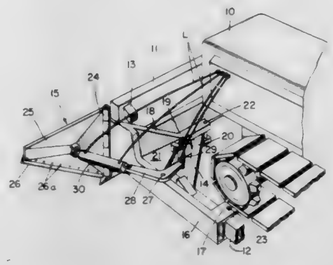
SLOPE CUTTING ATTACHMENT FOR BULLDOZERS

John W. Marron, 1318 Partridge Lane, Oceanside, Calif. 92054

Filed Oct. 22, 1965, Ser. No. 501,297

U.S. Cl. 172—802 **4 Claims**

Int. Cl. E02f *3/85*



A bulldozer is equipped with an adjustable cutting accessory, designated a slope board, pivotally coupled adjacent an edge of the main blade. The slope board is triangular shaped and has a lower cutting edge sloped for slicing into earth. A linkage system for swinging the slope board about a vertical axis has a first power unit for moving the board from a retracted position to a position substantially coplanar with the main blade, and, a second power unit for swinging the board further around to a forward position. As the board is moved from the coplanar to its forward position, the cutting edge slope becomes increasingly steeper so that a desired angle for cutting the earth can be conveniently selected.

3,430,707

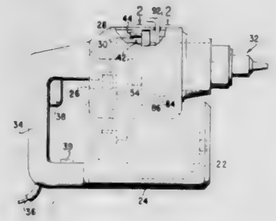
REVERSIBLE HAMMER DRILL MECHANISMS

Spencer C. Rees, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 17, 1967, Ser. No. 675,849

U.S. Cl. 173—48 **10 Claims**

Int. Cl. E02d *7/06;* **F16d** *19/00, 23/00*



This disclosure relates to a hammer drill mechanism for a power tool which permits the tool to be selectively operated either as a drill or as a hammer drill.

3,430,708

TRANSMISSION FOR ROTARY HAMMER

Daniel A. Miller, Glen Arm, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

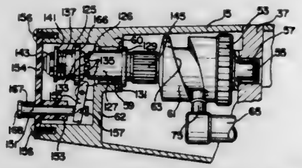
Filed Oct. 2, 1967, Ser. No. 672,289

U.S. Cl. 173—109 **12 Claims**

Int. Cl. E21c *3/00;* **B25d** *11/02, 11/10*

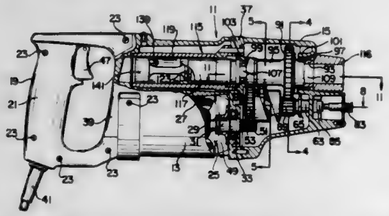
The device disclosed herein is a hand-held, power operated, portable tool which includes a housing having a drive motor therein and a tool bit socket rotatably sup-

ported therein. The motor is drivingly connected to and rotates the socket through a transmission which includes an adjustable torque and manually releasable clutch. In addition, the motor drives an impact mechanism which



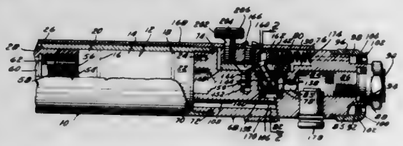
is adapted to strike a tool bit carried by the socket so that during normal operation, the motor rotates and imparts a hammer blow to the tool bit. However, when the clutch is released, rotation of the socket ceases and the tool bit receives only a hammering action.

3,430,709
MOTION TRANSMISSION MECHANISM FOR IMPACT TOOLS
Daniel A. Miller, Glen Arm, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 2, 1967, Ser. No. 672,274
U.S. Cl. 173—123 **11 Claims**
Int. Cl. E21c *3/00*; **B25d** *11/02, 11/10*



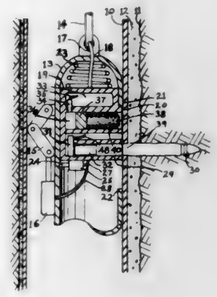
The device hereinafter disclosed is a powered, handheld tool which includes a housing having a drive motor supported therein. A tool bit socket is rotatably supported by the housing and is adapted to be selectively rotated by the motor through a rotary transmission. The motor also is connected through a motion transmission mechanism to an impact or percussive mechanism which is adapted to strike a tool bit carried by the socket so that in addition to being selectively rotated, the tool bit is hammered into engagement with a workpiece during motor operation.

3,430,710
CONTROL MECHANISM FOR POWER HAND TOOLS OR INSTRUMENTS
Ronald G. Coss, La Habra, Calif., assignor to Standard Pneumatic Motor Company, Whittier, Calif., a corporation of California
Filed Oct. 27, 1967, Ser. No. 678,609
U.S. Cl. 173—169 **11 Claims**
Int. Cl. B23b *45/04*; **B27c** *3/08*; **A61c** *1/10*



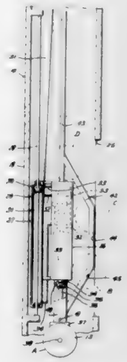
Control mechanism for small size pneumatic hand tools or instruments having a valve with a pivoted ball shaped movable fluid control valve member with a relieved portion operated by a slidable, thumb tip or fingertip actuated lever.

3,430,711
CASING PERFORATING AND SCREEN PLUG SETTING DEVICE
Harriet A. Taggart, 17130 Horace St., Granada Hills, Calif. 91344
Filed Dec. 11, 1967, Ser. No. 689,468
U.S. Cl. 175—4.52 **5 Claims**
Int. Cl. E21b *43/116, 33/12*



The invention relates to wells drilled in the earth, and more particularly to completing and producing fluids from such wells. The device involves an element for perforating a well casing in combination with an element for inserting a screen or filter plug into the perforation.

3,430,712
WELL TOOL POSITION INDICATOR
John A. Stafford, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,951
U.S. Cl. 175—40 **8 Claims**
Int. Cl. E21b *41/00, 47/12, 49/02*



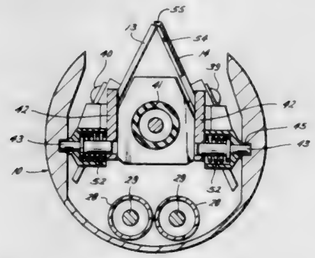
The particular embodiment described herein as illustrative of one form of the invention is directed to a position indicator for borehole apparatus used to obtain and collect a sample from earth formations traversed by the borehole. To accomplish this, the disclosed tool includes cutting wheels that are arranged to be extended and make cuts along the face of an adjacent formation as a carrier supporting the wheels is moved longitudinally. An electrical control on the carrier is varied as it moves along a particularly arranged surface on the tool to produce electrical signals characteristic of the relative position of the carrier to the fixed position of the tool.

3,430,713
FORMATION-SAMPLING APPARATUS
C P Lanmon II, Friendswood, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,929
U.S. Cl. 175—78 **44 Claims**
Int. Cl. E21b *49/02*



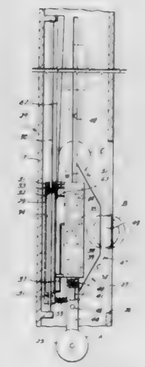
The particular embodiments described herein as illustrative of various forms of the invention are directed to borehole apparatus for obtaining and collecting a plurality of elongated samples from earth formations traversed by the borehole. To accomplish this, the disclosed tool includes cutting wheels that are arranged to cooperate with various guide systems in such a manner that the cutting wheels will be extended and make cuts along the face of an adjacent formation as a carrier supporting the wheels is moved longitudinally. When these cuts are completed, the cutting wheels are retracted by the guide systems and, upon reversal of the direction of the carrier's travel, returned to their initial position while still retracted. One or more selectively-operable sample receivers are provided to receive formation samples and, by virtue of certain motion-translation means, keep these samples segregated from one another.

3,430,714
FORMATION-SAMPLING APPARATUS
Emmet F. Brieger, Needville, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,952
U.S. Cl. 175—78 **12 Claims**
Int. Cl. E21b *49/02*; **B28d** *1/04*



The particular embodiments described herein as illustrative of two forms of the invention are directed to borehole apparatus for obtaining and collecting a plurality of elongated samples from earth formations traversed by the borehole. To accomplish this, the disclosed tool includes particularly-arranged cutting wheels that are extended to make cuts along the face of an adjacent formation as a carrier supporting the wheels is moved longitudinally. By virtue of the arrangement of the cutting wheels, an elongated formation sample is completely cut out of the earth formation being sampled.

3,430,715
FORMATION-SAMPLING APPARATUS
Roger Q. Fields, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,974
U.S. Cl. 175—78 **7 Claims**
Int. Cl. E21b *49/02*



The particular embodiment described herein as illustrative of one form of the invention is directed to borehole apparatus for obtaining and collecting a plurality of elongated samples from earth formations traversed by the borehole. To accomplish this, the disclosed tool includes cutting wheels that are arranged to be extended and make cuts along the face of an adjacent formation as a carrier supporting the wheels is moved longitudinally. By means of particularly-arranged guide systems, the cutting wheels will be guided in a path conforming to any irregularities on the surface of the borehole wall from which the sample is being taken.

3,430,716
FORMATION-SAMPLING APPARATUS
Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,976
U.S. Cl. 175—78 **22 Claims**
Int. Cl. E21b *3/08, 9/22, 49/02*



The particular embodiment described herein as illustrative of one form of the invention is directed to borehole

apparatus for obtaining and collecting a plurality of elongated samples from earth formations traversed by the borehole. To accomplish this, the disclosed tool includes cutting wheels that are arranged to be extended and make cuts along the face of an adjacent formation as a carrier supporting the wheels is moved longitudinally. When these cuts are completed, the cutting wheels are retracted and, by reversing the direction of the carrier's travel, returned to their initial position while still retracted. One or more selectively-operated sample receivers are provided to receive formation samples and keep these samples segregated from one another.

3,430,717

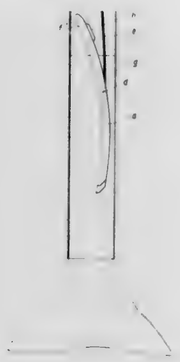
BROACHING TOOL FOR BORE HOLES PARTLY FILLED WITH WATER

Robert Hochstrasser, deceased, late of Saarbrucken, Germany, by Elisabeth Hochstrasser and Jurgen Hochstrasser, administrators, both of Kobenhuttenweg 22, Saarbrucken, Germany

Filed Jan. 9, 1967, Ser. No. 609,274

Claims priority, application Germany, Apr. 6, 1966, H 59,028; Aug. 19, 1966, H60,280

U.S. Cl. 175—263 **7 Claims**
Int. Cl. E21b *11/00;* **E21c** *19/00*



To widen a bore hole having its lower end filled with water, an arcuately curved elongate tool with teeth at its lower end is dropped into the hole while being suspended from a rope attached to the tool body above its center of gravity within a longitudinal slot thereof. The body may be unsymmetrically shaped about its plane of curvature, thereby imparting to the dropping tool a certain torque which causes it to rotate progressively in the hole upon successive drops.

3,430,718

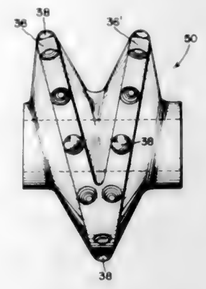
ROLLER CUTTER FOR ROTARY DRILLING APPARATUS

James C. Lawrence, Seattle, Wash., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 28, 1967, Ser. No. 632,132

U.S. Cl. 175—343 **11 Claims**
Int. Cl. E21b *9/12;* **E21c** *13/01, 13/02*

A rock drilling roller cutter including a circumferential cutting edge located in a plane which intersects the axis of the cutter at an oblique or acute angle. Also, a cutter having a pair of circumferential cutting edges



located in planes intersecting each other and crossing the cutter axis at oblique or acute angles.

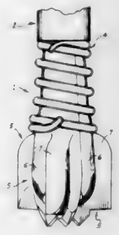
3,430,719

WELL DRILLING BIT

Thomas A. White, Box 61, Quanah, Tex. 79252

Filed Nov. 20, 1967, Ser. No. 684,407

U.S. Cl. 175—412 **5 Claims**
Int. Cl. E21c *13/02*



Certain specific improvements in a bit as hereinafter described which has heretofore been employed for drilling comparatively shallow, small diameter holes such as shot holes, water wells and the like.

The invention is applicable to a bit as described having a plurality of three circumferentially spaced removable blade elements each having an arcuate web portion embracing a corresponding portion of the peripheral surface of a tubular blade holder, beginning at the lower end of said holder and extending upwardly therefrom, and having a blade portion positioned near the lower end of said web portion and extending radially outwardly and downwardly therefrom, said holder having an externally threaded shank portion, beginning at its upper end, extending upwardly above the web portions of said blade elements for engagement with the lower end of a drill pipe. The external peripheral surfaces of the web portions of said blade elements are tapered downwardly and radially outwardly for use as hereinafter described.

According to this invention the holder, and the opposing surfaces of the web portions of the respective blade elements, are straight, and a tapered compression spring, which in its applied position encircles the upper ends of the web portions of said blade elements, has its upper end, which is of relatively smaller diameter, secured in abutting engagement with the lower end of the drill pipe whereby said blade elements are positively secured to said holder, between said holder and said spring.

An important feature of the invention is that the tapered compression spring is seated initially on the above mentioned blade portions of said blade elements, which extend radially outwardly and downwardly from the web portions as described, in the lowermost position of said spring, and extends upwardly a short distance above said web portions for abutting engagement with the drill pipe whereby the spring is compressed upon advancing the holder relative to the drill pipe.

Upon compressing the spring, as the holder is advanced relative to the drill pipe, the several convolutions of the spring are caused to grip the opposing web portions whereby the blade elements are positively clamped to the holder, between the holder and said spring. Upon releasing the spring it is immediately disengaged from the blade elements due to its inherent spring tension.

The invention contemplates an arrangement as described which includes mutually engaging means on the blade holder and the blade elements, respectively, whereby the blade elements are clamped securely to the holder, as the holder is advanced relative to the drill pipe, the blade elements are positively secured against displacement in any direction relative to the holder, and the structure is additionally reinforced so that the bit is characterized by its ruggedness and dependability as well as its efficiency.

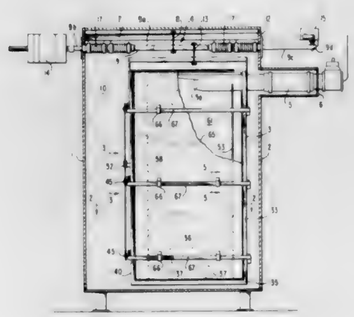
3,430,720

METHODS AND APPARATUS FOR WEIGHING MATERIAL IN A VACUUM ENVIRONMENT

Clarence F. Carter and Robert E. Carter, Danville, Ill., assignors to Carter Engineering Company, Danville, Ill., a corporation of Illinois

Filed May 12, 1966, Ser. No. 549,709

U.S. Cl. 177—1 **10 Claims**
Int. Cl. G01g *9/00, 13/00*



A weighing and filling apparatus including a weigh beam supported within a vacuum housing. Flexible seals sealingly interconnect the weigh beam and the housing and provide fluid reaction surface means acting longitudinally of the weigh beam.

3,430,721

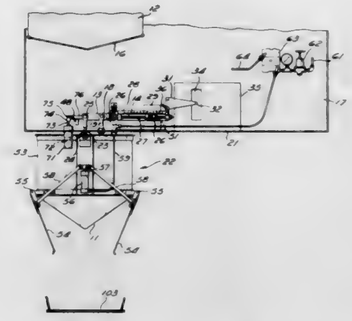
WEIGHT RECORDERS

Allen Harmon and Benjamin Gause, Mauldin, S.C., assignors to Crompton & Knowles Corporation

Continuation of application Ser. No. 582,014, Sept. 26, 1966. This application Jan. 3, 1967, Ser. No. 613,706

U.S. Cl. 177—2 **26 Claims**
Int. Cl. G01g *23/38*

Automatic weighing apparatus, particularly for textile fibers, with a chart to record deviations in the weights of batches of material discharged by the apparatus. There is a balance beam with a center of gravity lower than the pivot point of the balance beam and mechanism for discharging material from a scale pan when the balance beam comes to a substantially horizontal position and simultaneously marking on the chart the actual position of the balance beam to indicate how much the actual weight of the batch deviated from the batch weight for exact balance of the beam in a horizontal position.



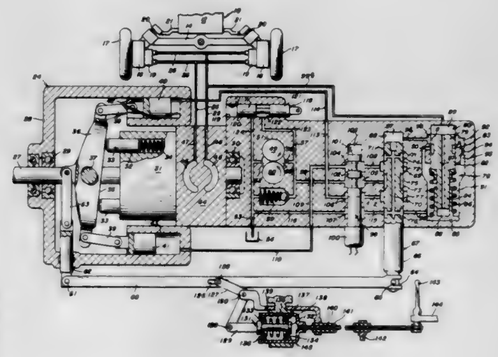
3,430,722

APPARATUS TO SYNCHRONIZE FLUID DRIVES WITH MECHANICAL DRIVES

Tadeusz Budzich, 80 Murwood Drive, Moreland Hills, Ohio

Continuation-in-part of application Ser. No. 500,050, Oct. 21, 1965. This application Sept. 28, 1967, Ser. No. 671,298

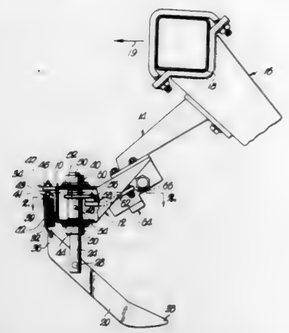
U.S. Cl. 180—44 **29 Claims**
Int. Cl. B60k *7/00, 17/30, 17/34*



An auxiliary hydrostatic drive for a tractor or the like which incorporates a variable flow hydraulic pump and hydraulic motors. The hydraulic pump has a tiltable cam plate to vary the displacement of the pump. The control for the pump is provided which allows the cam plate to be set at plurality of control positions and limiting the maximum displacement of the pump. The control means includes a device for superimposing a system pressure control signal over the displacement control means so that a relatively constant discharge pressure can be maintained from the pump with the maximum displacement control positions being matched to and operable by the gear shift lever so that for each particular gear ratio

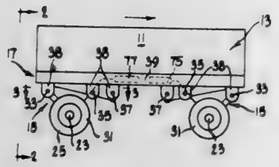
a control position approximately matched to the speed of the vehicle will be provided with the pressure responsive control means operating between zero and the maximum selected displacement control position.

3,430,723
DOUBLE POST ROW FINDER
Dean P. Brooks, Newton, Kans., assignor to Hesston Corporation, Inc., Hesston, Kans., a corporation of Kansas
Filed Jan. 9, 1967, Ser. No. 608,183
U.S. Cl. 180—79 **6 Claims**
Int. Cl. A01b *3/64*



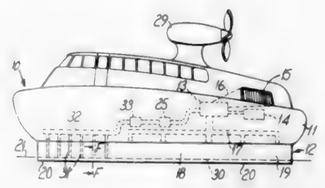
A crop row finder having a pair of side-by-side crop detectors positioned for engaging crops in the row and being deflected thereby whenever the row finder is not aligned with the row. The row finder is adapted for association with the steering mechanism of a farm implement for operating the steering mechanism upon deflection of a detector to align the row finder and thus the implement with the row.

3,430,724
INTERACTING STEERING-SUSPENSION SYSTEM FOR A SELF-PROPELLED OR TOWED VEHICLE
Brian K. Hutcherson, Box 712, Oswego, Ill. 60543
Filed Nov. 15, 1967, Ser. No. 683,358
U.S. Cl. 180—79 **5 Claims**
Int. Cl. B62d *3/02, 21/14, 37/00*



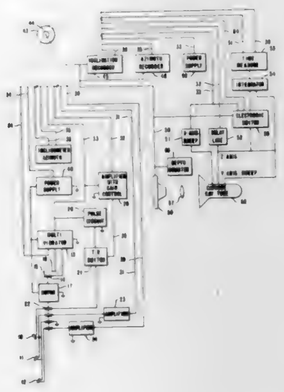
A steering-suspension system is provided for a vehicle which suspension system includes both front and rear wheel carrying suspensions both of which are steerable. Each suspension system unit is attached to the body of the vehicle and mounts a wheel carrying axle on which are mounted a plurality of wheels. Each suspension unit includes a plurality of torsion bars which are interconnected such that their respective lengths are cumulative to provide an angular twisting with torque equivalent to that experienced with an extremely long torsion bar. The vehicle is turned by increasing the wheel-base on the side of the vehicle opposite the center of the curve.

3,430,725
GAS CUSHION VEHICLES OF THE SIDE WALL TYPE
David William Nicholas, Totton, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Nov. 9, 1966, Ser. No. 593,125
Claims priority, application Great Britain, Nov. 11, 1965, 47,963/65
U.S. Cl. 180—126 **14 Claims**
Int. Cl. B60v *1/04, 1/16, 1/02*



A gas cushion vehicle of the side wall type has a downwardly facing, longitudinally extending concavity beneath the rigid portion of each side wall and is provided with means for supplying pressurised gas to each concavity to form gas cushions beneath the sidewalls, and with means at each end of each concavity for restricting the outflow of gas therefrom. Each side wall may be provided with a flexible skirt which is movable between a first position wherein it is disposed within the concavity and a second position wherein it extends downwardly from the side wall to assist in laterally bounding the vehicle-supporting gas cushion. The vehicle may also be provided with means responsive to the speed of the vehicle for regulating the supply of gas to the cushions beneath side walls, and for controlling the position of the flexible skirts.

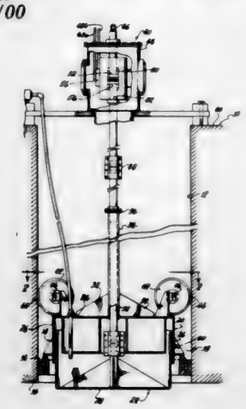
3,430,726
ACOUSTICAL METHOD AND APPARATUS FOR MAPPING THE WALL OF A BOREHOLE
Noyes D. Smith, Jr., Bellaire, and Charles B. Vogel, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 527,328, Feb. 14, 1966. This application Aug. 28, 1967, Ser. No. 667,033
U.S. Cl. 181—.5 **5 Claims**
Int. Cl. G10k *10/00, 11/00*



An acoustical method for mapping the wall of a borehole using a logging tool having ot least one transmitting transducer and one receiving transducer. The transducers

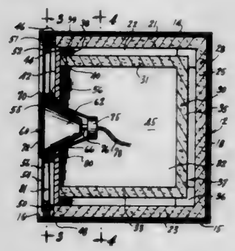
are mounted in a unitary array so that the complete assembly can be rotated to sweep 360° of the borehole wall. The signals from the downhole tool are displayed on an oscilloscope wherein the Y axis is controlled in response to the travel time of an impulse between two detectors, the X axis is stepped to correspond to the sweep of the tool, and the Z axis is brightened in response to the acoustic waves that are reflected and scattered back to the transmitting transducer.

3,430,727
SEISMIC SIGNAL TRANSDUCING APPARATUS
Booth B. Strange and Ben B. Thigpen, Houston, Tex., assignors to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,741
U.S. Cl. 181—.5 **8 Claims**
Int. Cl. G01v *1/00*



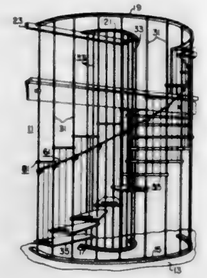
A marine seismic signal generator having at least two telescopically mated surfaces, one surface being free to reciprocally move relative to the other surface and including a generating surface exposed to a body of water. A source of air supplies air pressure to the cavity formed between the mated surfaces to preclude water from entering into the cavity. An energy source imparts motion to the generating surface to produce the desired impulses into the body of water.

3,430,728
LOUDSPEAKER ASSEMBLY WITH LOUDSPEAKER SUPPORTED BY VIBRATORY DIAPHRAGM
William S. Dunning, Bloomingdale, N.J.
(98—15 Horace Harding Blvd., Rego Park, N.Y. 11368)
Filed Mar. 27, 1968, Ser. No. 716,616
U.S. Cl. 181—31 **10 Claims**
Int. Cl. G10k *13/00;* **H04r** *7/16*



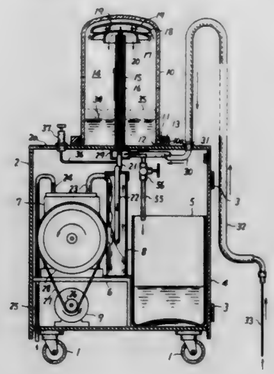
A loudspeaker assembly is disclosed having a loudspeaker peripherally supported by a vibratory diaphragm at the front of the loudspeaker cone. Behind the loudspeaker is a first, inner enclosure nested in a second, outer enclosure acoustically isolated from an outer cabinet. The enclosures have sound absorbing walls. A nonresonant board closes the inner enclosure. Sound waves developed at the rear of the loudspeaker cone are wholly absorbed in the enclosures.

3,430,729
STAIRWAY
Fidelis P. Miceli, 442 Brunner Drive, Monroeville, Pa. 15146
Filed Dec. 22, 1967, Ser. No. 692,784
U.S. Cl. 182—93 **6 Claims**
Int. Cl. E06c *9/00, 7/18;* **E04g** *3/00*



A spiral stairway **11** between a lower level **13** and an upper level **23** including an inner and an outer arcuate bracket **17** and **21** and **15** and **19** respectively, supported at each level. Two sets of columns or rods **31** and **33** extend between, and are supported by, the inner and outer brackets respectively and treads **35** are supported between the columns respectively. The handrail **61** is a long rod bent into a helix and supported by one set of columns. Guard rails or inserts **81** are supported on the columns.

3,430,730
DEVICE FOR REMOVAL OF LUBRICATING OIL
Masaichi Kitajima, 9 Imazu Yamanaka-cho, Nishinomiya-shi, Japan
Filed Jan. 25, 1966, Ser. No. 522,867
Claims priority, application Japan, Feb. 3, 1965, 40/7,984; Feb. 22, 1965, 40/13,988
U.S. Cl. 184—1.5 **9 Claims**
Int. Cl. F01m *11/04;* **F16n** *33/00*

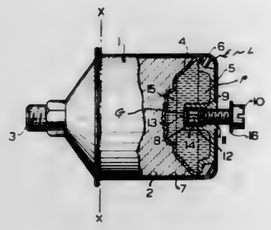


A device for the removal of lubricating oil from crank cases of engines, gear boxes and the like which avoids the need for gravity drains.

3,430,731
LUBRICATOR

Gebhard Satzinger, Bad Kissingen, Germany, assignor to Gebhard Satzinger Metallwarenfabrik, Bad Kissingen, Germany, a corporation of Germany

Filed Aug. 4, 1965, Ser. No. 477,223
U.S. Cl. 184—39 12 Claims
Int. Cl. F16n 5/00; B67d 5/44; G01f 13/00

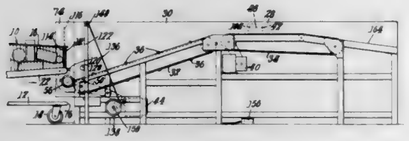


A lubricator apparatus which forcibly dispenses lubricant from a supply container by the volumetric displacement action of a bag-like expandable member enclosed within the container and which contains an electrolyte. Bag volume is increased by the internal pressure of gases generated by the reaction between the electrolyte and a galvanic element in contact therewith.

3,430,732
AUTOMATIC GROCERY CART

Armand A. Lachance, % American Metal Products Co., Southbridge St., Auburn, Mass. 01501, and Joseph M. Howard, Worcester, Mass.; said Howard assignor to said Lachance

Continuation of application Ser. No. 478,860, Aug. 11, 1965. This application Sept. 25, 1967, Ser. No. 670,462
U.S. Cl. 186—1 9 Claims
Int. Cl. A47f 10/00; B60p 1/38, 3/02



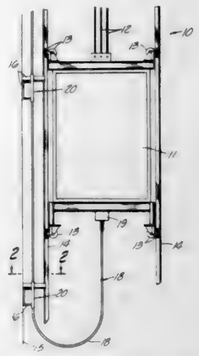
A nesting grocery cart having a swinging gate at the rear to receive the forward end of a succeeding similar cart and a movable gate at the front to clear the way for the motion of goods out of the cart in a forward direction, there being an endless belt forming a floor for the receptacle which upon being energized moves the goods, a checkout counter and power operated means to open the front gate, and a conveyor to bring the goods from the open gate to the checkout counter.

3,430,733
ELEVATOR CABLE PROTECTOR AND METHOD

Ethan A. Smith, Balboa, Calif., assignor to Walter A. Plummer, Sherman Oaks, Calif.

Filed Apr. 24, 1967, Ser. No. 633,154
U.S. Cl. 187—1 10 Claims
Int. Cl. B66b 9/00; F16l 11/00

A readily-installed replaceable elevator cable protector for use along portions of cabling likely to be damaged by repeated impact with other objects, as the shaft framing members, and capable of absorbing such impact and the like hazards. The protector is resilient, highly flexible, thereby avoiding interference with flexing of the cable itself, and is effective to grip the cabling sufficiently to avoid creep and migration of the protector lengthwise of the cable or the need for attachment to the cable jacket.



3,430,734
PORTABLE ELEVATING APPARATUS

Earl P. Embree, 1493 Gardner Blvd., San Leandro, Calif. 94577

Filed Aug. 16, 1967, Ser. No. 661,115
U.S. Cl. 187—10 2 Claims
Int. Cl. B66b 9/20, 9/06, 11/04



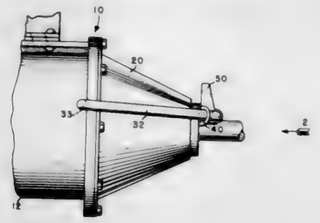
A portable elevating apparatus includes a carriage that slides on a ladder and is controlled in its movement by the operator in the carriage. A hydraulic cylinder is mounted in the carriage and its piston rod has a cable or rope gearing so connected between the carriage and the top of the ladder as to move the carriage about four or five times as fast as the moving piston rod. The ladder carries a propping pole so that the operator can place the ladder near a fruit tree and use the carriage for lifting him to different heights for picking fruit from the tree.

3,430,735
MECHANISM FOR LOCKING THE BRAKE ASSEMBLY FOR RAILROAD CARS

Oliver Davis Collins, Latham, N.Y., assignor to Snilloc Corporation, Latham, N.Y., a corporation of New York

Filed Dec. 29, 1966, Ser. No. 605,726
U.S. Cl. 188—67 9 Claims
Int. Cl. F16d 57/00; F15b 15/26; B25b 27/00

A locking means for brake assemblies of railroad cars to provide a positive brake system locking action for railroad car brake assemblies during movement or repair thereof. The locking mechanism being an arm abutting

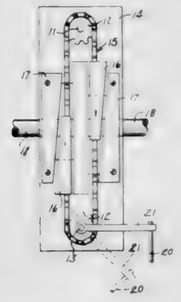


a portion of the brake cylinder and the outer end of the piston shaft.

3,430,736
SELF ADJUSTING WEDGE-TYPE DISC BRAKE

Charles E. Long, P.O. Box 367, De Land, Fla. 32720

Filed Sept. 25, 1967, Ser. No. 670,213
U.S. Cl. 188—73 3 Claims
Int. Cl. F16d 55/00, 51/60, 65/38

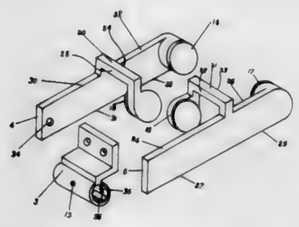


A braking device having an inherent adjusting means with the brake shoes being wedge shaped and secured to an endless-sprocket driven chain. This device by the wedged shoes being tapered and carried by the chain automatically due to the shape of the shoes and guides takes up any wear that normally occurs and an arm attached to one of the sprockets is pulled by a brake cable attached to the arm in order to provide the necessary braking action.

3,430,737
FRICTIONAL BRAKE SYSTEM

Harvey W. Welsh, 5631 Wilhelmina Ave., Woodland Hills, Calif. 91364

Filed Apr. 27, 1966, Ser. No. 546,162
U.S. Cl. 188—73 11 Claims
Int. Cl. F16d 55/224, 63/00, 65/00

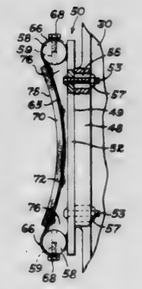


The frictional brake system employs a lever arm with two brake pads attached thereto in such a way that they bear on opposite sides of the member to be braked. One of the brake pads takes the place of a pivot pin which would be required in a conventional lever system and, as a result, a significant multiplication in the braking force is achieved over that of a simple lever system or of direct acting brake pads with little or no self-energization.

3,430,738
DRUM BRAKE ASSEMBLY

John E. Dain, Fulton, N.Y., and William S. Milne, Everett, Wash., assignors to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed Nov. 23, 1966, Ser. No. 596,504
U.S. Cl. 188—75 7 Claims
Int. Cl. F16d 51/00, 69/00; B61h 13/36

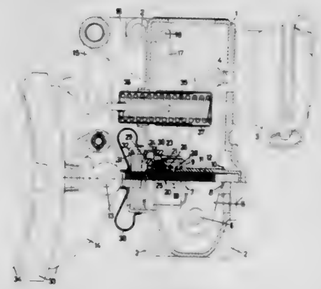


A drum brake has a movable arm which supports the ends of a curved flexible band having a curved flexible pad of friction material secured thereto for conforming flexure therewith.

3,430,739
RAILWAY VEHICLE BRAKE RIGGING

Gert Artur Presson, Oxie, Sweden, and Nils Börje Lennart Sander, Malmo, Sweden, assignors to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden, a corporation of Sweden

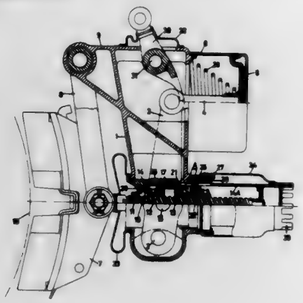
Filed Aug. 18, 1967, Ser. No. 661,690
Claims priority, application Great Britain, Apr. 18, 1967, 17,630/67
U.S. Cl. 188—202 12 Claims
Int. Cl. F16d 65/56; B60t 11/10



A railway brake system with a compact brake rigging affixed to a housing on the vehicle is disclosed including bidirectional slack adjusting means relatively movable with respect to the housing. The slack adjusting means comprises an axially displaced push transmitter receiving a compression force and having a threaded spindle and

locking nut thereon affixed in a relatively positionable telescoping sleeve with means for adjusting the relative position by rotating the nut in either direction to hold a predetermined degree of slack. In order to reduce the space in which the brake rigging is mounted, the entire slack adjusting linkage assembly pivots on respective levers about an arc defined by two fixed pivot points on the fixed housing, and intervenes between a brake power cylinder and the movable braking assembly to permit a compression force to be transmitted therethrough. A series of springs and clutches coact to cause the nut to rotate in the proper direction when brakes are actuated to compensate and correct the slack in the brake linkage whenever slack becomes too great from wear or too little when new brakeshoes are installed. One such spring holds the telescoping parts in tension and coacts with the compressive braking force to aid in determining the position during application of the brakes that the slack take up and let out operations occur.

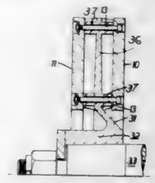
3,430,740
RAILWAY VEHICLE WHEEL BRAKE UNIT
Karl Bertil Larsson and Nils Börje Lennart Sander, Malmo, Sweden, assignors to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden, a corporation of Sweden
Filed Aug. 22, 1967, Ser. No. 662,446
Claims priority, application Great Britain, Sept. 6, 1966, 39,672/66
U.S. Cl. 188—202 **4 Claims**
Int. Cl. F16d *65/56*



An automatic slack adjusting device for railway vehicle brakes operates with an axially movable screw threaded spindle upon which two nuts are mounted for rotation with springs biasing them away from the brake shoe. A sleeve about the spindle moves axially with the brake lever and includes a flange with clutch surfaces engaging both nuts and positioned therebetween. Limit stop means engages the rearmost nut as the brake is released. Clutching and locking means move part of the way with the sleeve over a range of normal slack, and when the slack becomes excessive, the sleeve moves alone and the clutch becomes disengaged to permit the springs to rotate the nuts and take up slack. Thus, operation during wear is automatic and manual nut rotating means is used to readjust the assembly when new brake shoes are installed.

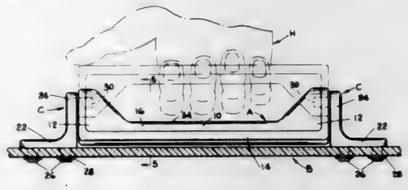
3,430,741
DISC BRAKES
Norman Arthur Meredith, Tyseley, England, assignor to Gerling Limited
Filed June 2, 1967, Ser. No. 643,164
Claims priority, application Great Britain, June 30, 1966, 29,453/66
U.S. Cl. 188—218 **4 Claims**
Int. Cl. F16d *65/10, 11/00, 13/60*

A braking ring is applied to one or each face of a rotor (such as a wheel or a brake rotor) by fasteners which extend through clearance holes in the rotor and are stressed in sufficient tension for braking torque to be transmitted from the ring or rings to the rotor purely by the frictional engagement therebetween, so that the fasteners are not stressed in shear. Thermal expansion and



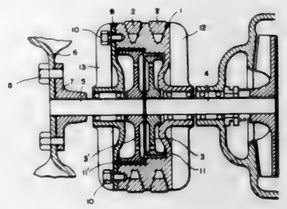
contraction of the ring or rings is accommodated by movement thereof, together with the fasteners, relative to the rotor. Each ring may be in segments, in which case confronting radial edges of adjacent segments are spaced apart to reduce total thermal strains during braking.

3,430,742
HANDLE ASSEMBLY FOR LUGGAGE OR THE LIKE
Anthony N. D'Elia, Riverdale, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Aug. 11, 1967, Ser. No. 659,986
U.S. Cl. 190—58 **13 Claims**
Int. Cl. A45c *13/10, 13/22, 13/26*



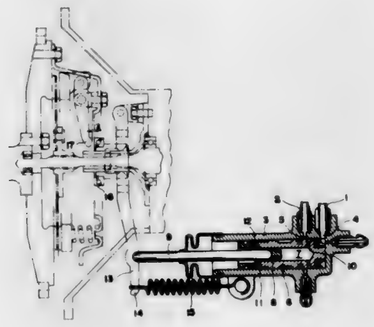
Handle assemblies are disclosed wherein the protrusion of the handle with respect to the wall of a luggage case or the like is minimized when the handle is at rest. The handle is asymmetrically mounted relative to a pivotal axis and is turned from a recessed rest position to a projected carrying position. By making the handle pendulous, automatic return to its rest position is provided.

3,430,743
VISCOUS OIL FLOW HYDRAULIC COUPLING
Saburo Fujita and Uichiro Kobashi, both of Kariya, Japan, assignors to Aisin Seiki Kabushiki Kaisha, Kariya, Aichi Prefecture, Japan
Filed July 27, 1967, Ser. No. 656,589
Claims priority, application Japan, Aug. 3, 1966, 41/51,186
U.S. Cl. 192—58 **4 Claims**
Int. Cl. F16d *31/00, 21/02;* **F01p** *7/02*



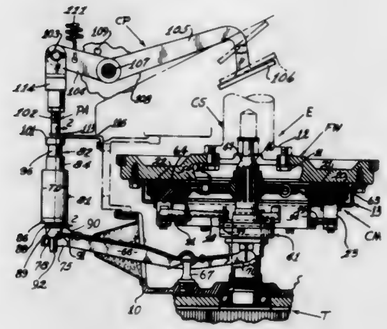
This invention relates to a viscous oil flow hydraulic coupling so designed that two different kinds of output can be obtained from a single input.

3,430,744
CLUTCH RELEASE MOTOR WITH AUTOMATIC COMPENSATOR FOR DISC WEAR
Katsuhiko Oguri, Kariya, Japan, assignor to Aisin Seiki Kabushiki Kaisha, Kariya, Aichi Prefecture, Japan
Filed Sept. 22, 1967, Ser. No. 669,887
U.S. Cl. 192—111 **1 Claim**
Int. Cl. F16d *11/00, 13/60, 13/44*



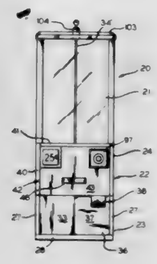
Apparatus responsive to variation of the load of release relative to the stroke of the pressure rod of a clutch and, detecting thereby the amount of the wear of a friction disc, is adapted to adjust the clearance between the release bearing and the pressure lever, so as to automatically compensate for the wear of the friction disc.

3,430,745
SELF-ADJUSTING LINKAGE DEVICE FOR CLUTCH ACTUATORS
Glenn T. Randol, P.O. Box 275, Mountain Lake Park, Md. 21550
Original application Nov. 19, 1964, Ser. No. 412,428, now Patent No. 3,314,511, dated Apr. 18, 1967. Divided and this application Apr. 13, 1967, Ser. No. 630,739
U.S. Cl. 192—111 **10 Claims**
Int. Cl. F16d *11/00, 13/60, 19/00*



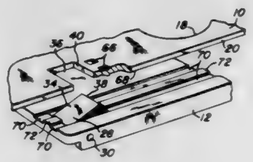
This invention describes an apparatus for automatically adjusting the interconnecting linkage between a clutch-operating pedal and a spring-engageable friction clutch such as employed on motor vehicles and the like, to compensate for wear between the friction engaging elements and thereby providing uniform stroking of the pedal to effect disengagement of said clutch.

3,430,746
MERCHANDISE VENDING MACHINE WITH COMBINATION ROTARY COIN MECHANISM AND SLUG REJECTOR
Richard K. Bolen, Morris, Ill., assignor to The Northwestern Corporation, Morris, Ill., a corporation of Illinois
Filed May 15, 1967, Ser. No. 638,391
U.S. Cl. 194—63 **12 Claims**
Int. Cl. G07f *11/00, 3/02*



A bulk merchandise vending machine with a compact combination rotary coin mechanism and slug rejector which comprises part of the front of the machine, and a cash box with a built-in merchandise vending chute; the front of the cash box comprising the other part of the front of the machine.

3,430,747
SHIM DEFLECTING MEANS FOR COIN CHUTE
Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075
Filed Feb. 9, 1967, Ser. No. 614,830
U.S. Cl. 194—92 **1 Claim**
Int. Cl. G07f *3/02*

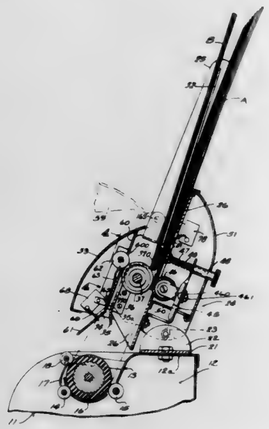


The coin chute incorporates simple and inexpensively formed cooperative lugs and channels to limit insertion and manipulation of thin shims within the coin slide passageway, the attempt to nullify the function of a coin slide latch intended to prevent illegal performance of a dispensing machine. One or more lugs extended from a face of the coin slide, ride in one or more channels formed in the slide housing, to provide a shim barrier which is serpentine in cross-section and impenetrable by the thinnest maneuverable shim.

3,430,748
PAPER FEEDER COORDINATED WITH PLATEN
Gwynn J. Parri, 3149 S. Howell Ave., Milwaukee, Wis. 53207
Continuation-in-part of application Ser. No. 323,625, Nov. 14, 1963. This application Nov. 4, 1966, Ser. No. 592,219
U.S. Cl. 197—130 **10 Claims**
Int. Cl. B41j *13/14*

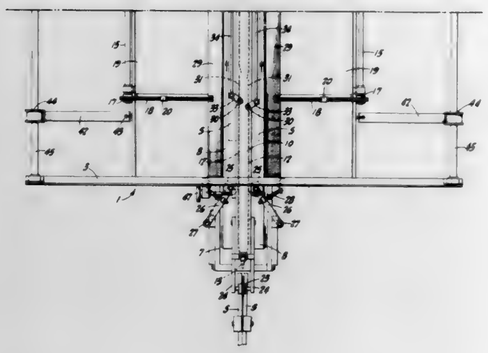
The feeder is applicable to a conventional electric typewriter and includes unitarily associated feed and receiving

magazines with a common feed roll connected to function in synchronism with the typewriter platen. Incoming sheets bear at their end margins upon a convex rough surface, the feeder being so adjustable as to angle that as each sheet leaves the feed roll another will move automatically into position. A solenoid energized manually



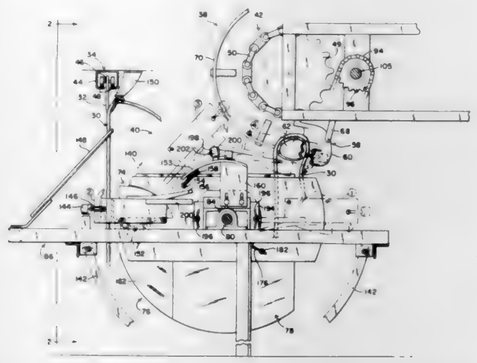
to start the feed holds down the sheet advancing key of the typewriter to maintain the new sheet in continuous advance until its leading end trips a microswitch to open the holding circuit for the solenoid, leaving the sheet properly positioned for use.

3,430,749
LUMBER STRIP OFF-BEARER AND LOADER
Arthur M. Ferrari, P.O. Box 315, Corning, Calif. 96021
Filed June 9, 1967, Ser. No. 645,047
U.S. Cl. 198—24 **7 Claims**
Int. Cl. B65g *47/26, 57/00*



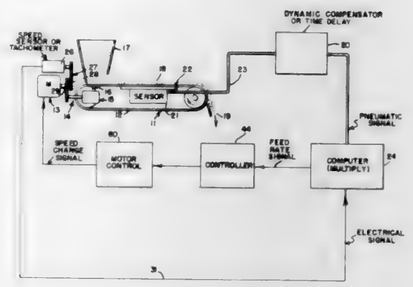
A lumber strip off-bearer and loader arranged to receive and widely laterally separate longitudinally sawed lumber strips fed to a predetermined point in side-by-side relation from a saw or a strip pre-separator unit to which the saw delivers; the apparatus being operative to accumulate stacks of such widely laterally separated strips and deposit the same on alongside pallets or trucks.

3,430,750
ROTARY GRIPPER TRANSFER MECHANISM
Charlie J. Soules, 1115 Willow St., Yakima, Wash. 98902
Filed Mar. 28, 1967, Ser. No. 626,494
U.S. Cl. 198—25 **15 Claims**
Int. Cl. B65g *47/61, 29/00*



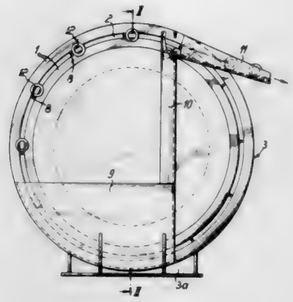
Apparatus useful, in one application, for transferring hop vines from an overhead conveyor to the feed conveyor of an upright hop picker including a grasper device for engaging the vines held by the overhead conveyor and operating mechanism for thereafter so manipulating and shifting the grasper device as to disengage the vine from the overhead conveyor and transfer it to the feed conveyor. An unloader then positions the vine in a grasper device incorporated in the feed conveyor. After the latter snaps shut the operating mechanism opens the grasping device of the transfer and positions it to receive another vine.

3,430,751
VARIABLE SPEED FEEDER CONTROL
Robert N. Bateson, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 565,564, July 15, 1966. This application Sept. 28, 1967, Ser. No. 671,359
U.S. Cl. 198—37 **9 Claims**
Int. Cl. B65g *47/08, 69/00*



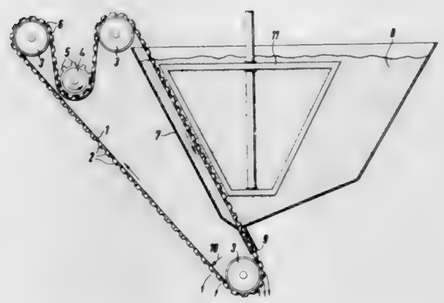
A feeder or conveyor control system for regulating the mass rate of delivery of material by a conveyor. A dynamic compensator is positioned in the signal path between a mass or load sensor and a computer to delay a signal change to compensate for a time lag between a detected change and the time corrective action is necessary at the delivery point of the conveyor.

3,430,752
CONVEYOR FOR MAGNETIZABLE COMMODITIES
Heinrich Spodig, 84 Netteberge, 4711 Bork, Germany
Filed Mar. 27, 1967, Ser. No. 626,232
Claims priority, application Germany, Mar. 28, 1966, S 102,808
U.S. Cl. 198—41 **12 Claims**
Int. Cl. B65g *47/12, 47/92, 47/24*



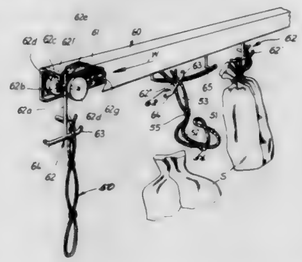
A magnetic conveyor wherein the poles of a stationary magnetic rail are separated from each other by an elongated gap which receives motion transmitting pins affixed to a link chain. Magnetizable articles adhere to the two poles and extend across the gap so that, when the chain is driven, the pins cause the articles to travel along the exposed surfaces of the poles while such articles adhere to the rail. The rail may resemble an annulus or it may comprise two or more mutually inclined sections.

3,430,753
POWDER FEEDING
Alastair Strang, Kenilworth, England, assignor to Courtaulds Limited, London, England, a British company
Filed Apr. 12, 1967, Ser. No. 630,345
Claims priority, application Great Britain, Apr. 15, 1966, 16,563/66
U.S. Cl. 198—53 **1 Claim**
Int. Cl. B65g *47/18, 65/30;* **A01f** *25/00*



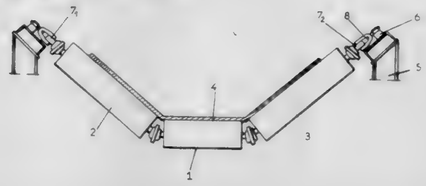
The invention is a method of feeding powdered material continuously under controlled conditions in which a continuous driven belt having pockets or recesses at regular intervals in the surface thereof is fed with powdered material from a reservoir, preferably by passage of the belt through the reservoir containing powdered material, and the powdered material is subsequently discharged from the belt. The entire apparatus is preferably continuously weighed during the feeding process.

3,430,754
CLOSURE AND SUSPENDING DEVICE FOR BAGS OPEN AT THE TOP
Curt Th. Meseke, Leer, Ostfriesland, and Winfried Winkler, Laurensberg, Germany, assignors to Hammer-Lit G.m.b.H., Leer, Ostfriesland, Germany
Filed Feb. 7, 1968, Ser. No. 703,783
Claims priority, application Germany, Feb. 11, 1967, H 61,820
U.S. Cl. 198—177 **20 Claims**
Int. Cl. B65g *17/20;* **B65d** *33/14, 33/28*



An arrangement for use in connection with the closing, suspending, transporting and releasing of bags open at the top, especially laundry bags, according to which the upper end of a bag is gathered and held together by closing means in the form of loop means which comprise two superimposed U-shaped sections having their superimposed leg ends respectively interconnected while said loop means are suspended on suspending means operable to release one portion of said loop means to free said gathered bag portion and thereby to free said bag while retaining another portion of said loop means.

3,430,755
FASTENING DEVICE FOR TROUGHING ROLL AND CONVEYOR BELTS HAVING SAID FASTENING DEVICE
Marcel Allendorf, Saverne, France, assignor to Precismeca S.A., Saverne, France, a company of France
Filed May 22, 1967, Ser. No. 640,097
Claims priority, application France, May 23, 1966, 62,562
U.S. Cl. 198—192 **3 Claims**
Int. Cl. B65g *15/08, 15/40*

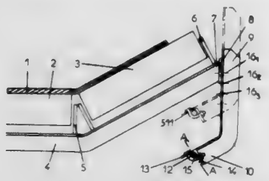


Fastening device for troughing rolls of conveyor belts characterised by the fact that it is oscillatory and comprises between the troughing roll and the frame a pivoted connection absorbing the torsion effects of the troughing roll on the frame caused by the oscillation of the troughing roll.

3,430,756
STRUCTURE FOR CONNECTING THE ENDS OF A TROUGHING ROLL ASSEMBLY
Marcel Allendorf, Saverne, France, assignor to Precismeca S.A., Saverne, France, a company of France
Filed June 16, 1967, Ser. No. 646,578
Claims priority, application France, July 5, 1966, 68,258
U.S. Cl. 198—192 **2 Claims**
Int. Cl. B65g *15/08*

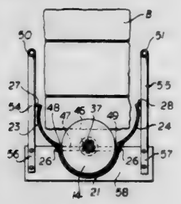
Structure for connecting the ends of a troughing roll

assembly having a conveying train comprising a plurality of assemblies of horizontal rolls and inclined side rolls



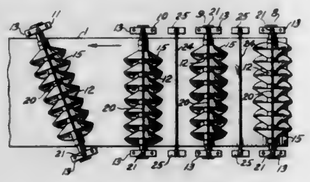
and having means for placing the longitudinal wire ropes under the inclined rolls of the assembly of rolls.

3,430,757
COMBINATION ELEVATOR
Wilbur H. Clendenin, Ava, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,210
U.S. Cl. 198—213 **8 Claims**
Int. Cl. B65g *33/14*



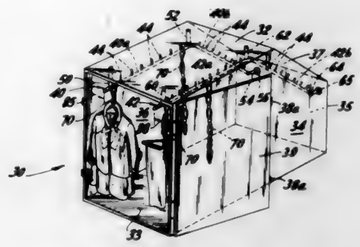
A combination elevator for selectively handling granular material and bundled material. The elevator includes a trough covered by a pair of swingable cover members. The cover members occupy a closed position which in combination with the trough constitutes the auger housing, and are swingable outwardly to an open position exposing a peripheral portion of the auger, the exposed auger adapted to engage and lift bales of hay deposited thereon.

3,430,758
CONVEYOR BELT CLEANER
Amos Searles, 643 Adams Ave., Scranton, Pa. 18510
Filed May 17, 1967, Ser. No. 639,101
U.S. Cl. 198—230 **11 Claims**
Int. Cl. B65g *45/00*



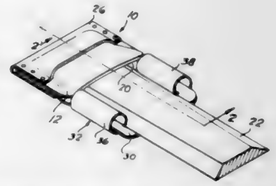
Resilient conical discs are deflected and rotated by a moving conveyor belt. The deflected segments sweep across the face of the conveyor belt and clean material therefrom. Tensioned resilient bands engage the peripheries of the discs to remove material adhering thereto. Other tensioned resilient bands are interposed between adjacent disc assemblies as baffles. A reverse bend roll and snub pulley squeegee water from the moving conveyor belt, and tensioned resilient bands engage the surfaces of the reverse bend roll and snub pulley to remove the squeegeed water therefrom.

3,430,759
CONTAINER FOR AIR TRANSPORTATION
Philip Harold Radel, New York, and Seymour Marvin Miller, Far Rockaway, N.Y., assignors to Gilbert International Corporation, Secaucus, N.J., a corporation of Delaware
Filed Dec. 5, 1967, Ser. No. 688,073
U.S. Cl. 206—7 **7 Claims**
Int. Cl. B65d *85/18;* **A47b** *96/06, 61/06*



A container for air freight has two rods translating therethrough substantially parallel to flat and inclined top surfaces. The rods are equidistant from the container side panels, and are affixed to the top and rear container members for shock absorbing purposes. A plurality of pins are mounted on the rods to secure garments within the container.

3,430,760
WOOD CHISEL SCABBARD
James C. Ulmer, 20128 Highway 99, Lynnwood, Wash. 98036
Filed Oct. 6, 1967, Ser. No. 673,497
U.S. Cl. 206—16 **5 Claims**
Int. Cl. B65d *85/54;* **F41b** *13/04*



A scabbard for holding a tool having sharp edges, such as a wood chisel. The scabbard includes a strip of leather folded intermediate its length to provide complemental, facing, spaced surfaces forming a pocket to receive the blade of the chisel in sliding engagement. The pocket is reinforced with a metal outer covering. One of the pocket forming surfaces is longer than the other and mounts a spring metal plate having opposite edges rolled into tubular form for overlying and clamping the edges of the chisel blade to the surface. The scabbard not only prevents inadvertent contact with the sharp edges of the blade, but protects the cutting edge from being dulled or broken.

3,430,761
COMBINATION GREETING CARD AND PHONOGRAPH RECORD
Joseph Pelkey, P.O. Box 989, Pittsfield, Mass. 01201
Filed Nov. 3, 1966, Ser. No. 591,738
U.S. Cl. 206—62 **1 Claim**
Int. Cl. B65d *85/30;* **B42d** *15/00*

A combination phonograph record and greeting card in which the greeting card element thereof forms a suitable mailer for the phonograph record element thereof, and in which, after detachment of the record element therefrom, the card element may be suitably displayed



by hanging means incorporated thereon, either by itself or in combination with the record, to become a permanent home decoration.

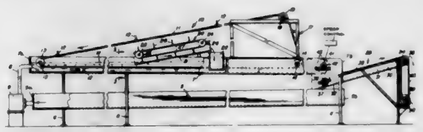
3,430,762
SIMULTANEOUS FLOTATION OF SILICA PHOSPHATES AND CARBONATE MINERALS
David Weston, 129 Adelaide St. W., Toronto, Ontario, Canada
No Drawing. Filed Jan. 19, 1967, Ser. No. 610,248
Claims priority, application Canada, Nov. 28, 1966, 976,645
U.S. Cl. 209—5 **4 Claims**
Int. Cl. B03d *1/02*

Process for flotation of phosphates, carbonates and silica with suppression of metallic oxides without desliming by dispersion of the pulp at an elevated pH within a controlled range and subsequent flotation.

3,430,763
METHOD OF REMOVING FATTY ACID COATING FROM IRON ORES
Iwao Iwasaki, Minneapolis, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
No Drawing. Filed Jan. 10, 1967, Ser. No. 608,269
U.S. Cl. 209—10 **8 Claims**
Int. Cl. B03b *1/04*

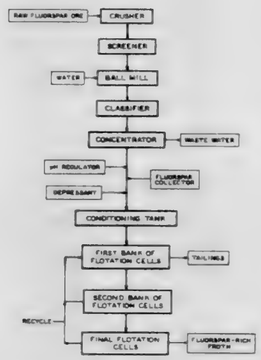
A method of removing fatty acid coatings from iron ore concentrate resulting from flotation processes by the use of activated carbon. The ore is repulped, conditioned with activated carbon and then removal of fatty acid coatings facilitates further concentration in duplex flotation processes and facilitates pelletizing of the concentrate.

3,430,764
FLOTATION SEPARATOR FOR PEPPER CORES AND MEATS
Sidney G. Hensley, Limestone, Tenn., assignor to Moody Dunbar, Inc., Limestone, Tenn., a corporation of Tennessee
Filed Oct. 31, 1967, Ser. No. 679,333
U.S. Cl. 209—10 **8 Claims**
Int. Cl. B03b *11/00, 3/38*



Apparatus for automatically separating the cores from the meats of pepper pods by a flotation system having an elongated, inclined water reservoir surmounted by an elongated, oppositely inclined flotation trough, the elevated end of which communicates with the lower end of the reservoir through a passageway having a water circulating pump. Crushed peppers are fed to the elevated end of the flotation trough where the cores float on the water and the meats sink to the bottom, due to their greater density. This flotation trough is provided intermediate its ends with an endless chain drag conveyor mounted on an incline and designed to intercept and discharge the floating cores. The sunken meats are transported along the bottom of the flotation trough towards its discharge end by a second drag conveyor or feed regulator extending from end to end of the trough with its operative run passing beneath the first drag conveyor. Extending across its discharge end, the flotation trough is provided with a water level regulator consisting of a rotary cylinder having a plurality of radial flights discharging the meats onto an endless, inclined, perforated dewatering conveyor which collects the meats for inspection and returns the water to the reservoir for recirculation.

3,430,765
BENEFICIATION OF FLUORSPAR ORES
George E. Allen and Glenn E. Allen, Boulder, Colo., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Aug. 11, 1965, Ser. No. 478,858
U.S. Cl. 209—11 **7 Claims**
Int. Cl. B03b *1/02, 1/04*

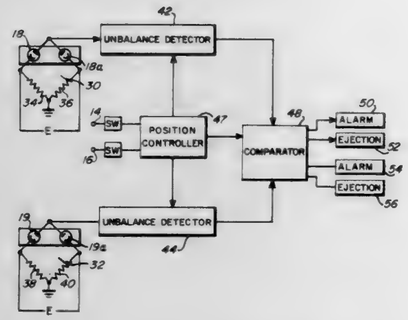


"Acid-grade" fluorspar is recovered from fluorspar ores containing appreciable amounts of gangue minerals and metallic sulfides by a froth flotation treatment which comprises the following steps: (a) mixing crude fluorspar ore with water to form an aqueous pulp, (b) adding to the pulp a collector for fluorspar selected from the group consisting of saturated fatty acids and mixtures of saturated and unsaturated fatty acids wherein the saturated fatty acid content of the mixture comprises at least about 40% of the total quantity of collector, or soaps of these acids or acid mixtures, (c) further adding to the pulp a depressant for gangue minerals selected from the group consisting of alkali metal silicates and alkali metal metasilicates, (d) subjecting the pulp to a conditioning treatment which comprises heating the pulp to its boiling point with agitation while maintaining the pulp at a pH between about 8.0 and 9.0, (e) subjecting the conditioned pulp to froth flotation and (f) recovering fluorspar enriched concentrate from the froth.

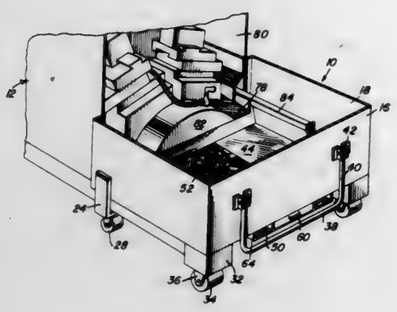
3,430,766
DEVICE FOR DETECTING MARKINGS AND EJECTING CONTAINERS
Leslie F. Stone, Westchester, Ill., assignor to The Richardson Company, Melrose Park, Ill., a corporation of Ohio
Filed June 7, 1966, Ser. No. 555,870
U.S. Cl. 209—111.7 **4 Claims**
Int. Cl. B07c *5/34;* **H01j** *39/12*

A device for detecting the presence of markings on contrasting backgrounds on flat or curved containers and comprising an electric bridge including a pair of photo-

cells positioned in front of the container and an unbalance detector, ejection mechanism, and switches to detect the correct container position and to connect the unbalance detector with the energized ejection mechanism. The output from the unbalance detector is set to cancel the energizing force in the ejection mechanism when proper markings are present on the container. The device, through the use of the pair of photocell means is relatively insensitive to variations in ambient light level, color, voltage change and distance to the container.

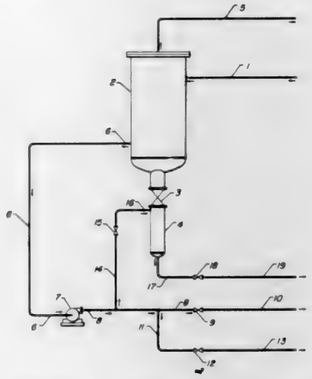


3,430,767
CHIP REMOVING ASSEMBLY
Harold L. Lawalin, 1310 Exeter Ave., Indianapolis, Ind., and Kenneth Skirvin, R.R. 2, Box 72, Greenwood, Ind. 46142
Filed Oct. 8, 1965, Ser. No. 494,176
U.S. Cl. 210—79 **7 Claims**
Int. Cl. B01d *23/24*



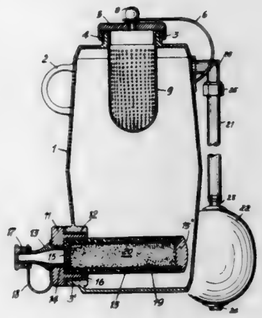
A mobile and portable chip removing bin for use with a metal working machine including a bottom wall characterized by a central aperture covered with a screen material. A removable filter is positioned underneath the screen and is supported by a plate affixed to the underside of the bin, this plate containing an aperture allowing a fluid coolant to pass through the screen, filter and plate aperture of the bin onto a machine passageway which leads the filtered coolant into a reservoir of the metal working machine. Receiving ways are attached to the underside of the bin at one edge for receipt of the forks of a fork lift truck which transports the bin to a remote destination for emptying the chip contents enclosed therein. To facilitate the dumping of these contents, a bail handle affixed to one end of the bin is positioned on the forks of the fork lift truck thereby permitting a controlled pivoting of the bin during the dumping operation.

3,430,768
SEPARATION PROCESS
John H. Stephens, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,133
U.S. Cl. 210—83 **6 Claims**
Int. Cl. B01d *17/02*



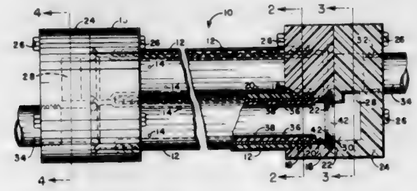
Process for recovery of a desired first liquid phase from a feed stream comprising two immiscible liquids wherein the feed stream is separated into the first liquid phase and a second liquid phase in a settling zone. The first liquid phase is accumulated in a collecting chamber within the zone, and is periodically isolated from the zone when a predetermined volume has been accumulated. The first liquid phase is recovered by being displaced from the collecting chamber by the introduction of either the feed stream or the second liquid phase into the collecting chamber at a pressure greater than that within the chamber. When the desired volume of first liquid phase has been recoverd, the introduction of the feed stream or second liquid phase into the collecting chamber is discontinued, and the chamber is recommunicated with the settling zone. Upon further accumulation of the first liquid phase within the chamber, the sequence of operational steps is repeated for further recovery of the desired first liquid phase.

3,430,769
APPARATUS FOR PREPARING DRINKABLE WATER
William A. Sanzenbacher, P.O. Box 341, 8022 Zurich, Switzerland
Filed Dec. 1, 1966, Ser. No. 598,348
U.S. Cl. 210—266 **8 Claims**
Int. Cl. B01d *29/00, 31/00*



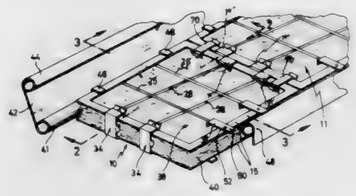
A water conditioning apparatus for preparing potable water comprising a container having a water inlet opening and a water outlet opening. A filter element composed of diatomaceous earth is mounted inside the container at the water outlet opening. The filter element has a wall portion and one end portion forming a hollow space. A granular, free-flowing filter material is disposed within this hollow space. The end portion of the filter element is placed so that it faces the water outlet opening. A pressure-producing means is connected to the container to force water to be treated from outside the wall portion of the element into and through the said filter material within the hollow space and finally through the end portion of the element out of the water outlet.

3,430,770
REVERSE OSMOSIS APPARATUS
George B. Clark, Poway, and Serop Manjikian, Del Mar, Calif., assignors to Universal Water Corporation, Del Mar, Calif., a corporation of California
Filed Nov. 21, 1966, Ser. No. 595,900
U.S. Cl. 210—321 **8 Claims**
Int. Cl. C02b *1/74, 1/82*



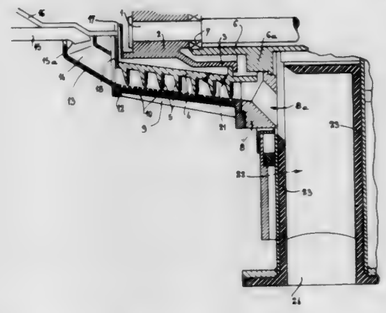
A module for treating solutions by reverse osmosis comprises a number of backing tubes containing tubular membranes arranged in side-by-side relationship. Flanges, preferably of plastic, are cast around the ends of the tubes and these flanges contain flared bores communicating with the tube bores and which are overlaid with flared membrane ends. End plates, preferably containing connecting channels, are fastened to the flanges with O-ring seals between the end plates and the flared membrane ends.

3,430,771
FILTER ASSEMBLY
Elmer Dreher, 26 Rue des Chainettes, Yverdon, Vaud, Switzerland
Filed Oct. 5, 1966, Ser. No. 584,532
Claims priority, application Germany, Oct. 5, 1965, D 48,354
U.S. Cl. 210—323 **21 Claims**
Int. Cl. B01d *25/14*



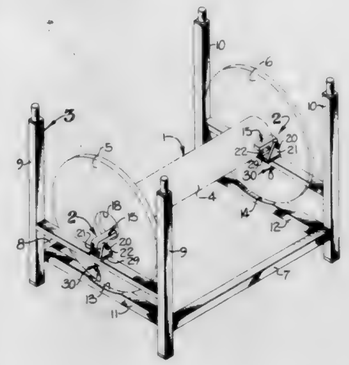
A filter assembly including a mat of deformable filter material, a frame including a pair of frame sections disposed at opposite side of the mat and having cooperating sealing portions engaging the mat to compress the filter material, the frame members define between themselves an outer groove surrounding the sealing portions into which marginal zones of the mat extend, and a plurality of clips engaging the frame sections to maintain the sealing portions thereof in compressive engagement with the material of the mat.

3,430,772
CONTINUOUSLY OPERATING CENTRIFUGAL FILTERS
Jean Ranc, Lyon, France, assignor to Robatel Slpi, Lyon (Rhone), France, a French joint-stock company
Continuation-in-part of application Ser. No. 591,239, Nov. 1, 1966. This application Apr. 8, 1968, Ser. No. 719,425
Claims priority, application France, Mar. 25, 1966, 47,095
U.S. Cl. 210—374 **4 Claims**
Int. Cl. B01d *33/06, 33/02, 33/00*



In a centrifugal filter having an outer shell and an inner support which rotate at slightly different speeds, the inner support carrying helicoidal scraper or screw-threads to act on the solid layer formed on the inner periphery of the shell, the screw-threads carry helicoidal scraping pads made of a plastic material having a low coefficient of friction and extending continuously along the whole length of each convolution. These pads are mounted in guides associated with the screw-threads and in which they are freely slidable radially and angularly with respect to the axis of the inner support, being only retained by end stops which prevent them from becoming disengaged from their guides, somewhat in the manner of a split ring which would be disposed in a helical groove provided with end abutments to retain the ring.

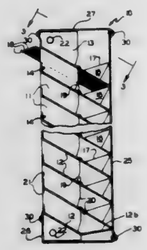
3,430,773
LOCKING DEVICE FOR BEAMS
James L. Hancock, Rock Hill, S.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,746
U.S. Cl. 211—13 **8 Claims**
Int. Cl. A47f *7/18, 5/03, 1/16*



This invention relates to racks for supporting cylindrically shaped articles, such as yarn beams or the like,

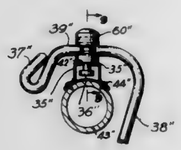
during storage or transportation thereof. The rack includes a locking means for firmly securing the beam within the rack to prevent its unintentional shifting or dislocation. The locking means includes a securing lever pivoted on the rack receivable in an opening in the end of the beam and a fastening means to lock the lever in the beam to securely hold the beam on the rack.

3,430,774
CARD RACK
Henry E. Karkut, Baldwinsville, N.Y., assignor to Henry E. Karkut Inc., Phoenix, N.Y., a corporation of New Jersey
Filed Feb. 3, 1967, Ser. No. 613,880
U.S. Cl. 211—50 **3 Claims**
Int. Cl. A47f *7/00*



A rack having a plurality of compartments for storing indicia cards. Each compartment is inclined downward from front to rear of the rack and the bottom of each compartment at the rear has a portion inclined upwardly and rearwardly against which the ends of the cards rest for separating the cards in progressively staggered relation so that the front edge of the bottom card may be grasped and a single card quickly withdrawn.

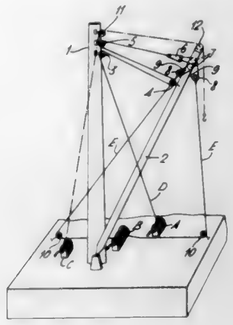
3,430,775
SECURITY HANGER DEVICE
Howard A. Fleischman, Woodland Hills, Calif., assignor to Fleischman Industries, Inc., Compton, Calif., a corporation of California
Filed Mar. 31, 1967, Ser. No. 627,483
U.S. Cl. 211—123 **8 Claims**
Int. Cl. A47g *25/00;* **A47h** *1/06;* **E05d** *13/02*



The present disclosure describes a hanger for clothes which is slotted to the supporting member, usually an elongated rod, so as not to be readily removable by someone intending theft of a group or number of articles of clothing by grasping the clothing, together with the hangers, and lifting them off the rod. The hanger hook member has projecting members which fit into a slot or opening in the top of the hanger rod which prevent removal except upon predetermined manipulation of the hanger members, thus preventing ready theft.

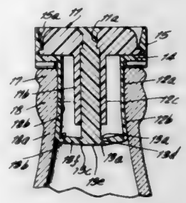
3,430,776
DERRICK CRANES AND SWINGING DERRICKS
Robert Morrison, 9 Gateside Ave., Greenock, Renfrewshire, Scotland
Filed Apr. 24, 1967, Ser. No. 634,806
U.S. Cl. 212—3 **5 Claims**
Int. Cl. B66c *23/52, 23/62*

The invention relates to a derrick crane or swinging derrick in which the rigging which effects slewing or topping, that is to say, a side-ways movement or a vertical movement, of the jib include means for dividing the topping and slewing effort so as to maintain the topping and slewing efforts in balanced relation when the crane is



moving a load to give positive control of the jib head during, throughout and at the extremes of slewing and topping operations and movement, and to prevent oscillation of the load when a slewing movement is stopped.

3,430,777
PILFERPROOF CAP WITH INTEGRAL PRESSURE ACTUATED SEALING MEANS
Vincent J. Esposito, Jr., 31 Jackson Ave., Wayne, N.J. 07470
Filed June 22, 1967, Ser. No. 648,122
U.S. Cl. 215—52 **8 Claims**
Int. Cl. B65d *39/12*



A stopper-type plastic cap has means for selectively applying outward radial pressure to engage the interior surface of bottle necks for sealing, releasing and resealing the bottle. An integral annular tear strip locks the cap in a sealed condition by a snap-in undercut groove when the cap is initially applied to the neck by a downward force and requires tearing off for initial release. Compressible means is located on a surface of a radial flange extending across the bottle mouth and coacts with the outward radial pressure applying means to accommodate varying dimensions of the bottle neck.

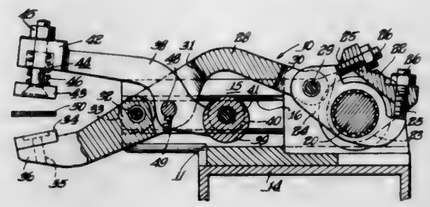
3,430,778
LOAD LIFTING
David J. B. Brown, Stroud, England, assignor to Winget Limited, Rochester, England
Filed Mar. 15, 1967, Ser. No. 623,344
Claims priority, application Great Britain, Mar. 17, 1966, 11,674/66
U.S. Cl. 212—144 **4 Claims**
Int. Cl. B66c *23/62*

A jib for a load lifting apparatus comprising at least two interconnected sections, with pivot means and locking means disposed between two of the adjacent sections so that the sections may be locked as a jib or be released so



that the section may be folded into a retracted storage position.

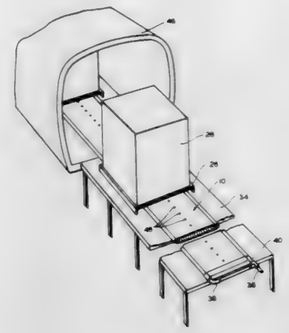
3,430,779
TRANSFER ASSEMBLY FOR A PRESS
Howard J. McElroy, South Holland, Ill., assignor to Verson Allsteel Press Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,581
U.S. Cl. 214—1 **9 Claims**
Int. Cl. B25j *3/00;* **B66c** *1/10;* **B65g**



At least one gripper finger mechanism is carried by at least one longitudinally movable feed bar for gripping, transferring along a press and releasing a work piece. The gripper mechanism includes a pair of pivoted finger members which are advanced and retracted and opened and closed by a pivoted lever which in turn is pivotally moved by an oscillatable shaft.

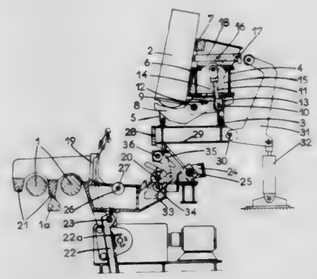
3,430,780
INFLATABLE MATERIAL MOVING DEVICE
Cyril B. Rogers, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed June 28, 1967, Ser. No. 649,560
U.S. Cl. 214—1 **1 Claim**
Int. Cl. B65g *7/06*

An inflatable device is inserted beneath material to be moved, and inflated to lift the material off the surface on which it is supported, after which the material may be slid along the upper surface of the device. The device may be provided with lubricating means on the upper



surface such as an air film discharged from openings in the upper surface. The inflatable device may be made contractible into a compact bundle.

3,430,781
INSTALLATION COMPRISING A CRADLE FOR SUPPLYING INGOTS TO A ROLLING MILL
André Nectoux, Le Creusot, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a company of France
Filed Nov. 28, 1966, Ser. No. 597,269
Claims priority, application France, Dec. 8, 1965, 41,415
U.S. Cl. 214—1 **7 Claims**
Int. Cl. B65g *67/24;* **B21b** *39/20*

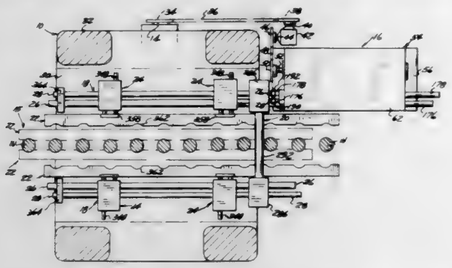


Ingots are transported from an ingot truck to the roller table of a rolling mill by a rocking cradle. The rocking cradle is mounted for two-directional rocking movements about a horizontal axis from a bottom position to a top position. The movement of the cradle to a vertical position brings it beneath the ingot on the ingot truck. The cradle is then moved to its lower position for depositing the ingot on the roller table. The pivot is locked and released in its upper and lower positions.

3,430,782
ARTICLE TRANSFER APPARATUS
Edward J. Henkel, 31625 Briarcliff Road, Franklin, Mich. 48025
Filed June 29, 1967, Ser. No. 649,998
U.S. Cl. 214—1 **20 Claims**
Int. Cl. B25j *5/00;* **B65g** *25/08*

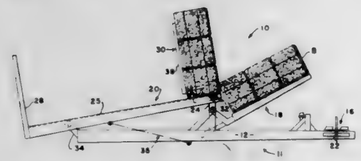
A transfer apparatus for articles such as workpieces or parts has a pair of oppositely-movable reciprocatory

article-gripping transfer members which are caused to move in approximately rectangular paths to engage, move along and release such articles step-by-step through a



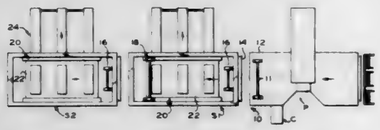
plurality of stations, each time returning to a starting position in response to precision rotary cam-operated mechanism.

3,430,783
BALE WAGON
Lee Dennis Butler, Kingsburg, Calif., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,812
U.S. Cl. 214—6 **4 Claims**
Int. Cl. B65g *57/28*



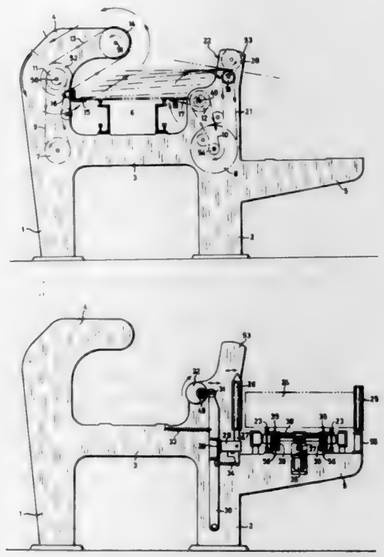
A bale wagon having a load-retaining rack which is movable to a plurality of positions on the load-carrying bed and is held in position by a braking device which automatically permits movement of the rack and the load supported thereby when additional bales are loaded on the load-carrying bed.

3,430,784
APPARATUS FOR STACKING AND SORTING PANELS
Kenneth J. Hall, Portland, Oreg., assignor to Western Machinery Corporation, Portland, Oreg., a corporation of Oregon
Filed Nov. 29, 1965, Ser. No. 510,349
U.S. Cl. 214—6 **26 Claims**
Int. Cl. B65g *57/00;* **B65h** *29/58*



A sorting system for panels including at least one intermediate stacker and an end stacker arranged end to end at the downstream end of a conveyor line. An operator at a patching station upstream from the stackers operates a control panel having selector switches for determining which one of the several stackers will receive each panel passing by the operator. The operator shoves each panel into a set of pinch rolls at the offbear end of the patching station which feed the panel onto support rails in the first stacker. If another stacker has been preselected to receive the panel, it is conveyed horizontally along the rails of the first stacker to booster wheels which feed the panel onto similar rails of the next stacker. These rails pivot downwardly to drop the panel vertically onto a stacking table. Each stacker includes side and end crowders for maintaining a squared sack, an unloading device and an accumulator for receiving panels to be stacked while the unloading device is removing a stack.

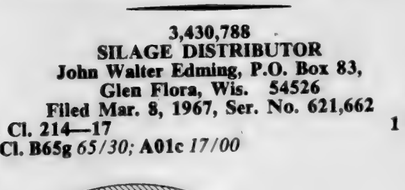
3,430,785
TRANSPORT AND PILING DEVICE
Lennart Hedborg, Overboelare, Belgium, assignor to Aktiebolaget Siefvert & Fornander, Kalmar, Sweden
Filed Oct. 17, 1967, Ser. No. 675,867
Claims priority, application Sweden, Oct. 18, 1966, 14,107/66
U.S. Cl. 214—6 **10 Claims**
Int. Cl. B65g *57/00, 59/00;* **B65h** *29/12*



This invention relates to a system for stacking veneer sheets or the like in mutually partly overlapping relation in a pile, comprising a first sheet conveyor by which said sheets are sequentially advanced, a second sheet conveyor which extends beside the first conveyor and has a substantially lower velocity than said first conveyor, and means for sequentially elevating the sheets advanced by said first sheet conveyor, transferring them in a lateral direction and depositing them onto the second conveyor in such a manner that they form a pile in which the sheets partly overlap each other.

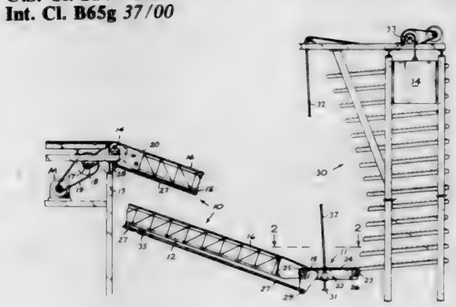
3,430,786
CHANGING BENCH FOR FLASH WELDER DIES AND THE LIKE
Charles M. Senn and Owen S. Cecil, Jr., Pittsburgh, Pa., assignors to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1966, Ser. No. 588,482
U.S. Cl. 214—16.4 **5 Claims**
Int. Cl. B66f *9/14*

A changing bench for inserting and withdrawing elongated elements supportable on a structure having guideways therefor, said changing bench including platform means, means for mounting said platform means in alignment with said guideways, traction means movably mounted on said platform means, and guiding means coupled to said traction means along a path alignable with said guideways so that the application of bending



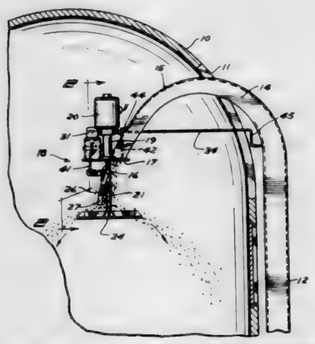
moments to said machine elements is avoided by said traction means.

3,430,787
COMPOSITE TIPPLE DEVICE
Donald B. Turner and Ralph A. Hoffman, Portland, Oreg., assignors to Moore Dry Kiln Company of Oregon, North Portland, Oreg., a corporation of Oregon
Filed Sept. 1, 1967, Ser. No. 665,706
U.S. Cl. 214—16.4 **2 Claims**
Int. Cl. B65g *37/00*



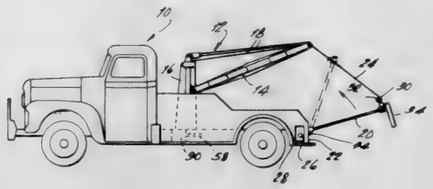
A transfer device with the discharging end pivotally mounted on a stationary support and the receiving end movable up and down in registry with the decks of the material sorting apparatus, the transfer device comprising a main tipple and a secondary tipple connected to the free end of the main tipple, the secondary tipple so mounted that its angle of inclination will not vary during the up and down movement of the receiving end of the device, thereby enabling the material being transferred to proceed more satisfactorily onto the main tipple regardless of the momentary slope of the main tipple.

3,430,788
SILAGE DISTRIBUTOR
John Walter Edming, P.O. Box 83, Glen Flora, Wis. 54526
Filed Mar. 8, 1967, Ser. No. 621,662
U.S. Cl. 214—17 **1 Claim**
Int. Cl. B65g *65/30;* **A01c** *17/00*



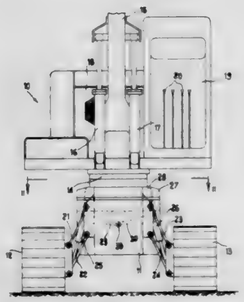
An apparatus for mounting at the discharge end of a silo filler tube and having a rotary distributor plate for broadcasting the silage around the silo and an adjustable guide plate for guiding the silage against the desired portion of the distributor plate to vary the area of distribution.

3,430,789
TOW BAR ARRESTING DEVICE
Arthur W. Nelson, 276 Long Island Ave., Wyandanch, N.Y. 11798
Filed Mar. 16, 1967, Ser. No. 623,689
U.S. Cl. 214—86 **5 Claims**
Int. Cl. B66c *21/02, 13/48*



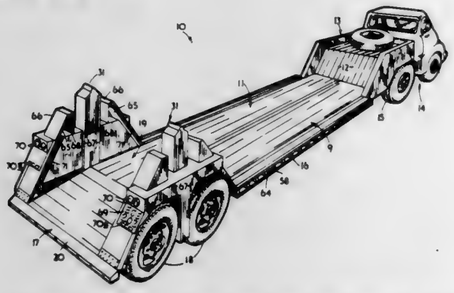
This invention is concerned with providing a means for arresting the upward motion of a pivotally mounted tow bar on an auto wrecker, when said tow bar has reached its maximum vertical displacement with relation to an automobile or truck being raised by said tow bar. Briefly, the invention provides a means for arresting the upward motion of the tow bar by automatic disengagement of the tow bar from the power take-off unit to which it is connected by means of a winch driven cable, said winch cable acting to raise the tow bar.

3,430,790
EXCAVATOR
Osmano Beltrami, 220 Via Faentina, Ravenna, Italy
Filed Mar. 6, 1967, Ser. No. 620,897
Claims priority, application Italy, Apr. 16, 1966, 8,661/66
U.S. Cl. 214—138 **8 Claims**
Int. Cl. E02f *3/50;* **B60g** *17/00*



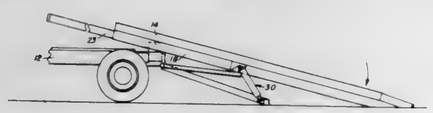
An improved excavator comprising means designed to allow and to control the swiveling motions of its boom in any direction in respect of the ground surface; means for changing the tread width of its tracks or wheels and to allow said tracks or wheels to rest on different levels in either tread sides; and means adapted to increase the operating range of the boom.

3,430,791
VEHICLE
Kenneth G. Moss, Field House, Pierce Lane, Fulbourn, Cambridge, England
Filed Mar. 21, 1967, Ser. No. 624,743
Claims priority, application Great Britain, Mar. 23, 1966, 12,710/66
U.S. Cl. 214—505 **10 Claims**
Int. Cl. B60p *1/02*



A vehicle having a load carrying platform in which the rear ground engaging wheels are power operated to be movable up-and-down and laterally to lower the platform to the ground and to increase the track of the vehicle respectively so as to facilitate loading of the vehicle from the rear end. Locking means may be provided to prevent unauthorised movement of the ground engaging wheels and the locking means may include means to prevent movement of the wheels up-and-down when the wheels are displaced outwardly from their normal position. A low loading vehicle having such power operated movable wheels is specifically described.

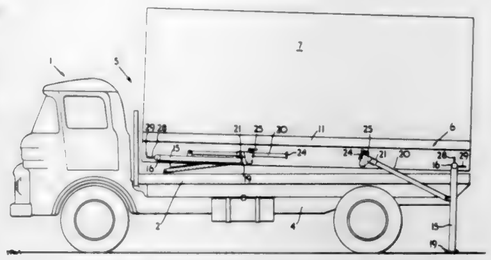
3,430,792
VEHICLE WITH TILTING BED
Dwight L. Grove and John L. Grove, Greencastle, and Robert W. Sutter, Waynesboro, Pa., assignors, by mesne assignments, to Grove Manufacturing Company, Shady Grove, Pa., a corporation of Pennsylvania, and a wholly owned subsidiary of Walter Kidde & Company, Inc.
Filed July 12, 1967, Ser. No. 652,862
U.S. Cl. 214—505 **14 Claims**
Int. Cl. B60p *1/04, 1/30;* **B65g** *67/32*



A vehicle of a type having a bed slidably and pivotably secured on a pivot at the rear of the vehicle frame. The apparatus for tilting the bed has one end connected to said frame below said pivot and includes a pair of hydrauilc jacks having first ends in sliding engagement with said bed and second ground-engaging ends.

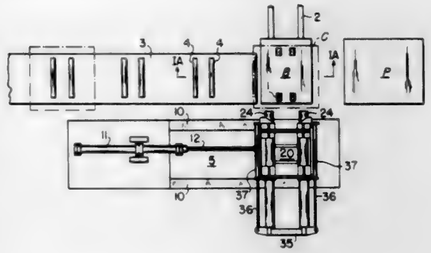
3,430,793
STILLAGES OR LIKE LOAD-CARRYING APPLIANCES AND VEHICLES FOR TRANSPORTING SAME
Victor A. Chapman, Sheldon, Birmingham, England, assignor to Abelson Motors Limited, Birmingham, England, a corporation of Great Britain
Filed Oct. 4, 1966, Ser. No. 584,257
Claims priority, application Great Britain, Oct. 5, 1965, 42,133/65; Dec. 10, 1965, 52,649/65
U.S. Cl. 214—515 **8 Claims**
Int. Cl. B60p *3/06, 1/64;* **B66f** *7/26*

A load-carrying appliance adapted to be moved between vehicle-supported and independently-supported positions, from and on to a transporter vehicle, wherein at least one pneumatic and extensible bellows is provided at each end, and symmetrically to the longitudinal center line, of a frame located between the appliance and the



vehicle and adapted to support the appliance so that the lifting and lowering operations may be effected, respectively, by supplying compressed air to, and exhausting spent air from, the bellows.

3,430,794
FORKED COIL BUGGY
Terry W. Nash, East Palestine, Ohio, assignor, by mesne assignments, to L. W. Nash Company, East Palestine, Ohio, a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 577,711
U.S. Cl. 214—731 **8 Claims**
Int. Cl. B66f *9/14;* **B65g** *37/00, 67/00*

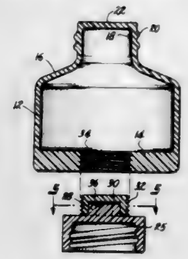


Coil handling apparatus including spaced ways and a horizontal base member cooperating with the ways for movement therealong and carrying a guide member on its upper surface. A vertically movable housing overlying said guide member, extensible fingers carried on opposite sides of said housing for movement with said housing and means for moving said housing relative to said guide member and said fingers relative to said housing.

3,430,795
MEDICINE BOTTLE WITH SAFETY CLOSURE MEANS
William Laufer, 692 N. Pearl St., Albany, N.Y. 12204
Filed Apr. 10, 1967, Ser. No. 629,717
U.S. Cl. 215—2 **4 Claims**
Int. Cl. B65d *1/06, 1/20, 55/02*

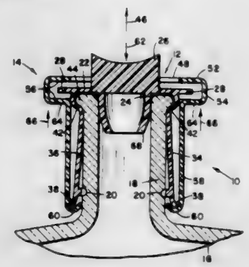
A bottle or like container adapted to contain medicinal substances, and designed to prevent or make it difficult for preschool children and others who may not understand the nature of the contents, to gain access to the contents. The bottle has a conventional appearance, however when the cap is removed from the bottle neck in the usual way, no opening is found. The actual bottle opening is located

at a different point spaced from the bottle neck. Closure means are provided for the opening which, in order to be



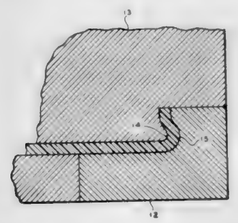
operated, must be engaged and turned by a key member that is part of the cap.

3,430,796
SAFETY BOTTLE CAP
Robert C. Berg, 109 W. 4th St., Auburn, Ind. 46706
Filed July 18, 1967, Ser. No. 654,170
U.S. Cl. 215—9 **12 Claims**
Int. Cl. B65d *55/02*



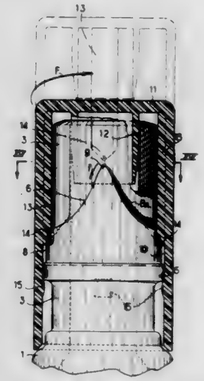
A bottle cap assembly comprising an inner cap for closing the mouth of the filler neck of a bottle and an outer cap arranged telescopically to enclose said inner cap. The inner cap is provided with at least one resilient finger-like member extending downwardly to engage the bottle to hold the inner cap on the mouth. The outer cap is provided with means for engaging the finger-like member to move the member out of engagement with the bottle when the outer cap is moved axially outwardly relative to the inner cap. In one preferred embodiment, the inner cap is provided with a plug portion which extends into the filler neck sealably to close the bottle.

3,430,797
ORIENTED THERMOPLASTIC CONTAINER CLOSURES
Robert R. Goins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,468
U.S. Cl. 215—41 **9 Claims**
Int. Cl. B65d *41/16, 41/48;* **B29c** *3/00*



A thermoplastic container closure comprising a top portion and a depending skirt portion, both portions being formed of completely oriented material, is formed by compression molding of a thermoplastic preform in a closed mold at orientation temperature.

3,430,798
BOTTLE STOPPER
Daniel Goyet, Romainville, and Jacques Gratiot, Paris, France, assignors to Societe anonyme dite: L'Oreal, Paris, France
Filed Feb. 21, 1968, Ser. No. 707,140
Claims priority, application France, Mar. 1, 1967, 96,977
U.S. Cl. 215—41 **5 Claims**
Int. Cl. B65d *41/22, 43/02*

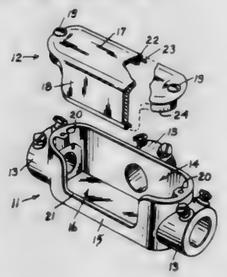


The neck of a bottle is provided with an external peripheral ridge, and at least one ramp above the ridge. A cap is provided with inner and outer dependent skirts, the innermost of which seals against the inside of the neck and the outermost of which carries at least one inwardly extending projection which slides on said ramp as said cap is applied and inwardly extending catch means which snap over said peripheral ridge as said cap is forced home.

ERRATUM

For Class 215—52 see:
Patent No. 3,430,777

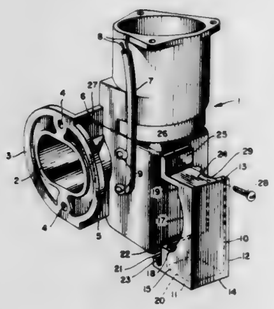
3,430,799
ELECTRICAL JUNCTION BOXES
William Maier, 125 Lawlor Terrace, Stratford, Conn. 06497
Continuation-in-part of application Ser. No. 547,226, May 3, 1966, Patent No. 3,355,048. This application Aug. 31, 1966, Ser. No. 576,345
U.S. Cl. 220—3.94 **1 Claim**
Int. Cl. H02g *3/08;* **B65d** *43/02*



Two complemental, separably assembled box sections sealed by a continuous gasket which is interposed between their opposing edges. One of the box sections is provided

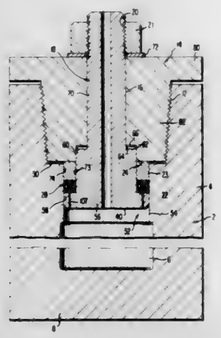
with either an inside, an outside, or both inside and outside flanges to retain the gasket and overlap the other box section.

3,430,800
WIRE CONNECTION COVER
William E. Allison, 2109 Burlington St., Ottawa, Ill. 61350
Filed Dec. 22, 1967, Ser. No. 692,848
U.S. Cl. 220—3.94 **2 Claims**
Int. Cl. H02g *3/08;* **H05k** *5/02*



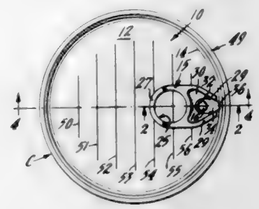
A protective cover device adapted to be applied to the housing for gear shifting mechanisms for two-speed axles of trucks, which housing has thereon a plurality of electrical terminals on the outside thereof to which electrical wires are connected from the gear shift handle inside of the truck cab. The protective cover protects the electrical terminals against deterioration by the action of chemicals, dirt, and weather.

3,430,801
CLOSURE FOR A HIGH PRESSURE VESSEL
Horace J. Homrig, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Feb. 12, 1968, Ser. No. 704,703
U.S. Cl. 220—46 **7 Claims**
Int. Cl. B65d *53/04, 39/08*



A closure for a vessel of the type adapted to contain fluid under high pressure and which includes an edge defining an opening in the vessel. The closure includes an axially extending closure body having a body shoulder. A movable follower, mounted coaxially in the body, includes a follower shoulder in axially spaced, opposed relation to the body shoulder. The shoulders are urged relatively together by high pressure fluid acting on a pressure responsive surface provided on the follower. A seal extends peripherally around the follower between the shoulders. The seal includes a channel member of substantially incompressible material having a predetermined elastic limit. The seal also includes a wedging member extending partially into the channel member. The seal and channel members include deforming means for deforming the channel member into sealing relation with the follower and the edge of the vessel opening upon relative approaching motion of the members. A limiting means is connected with at least one of the members for limiting their approaching motion to a predetermined amount, determined by the yield strength of the material, so as to limit deformation of the channel member up to but not beyond the elastic limit of the material.

3,430,802
EASY-OPENING CAN
Leonard Thomas La Croce, Paramus, and Raymond Luscombe Batchelar, Westwood, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 15, 1967, Ser. No. 638,356
U.S. Cl. 220—54 **5 Claims**
Int. Cl. B65d *17/20*



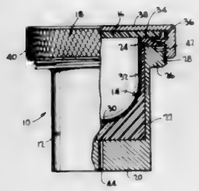
A container closure having a countersink wall which surrounds a large removable section defined by a peripheral score line and which has an opening tab secured to the removable section adjacent to the score line is provided with one or more beads which are formed in the removable section and extend in a direction generally transversely of the longitudinal axis of the opening tab. These beads prevent upward transverse bowing of the removable section and consequent distortion of the countersink wall during the opening operation and facilitate opening of the container.

3,430,803
SEMIDISPOSABLE TRAY
Paul B. Nelson, Aliquippa, Pa., assignor to Sinclair-Koppers Company, a partnership of Delaware
Filed Oct. 2, 1967, Ser. No. 672,231
U.S. Cl. 220—63 **8 Claims**
Int. Cl. B65d *25/14, 25/34*



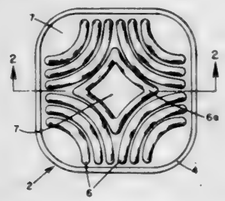
A tray is provided, comprising a unitary foam plastic base in combination with a nonfoam plastic guard, which is useful in the serving of comestibles. Following a single use period, the guard may be removed and discarded while the base member can be used for any number of servings, with a clean guard in place. The configuration of the base member provides structural stability for the tray and the guard rests firmly in place when superimposed upon said base member.

3,430,804
DECOMPOSITION VESSEL
Bedrich Bernas, 8531A Glenn Dale Road, Greenbelt, Md. 20770
Filed Feb. 19, 1968, Ser. No. 706,543
U.S. Cl. 220—63 **10 Claims**
Int. Cl. B65d *25/14, 41/04, 53/06*



Decomposition vessel particularly for use when a liquid- and vapor-tight seal is required. A supporting vessel surrounds a chemically resistant liner or bucket having an upstanding rim which sealingly engages a chemically resistant sealing disk held in place by a cap removably secured to the supporting member. Contact areas are minimized to maximize sealing pressure while support for the sealing engagement is provided by an outstanding flange on the bucket immediately below the rim.

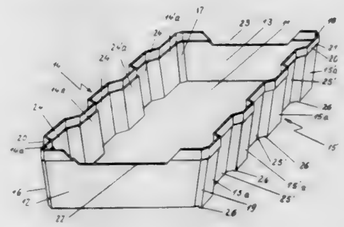
3,430,805
CONTAINER, PARTICULARLY FOR LIQUIDS
Norbert Buchner, Beutelsbach, Wurttemberg, and Rolf Köhnlein, Stuttgart-Rotenberg, Germany, assignors to Hesser, Fr., Maschinenfabrik A.G., Stuttgart-Bad Cannstatt, Germany, a corporation of Germany
Filed Jan. 11, 1967, Ser. No. 608,602
Claims priority, application Germany, Jan. 15, 1966, H 54,269
U.S. Cl. 220—66 **8 Claims**
Int. Cl. B65d *7/42*



A tube-like container of substantially rectangular cross-section composed of fibrous or similar material in which the bottom and/or top cover are composed of metal foil and stiffened by corrugations.

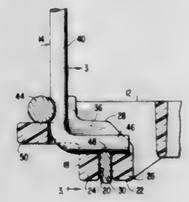
3,430,806
STACKING CONTAINER
Edmund Munk, In den Klaeren 25; Herbert Haas, In den Klaeren 27; and Gert Weinberg, Lerchenweg 14, all of Oberstenfeld, Germany
Filed July 6, 1967, Ser. No. 651,465
Claims priority, application Germany, July 28, 1966, F 49,802
U.S. Cl. 220—97 **2 Claims**
Int. Cl. B65d *21/04*

A stackable open-top container which includes sloping side walls with some portions of the walls projecting outwardly and complementary recessed portions of the opposite side walls projecting inwardly. The containers can be telescoped for minimum storage requirements when empty, as shown in FIGURE 4. Alternate containers can



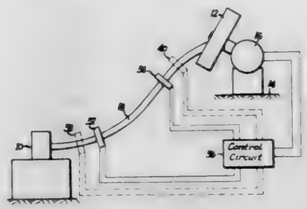
be rotated 180° for stacking without compressing their contents by supporting the outward projections of the upper container with the recessed projections of the lower adjacent container, as shown in FIGURE 6.

3,430,807
MATERIAL HANDLING CRATE
Houston Rehrig, Pasadena, Calif., assignor to Rehrig Pacific Company, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 652,264, July 10, 1967. This application May 23, 1968, Ser. No. 733,740
U.S. Cl. 220—97 **16 Claims**
Int. Cl. B65d *21/02, 15/24, 19/06*



A material handling crate having the bottom panel and the side panels formed from dissimilar materials. Either the bottom panel or the side panels may be formed from a plurality of rod-like metallic members and the other molded from synthetic resin material with an improved means of securing the bottom panel to the side panels.

3,430,808
LEVEL CONTROL SYSTEM FOR GRAVITY CONVEYOR
John Horton Matthews, Royal Oak, Mich., assignor to Multifastener Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 17, 1967, Ser. No. 624,004
U.S. Cl. 221—10 **7 Claims**
Int. Cl. G07f *11/58;* **B65g** *11/20*



An electrical system is provided which controls a feeding device supplying magnetic objects, such as pierce nuts, to a chute or other receptacle so that the feeding device is

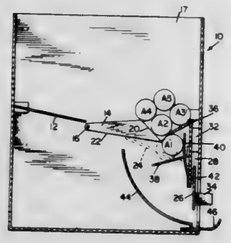
turned on when objects stacked in the chute drop below a minimum level and is turned off when the stack of objects rises to a maximum level. Inductor coils are wound about the chute at the minimum and maximum levels and act to sense the presence or absence of objects at those levels. A switching device controls the energization and de-energization of the feeding device and is in turn controlled by the sensor coils. When no magnetic objects are present in the coils, the coils cause the switching device to turn on the feeding device. When there are magnetic objects in both coils, the coils cause the switching device to turn off the feeding device. Thus, the level of objects in the chute is kept between the minimum and maximum levels.

3,430,809
METERED PARTS DISPENSING CARTRIDGE
Harold J. Vanstrom, 210 Easy St., Mountain View, Calif. 94040
Filed July 13, 1967, Ser. No. 653,052
U.S. Cl. 221—64 **5 Claims**
Int. Cl. B65d *83/00;* **A47f** *1/04;* **G07f** *11/00*



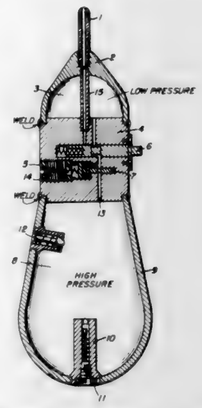
A tubular receptacle for carrying and dispensing small articles with resilient constrictive portions which normally retain articles within the receptacle but which may be deformed to permit passage and dispensing of the articles in measured amounts.

3,430,810
DISPENSER WITH SUPPLY HOLD-BACK MEANS
Albert H. Baller, 59 Beech St., Clinton, Mass. 01510, and Lawrence A. Willette, 764 Arnon Ave., Bronx, N.Y. 10467
Filed May 5, 1967, Ser. No. 636,483
U.S. Cl. 221—205 **15 Claims**
Int. Cl. B65h *3/32;* **B65g** *59/06*



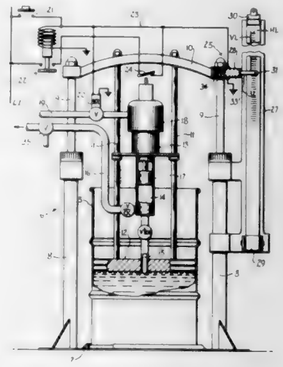
A dispenser for elongated articles including a housing in which there is a hopper, the hopper having an inclined ramp and there being a door in a wall of the housing providing an exit for articles, and including a hold-back means which is manually movable by the operator serving to divide the pile of articles from an initial article which is released by the hold-back means to move down the ramp under gravity and out through the door when the dividing hold-back means is actuated.

3,430,811
PNEUMATIC CHIP EJECTOR
Charles A. Nystrom, 31 Alps Road, Wayne, N.J. 07470
Filed Dec. 18, 1967, Ser. No. 696,679
U.S. Cl. 222—3 **4 Claims**
Int. Cl. B08b *5/02*



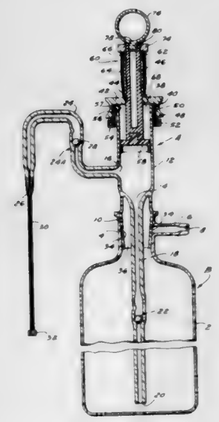
A hand held air ejector including a high pressure air reservoir, a regulating valve, a low pressure chamber, a control valve and a nozzle. The regulating valve supplies air from the high pressure reservoir to the low pressure chamber at a safe, reduced pressure. The control valve disconnects the high pressure reservoir from the chamber, and simultaneously connects the low pressure chamber to the nozzle to produce a safe, low pressure pulse or puff from the nozzle, said pulse being useful to eject metal chips from machined parts.

3,430,812
APPARATUS FOR INDICATING DEVIATION IN OUTPUT OF A CYCLICALLY OPERABLE PUMP
Albert J. Leo, La Grange, and Edward C. Bielskis, Chicago, Ill., assignors to National Pectin Products Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 3, 1967, Ser. No. 658,243
U.S. Cl. 222—14 **6 Claims**
Int. Cl. B67d *5/30*



A follower riding upon the surface of pumpable material in a drum descends as material is withdrawn from the drum by a pump having its inlet opening to the underside of the follower. The follower is connected with movable indicator means to cause the latter to travel in a defined path along a stationary chart, proportionately to the descent of the follower. At the beginning and end of each cycle of operation of the pump an electric control circuit acts to cause the indicator means to produce indicia on the chart, the spacial relationship of which depicts the actual quantity of material withdrawn so that departure in that spacial relationship from a predetermined norm indicates deviation from the desired amount of material to be withdrawn and delivered during each cycle of pump operation.

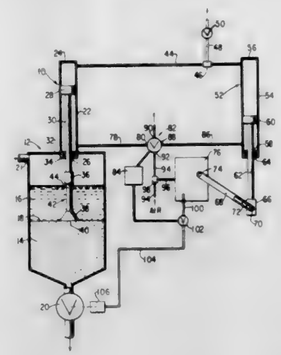
3,430,813
MICROMETRIC DISPENSER
Roger Gilmont, Douglaston, N.Y., assignor to Cole-Parmer Instrument and Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 17, 1967, Ser. No. 631,337
U.S. Cl. 222—43 **2 Claims**
Int. Cl. G01f *11/06;* **B67d** *5/42*



A pump-type dispenser in which the degree of movement of the piston, and hence the volume of liquid dispensed on each cycle of operation, is adjustably controlled by structure mounted on the piston rod.

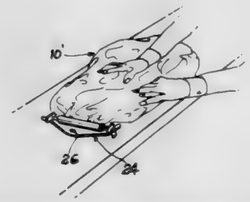
3,430,814
SOLID INTERPHASE INDICATOR CONTROLLER
Lubomyr M. O. Cymbalisty, Edmonton, Alberta, Canada, assignor of thirty percent each to Cities Service Athabasca, Inc., a corporation of Delaware, Imperial Oil Limited, a Canadian corporation, Atlantic Richfield Corporation, a corporation of Pennsylvania, and ten percent to Royalite Oil Company Limited, a Canadian corporation
Filed July 19, 1967, Ser. No. 654,516
U.S. Cl. 222—64 **8 Claims**
Int. Cl. B67d *5/08*

A device for remotely indicating and controlling the level of a solid-liquid inter-phase particularly where there is turbulence, comprising a pair of dual acting pistons and cylinders which are hydraulically directly coupled at one end of each cylinder and pneumatically coupled at the other end to a four-way pneumatic servo valve. An inverted cone-shaped feeler projecting into the solid-liquid medium is axially attached to the lower end of the piston rod of one of the cylinders while the second cylinder has a lever arm extending from the piston rod coupled to a position transmitter. A two cam timer controls the four-way pneumatic servo valve so as to periodically activate the pair of pistons and cylinders thereby hydraulically driving the pistons and piston rods in a reciprocating vertical path and forcing the feeler into the solid liquid medium until it contacts sufficient solid obstruction to stop.



The arresting of the feeler is hydraulically communicated to the second piston thereby remotely indicating at the position transmitter at what level the feeler is stopped. The position indicator automatically activates an unloading valve at a preset level indication.

3,430,815
SANITARY METHOD AND MEANS FOR HANDLING, PREPARING AND DISPENSING FLUENT FOOD PRODUCTS IN AND FROM A SUSPENDIBLE BLADDER
Ralph E. Weimer, Lombard, and Ronald M. Herbert, Hanover Park, Ill., assignors to McDonald's System, Inc., a corporation of Illinois
Filed Feb. 13, 1967, Ser. No. 615,660
U.S. Cl. 222—99 **3 Claims**
Int. Cl. B65d *35/10, 35/56, 33/16*

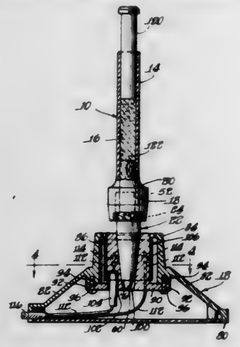


This application discloses a suspendible hanger of the reel type for suspending a bag or bladder in which several ingredients may be mixed. Also disclosed is a multi-opening bladder which serves as a shipping, mixing and dispensing container and a system for utilizing said bladder to intermix products therein and to dispense products therefrom.

3,430,816
APPARATUS FOR DISPENSING ADHESIVE MATERIALS
Russell J. Nadherny, Glenview, and Wendell W. Moyer, Jr., Oak Brook, Ill., assignors to Daubert Chemical Company, Oak Brook, Ill., a corporation of Illinois
Filed Aug. 17, 1967, Ser. No. 661,441
U.S. Cl. 222—146 **12 Claims**
Int. Cl. B67d *5/62*

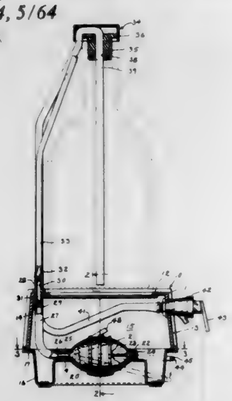
Apparatus for converting a solid adhesive material such as a thermoplastic adhesive or cement to a molten state and for dispensing the thermoplastic adhesive or cement in its molten state, comprising a portable applicator member and a normally stationary heating member. The normally stationary heating member has a heat sink which

receives a heat conducting portion of the portable applicator member. In the preferred embodiment, the heat sink acts to support the portable applicator member in an



upright position when converting solid thermoplastic adhesive or cement to a molten state and when the applicator member is not in use.

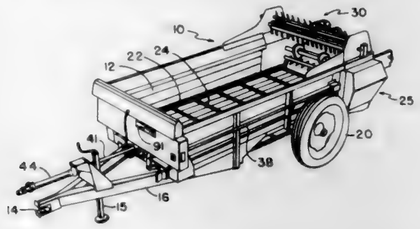
3,430,817
DISPENSER FOR BOTTLED LIQUIDS
Gustave F. Falkenberg, Brookfield, Wis., assignor to Dimensional Products, Inc., Milwaukee, Wis.
Filed Apr. 27, 1967, Ser. No. 634,301
U.S. Cl. 222—173 **1 Claim**
Int. Cl. B67d *5/54, 5/64*



A dispenser for a bottled liquid includes a hollow stand with an upper floor that supports the bottle. A priming tube, including a check valve, extends from the outlet of a flexible bulb nestled in the stand upwardly to a removable closure for the mouth of the bottle and opens into the interior of the bottle. A siphon tube has a depending short leg in the bottle, bends through the closure, and has a long leg extending downwardly to a dispensing valve on the stand. A priming bar is journaled in the stand and is depressible to compress the bulb and force air into the bottle under pressure to prime the siphon tube.

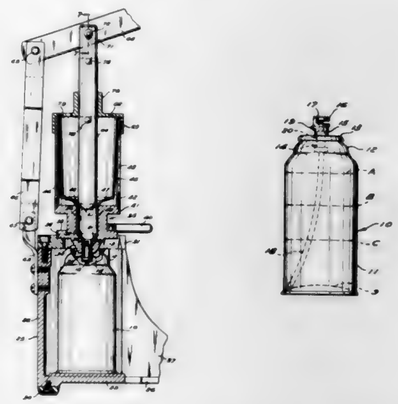
3,430,818
FEED CONTROLS FOR MATERIAL UNLOADERS
Lawrence J. Vagedes, Celina, and John H. Bing, Greenville, Ohio, assignors to Avco Corporation, Coldwater, Ohio, a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 701,666
U.S. Cl. 222—178 **7 Claims**
Int. Cl. B67d *5/64;* **G01f** *11/20, 13/00*

The disclosure illustrates an improved feed control system for a material unloader, including a conveyor which operates at selected rates to deliver material in the unloader to a distributing device for discharge. In response to linear displacement inputs, a single drive source operates the distributing device at a given rate and the conveyor at selected rates for normal operation. A displacement input beyond the normal operating positions causes the conveyor to be operated at the maximum rate and the distributing device to be disengaged for clean-



out of material. A pivotal control arm is positioned to permit visual observation and actuated to provide the displacement inputs by a rope extending to a remote location. The control arm is maintained in predetermined positions corresponding to the selected rates of operation of the conveying mechanism by a pawl and ratchet plate. The ratchet plate is shaped to selectively permit a substantial displacement to the clean-out position or to one of the selected rates of operation.

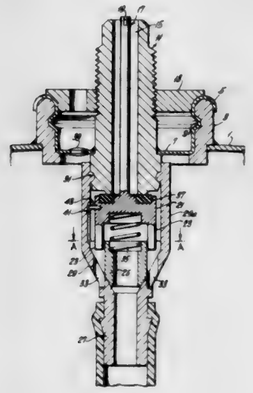
3,430,819
METHOD AND ARTICLE FOR THE PACKAGING OF AEROSOL PRODUCTS
William Moonan, Shaker Heights, Ohio, assignor to Sprayon Products, Inc., Bedford Heights, Ohio, a corporation of Ohio
Original application Jan. 27, 1964, Ser. No. 340,261, now Patent No. 3,335,765, dated Aug. 15, 1967. Divided and this application Mar. 29, 1967, Ser. No. 640,765
U.S. Cl. 222—402.1 **12 Claims**
Int. Cl. B67c *3/06;* **B65b** *37/00*



Aerosol cans are partially filled by the manufacturer with the required amount of liquified propellant gas and at least one but not all of the constituents of a material to be dispensed, such as a solvent or thinner for a paint or lacquer that is to be dispensed. The cans are provided with normally closed discharge valves and the pressurized cans are then placed in commerce. The cans are completed as aerosol packages by or on behalf of the ultimate users by subsequently injecting into them the bal-

ance of the materials to be dispensed, such as paints or lacquers of especially blended colors. Thus, each individual can, of many cans that were substantially identical when shipped to the manufacturer, can be used to dispense a different custom blended color of paint or lacquer, if desired.

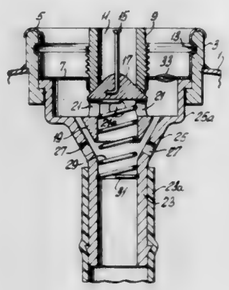
3,430,820
VAPOR-LIQUID WITHDRAWAL VALVE
Gary G. Winters, Kendall Park, N.J., and William J. Hamel, St. Albans, and Richard O. Spencer, Dunbar, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed May 11, 1967, Ser. No. 637,760
U.S. Cl. 222—402.17 **3 Claims**
Int. Cl. B65d *83/00;* **F16k** *45/00*



A device has been provided for attachment to the opening on top of a pressurized container and adapted to selectively withdraw liquid or vapor therefrom. It comprises a closure cap such as a standard aerosol valve cap fitted within a spud attached to the opening of the container. The closure cap has a closed bottom end with a central opening adapted to threadedly receive a hollow externally threaded body. Inside the container, there is a funnel-shaped structure defined by a lower tubular member and an upper truncated conical section securely engaged into the closure cap and containing a plurality of circumferentially disposed perforations for the passage of vapor. A depressible pin extends through the hollow externally threaded member and is integrally attached at its lower end to an upper seat from which projects a plurality of rotational pins. A lower seat defined by a circumferentially serrated section is disposed below and adapted to be rotatingly driven by the rotational pins so as to permit the passage of liquid or vapor selectively by proper positioning of the serrated sections of the lower valve seal with respect to the vapor passages.

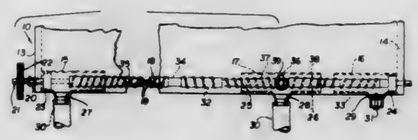
3,430,821
VAPOR-LIQUID WITHDRAWAL VALVE
Gary G. Winters, Kendall Park, N.J., and William J. Hamel, St. Albans, and Richard O. Spencer, Dunbar, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed May 11, 1967, Ser. No. 637,762
U.S. Cl. 222—402.17 **3 Claims**
Int. Cl. B65d *83/00;* **F16k** *45/00*

A valve device has been provided for attachment to the opening on top of a pressurized container and adapted for the selective withdrawal of liquid or vapor therefrom. It comprises a closure cap such as a standard aerosol valve cap securely fitted within a spud in the opening of the container. The closure cap has a closed bottom end with a central opening adapted to threadedly receive a hollow externally threaded body. Inside the container, there is a funnel-shaped structure defined by a lower tubular member and an upper truncated conical section securely engaged into the closure cap. The conical section contains



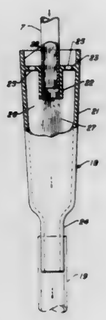
at least one, but preferably several perforations circumferentially spaced for the passage of vapor. A depressible pin extends centrally through the hollow externally threaded body. The pin is integrally attached at its lower end to a unitary structure consisting of an upper seat, a lower seat and means for connecting the two seats. Depression of the pin lowers the seats so that either liquid or vapor can be withdrawn depending on the relative positions of the seats and the vapor passages.

3,430,822
AUGER CENTERING DEVICE
Darlo E. Lienemann, Clarendon Hills, and John F. Stufflebeam, Hampton Park, Lockport, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,409
U.S. Cl. 222—412 **4 Claims**
Int. Cl. A01c *15/02, 15/08*



An agricultural fertilizer distributor or the like utilizing an elongated hopper to cover a wide area having several openings in the bottom from which the material is discharged and an auger extending the length of the hopper rotatable to feed the material to the openings. Since the auger is supported only at its ends, and modern farming practices require longer and longer hoppers and augers, the problem of having the auger sagging or being pushed upward by the material between its ends and interfering with its ability to move uniform quantities of fertilizer and the like to the discharge outlets required a solution. The present centering device consists of a roller mounted on the shaft at one of the outlets to avoid interfering with the flow of material and having a greater diameter than the shaft so that distortion of the shaft by fertilizer build-up is prevented.

3,430,823
LIQUID DISPENSING SYSTEM
Vero L. Hunsaker, Burbank, Calif., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Continuation of application Ser. No. 573,046, Aug. 17, 1966. This application Feb. 23, 1968, Ser. No. 707,877
U.S. Cl. 222—416 **5 Claims**
Int. Cl. B67d *3/00;* **F16l** *43/00;* **E03c** *1/08*



In a liquid dispensing apparatus providing automatic intermittent discharge of a treated water stream including a water chamber, a water inlet line thereto, and a discharge line comprising an upper siphon section within the chamber and a lower externally depending vertical outlet leg, the combination therewith of an enlarged vertically positioned air inlet-vent section connected to said outlet leg, the air inlet-vent section having an enlarged central portion with a lower liquid outlet and an axially positioned upper liquid inlet depending a short distance through an upper horizontal diaphragm and into the hollow interior portion of the air inlet-vent section, the diaphragm having a plurality of small peripherally spaced ports around the liquid inlet. The air inlet-vent section precludes a vacuum in the water chamber of the dispensing apparatus or, alternatively, precludes any blow-back or backing-up of liquid into the siphon outlet in the event of a pressure increase on the system.

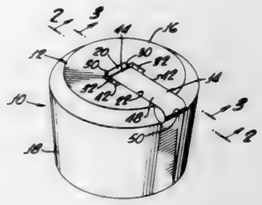
3,430,824
LIQUID CONTAINER WITH DISPENSING VALVE
John P. Conners, Lancaster, and Samuel B. Davis, Columbus, Ohio, assignors to The Corrugated Container Company, Columbus, Ohio, a corporation of Ohio
Filed Feb. 13, 1967, Ser. No. 615,753
U.S. Cl. 222—523 **3 Claims**
Int. Cl. B67d *3/00;* **B65d** *25/44*

According to this invention, a container is provided for liquids and is preferably of rigid or semirigid thermoplastic resin material. The container is provided with a neck having an opening through which the container is filled with liquid and also through which the liquid is dispensed. Mounted on this neck is a dispensing valve assembly of novel form which is also preferably of thermoplastic resin material. The container neck is so disposed and the valve assembly is so positioned therein that normally all parts of the valve assembly, as well as the container neck, are disposed in a pocket which is recessed within adjacent wall surfaces of the container so that the valve assembly is protected from damaging contact with surfaces such as the surfaces of a shipping case in which one or more of the containers are disposed. The valve assembly includes a dispensing valve and a mounting and positioning means for movably mounting it on the container neck. The mounting and positioning means permits the bodily movement of the valve from a retracted position within the pocket to an extended position where the valve can be actuated readily between closed and opened



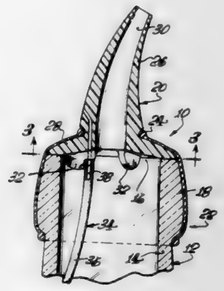
positions and where a receiving tumbler or cup can be positioned effectively relative thereto to receive the dispensed liquid.

3,430,825
DISPENSING CLOSURES
Woodrow S. Wilson, Slatersville, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed Aug. 25, 1966, Ser. No. 574,972
U.S. Cl. 222—534 **2 Claims**
Int. Cl. B67d *3/04, 5/06*



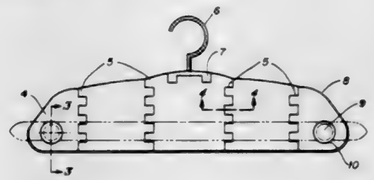
This invention pertains to new and improved dispensing closures of the rotatable spout type.

3,430,826
BOTTLE TOP WITH RESILIENT ATTACHING SLEEVE
Anthony Microulis, 8919 Longden, Apt. 13, Temple City, Calif. 91780
Filed Oct. 25, 1967, Ser. No. 678,075
U.S. Cl. 222—570 **7 Claims**
Int. Cl. B65d *5/72, 25/40, 35/38*



An attachment for a bottle having a neck with an open mouth surrounded by an external lip on the neck, the attachment having a cap member which may be a pouring spout, closure, or shaker, and a resilient skirt on the member adapted to be snapped or rolled over the bottle neck to be secure and seal the cap member to the neck.

3,430,827
COLLAPSIBLE COAT HANGER
Josephine Nelson, 626 11th St. S., South Lethbridge, Alberta, Canada
Filed Dec. 9, 1966, Ser. No. 600,464
U.S. Cl. 223—89 **2 Claims**
Int. Cl. A41d *27/22*



A garment hanger comprising a bar composed of a plurality of hingedly connected sections foldable in overlapping relation so as to be easily stored when not in use, the end sections of the bar, on both sides, having means for attaching a strap extending longitudinally of the bar to hold the sections in alinement when the hanger is in use, and a hanger hook hingedly connected to the upper edge of the center section of the bar.

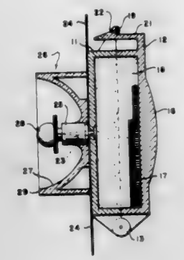
3,430,828
GUN SLING
Melvin Ross Gregson, Box 837, Mill Road, Chapleau, Ontario, Canada
Filed June 23, 1967, Ser. No. 648,499
U.S. Cl. 224—1 **1 Claim**
Int. Cl. F41c *33/00*



A gun support worn by the person as constituted by a shoulder pad, a strap secured to said pad adapted to support a gun, and a second strap adapted to partly encircle the wearer to retain the equipment in position. A butt case formed with a D ring secured on both sides thereof enables the use of the device by both right hand and left hand hunters.

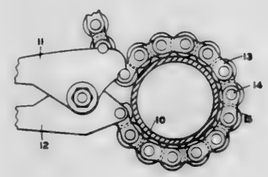
3,430,829
APPAREL ATTACHED CONTAINER
Porter C. Wilson and Lucille E. Wilson, both of 320 E. Elvira Road, Tucson, Ariz. 85706
Filed Nov. 1, 1966, Ser. No. 591,169
U.S. Cl. 224—5 **5 Claims**
Int. Cl. A45c *1/04*

A detachable coin container which can be pinned to wearing apparel by a pin-clutch device which has a hinged cover with an integral magnifying lens in the cover. The cylindrical coin container is of sufficient depth to hold a number of coins and has a resilient pad in the container



to keep the coins from rattling. The container is specifically designed for carrying small change by small children.

3,430,830
CUTTING ELEMENT FOR A PIPE-CUTTING CHAIN
Sanford E. Coblitz, 567 Knollwood Ave., Ashtabula, Ohio 44004
Filed Apr. 21, 1967, Ser. No. 632,749
U.S. Cl. 225—103 **6 Claims**
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*

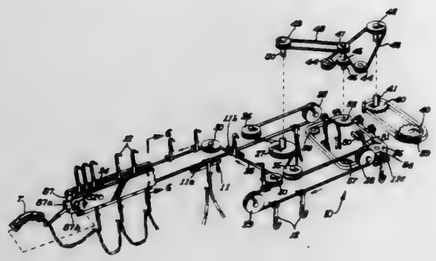


Segmental circular cutting elements for a pipe-cutting chain. At least a selected one of two adjacently disposed cutting elements having at least a chordally directed edge clearance surface and segmental cutting edge means encompassing less than 360 degrees, whereby the edge clearance surface clears the segmental cutting edge means of the other of the two adjacently disposed cutting elements. The cutting elements will make a deep cut into the pipe without decreasing the width of the side links of the chain and without increasing the longitudinal spacing between the pins upon which the cutting elements are mounted.

3,430,831
TRANSFER DEVICE FOR A FRANK-O-MATIC SYSTEM
Jean A. Burton, Austin, Robert J. Geppert and James L. Farmer, Minneapolis, and Joseph J. Mathis, St. Paul, Minn., assignors, by direct and mesne assignments, to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,163
U.S. Cl. 226—105 **7 Claims**
Int. Cl. B65h

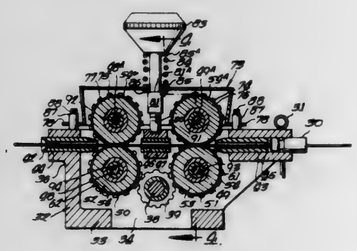
A transfer device comprising a plurality of hooked shaped conveyor members mounted on an endless track which extends between the sausage making machine and cooking conveyor, the hook shaped conveyor members receiving and supporting elongate sections of sausage links

from a sausage making machine, and transferring the sections of sausage links to a moving cooking conveyor. An endless belt engaging the conveyor member to move the same along the track but releasing the conveyor members



adjacent the cooking conveyor. An escapement mechanism controlling movement of each conveyor member adjacent the cooking conveyor to permit controlled transfer of the sections of sausage links of the cooking conveyor.

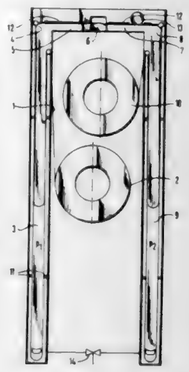
3,430,832
WELDING WIRE FEEDING MECHANISM FOR CONTINUOUS WELDING APPARATUS
Gilbert F. Meyer, Greendale, Wis., assignor to Machinery and Welder Manufacturing Corporation, Greendale, Wis., a corporation of Wisconsin
Filed July 21, 1967, Ser. No. 659,281
U.S. Cl. 226—174 **17 Claims**
Int. Cl. B65h *17/22, 17/20*



A welding wire feeding mechanism for continuous welding apparatus providing for lateral and longitudinal alignment of feed rolls, the feed rolls being changeable, if necessary, without affecting the alignment.

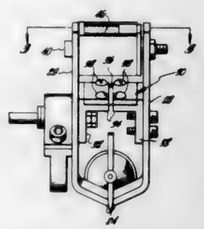
3,430,833
MAGNETIC TAPE DEVICE FOR HIGH TAPE SPEEDS
Wilhelm V. Fabris, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Sept. 28, 1966, Ser. No. 582,656
Claims priority, application Germany, Sept. 28, 1965, S 99,725
U.S. Cl. 226—195 **4 Claims**
Int. Cl. B65h *23/08*

A magnetic tape unit with pneumatic buffer chambers in which the tape is moved merely by differential pressures therein, both in a forward and a reverse direction, in which the forces exerted on the tape are so selected that a speed would be imparted thereto which is higher than the desired tape speed, braking means being provided by means



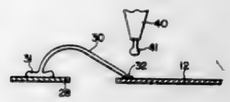
of which the tape movement may be controlled to achieve the desired speed.

3,430,834
WIRE CLAMP
Joseph L. Laub, Claremont, and Momtaz Nosshi Mansour, Duarte, Calif., assignors to Unitek Corporation, Monrovia, Calif., a corporation of California
Filed May 17, 1967, Ser. No. 639,160
U.S. Cl. 228—1 **6 Claims**
Int. Cl. B23k *1/06, 5/20, 3/00*



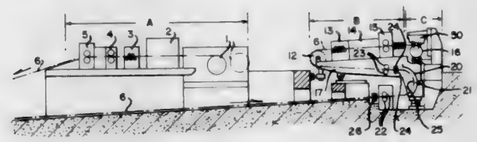
A wire clamp for use in ultrasonic bonding apparatus. A flexure interconnects the arms of the clamp and an electromagnet provided between the arms of the clamp provides the force for opening or closing the jaws of the clamp against the resisting spring tension of the flexure. By reducing the friction in the clamp to a negligible amount, substantially increased control over opening and closure of the clamp jaws is obtained.

3,430,835
WIRE BONDING APPARATUS FOR MICRO-ELECTRONIC COMPONENTS
Ronald C. Grable, Mountain View, Calif., and Hans E. Patzer, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 7, 1966, Ser. No. 555,873
U.S. Cl. 228—4 **5 Claims**
Int. Cl. B23k *19/00;* **B21f** *15/10;* **H01r** *43/02*



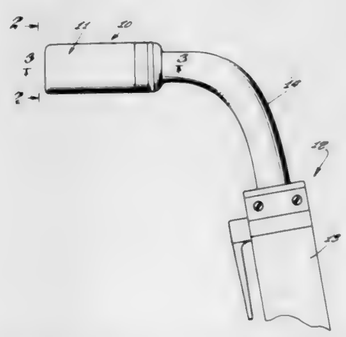
Thermocompression bonding with avoidance of a tail of excess wire at the bond is provided by apparatus including means responsive to the motion of the capillary from the bonding surface to grasp the wire and sever it at the bond.

3,430,836
SPIRAL WELD TUBE AND PIPE MILLS
Ali Bindernagel, Dusseldorf-Gerresheim, Germany, assignor to Kommanditgesellschaft Friedrich Kocks, Dusseldorf, Germany, a corporation of Germany
Filed Mar. 24, 1967, Ser. No. 625,639
U.S. Cl. 228—15 **4 Claims**
Int. Cl. B23k *1/20*



Apparatus is provided for spiral weld tube and pipe mills in which a horizontal loop forming device is provided in place of vertical looping pits and in which a strip feeder to a welding head and direction-changing means are provided for changing the direction of strip going to the welding head which direction-changing means receives strip from the loop forming device and is free to move with the changing movements of the strip feeder to the welding head.

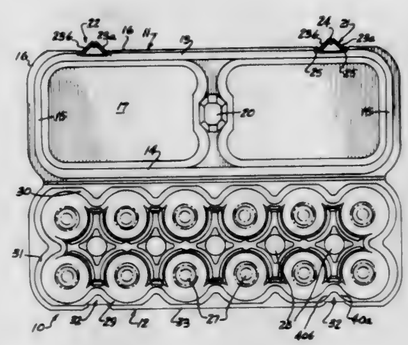
3,430,837
ANTI-STICK AUTOMATIC WELDING TIP
Ronald L. Hein, 1008 22nd Ave. Court, Greeley, Colo. 80631
Filed July 27, 1967, Ser. No. 656,446
U.S. Cl. 228—53 **7 Claims**
Int. Cl. B23k *3/04*



A welding tip which is provided with a novel type of coating upon the inside parts so as to prevent splattering metal from sticking thereto or becoming built up thereabout, thus saving on maintenance and repair of the welding tip as well as eliminating the stopping of the automatic feed of welding wire.

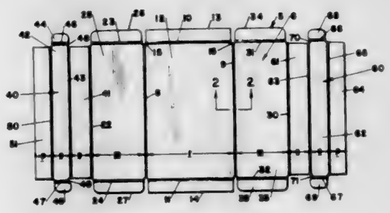
3,430,838
CARTON CONSTRUCTION
Clifford H. Bessett, South Holland, Ill., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Mar. 28, 1968, Ser. No. 716,862
U.S. Cl. 229—2.5 **7 Claims**
Int. Cl. B65d *1/00, 81/00, 85/00*

A carton construction is provided which includes a bottom section and a cover section, the latter being movable into overlying relation with respect thereto. The bottom section has a front wall which is provided with a stationary upwardly extending protuberance. The protuberance includes a pocket having an open outwardly facing front side and a bridge portion forming a closed top side. The cover section is provided with a depending front wall which extends adjacent to and in front of the pocket front side, when the cover section is in its overlying position. Formed in the cover front wall and



in registration with the pocket front side is a yieldable male element. The element is capable of being pushed inwardly or pulled outwardly upon the application of a predetermined external force. The element, when pushed inwardly, extends into the pocket and interlockingly engages the bridge portion and thus retains the cover section in its overlying relation with respect to the bottom section.

3,430,839
MULTI-BLANK REINFORCED FIBERBOARD CONTAINER
Michael J. McColl, St. Louis, Mo., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Oct. 18, 1965, Ser. No. 497,159
U.S. Cl. 229—23 **9 Claims**
Int. Cl. B65d *5/42, 13/04*



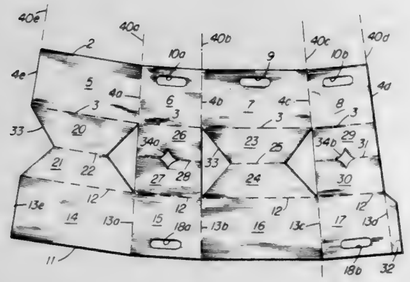
A reinforced carrier formed from two end walls and a center portion, the latter integrally including side walls and a bottom wall. The side and end walls are provided along their upper margins with reinforcing rims formed from foldably connected panels. When the end walls are fitted into closure-forming relation with the center portion the side faces of the rims on the end walls facewise abut against the end edges of the rims on the side walls. Projecting outwardly from the rims on the side walls are securement tabs and similarly projecting from the end margins of the side walls are side flaps. The securement tabs are scored at the corners of the carrier so that when the tabs are folded across the corners at their scores, in-

wardly protruding beads will be formed which will engage the rims on the end walls and urge them into abutment with the rims on the side walls. The side flaps are also scored so that when they are folded therealong the beads formed will project into and rigidify the beads on the tabs. The center portion and end walls are formed from blanks illustrated in FIGS. 1 and 3, respectively, of the drawings.

3,430,840
COLLAPSIBLE PAPERBOARD BOX

Richard E. Paige, New York, N.Y., assignor to The Paige Company Containers, Inc., New York, N.Y., a corporation of New York

Filed June 20, 1967, Ser. No. 647,516
U.S. Cl. 229—37 **12 Claims**
Int. Cl. B65d *5/02, 5/36*

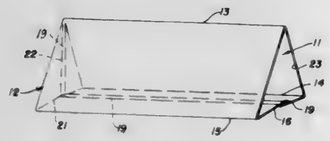


A collapsible carton containing inner and outer telescoping shells which when constructed define a carton having four double walls of equal height, two end walls and two side walls wider than the end walls, at least one of the side walls having a hand opening on one of its inner panels.

3,430,841
TRI-CORNERED BAG

Amos R. Kanaga, 83 21st Ave., San Mateo, Calif. 94403

Filed Jan. 26, 1967, Ser. No. 611,991
U.S. Cl. 229—53 **1 Claim**
Int. Cl. B65d *5/00*

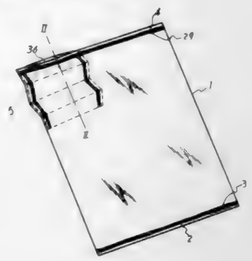


The invention comprises a tri-cornered receptacle having an opening at one end thereof for receiving and removing receptacle contents; said receptacle comprising a pair of opposed slanting sides terminating at the top in a longitudinally extending apex, a base consisting of folded and lapped transverse extremities of said slanting sides, and a closure at the opposite end from said opening consisting of a folded extension of said base terminating at said apex and lapped longitudinal extremities of said slanting sides, and means fastening together said lapped transverse extremities of said sides defining said base as well as fastening together said folded extension of said base and said lapped longitudinal extremities of said sides defining said closure.

3,430,842
VALVED BAG

Gennosuke Yamaguchi, 100 1-chome, Okusawa, Tamagawa, Setagaya-ku, Tokyo, Japan

Filed Sept. 22, 1967, Ser. No. 669,932
Claims priority, application Japan, Sept. 22, 1966, 41/62,499
U.S. Cl. 229—62.5 **6 Claims**
Int. Cl. B65d *31/14, 77/14*

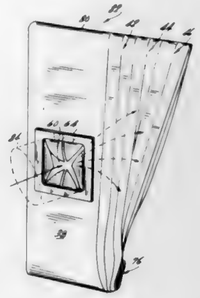


A valved bag having a bag body and a flat valve sleeve therefor both of which are formed of thermoplastic material, with the open-ended sleeve mounted internally of the bag body and heat sealed to the bag body. The valve sleeve is flattened by employing heat welded zones along each side thereof and is folded transversely into a plurality of accordion pleats which function to effect improved sealing of the valve sleeve on filling of the bag body.

3,430,843
DISPOSABLE FILTER BAG

John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., Far Rockaway, N.Y., a corporation of New York

Filed Nov. 13, 1967, Ser. No. 682,205
U.S. Cl. 229—62.5 **7 Claims**
Int. Cl. B65d *31/14, 31/00, 33/00*



The invention is directed to a bag, suitable for use as a vacuum cleaner filter bag, comprising a sheet of flexible material having a pair of opposing side edges, one of said side edges being provided with a plurality of pleats, including a face pleat, formed thereon, the other side edge being provided with a face panel, said sheet being transversely folded medially of its length, the confronting face panels being joined together, so that a bag is formed which is resultingly off-centerly expansible.

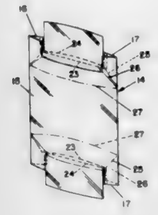
3,430,844
VALVED BAG END CONSTRUCTION

Allen Daniels, Shaker Heights, Ohio, assignor to Chase Bag Company, a corporation of Delaware

Filed Nov. 8, 1967, Ser. No. 681,407
U.S. Cl. 229—62.5 **4 Claims**
Int. Cl. B65d *31/14, 33/00*

A flattened tube of foldable and heat sealable material from which a rectangular shaped bag is formed with

the flattened tube having rectangular end flaps projecting from both ends but on opposite sides of the tube and the end flaps being folded below the base of a rectangle

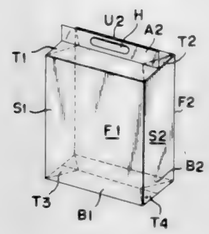


when the ends of the tube are opened and folded. A valve sleeve blank is inserted in a corner of the bag between the end flap and a folded portion of the end of the flattened tube.

3,430,845
SEALED CUBOID CONTAINER UTILIZING A SHEET OF SYNTHETIC RESIN FILM FOR PACKING POWDER OR FINE PARTICLES AND ITS FABRICATING METHOD

Rinnosuke Susuki, Tokyo, and Hiroshi Hoshi, Narashinoshi, Japan, assignors to Raion Yushi Kabushiki Kaisha, Tokyo, Japan

Filed Nov. 27, 1967, Ser. No. 685,774
U.S. Cl. 229—87 **3 Claims**
Int. Cl. B65d *65/00, 75/00, 5/46*



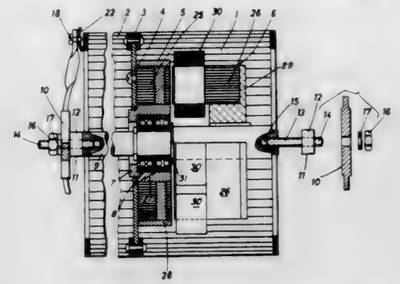
Sealed cuboid containers for powder and fine particles having gorgeous external appearances can be fabricated at a cost lower than that of carton, can or plastic containers, by merely enveloping an inner core box made of a cheap sheet material with a sheet of synthetic resin film and thermally fusing the overlying lateral as well as the top and bottom marginal portions of said sheet.

3,430,846
BLOWER WITH ELECTRIC DRIVE

Johann Gross, Andernach (Rhine), Germany, assignor to Blech- und Metallwarenfabrik, Robert Fischbach Kommanditgesellschaft, Neunkirchen, Kreis Siegen, Germany, a corporation of Germany

Filed Mar. 20, 1967, Ser. No. 624,437
Claims priority, application Germany, Mar. 19, 1966, B 86,275
U.S. Cl. 230—117 **2 Claims**
Int. Cl. F04d *25/06, 25/08, 17/08*

A radial flow blower having a casing and a shaft supported in the casing and a drum-type impeller rotatably supported in the casing on the shaft. An electrical induction motor is supported internally of the impeller in the air stream of the blower. The rotor winding means of the electrical induction motor has an electrical resistance of a magnitude sufficient to cause the rotor to slip at at least 25 percent when the blower is

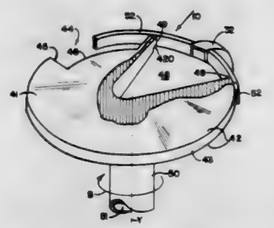


operating under free delivery conditions so that the resistance to the flow of air out of the radial flow blower can vary substantially without appreciably affecting the delivery efficiency of said blower.

3,430,847
ROTARY WAVE COMPRESSORS AND THE LIKE

Roger C. Weatherston, Williamsville, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York

Filed Aug. 15, 1966, Ser. No. 572,600
U.S. Cl. 230—150 **28 Claims**
Int. Cl. F04c *17/04;* **F01c** *3/06;* **F02b** *55/00*

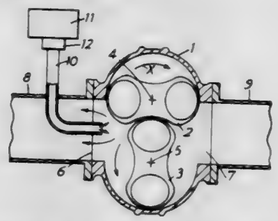


A fluid rotary compressor and/or motor, one or more pistons rotatable in one or more annular expansible chambers, a rotary abutment member providing a closure and an escapement for the piston or pistons, gears synchronizing piston movement with abutment movement and supply and exhaust passages in the cylinder walls and/or the abutment member.

3,430,848
ROTARY-DISPLACEMENT COMPRESSORS

Stanley Berry Turner and Kenneth Ernest Challis, Ilford, England, assignors to The Plessey Company Limited, Ilford, England, a British company

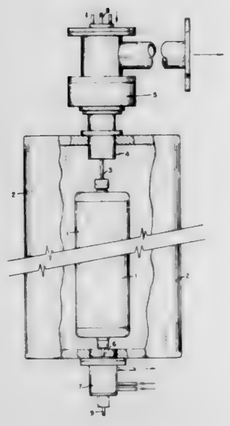
Filed Dec. 30, 1966, Ser. No. 606,172
Claims priority, application Great Britain, Feb. 23, 1966, 8,032/66
U.S. Cl. 230—210 **6 Claims**
Int. Cl. F04c *29/04;* **F04b** *39/06*



Overheating of a Roots blower when running near zero delivery against pressure is reduced by means of a

cooling-air injection pipe arranged at the inlet side and direction of cooling air into the zone of intermesh, from which the injected air can escape through the inlet pipe.

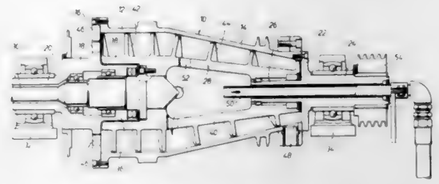
3,430,849
LIQUID CENTRIFUGE FOR LARGE-SCALE VIRUS SEPARATION
Ronald F. Gibson, Oak Ridge, Clifford E. Nunley, Kingston, and Dean A. Waters, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 1, 1967, Ser. No. 657,713
U.S. Cl. 233—1 **8 Claims**
Int. Cl. B04b; B01d *21/26, 43/00*



An intermediate-speed, high capacity centrifuge adapted to separate virus in liquid media. A vertically oriented rotor is mounted on upper and lower hollow shafts which provide flow passageways for continuous passage of virus-containing liquid through the rotor while it is rotating. An air-driven turbine provides axial support as well as driving force to the rotor through the upper hollow shaft. The lower hollow shaft provides radial support only to the rotor. The rotor is mounted within a housing designed to serve as both a crash shield and vacuum casing.

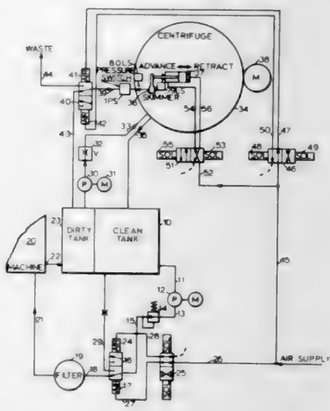
3,430,850
CENTRIFUGAL SEPARATOR
Lafayette E. Gilreath, Houston, Tex., assignor to Perfection Engineering Co. Inc., Houston, Tex., a corporation of Texas
Filed Nov. 13, 1967, Ser. No. 682,188
U.S. Cl. 233—7 **6 Claims**
Int. Cl. B04b *1/12, 3/04, 5/00*

A centrifugal separator of the type having an outer, rotatably mounted barrel formed with a cylindrical portion terminating at one end of the barrel and a longitudinally tapering portion extending from the inner end of the cylindrical portion to the other end of the barrel, and an inner rotor in the barrel rotatable relative thereto and provided with a spiral flight extending from end to end thereof, the flight having a portion of constant pitch located in the cylindrical portion of the barrel to form therewith a spiral chamber portion providing a separating zone for material under treatment, and a portion of varying pitch extending throughout the tapered portion of the barrel, to form therewith a spiral chamber portion providing dehydrating zone and solids feeding zone, the volume of any portion of said solids feeding zone throughout the length thereof being the same as the volume of any other portion of the same length of said solids feeding zone. The barrel and rotor are adapted to rotate together at somewhat different speeds to cause the flight to move



solid material, separated from the material under treatment, toward one end of the barrel. The flight of the rotor in the tapered portion of the barrel is interrupted to provide openings through which the separated liquid may flow in a direction to allow the liquid to move away from the solids as the solids move toward one end of the barrel.

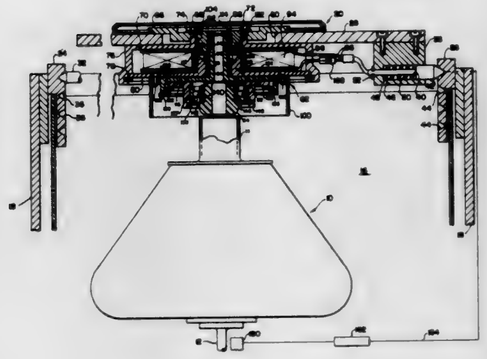
3,430,851
AUTOMATIC CENTRIFUGE APPARATUS
Ronald C. Abt, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 26, 1967, Ser. No. 693,662
U.S. Cl. 233—19 **10 Claims**
Int. Cl. B04b *9/00*



There is shown and described a clarifying system in combination with an electro-chemical metal cutting machine. The system includes a centrifuge and automatic controls for producing an automated cycle of use. The control system responds to the density of the discharge from the centrifuge waste skimmer to direct the discharge either for recirculation to the centrifuge or for collection at a waste station. The waste skimmer is caused to move through its cycle in response to either the lapse of a predetermined period of time or to the consumption of a predetermined amount of energy in the metal cutting machine.

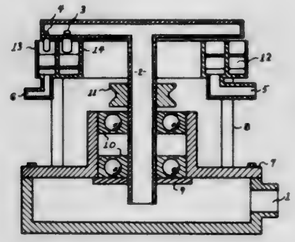
3,430,852
ROTOR STABILIZER
Andrew Lenkey, Menlo Park, and James B. Graeser, Jr., Palo Alto, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 8, 1967, Ser. No. 644,558
U.S. Cl. 233—23 **9 Claims**
Int. Cl. B04b *9/00, 15/00*

Apparatus for stabilizing a spinning rotor below a predetermined speed of rotation which apparatus is completely removable from the centrifuge and in which a



tractive electromagnet actuates a stabilizing member into engagement with the rotor below said speed.

3,430,853
TURBINE CENTRIFUGE
Samuel A. Kirk, General Delivery, Pringle, S. Dak. 57773, and Clair F. Kirk, 2511 Linden Way, Cheyenne, Wyo. 82001
Filed Oct. 7, 1966, Ser. No. 585,109
U.S. Cl. 233—23 **2 Claims**
Int. Cl. B04b *9/06*



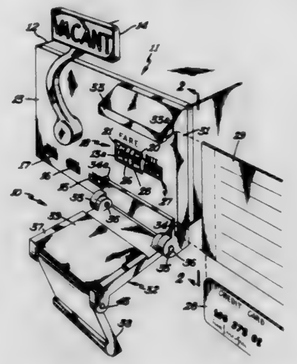
The turbine centrifuge is a device in the form of a tubular centrifuge with the objective of separating liquids of different weights contained in a solution or mixture. Removal ports, or holes in the tube into liquid layers when the tube and mixture are under centrifugal force, eject the separated liquids to form a reaction wheel with the objective of device efficiency.

ERRATUM

For Class 235—6 see:
Patent No. 3,431,401

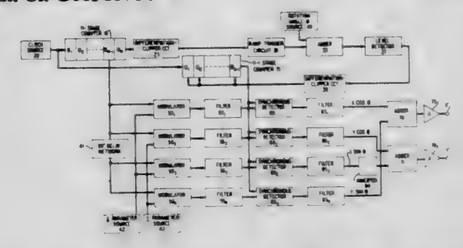
3,430,854
READOUT DEVICE FOR TAXICAB METERS
Fred Dowden, Jr., Spirit Lake, Iowa 51360
Filed Feb. 17, 1967, Ser. No. 616,879
U.S. Cl. 235—30 **1 Claim**
Int. Cl. G07 *13/00*

A readout and indicating device for taxicab meters wherein the meters are provided with fare calculation units, the readout device having printing wheels for indicating a fare calculation, and having indicia thereon



for transferring the information to a permanent record directly from the indicating means.

3,430,855
COORDINATE AXIS CONVERTER EMPLOYING A FUNCTION GENERATOR
Walter T. Hartwell, Wharton, and Frederick C. Young, New Vernon, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed June 25, 1965, Ser. No. 466,918
U.S. Cl. 235—197 **17 Claims**
Int. Cl. G06f *15/34*

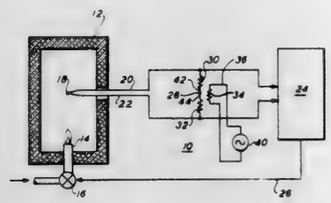


An all-electronic translator for converting parameters associated with one rectangular coordinate axis system to corresponding parameters associated with a rotated such system includes circuitry for generating two square waves that are displaced in phase by an amount proportional to the angle of rotation between the systems. One square wave is amplitude modulated with the parameters of the original coordinate system and then filtered to generate four sinusoidal carrier waves. In turn, a plurality of synchronous detectors operate on the modulated carriers in a manner determined by the relative phase displacement between the two square waves. The resulting signals correspond to the original parameters multiplied by sinusoids whose argument is the angle of rotation between the systems. By selectively combining these signals the axis parameters for the new rotated system are formed.

3,430,856
HEAT CONTROL APPARATUS
William E. Engelhard, Apalachin, N.Y., assignor to Pyro-Serv Instruments, Inc., North Arlington, N.J., a corporation of New Jersey
Filed Apr. 4, 1967, Ser. No. 628,341
U.S. Cl. 236—15 **8 Claims**
Int. Cl. F23n *1/00;* **G05d** *15/01, 23/22*

The temperature of an oven is measured by a temperature measuring thermocouple which transmits signals

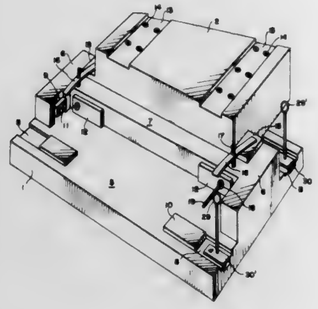
over a pair of leads to a controller which, in response thereto, controls the feeding of fuel to the oven. In order to prevent runaway of the system if the temperature measuring thermocouple opens, a signal generating thermocouple is connected across the pair of signal leads to the high gain amplifier section of the controller. The signal generated thereby will shut down the system in the absence of signals from the temperature measuring thermocouple.



3,430,857
BALLASTLESS RAILWAY TRACK STRUCTURE

Kentaro Matsubara, Tokyo, and Seikichi Tohyama, Ohtsuki-shi, Japan, assignors to Japanese National Railways and Kowa Concrete Company Limited, Tokyo, Japan

Filed Nov. 30, 1966, Ser. No. 597,948
Claims priority, application Japan, Dec. 27, 1965, 40/80,068; July 6, 1966, 41/43,972, 41/43,973, 41/43,974
U.S. Cl. 238—1 **4 Claims**
Int. Cl. E01b *1/00, 21/00, 25/28*



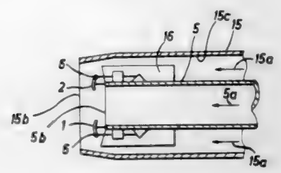
The disclosure relates to an unballasted railway track structure including supports or piers positioned along a roadbed at predetermined intervals longitudinally thereof and spanned by relatively long elongated beams, each beam having its opposite ends supported by a pair of longitudinally adjacent respective supports. Each support has an upper beam-supporting surface formed with projections limiting lateral and longitudinal displacement of a beam supported thereon, and the beams have upper surfaces formed to support and fixedly position the two rails of a track. Resilient shim blocks are interposed between the beam-supporting surface and the undersurface of a beam, and between the projections and end and lateral surfaces of the beam, these shim blocks damping vertical and horizontal impacts on the supported beam. The relative lateral and vertical positions of the rails or track is settable by selecting the thicknesses of the shim blocks.

The disclosure is further directed to a novel method of properly aligning the supports or piers along the road bed.

3,430,858
JET POWER PLANT

Gerhard Eggers, Bremen, and Wilhelm Seibold, Aachen-Laurensberg, Germany, assignors to Vereinigte Flugtechnische Werke, GmbH., Bremen, Germany

Filed Aug. 8, 1966, Ser. No. 570,859
U.S. Cl. 239—127.3 **12 Claims**
Int. Cl. B64d *33/04;* **B64c** *15/06*

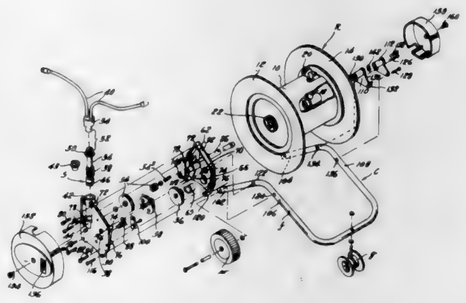


A jet power plant having an inner duct for ducting hot gases, an outer duct surrounding the inner duct, and defining therewith an annular passage for ducting cool gases, and a plurality of deflecting vanes movable between inoperative and deflecting positions for deflecting when in the latter position, cool gases from the annular passage into the stream of hot gases emanating from the outlet of the inner duct and in which each of the vanes has an upstream portion radially inwardly of the outer duct in the path of cool gases so that such cool gases will pass along opposite surfaces of said vanes to cool the latter when in the deflecting position.

3,430,859
TRAVELLING SPRINKLER

Ho Chow, River Edge, N.J., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York

Filed Feb. 17, 1967, Ser. No. 616,880
U.S. Cl. 239—183 **12 Claims**
Int. Cl. B05b *3/06, 3/18*

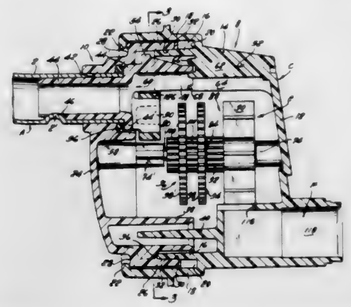


A travelling fluid sprinkler of the type in which a wheeled carriage is propelled along the ground tracked by a laid out extension of a hose, propulsion being effected by the winding up of the hose on a reel which is mounted on the carriage, the reel being rotated by the jet reaction operation of a sprinkler mounted on the carriage and in fluid communication with the hose. The sprinkler is characterized by a number of features which result in the production of a compact, readily assemblable and simplified structure design.

3,430,860
OSCILLATING SPRINKLER

Ho Chow, River Edge, N.J., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York

Filed Nov. 15, 1966, Ser. No. 594,611
U.S. Cl. 239—242 **20 Claims**
Int. Cl. B05b *3/16;* **F16h** *3/08*



An oscillating sprinkler in which the oscillatory element has a section extending into the sprinkler housing with a part projecting therefrom toward a wall of the housing, that wall having guide means engaging with the part for guiding the latter in movement as the oscillatory element oscillates, stops are provided engageable with the part for limiting the movement of the oscillatory element, a gear drive is provided in which a shaft has an enlarged portion axially separating independently rotatable gears mounted thereon, and in which the housing is composed of two sealingly telescopable parts.

3,430,861
LIQUID DISTRIBUTING SYSTEM FOR DISHWASHING MACHINE

Russell C. Geiger, Paul B. Geiger, and David A. Meeker, Troy, Ohio, assignors to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio

Original application July 26, 1965, Ser. No. 474,667, now Patent No. 3,323,429. Divided and this application Apr. 3, 1967, Ser. No. 627,919
U.S. Cl. 239—251 **5 Claims**
Int. Cl. B05b *3/06;* **B08b** *3/02, 3/06*

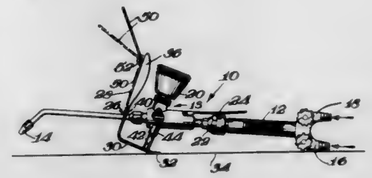


A dishwasher has a tank defining a cleansing chamber and a liquid distributing system including a recirculating pump. A reaction spray arm has a hub supported for rotation within the chamber by a manifold connected to the pump, and the spray arm hub and manifold have mating cylindrical surfaces. A groove is formed within one of the surfaces, and a substantially rigid sealing ring is mounted within the groove for free rotation while firmly engaging the other cylindrical surface.

3,430,862
PROTECTIVE SHIELD FOR A FLAME SPRAYING TORCH

John P. Broderick, Bayside, and Frederick T. Wishnie, Seaford, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York

Continuation of application Ser. No. 341,231, Jan. 30, 1964. This application May 4, 1965, Ser. No. 453,132
U.S. Cl. 239—280 **10 Claims**
Int. Cl. B23k *5/24*



1. A heat shield and stand in combination with a flame spraying torch having a body with a flame ejecting tip and a portion of said body being adapted for manual gripping, said shield and stand comprising a widened front shielding section secured to said body between said flame ejecting tip and said portion of said body adapted for manual gripping, a bottom shielding section integral with said front shielding section to be disposed under said body in front of said manual gripping portion whereby said front and bottom sections may shield the operator from the heat of the flames ejected from said tip, and a portion of said bottom shielding section being planar to provide a stand for said torch, an eye shield being secured to the top of said front shielding section, said eye shield being made of a material which protects the operator's eyes from the intense light of said torch, and pivot means connecting said eye shield to said front shielding section whereby said eye shield may be rotated against said front shielding section to provide a compact unit.

5. A flame spraying torch comprising a tip section for ejecting flames from said torch, a powder injecting section connected to said tip section, gas connecting means connected to said tip section, a gas conduit extending from said gas connecting means and through said powder injecting section and said tip section, a heat sensitive powder container for holding a heat sensitive powder mounted on said powder injecting section, a powder passageway leading from said powder container to said gas conduit whereby the powder may flow into said conduit, a heat shield connected to said powder injecting section and disposed between said powder container and said tip section for shielding said powder container to protect said heat sensitive container from the heat emitted from the tip section, and said heat shield extending at least as far above said powder injecting section as said container and partially enveloping said container.

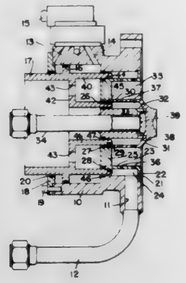
3,430,863
FUEL-OXIDIZER INJECTION

John J. Canavan, Mine Hill, Dover, Henry Gawrylowicz, Wallington, William J. Buckley, Jr., Sparta, and William Johns, Lake Hopatcong, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 28, 1966, Ser. No. 605,494
U.S. Cl. 239—412 **5 Claims**
Int. Cl. B05b *7/12*

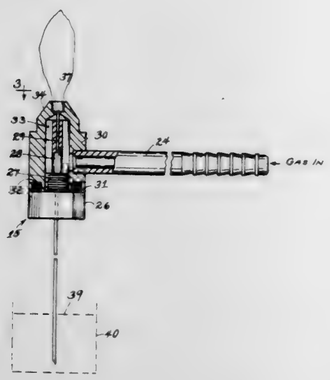
An annular, throttling fuel-oxidizer injector for variable thrust rocket structures that provides an improved thrust

management over the entire thrust range including a complete shut-off capability. A control piston is employed having a concentric pair of annular shuttle valve members



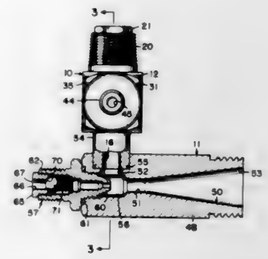
that extend into respective fuel and oxidizer supply cavities that are positioned on either side of a combustion chamber annulus having ported sidewalls which are controlled by the shuttle valve.

3,430,864
HYDROGEN-ENTRAINED AIR TOTAL CONSUMPTION ASPIRATOR BURNER
C. David Miller, Greenbelt, Charles Soodak, Silver Spring, and Paul Priarone, West Hyattsville, Md., assignors to American Instrument Company, Inc., Silver Spring, Md.
Filed May 26, 1967, Ser. No. 641,523
U.S. Cl. 239—424 **10 Claims**
Int. Cl. B05b *7/06*



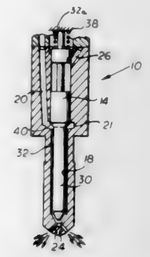
An aspirating burner consisting of a chamber connected to a single source of pressurized fuel gas, such as hydrogen. The chamber has a top aperture centrally located in a counterbore in the top of the chamber body. An aspirating tube is supported in a center post in the chamber, the top end of the tube extending centrally through the top opening and terminating slightly above, defining an annular gas nozzle orifice. The lower end of the tube is received in a vessel containing a sample liquid to be spectrometrically analyzed by the flame method. The passage of the pressurized fuel gas through the annular nozzle orifice effects aspiration of the sample through the tube and partially collimates the stream of aspirated liquid forming the flame structure.

3,430,865
FOAM GENERATOR
Franklin M. McDougall, Kirkwood, Mo., assignor to Standard Machine & Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Continuation of application Ser. No. 526,111, Feb. 9, 1966. This application Apr. 15, 1968. Ser. No. 721,515
U.S. Cl. 239—427.5 **3 Claims**
Int. Cl. B05b *7/00, 7/04;* **A47k** *5/14*



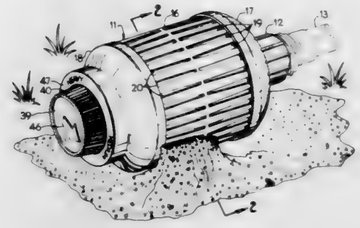
A first injector, including a venturi having a constricted throat, interposed between an inlet and an outlet receives water under pressure. An induction passage communicates with the throat so that detergent is induced into the injector by pressure drop at the throat, there to be mixed with the water. The resulting mixture is discharged from the first injector into a second injector, which includes a second venturi. The second injector is substantially transverse to the first injector. The outlet of the first venturi communicates with a chamber ahead of the throat of the second venturi. An air nozzle communicates with the chamber to introduce air under positive pressure into the chamber so that the mixed water and detergent liquid are air entrained. The resultant stream is discharged through the second venturi and into the atmosphere to create a foam. Check valves disposed in the first venturi, the detergent induction passage, and the air nozzle, preclude reversal of flow at these locations.

3,430,866
FUEL INJECTION NOZZLE
Rudolf W. Guertler, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 31, 1967, Ser. No. 627,352
U.S. Cl. 239—533 **4 Claims**
Int. Cl. B05b *1/30;* **F02m** *45/04*



A fuel injection nozzle wherein means is provided to reduce undesirable initial high rates of injection. This means comprises a chamber associated with the needle valve to which a portion of the fuel is diverted during the injection cycle to cut the "peak" from the initial high rate of injection.

3,430,867
IRRIGATOR
James Linn Rodgers, 9606 La Serna Drive, Whittier, Calif. 90605, and Robert B. Caves, 10028 Deerhaven Drive, Santa Ana, Calif. 92705
Filed Mar. 14, 1967, Ser. No. 623,075
U.S. Cl. 239—542 **11 Claims**
Int. Cl. E03c *1/084;* **B05b** *7/04*



An irrigating device for attachment to a garden hose including a means for directing a stream of water in an annular formation around a cylindrical surface toward a wall having an annular opening interrupted by spaced elements. A control governs the flow, which at lower volumes passes through the annular opening, drawing in air to produce an aerated flow discharging downstream of the wall. At higher flow rates, the spaced elements at the opening create turbulence so that the flow is broken up, most not passing through the opening and discharging upstream of the wall.

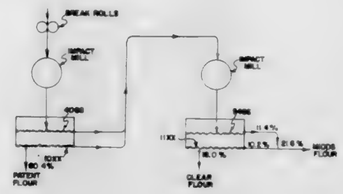
3,430,868
TORCH TIP
Stephen C. Berger, 33 Mosman St., West Newton, Mass. 02165
Filed Dec. 6, 1966, Ser. No. 599,622
U.S. Cl. 239—590.3 **11 Claims**
Int. Cl. F23d *13/26, 13/36*



A sintered metal material is used as a torch tip for a brazing tip or a cutting tip in the present invention. Passageways are provided in the sintered metal without substantially affecting the porosity of the sintered metal at the surface of the passageways so as to allow gas flow within the tip which enhances the flame characteristics of flames produced by burning gases at the tip.

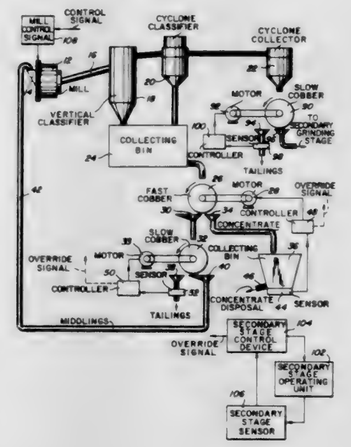
3,430,869
MILLING PROCESS FOR RYE
La Verne M. Odden, Wayzata, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,097
U.S. Cl. 241—9 **5 Claims**
Int. Cl. B02c *9/04, 11/04, 11/08*

1. A short flow process for milling rye, comprising:
(a) subjecting said rye to a hard grinding break, such that at least about 45% of the resulting product is able to pass through a 28W screen,
(b) then impacting said product at a relatively high velocity so as to further reduce the product and loosen most of the endosperm particles thereof from the bran, thereby providing a fine fraction of rye



patent flour in an amount substantially corresponding to that obtainable from the same rye by a gradual reduction milling process, and
(c) classifying said product to separate the fine fraction of patent flour.

3,430,870
FAST MAGNETIC DRUM ORE SEPARATOR CONTROL
David Weston, Toronto, Ontario, Canada, assignor to Aerofall Mills Limited, Toronto, Ontario, Canada
Filed Nov. 20, 1967, Ser. No. 684,466
Claims priority, application Canada, Mar. 1, 1967, 984,100
U.S. Cl. 241—34 **11 Claims**
Int. Cl. B02c *4/32, 7/14, 9/04*

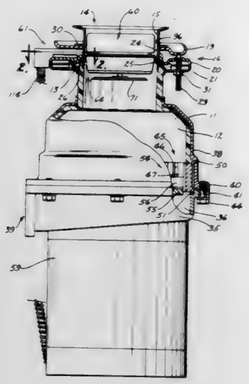


Control device for rotary magnetic ore separator, having a weight sensor sensing the weight of ore concentrate separated out, and a speed controller for regulating the speed of rotation of the separator to regulate the quantity of ore concentrate separated out.

3,430,871
CONTROL FOR WASTE DISPOSER APPARATUS
Frank E. Ross, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,914
U.S. Cl. 241—32.5 **13 Claims**
Int. Cl. B02c *19/12, 25/00, 19/00*

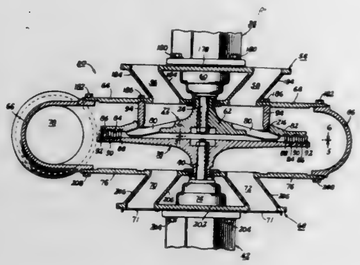
A control system for a waste disposer apparatus including an inlet cover construction having a movable fluid

container for receiving fluids and retaining a portion thereof to sense a minimum rate of fluid flow into the disposer



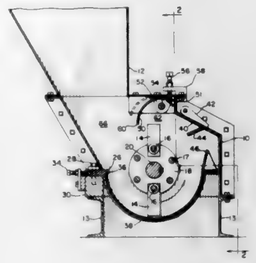
apparatus. Actuation means, movable with the fluid container, is operable for initiating motor operation responsive to a predetermined minimum rate of fluid flow.

3,430,872
CENTRIFUGAL IMPACTING APPARATUS
Kurt H. Conley, Hamden, and Arnold J. Tenner, West Haven, Conn., assignors, by mesne assignments, to Entoleter, Inc., a corporation of Delaware
Application Nov. 24, 1961, Ser. No. 160,966, now Patent No. 3,229,923, dated Jan. 18, 1966, which is a division of application Ser. No. 799,930, Mar. 17, 1959, now Patent No. 3,023,973, dated Mar. 6, 1962. Divided and this application Oct. 6, 1965, Ser. No. 511,006
U.S. Cl. 241—55 **2 Claims**
Int. Cl. B02c *9/04, 11/00, 13/20*



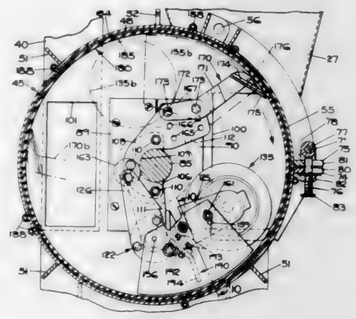
A centrifugal impacting mill has an upper or receiving rotor with impactors located toward the periphery thereof. A second processing rotor is positioned below the first rotor and has a number of impacting elements extending upwardly therefrom. The rotors are formed with concave adjacent faces to form an air inlet space between them. The space diminishes from the center of the rotors outwardly and may be designed to produce a venturi effect upon the air passing through this passage. Fan blades are mounted on the upper surface of the second rotor. The first or upper rotor has a plurality of radially disposed impacting elements located in an outward annular region just below a downwardly sloping portion on which the material to be milled is received. The leading surfaces of these impactors may be grooved to direct the treated material toward the central portion of the impactors of the second rotor.

3,430,873
WOOD FRACTIONATOR
Harold F. Wahl, Portland, and Harold Nippert, Boring, Oreg., assignors to Rader Pneumatics Incorporated, Portland, Oreg., a corporation of Oregon
Filed Nov. 4, 1966, Ser. No. 592,019
U.S. Cl. 241—55 **1 Claim**
Int. Cl. B02c *13/04, 23/02;* **B07b** *1/20*



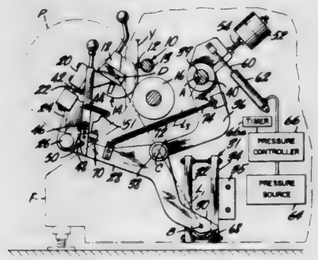
A machine for fractionating wood chips having a casing, a plurality of hammers rotatably mounted within the casing, and a hopper mounted on one side of the casing. A scroll is provided within the casing above the inlet to the hopper and eccentric with respect to the path of the hammers within. The scroll is arranged to create a low pressure area in the region of the inlet to the hopper to prevent blowback of material through the hopper and to facilitate feeding of material into the casing.

3,430,874
CONTINUOUS MULLER
Karl H. Andrae, Columbus, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Dec. 27, 1963, Ser. No. 333,936
U.S. Cl. 241—98 **19 Claims**
Int. Cl. B02c *17/16, 15/08, 19/00*



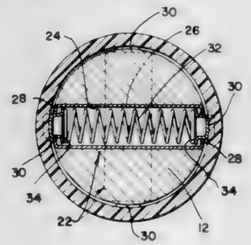
Continuous mulling apparatus having a receptacle in which the material is worked or mulled. The material is fed in at one end of the receptacle and discharged at the other end of the receptacle. There are successive mulling assemblies in the receptacle which successively mull the material as it moves from one end to the other end of the receptacle. Each mulling assembly has a mulling wheel to mull the material. There is an arresting dam to interrupt the longitudinal flow of material and to confine material in front of a mulling wheel to be mulled. A plow follows behind the mulling wheel to scrape the material and to disperse the material about the axis of the receptacle and over the inner mulling surface of the receptacle, such that the material is worked on all parts of the mulling surface and is put in a condition in which it flows from the one end of the receptacle to the other end of the receptacle.

3,430,875
WINDING APPARATUS
John P. Kieronski, Whitinsville, Mass., assignor to Whitin Machine Works, Inc., Whitinsville, Mass., a corporation of Massachusetts
Filed June 19, 1967, Ser. No. 647,028
U.S. Cl. 242—18 **14 Claims**
Int. Cl. B65h *54/00*



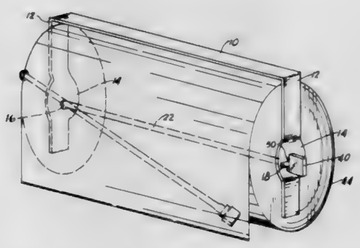
A mounting mechanism for the take-up roll of apparatus for winding flexible material into a roll of the type in which the take-up roll is driven by a drive roll that engages the material already wound onto it, thereby driving the take-up roll at a constant peripheral speed. The mechanism comprises a first member hingeably connected to a fixed support for pivotal movement about a horizontal axis A, a second member mounted for pivotal movement about an axis B which is parallel to the axis A and is shiftable along a vertical plane passing substantially through the axis A, the first member being pivotably coupled to the second member at an axis C. The take-up roll is mounted on the second member with its axis along a line D parallel to and lying in a plane with the axes B and C. The distances $\overline{AC}$, $\overline{BC}$ and $\overline{DC}$, measured in a plane perpendicular to the axes A, B, C and D, are equal to each other. The mounting mechanism embodies the principles of a mechanism known as the Scott-Russell mechanism.

3,430,876
SUPPORT APPARATUS
William Sandager, North Dighton, Mass., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Sept. 25, 1967, Ser. No. 670,199
U.S. Cl. 242—46.4 **4 Claims**
Int. Cl. B65h *75/30, 79/00;* **D01h** *3/16*



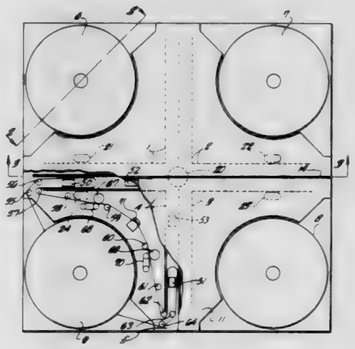
Apparatus for supporting a core of a yarn package on a take-up spindle. A cylindrical retainer having a pair of opposed detents at its ends and enclosing a spring urging the detents axially in opposite directions is fittingly received in a transverse bore extending through the spindle. The detents project beyond the surface of the spindle and engage the inner surface of the core to firmly and accurately position the core when telescopically received on the spindle.

3,430,877
TOWEL HOLDER
Edward Berlet, 9 Adrian Ave., Apt. 5B, Bronx, N.Y. 10463
Filed Sept. 7, 1967, Ser. No. 670,507
U.S. Cl. 242—55.2 **5 Claims**
Int. Cl. B65 *19/00*



A holder for a roll of paper towels including a paper towel roll supporting member slidably received in opposed legs of a frame, the supporting member having a rotatable locking means at one end thereof which is movable between a locked, roll supporting position and an unlocked, roll loading position, and adjustable biasing means on the supporting member adjacent one of the opposed legs whereby the leg can be adjustably biased toward the roll of paper towels to exert a selective pressure thereon.

3,430,878
TAPE APPARATUS
Harry F. Rayfield, Bradbury, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 459,625, June 30, 1965. This application Jan. 11, 1967, Ser. No. 608,594
U.S. Cl. 242—55.12 **12 Claims**
Int. Cl. G11b *15/44*

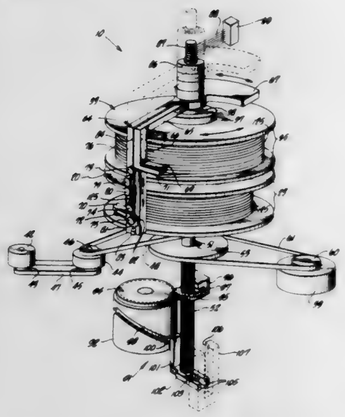


A closed-air system for tape handling apparatus employing vacuum columns. The tape handling components, including vacuum columns, are located in an enclosure which excludes the tape storage reels. Tape from the reels enters the enclosure through slots. A vacuum pump withdraws air from the vacuum columns. The withdrawn air is filtered and returned to the enclosure at a point outside of the vacuum columns. Preferably, the enclosure is maintained substantially at atmospheric pressure.

3,430,879
APPARATUS FOR TRANSPORTING ELONGATED MATERIAL

George Wesley Boyer, Covina, Calif., assignor to Leach Corporation, San Marino, Calif., a corporation of Delaware

Filed Mar. 6, 1967, Ser. No. 620,821
U.S. Cl. 242—55.12 22 Claims
Int. Cl. G11b *15/44, 5/00*

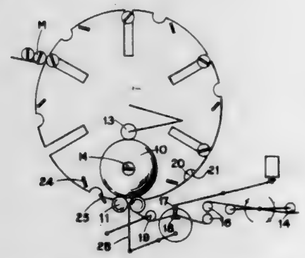


An apparatus for transporting elongated material such as magnetic tape between a pair of side-by-side coaxially aligned reels. An arm rotates around the reel axis adjacent the peripheries of the reels to strip tape from one reel and wind it on the other reel, and the arm carries guide pins or rollers for guiding the tape laterally between the reels. One reel is fixed, and the other reel is driven at constant torque to rotate only enough to compensate for the difference in tape-pack circumference on the reels. A magnetic head is mounted on the arm to record and reproduce data on the tape. Wide reels accept side-by-side wraps of narrow tape for high tape capacity, and a cam reciprocates the arm in a direction parallel to the reel axis to provide level winding of the tape. Data signals and power are fed to the rotating arm through slip rings or rotating transformers.

3,430,880
AUTOMATIC TOTE REWIND

Edward Albert Breacker, Kensington, London, and Edouard R. Armelin, Ealing, London, England, assignors to Societe d'Etudes de Machines Speciales, Paris, France, a French company

Filed Oct. 13, 1966, Ser. No. 586,503
Claims priority, application Great Britain, Oct. 13, 1965, 43,398/65
U.S. Cl. 242—56 8 Claims
Int. Cl. B65h *19/20, 17/08*

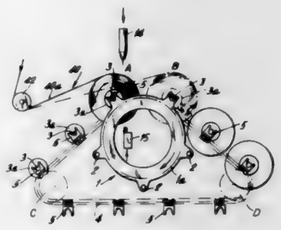


1. A machine for winding a length of web, taken from a supply of such web, onto a mandrel having a diametrically disposed slot therein, comprising a frame, a turret indexably mounted in said frame and including a plurality of mountings spaced around said turret to receive a plurality of said mandrels individually, at a loading position in said frame and carry them individually to a winding station in said frame, a pair of driving rollers mounted on said frame so as to contact and drive a mandrel when it is in said winding position, means for attaching the end of said web to be wound to a mandrel when it is in said winding position and means for severing said length of web when it has been wound onto one of said mandrels, wherein said web severing means comprises a stationary guillotine blade mounted on said frame and a moving guillotine blade mounted on said turret adjacent each mandrel mounting thereon, said moving guillotine blades each being arranged to individually cooperate with said stationary blade to sever said web as said turret is indexed to carry a mandrel, fully wound with said web, away from said winding position.

3,430,881
AUTOMATIC APPARATUS FOR CONTINUOUSLY WINDING STRIP MATERIAL

Markus Ebneter, Saint Gall, Switzerland, assignor to Ferd. Ruesch, Maschinenfabrik, Saint Gall, Switzerland

Filed June 23, 1967, Ser. No. 648,423
U.S. Cl. 242—56 10 Claims
Int. Cl. B65h *19/20, 75/34, 51/00*

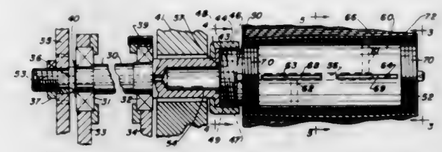


An automatic apparatus for continuously winding strip material on cores positioned on spindles where the spindles are positively secured in winding position on a rotatable drum during the winding operation. The rotatable drum is arranged for stepwise movement of the spindles into and out of the winding position. The drum contains a plurality of pairs of support members for holding the spindles. Each pair of support members is provided with a locking device which secures the spindle in place during the winding operation. At the end of the winding operation a lever disengages the locking device and releases the spindle from the winding position. The fully wound spindle is then transported by an endless belt means to a storage point. Each pair of support members is provided with means for rotating the spindle in the winding position, comprising a driving gear and a driven gear which are maintained in meshed relationship. The endless belt means for transporting spindles into and out of the winding position has spindle carrying members which have the same spacing as the support members on the drum. The apparatus also contains a cutting device which can be moved into and out of cutting position and a movable device for selectively applying or removing adhesive from the strip material being wound. By laterally reversing the positions of the cutting device and the device for applying a removing adhesive and by reversing the direction of the rotation of the spindle, the previously outwardly directed surface of the strip material can be directed inwardly as it is wound.

3,430,882
EXPANDABLE ARBOR

Frank W. Moynes, 1840 Meadow Lane, Village of Bannockburn, Deerfield, Ill. 60015

Filed June 27, 1967, Ser. No. 649,240
U.S. Cl. 242—72 5 Claims
Int. Cl. B65h *75/18*

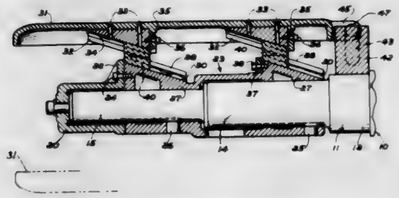


An expandable arbor for locking cores or the like to a rotatable spindle comprises a substantially solid cylindrical member having a spindle connector provided at one end with a passageway extending through the connector and into the member. The passageway opens onto the surface of the member and an elastomeric sleeve is fitted over the member and is sealed to the respective ends thereof whereby compressed air supplied to the passageway expands the sleeve into tight fitting engagement with a core placed thereon.

3,430,883
EXPANSIBLE MANDREL

Charles S. Charneski, Manville, and Ronald E. Elliott, Somerville, N.J., assignors to Frank W. Egan & Co., Somerville, N.J., a corporation of New Jersey

Filed June 14, 1967, Ser. No. 645,920
U.S. Cl. 242—72.1 10 Claims
Int. Cl. B65h *75/18*



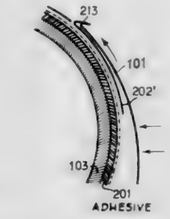
A reel for use in coiling and uncoiling metallic strip material including a sleeve unit carried by, rotatable with and slidable along a rotary shaft; a plurality of coil supporting members parallel to the shaft axis and spaced from the sleeve unit and from each other; a plurality of H-shaped slide blocks interposed between and slidable along corresponding rails carried by the sleeve unit and the coil supporting members for effecting movement of the coil supporting members toward and away from the shaft in response to axial movement of the sleeve unit; and an arrangement of arms, rollers and guides to permit bodily movement of the coil supporting members toward and away from the shaft.

3,430,884
REELS FOR CARRYING INKED RIBBONS IN PRINTING MACHINES

Alain Maurice Joseph Stéphan, Paris, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France

Filed Aug. 7, 1967, Ser. No. 658,738
Claims priority, application France, Aug. 31, 1966, 74,725
U.S. Cl. 242—74 3 Claims
Int. Cl. B65h *75/18*

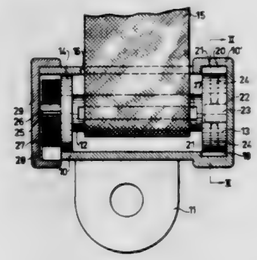
An inked ribbon carrying reel for use in a printing machine having a type-carrying device, such as a rotatable type drum, and striking mechanism for printing a paper which is advanced with the inked ribbon between the type-carrying device and striking mechanism, the reel being provided with an adhesive coating covered by protective ribbons which can be removed to enable the end of the inked ribbon wound from another similar reel to be adhesively secured to the first mentioned reel.



3,430,885
AUTOMATIC STRAP RETRACTING MECHANISMS FOR SAFETY SEAT BELTS IN CARS

Göte Eskil Yngve Holmberg, Anderstorp, Sweden, assignor to G.E.Y.—Patenter Aktiebolag, Anderstorp, Sweden

Filed Oct. 31, 1966, Ser. No. 590,681
Claims priority, application Sweden, Nov. 15, 1965, 14,700/65
U.S. Cl. 242—107.4 6 Claims
Int. Cl. B65h *75/48*

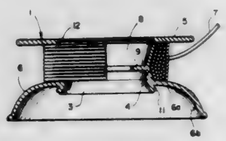


In an automatic strap retracting mechanism for safety belts a band roller is provided with locking pins which are held in their retracted inoperative position by a permanent magnet to be forced into operative locking position by the centrifugal force acting on the pins when the belt is suddenly unwound from the roller.

3,430,886
BOBBIN FOR FISHING LINES HAVING MEANS FOR ATTACHMENT TO SIMILAR BOBBINS

John M. Sweeney, Denver, Colo., assignor to Wright & McGill Co., Denver, Colo., a corporation of Colorado

Filed Nov. 10, 1966, Ser. No. 593,519
U.S. Cl. 242—118.7 8 Claims
Int. Cl. B65h *75/14, 55/00, 75/02*



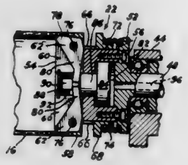
Bobbin for filament such as fishing leader including a hub and heads extending outwardly at end of the hub. One head having a curling portion of flexible ma-

terial establishing a surface in overlying and spaced relationship to the peripheral edge of the other radially extending flat head to cover the winding of filament on the hub when curled inwardly to a closed position and extending away from the flat head to expose the winding when curled to an open position. Flexible joint for connecting a plurality of similar bobbins including a projecting portion extending radially outwardly from the hub at one end and a recessed portion extending radially outwardly from the hub at the other end, said portions shaped for mating relationship therebetween.

3,430,887
CONE HEAD ASSEMBLY FOR WINDING MACHINES

Bertram F. Elsner and Frank Elsner, Jr., Hanover, Pa., assignors to Elsner Engineering Works, Inc., Hanover, Pa., a corporation of Pennsylvania

Filed Aug. 2, 1967, Ser. No. 657,958
U.S. Cl. 242—68.2 **15 Claims**
Int. Cl. B65h *17/02*

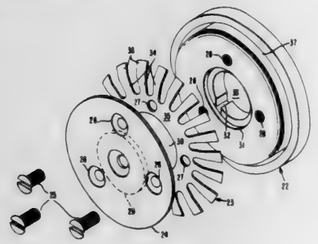


A cone head assembly to support and wind extensive lengths of sheet material on tubular cores and comprising a pair of spaced cone heads respectively insertable axially into the opposite ends of a tubular core, radially movable gripping means on each head engaging the inner surface of the opposite ends of said core to effect nonslip driving of the opposite ends of said core simultaneously, and ejecting means movable axially on each head abutting the ends of said core simultaneously to insure separation of said heads from the ends of said core at the completion of a winding operation.

3,430,888
END SUPPORT FOR CORE

Robert Bee Lewis, Newark, Del., and William Thomas Derry, University, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 27, 1967, Ser. No. 656,422
U.S. Cl. 242—68.4 **4 Claims**
Int. Cl. B65h *17/02*

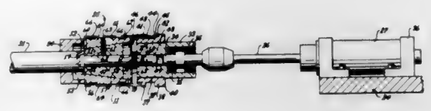


A chuck device and winding apparatus for winding sheets of material into roll form on tubular cores is presented wherein the chuck device includes nonlocking flexible spring release elements and engages the ends of the tubular cores for transmitting driving torque to the tubular cores.

3,430,889
EXPANDABLE CORE CARRYING MANDREL

Benton A. Whiteman, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed July 27, 1965, Ser. No. 475,218
U.S. Cl. 242—72.1 **3 Claims**
Int. Cl. B65h *75/22, 39/16*

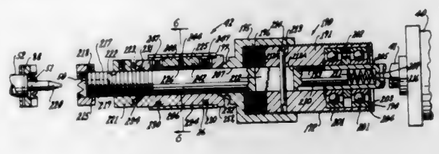


This disclosure relates to an apparatus for winding strip material onto cylindrical cores to provide strip conductor coils, the apparatus having a mandrel means for telescopically picking up a core at one station of the apparatus and indexing that core to a winding station of the apparatus where the mandrel is moved into engagement with a drive means of the apparatus that effects outward expansion of the mandrel to tightly hold the cylindrical core thereon whereby subsequent rotation of the drive means causes the core to rotate in unison thereon and draw the strip material in a coiled manner about the rotating core to produce the aforementioned strip conductor coil.

3,430,890
CORE CARRYING MANDREL

Benton A. Whiteman, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Aug. 7, 1967, Ser. No. 658,941
U.S. Cl. 242—72.1 **26 Claims**
Int. Cl. B65h *75/18*



A mandrel having a shaft which carries a plurality of cylindrical segments which are normally held by yielding means in a reduced diameter position against such shaft and upon moving driven means provided at the terminal end of the shaft into operative engagement with a suitable drive means, cam surface means provided on the mandrel move the cylindrical segments radially outwardly against inside surface means comprising a tubular core to hold such core firmly on such mandrel.

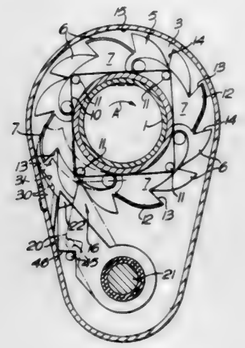
3,430,891
AUTOMATIC LOCKING MECHANISM FOR A SAFETY BELT OR HARNESS

David William Burleigh, Yateley, England, assignor to Britax (London) Limited, Byfleet, Surrey, England, a corporation of the United Kingdom

Filed May 4, 1967, Ser. No. 636,217
Claims priority, application Great Britain, May 4, 1966, 19,648/66
U.S. Cl. 242—107.4 **13 Claims**
Int. Cl. B65h *75/48;* **B60r** *21/10*

An automatic locking mechanism for a safety belt including a rotatable storage reel for the belt, biased for rotation in a direction to wind-up or retract the belt, a

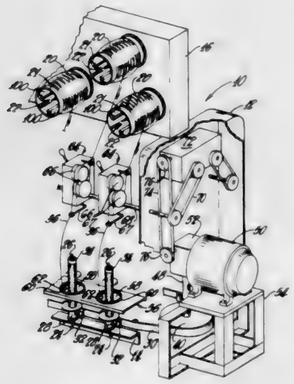
first inertia mass displaceable from a position of rest upon sudden change of movement or direction of movement of the vehicle in which the mechanism is mounted and a second inertia mass displaceable from a normal position of rest upon acceleration, in the rate of withdrawal of the belt from the storage reel, beyond a predetermined maximum, each inertia mass independently of the other being adapted upon displacement to lock or cause locking of the storage reel against rotation in a direction of belt withdrawal.



3,430,892
CREEL ADAPTER FOR FILAMENTARY MATERIAL PROCESSING APPARATUS

Frederick G. Heumann, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Aug. 3, 1966, Ser. No. 570,033
U.S. Cl. 242—129.5 **10 Claims**
Int. Cl. B65h *49/18, 75/24*

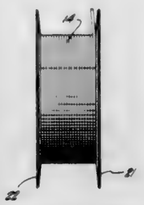


The disclosure embraces a rotatable creel adapter for supporting tubular packages of textile strand or yarn on a creel frame of a twister machine, the adapter comprising a hub having radially extending arms of rigid molded resinous material, and a member embracing each arm connected thereto by a pin and slot lost motion means with a plate spring disposed between each member and the adjacent arm to bias the member outwardly for engagement with the interior of a tubular package.

3,430,893
WOUND PACKAGE

John R. Johnson, Arcadia, and Robert F. Goodwin, Santa Ana, Calif., assignors to Royal Industries, Pasadena, Calif., a corporation of California

Continuation of application Ser. No. 550,530, May 16, 1966. This application Oct. 12, 1967, Ser. No. 674,844
U.S. Cl. 242—159 **3 Claims**
Int. Cl. B65h *55/00, 75/14*

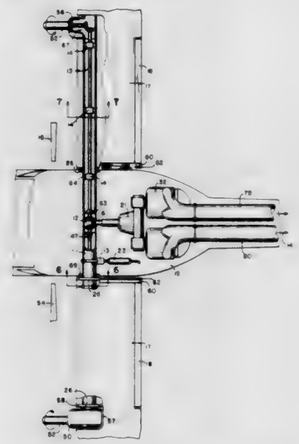


A wound package including ribbon-like tying material wound on a spool in overlying convolutions, the spool having flanges defined with a draft extending outwardly of the wound material to allow the material to be freely wound and unwound from the spool without binding.

3,430,894
VTOL AIRCRAFT HAVING FREE-FLOATING WINGS AND INDEPENDENTLY TILTING PROPELLERS

Torstein Strand, Ely S. Levinsky, and Mitchell E. Timin, San Diego, Calif., assignors to Air Vehicle Corporation, La Jolla, Calif., a corporation of California

Filed Apr. 17, 1967, Ser. No. 631,294
U.S. Cl. 244—7 **9 Claims**
Int. Cl. B64c *27/22, 29/00, 3/38*



This invention relates to an aircraft having vertical takeoff and landing capabilities with free-floating, tilting wings being controlled by means of pilot actuated wing tabs and having tilting propellers that pivot relative to the aircraft and wings.

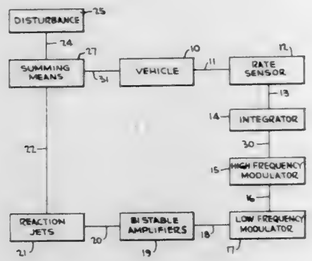
3,430,895
AIRCRAFT CONTROL SYSTEM

Carl J. Campagnuolo, Chevy Chase, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 21, 1966, Ser. No. 588,640
U.S. Cl. 244—78 **5 Claims**
Int. Cl. B64c *13/40*

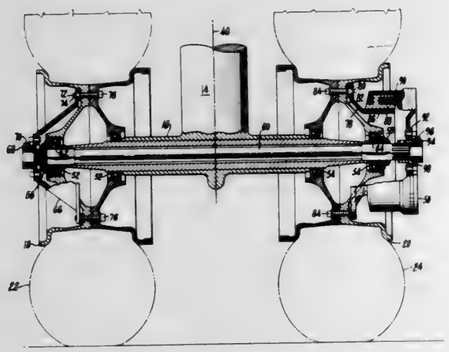
An aircraft control system for monitoring and correcting disturbances in the flight path of aircraft requiring no moving parts or electronic components. A vortex rate

sensor detects the angular rate of pitch, roll or yaw and supplies a fluid signal indicative of that rate to a fluidic integrator. The integrated rate signal is amplified by



being passed through a high frequency modulator, a low frequency modulator and a plurality of bistable amplifiers. The amplified signal is used to operate reaction jets to make the necessary correction.

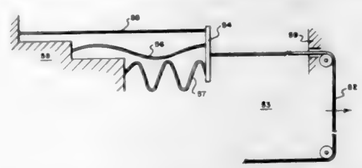
3,430,896
SHIMMY DAMPER
Jean P. Labrecque, Stratford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 2, 1967, Ser. No. 635,437
U.S. Cl. 244—103 **12 Claims**
Int. Cl. B64c *25/36, 25/50*



This disclosure relates to an improved shimmy damper for an aircraft landing gear which has dual wheels. The wheels are coupled together by a viscous damper which is easily installed or removed for servicing and which is attached to the wheels so that flexing of the wheels under load does not interfere with the operation of the closely spaced rotors of the viscous damper.

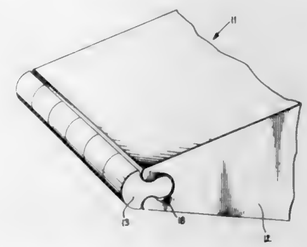
3,430,897
ENERGY ABSORBING SYSTEM
Vincent C. J. Peterson, Huntingdon Valley, Pa., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Original application Dec. 23, 1965, Ser. No. 515,979, now Patent No. 3,353,768, dated Nov. 21, 1967. Divided and this application July 24, 1967, Ser. No. 671,513
U.S. Cl. 244—110 **1 Claim**
Int. Cl. B64c *25/68, 25/58*

A kinetic energy absorbing device connecting a load receiving pendant with an anchorage point, the device comprising a plurality of cables arranged in parallel with slack being present in the respective cables in varying



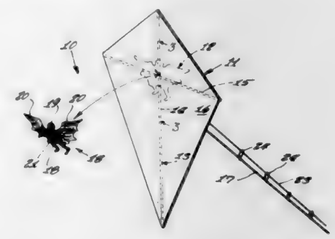
amounts in the initial position of the load receiving means so that the cables are placed under tension sequentially during application of the load.

3,430,898
LEADING EDGE FOR HYPERSONIC VEHICLE
Haig S. Parechanian and Jerome C. Schutzler, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 1, 1967, Ser. No. 635,975
U.S. Cl. 244—123 **1 Claim**
Int. Cl. B64c *3/28, 3/36*



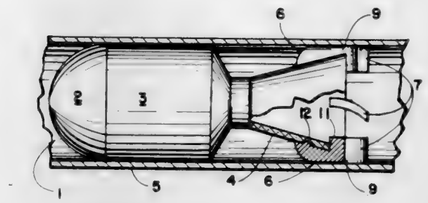
A leading edge for a hypersonic vehicle having a plurality of short ceramic segments each with an enlarged rounded surface on the leading edge, a reduced radius on the trailing edge, and a reduced thickness middle portion, and a metal support member having lips for providing a compressive load on said reduced thickness middle portion of said short ceramic segments.

3,430,899
KITE WITH DETACHABLE PARACHUTE
Edward N. Zopf, East Wenatchee, Wash. 98801
Filed Dec. 14, 1966, Ser. No. 601,684
U.S. Cl. 244—153 **1 Claim**
Int. Cl. B64c *31/06;* **A63h** *27/08*



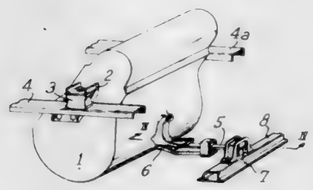
A kite having a detachable parachute secured thereto by a spring clip tethered to one end of a line extending to the ground adjacent the kite main line whereby a simple pull upon the first line will cause the spring clip to disengage with the parachute and allow the same to fall free from the kite toward the ground.

3,430,900
TUBE LAUNCHED ROCKET WITH DETACHING SPIN VANES
Darrell J. Turner, San Jose, and Charles A. Chase, Saratoga, Calif., and Michael C. S. Gardiner, Herts, England, assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 29, 1967, Ser. No. 649,927
U.S. Cl. 244—3.23 **4 Claims**
Int. Cl. F42b *15/14, 13/24*



A tube launched spin stabilized rocket is provided with vanes which interact with the rocket exhaust while in the launching tube to spin the rocket. The vanes are releasably engaged with the rocket and are maintained in operative relationship therewith by being in sliding contact with the launch tube. The vanes are carried with the rocket through the launch tube and separate from the rocket when it leaves the tube.

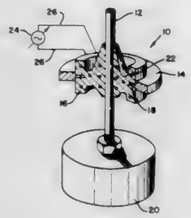
3,430,901
MOUNTING DEVICE FOR THE ENGINE BLOCK OF A VEHICLE
André Cauvin, 33 Rte. de Versailles, Port Marly, Yvelines, France
Filed July 20, 1967, Ser. No. 654,766
U.S. Cl. 248—8 **3 Claims**
Int. Cl. F16f *15/08;* **F16m** *5/00, 1/00*



A mounting device to be used with a three-point mounted engine having an axis which is transverse to the axis of the vehicle within which it is mounted. The mounting device comprises a highly resilient single leaf spring attached at one end to the engine and which has its other end held between two resilient cushioning blocks fixed to a chassis member of the vehicle.

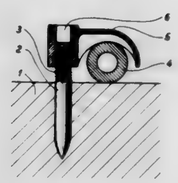
3,430,902
VARIABLE STIFFNESS POLYMERIC DAMPER
Jerome J. Lohr, Saratoga, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 11, 1967, Ser. No. 638,707
U.S. Cl. 248—18 **6 Claims**
Int. Cl. F16m *1/00*

A vibration damping device comprising a solid, high-molecular-weight, substantially amorphous polymer which is utilized at a temperature within the region of the glass transition temperature thereof. The polymer changes from a hard, substantially rigid condition at a temperature below the polymer's glass transition temperature to a viscous condition at a temperature in the region of the glass transition temperature. In the viscous condition the polymer comprises an efficient and reliable vibration damper. When the ambient temperature is below the glass temperature, means are provided for heating the polymer



to the glass temperature region. The heating means may be employed for heating the polymer to above the glass transition temperature to return the polymer to its original shape, if a polymer with a built-in memory is employed. Also, by using the polymer in the temperature range just below the glass temperature the damping increases with an increase in temperature thereby providing an added safety factor.

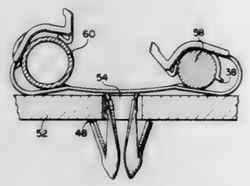
3,430,903
METHOD AND DEVICE FOR CLAMPING
Gunther Mathes, Vaduz, Liechtenstein, assignor to Anstalt fur Montage-Technik, Vaduz, Principality of Liechtenstein
Filed Dec. 6, 1965, Ser. No. 511,926
Claims priority, application Germany, Dec. 7, 1964, A 47,802
U.S. Cl. 248—68 **5 Claims**
Int. Cl. F16l *3/04, 3/10, 3/22*



A device for clamping cables and similar objects to a supporting surface is comprised of a stud arranged to be anchored into the supporting surface and a clamp element arranged to be secured onto the stud and to hold one or a number of objects on the supporting surface. The end of the stud which extends outwardly from the supporting surface is provided with serrations. The clamping element which may be composed of a single or of multiple parts, is formed of a yieldable thermo-plastic material and has a hub with an opening through it. The opening has a diameter smaller than the diameter of the stud and, is arranged to be forced onto the stud, whereby initially the material of the clamping element yields as it passes onto the stud and then contracts into locking engagement with the serrations on the stud. The clamping element has a concave surface for supporting

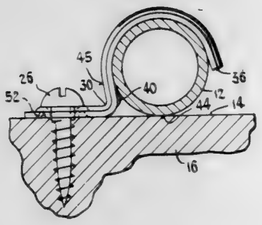
the object against either the wall or another concave surface provided by a cooperating part of the clamping element.

3,430,904
FASTENING DEVICE
Edmund J. Soltysik, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,695
U.S. Cl. 248—68 **8 Claims**
Int. Cl. F16l *3/22*



A sheet metal clip for mounting rods or tubes in parallel relation to an aperture work support with the retaining portion being capable of handling tubes or rods of different diameters, within a designed range of sizes, in semi-positive retention.

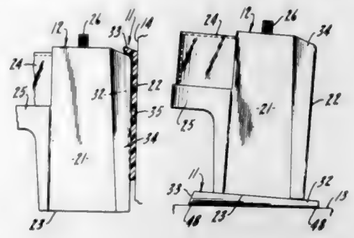
3,430,905
FASTENING DEVICE
Frank W. Pepe, Lordship, Conn., assignor to Arc-Co Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 21, 1967, Ser. No. 661,881
U.S. Cl. 248—74 **4 Claims**
Int. Cl. F16l *3/04*



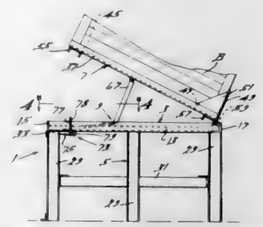
A relatively rigid clamp-type fastening device for securing pipe and the like to a supporting surface, having a flat securing portion and an integral hook-shaped pipe holding portion. The flat end securing portion has an aperture surrounded by a raised or bulged annular strengthening area and is provided with an integrally formed support portion extending oppositely from the raised annular area to prevent collapse thereof when excessive pressure is applied to the flat securing portion by a securing element passed through the aperture.

3,430,906
TWO-WAY INSTRUMENT MOUNT
Ellworth R. Danz and Clarence J. Goodwin, La Salle, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,759
U.S. Cl. 248—126 **4 Claims**
Int. Cl. A47g *29/00;* **A47f** *5/00;* **A47h** *1/10*

An instrument mounting arrangement suitable for supporting a plurality of instruments of the thermometer, barometer, etc. type on either a vertical wall or a horizontal surface, with the assembly having a snap action interchangeability.

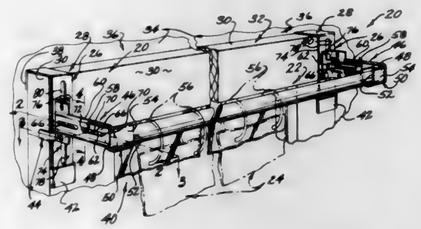


3,430,907
TILTING SUPPORT APPARATUS
Richard A. Bruhn and Findlay E. Newland, New Castle, Ind., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Jan. 19, 1967, Ser. No. 610,287
U.S. Cl. 248—140 **6 Claims**
Int. Cl. A47f *5/12*



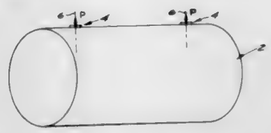
Support apparatus for a material handling box, the apparatus having a generally horizontal fixed bed, a movable bed pivotally connected to one end of the fixed bed and adapted to be swung between a generally horizontal position and an inclined position. The apparatus includes interconnected braces pivotally connected to the bottom of the movable bed and engageable with fixed plates on the fixed bed for locking the movable bed in an inclined position. A tensioning finger and spring device is attached to one of the braces for pulling the braces over the fixed plates when the movable bed is inclined beyond its normal inclination.

3,430,908
CURTAIN ROD BRACKET
Walter Kowalczyk, 14647 Brest, South Gate, Mich. 48192
Filed July 21, 1967, Ser. No. 655,088
U.S. Cl. 248—265 **1 Claim**
Int. Cl. A47h *1/142, 1/122*



A curtain rod bracket adapted to be removably mounted on a window molding strip including a mounting base strip member provided at the top with a downwardly extending hook member and further being provided with a forwardly extending projection member which has means to support a curtain rod.

3,430,909
DEVICE FOR HANDLING HEAVY LOADS
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert J. McCann, Mountain View, Calif.
Filed Nov. 9, 1966, Ser. No. 593,604
U.S. Cl. 248—317 **6 Claims**
Int. Cl. F16m *1/00*



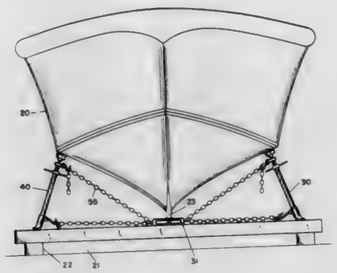
This invention teaches how to distribute a high concentrated force over a large area of an object. It is particularly useful where an object is to be raised and has a relatively thin skin that can be easily damaged by a concentrated force. Essentially a connection, including a frame and a plurality of resilient pins, is provided between the means applying the force and the object. The pins are supported by their ends by the frame, like simple beams. The central portion of each pin is connected to the object. The concentrated force is applied to the frame. The idea is to transmit the concentrated force through the resilient pins so that each pin bends within its elastic limit when a precalculated load on it is reached. Knowing the force to be applied, the pins can be designed to bend under a precalculated load. That is, as a pin bends, adjacent pins pick up the load to thus distribute the concentrated force over a larger area of the object.

3,430,910
STRINGER-RELEASING SHORE ASSEMBLY FOR A CONCRETE SLAB FORM INSTALLATION
George F. Bowden, Northbrook, and Richard T. Dagiel, Elk Grove Village, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,319
U.S. Cl. 248—354 **2 Claims**
Int. Cl. F16m *13/00*



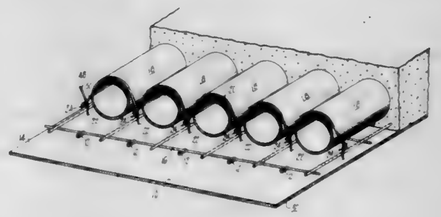
A supporting shore for a concrete slab, having a vertically shiftable stringer-supported member, which in its raised position, normally supports the stringer and associated panels during hardening of the concrete, and which, in its lowered position, releases the stringer so that the latter may be removed from beneath the slab at an early date and without waiting for the concrete to become fully hardened.

3,430,911
SHORING APPARATUS
Robert T. Olson, Box 14, Rte. 1, Wisconsin Dells, Wis. 53965
Filed May 17, 1967, Ser. No. 639,122
U.S. Cl. 248—354 **9 Claims**
Int. Cl. F16m *13/00*



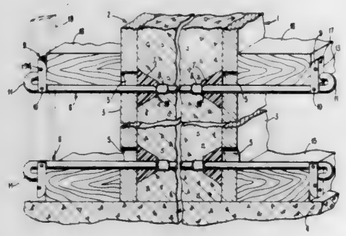
Shoring apparatus for storing and transporting boat hulls, tanks, construction beams and the like in a substantially horizontal position including at least one center plate for supporting the weight of the object being shored and shore posts anchored at their upper and lower ends to the center plate or plates by chains. The shore posts have attaching hooks for securing the chains at any point along their length. The shore posts are extensible and have pivotable pressure pads at their upper ends and curved-bottom support shoes at their lower ends for maintaining the shore posts at various angles of inclination on any firm supporting surface. Adjustable tubular extension sleeves are provided for mounting on the shore posts to facilitate shoring of larger objects than can be supported by the extensible shore posts. Tie chains are provided for fastening the front pair of shore posts to a rear center plate and the rear pair of shore posts to a front center plate to stabilize the system when used in conjunction with elevated crossbeams for movement on a conventional dolly-jack.

3,430,912
STRAP TIE-DOWN SYSTEM AND HOOK
William R. Davis, Simsbury, and Anselmo J. Macchi, Hartford, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 19, 1967, Ser. No. 668,963
U.S. Cl. 248—361 **8 Claims**
Int. Cl. A16b *5/07*



A strap tiedown system using continuous lengths of strap is adapted to individually secure numerous objects among the group being secured by employing a one piece strap anchoring hook having an easily attached mounting arm and a strap retaining loop including a pair of parallel strap retaining bars which threadably receive and frictionally immobilize an intermediate portion of the continuous strap. The hook is also adapted to permit separation of the mounting arm from the loop without sacrificing the tensile strength characteristics of the hook.

3,430,913
METAL TIE ROD FOR SPACED WALLS OF WOOD FORM FOR CONCRETE WALL
Calvin R. Johnson, P.O. Box 63, Crestwood, Ky. 40014
Filed July 3, 1967, Ser. No. 650,929
U.S. Cl. 249—217 **7 Claims**
Int. Cl. E04g *17/06, 9/00, 17/00*

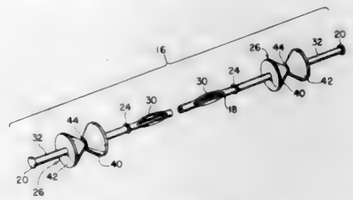


A metal tie rod for waler-backed wall panels which are spaced to receive wall-forming concrete between them. Each tie conventionally has: a central body portion, extending horizontally across the concrete space between panels, and left and right end portions extending through and projecting outwardly from the waler-backed panels; and a pair of spacers, one on each end of its central body portion, to hold the spaced wall panels against relative inward movement and thus prevent a decrease in panel spacing. Each projecting portion of the rod carries an arm mounted on it for movement from a retracted position to an extended position. Retracted, the arm extends along the projecting portion of the tie and cooperates therewith to form an assembly, which is cross-sectionally small enough to pass through a tie-receiving panel opening during the form-erection operation. Extended, the arms extends laterally outward from the tie to hold the adjacent panel and the interposed waler against outward movement relative to other waler-backed panel and thus prevent an increase in panel spacing during a period embracing the concrete pouring and setting operations.

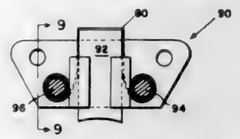
In use, one or more wall panels, on the "right" side of the concrete-receiving space, are erected. Ties, with their lock arms retracted, are inserted "rightwardly" through tie receiving openings of such panels, whereupon their respective locking arms may be extended to receive the walers and to clamp the right panel-waler assembly between the corresponding spacers and locking arms. In the process of erecting the "left" side panels, their tie-receiving holes are "threaded" over the corresponding ties and their retracted locking arms, whereupon their lock arms are extended to receive the walers and to clamp the left panel-waler assembly between the left spacer and locking arms. Now the concrete may be poured and allowed to set. Thereafter the outermost end portion of each end of each tie is twisted to snap the tie at the inner end of its spacer so that the snapped portion and the corresponding waler-backed panels may be stripped from the concrete wall.

3,430,914
TIE ROD ASSEMBLY FOR A CONCRETE WALL FORM AND WITH NOVEL SPACER MEMBERS FOR THE FORM SIDES
Richard D. Clasen and Fred B. Nichols, Los Angeles, Calif., assignors to Superior Concrete Accessories, Inc., Franklin Park, Ill., a corporation of Delaware
Filed May 18, 1967, Ser. No. 639,393
U.S. 249—217 **7 Claims**
Int. Cl. E04g *17/08*

A tie rod assembly having a spacer member in the form of a molded plastic diabolo which remains embedded in a concrete wall with its outer end face flush with a wall surface, thus obviating the necessity for pointing the void established by a conventional spacer cone when the latter is extracted from the wall surface. The inner section of the diabolo interlocks with the concrete to prevent dislodgment of the spacer member when the concrete shrinks with age. If the wall is to be painted, the outer section of the spacer member may be twisted from the inner member and extracted in the usual manner of cone extraction so that a filler plug having an affinity for paint adherence may be forced into the void left by the extraction.

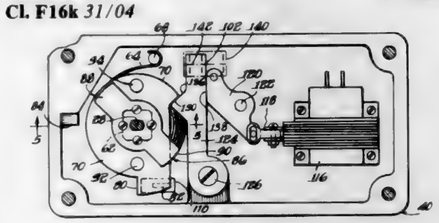


3,430,915
NON-CUMULATIVE FORCE ELECTRIC MOTOR OR GENERATOR BRUSH SPRING
Walter H. Vogelsberg, Radnor, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,277
U.S. Cl. 267—1 **5 Claims**
Int. Cl. F16f; H02k *13/00;* **H01r** *39/40*



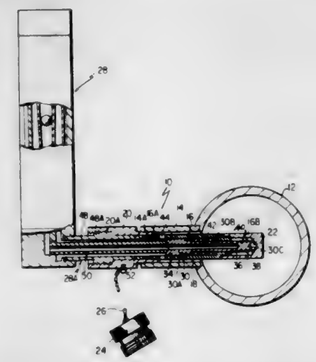
A non-cumulative force brush spring has a ribbon of spring material formed into at least one tightly wound non-cumulative force spring coil. The spring has a negative gradient to provide for the exertion of an increasing force on the brush as the brush wears.

3,430,916
ELECTRICALLY OPERATED VALVE
Frank J. Raymond, Jr., Barrington Hills, Ill., assignor to Ramcon Corporation, Elgin, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 630,050
U.S. Cl. 251—71 **9 Claims**
Int. Cl. F16k *31/04*



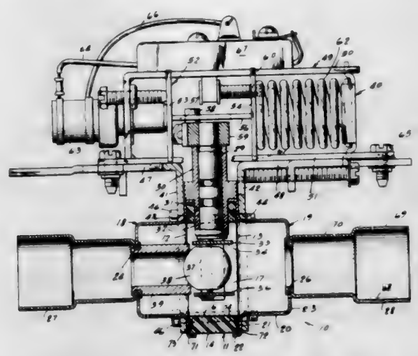
An electrically operated valve having a rotary flow control ball continuously connected through a torque multiplying transmission with a valve opening electric motor that need produce valve actuating torque in only one direction. A valve closing spring, energized upon opening of the valve, operates without the aid of torque multiplying means to quickly turn the ball to its closed valve position without rotating the electric motor or the torque multiplying transmission even though the latter is continuously connected to the ball. The valve closes in response to operation of control circuitry or loss of electric power. Construction of the valve permits usage of many standard components with consequent minimization of manufacturing cost.

3,430,917
INSTRUMENT ADAPTER
David L. Pellett, East Greenwich, R.I., assignor to Taco, Inc., Cranston, R.I., a corporation of New York
Continuation-in-part of application Ser. No. 367,357, May 14, 1964. This application Oct. 18, 1965, Ser. No. 497,422
U.S. Cl. 251—149.6 **11 Claims**
Int. Cl. F16l *37/28, 29/00*



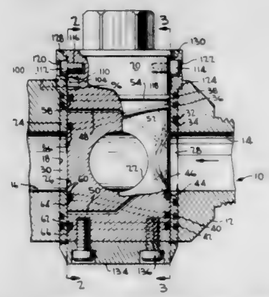
An instrument adapter for a fluid conduit comprising a valved connector fitting to which an instrument can be removably connected when a reading is to be taken. The fitting has a pair of normally closed passageways therethrough allowing readings to be taken at two points within the conduit and alternatively, allowing flow to proceed from the conduit through an instrument and be returned to the conduit.

3,430,918
BALL SEAT TYPE FLUID FLOW VALVE
Lawrence A. Kolze, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Apr. 21, 1967, Ser. No. 632,576
U.S. Cl. 251—152 **5 Claims**
Int. Cl. F16k *51/00*



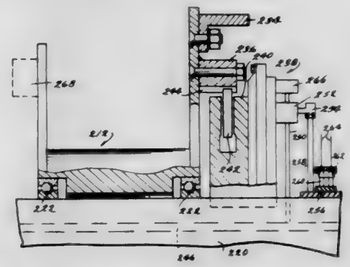
A fluid flow valve for sweat connection into a piping system. The valve includes a valve body and a pair of cup-shaped members mounted on opposite sides of the body. Gaskets are disposed between the cup-shaped members and the sides of the valve body to provide a fluid tight seal therebetween. Pipe couplings are mounted on the cup-shaped members for sweat connection into the piping system. The couplings may be made of brass and the cup-shaped members are made of stainless steel. The gaskets may be rubber and the valve body may be brass or plastic. The stainless steel cup-shaped members between the couplings and the gaskets reduce the transfer of heat from the couplings to the gaskets when the couplings are heated during a sweating operation.

3,430,919
HYDRAULICALLY BALANCED PLUG VALVE
Bruce J. Frazier, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,467
U.S. Cl. 251—283 **6 Claims**
Int. Cl. F16k *5/04, 39/06*



A rotary plug valve comprised of a valve body, a cylindrical plug rotatably mounted therein and a non-rotatably mounted liner interposed between the plug and the body. The plug is hydraulically balanced to reduce the torque required to operate the valve. Fluid is conducted from the upstream side of the plug in the closed position to upper and lower sealed balancing chambers in contact with the surface of the plug. Each of the balancing chambers encloses a continuous balancing area on the plug surface which extends about the entire circumference of the plug. Each of the balancing areas varies from a minimum on the upstream side to a maximum on the downstream side, when the plug is in the closed position.

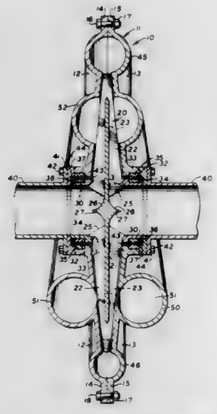
3,430,920
PORTABLE DREDGE
Nathaniel Edward Insley, Darlington, and Herbert E. M. Jacks, Bel Air, Md., assignors to Wiley Manufacturing Company, Port Deposit, Md., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,356
U.S. Cl. 254—185 **8 Claims**
Int. Cl. B66d *1/26;* **E02** *3/88;* **F16d** *67/02*



Improved winch machinery for dredges and the like including electro-pneumatic clutch means and brake means associated with a plurality of winding drums rotatably

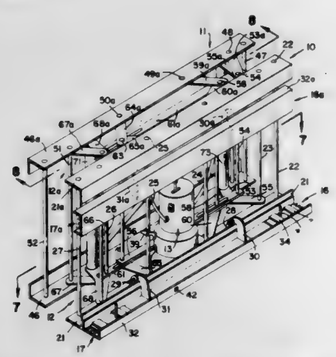
mounted on a shaft wherein the shaft has a common air passageway to which all clutches are connected for their source of air.

3,430,921
FLUID IMPELLER APPARATUS
Robert B. Dewey, 172 Oakdale Ave., Akron, Ohio 44302
Filed July 25, 1966, Ser. No. 567,716
U.S. Cl. 253—45 **7 Claims**
Int. Cl. F01d *3/02*



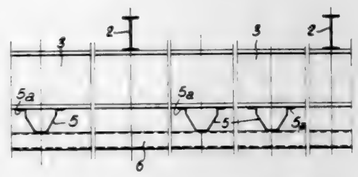
A fluid pressure conditioning impeller apparatus having a supported rotor mounted in a partially hollow housing, three or more input and output ducts communicating with the rotor at different radial positions, with one of the ducts being an input, one of the ducts being an output, and each of the ducts communicating with each of the other ducts via the rotor.

3,430,922
LOAD COMPACTOR
Kenneth H. Spencer, Penryn, Calif., assignor to Beckett Manufacturing Co., Penryn, Calif., a corporation of California
Filed June 30, 1967, Ser. No. 650,431
U.S. Cl. 254—93 **12 Claims**
Int. Cl. B66f *3/36*



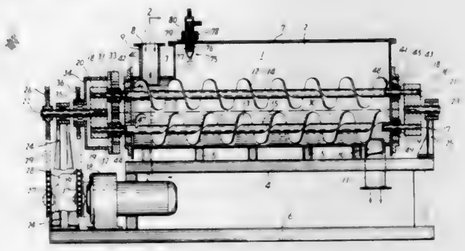
A compactor is adapted to be positioned adjacent to a stacked load or cargo and expanded to compress the load for transportation purposes. The compactor comprises a first frame arranged to be secured to a stationary wall partially defining a load carrying chamber, a second frame operatively connected to the first frame and actuating means for selectively expanding the compactor to compress the load.

3,430,923
GUARD RAIL
Vittorio Giavotto, Milan, and Carlo Caprile, Castello-Lecco, Italy, assignors of four-fifths to S.I.N.A. Societa Inizative Nazionali Autostradali S.p.A., Milan, Italy
Filed Dec. 30, 1966, Ser. No. 606,291
Claims priority, application Italy, Mar. 28, 1966, 16,062/66
U.S. Cl. 256—13.1 **1 Claim**
Int. Cl. E01f *15/00*



A guard rail is composed of a very rigid first section or stage on the edge of a highway joined to a second plastically deformable second section or stage facing the highway. When struck, the second stage deforms while absorbing impact energy, while stronger forces are resisted by the first stage so that the two stages work in series.

3,430,924
CONTINUOUS MIXING MACHINE
Masuo Hosokawa, 48 Ueno 9-chome, Toyonaka-shi, and Elichi Tomon, Tokyo-to, Japan; said Tomon assignor to said Hosokawa
Filed Dec. 7, 1967, Ser. No. 688,842
Claims priority, application Japan, Dec. 12, 1966, 41/81,425
U.S. Cl. 259—6 **14 Claims**
Int. Cl. B01f *7/08, 5/12*

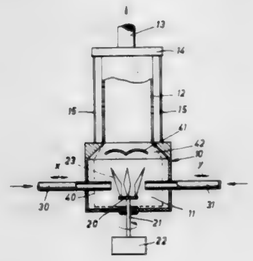


This invention relates to a continuous mixing machine, in which a forwarding screw feeder and a returning screw feeder are disposed in parallel with a central line, said feeders are revolved around said central line while said feeders are rotated, a supply inlet for raw material is provided at one end of a container which surrounds said feeders, an exhausting outlet therefor is provided at the other end thereof, and mixing of said raw material is continuously performed.

3,430,925
APPARATUS FOR CONTINUOUS DISPERSION OF PREDOMINANTLY VISCOUS SUBSTANCES
Willy Buhner, 114 Schwachhauser Heerstrasse, Bremen, Germany
Filed Jan. 26, 1967, Ser. No. 611,858
Claims priority, application Germany, May 25, 1966, W 41,667
U.S. Cl. 259—8 **21 Claims**
Int. Cl. B01f *7/04*

An apparatus for the continuous dispersion of predominantly viscous substances, such as lacquers, is formed

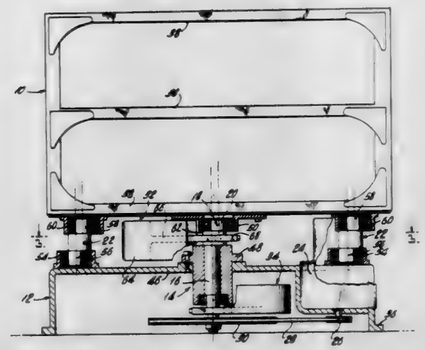
of a housing composed of a lower mixing chamber and an upper lead-off chamber with a passageway communicating between the two. The mixing chamber has a larger transverse cross sectional area than the lead-off chamber and is provided with an adjustable liner jacket for selectively varying the cross sectional area of the mixing chamber. One or more agitators are provided in the apparatus and each comprises a shaft extending into the interior of the mixing chamber, means for rotating the shaft connected to its outer end, and vanes having cutting edges connected to the shaft within the mixing chamber. Material feed pipes are telescopically movably mounted in the walls of the mixing chamber with their inner ends positioned in the vicinity of the vanes. The pipes are telescopically mounted so that they may be moved relative to the vanes depending upon various factors affecting the dispersion operation. At the outlet from the mixing chamber to the lead-off chamber, the walls of the mixing chamber converge providing a passageway of



reduced cross section as compared to the regular cross section of the mixing chamber. Within this reduced cross sectional area a plate member is positioned in parallel with the plane of the opening and with its edge spaced from the walls of the mixing chamber providing a passageway between the mixing chamber and the lead-off chamber. Preferably, the plate member has a corrugated appearance for properly directing the flow of the material being mixed. An outlet pipe is provided in the upper end of the lead-off chamber for removing materials from the apparatus. In this apparatus, the feed pipes deliver the material into the mixing chamber at a location closely spaced from the vanes. The vanes are variably rotatable up to high speeds for mixing and imparting to the materials an upward vertical flow path for passing them around the edge of the plate member into the lead-off chamber and then to the outlet pipe at the upper end of that chamber.

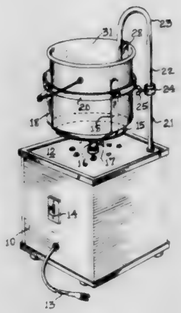
3,430,926
COUNTERWEIGHT SYSTEM FOR SHAKER APPARATUS
David Freedman, Highland Park, and Vytautas A. Liobis, Plainfield, N.J., assignors to New Brunswick Scientific Co., Inc., a corporation of New Jersey
Filed Sept. 12, 1967, Ser. No. 667,243
U.S. Cl. 259—54 **11 Claims**
Int. Cl. B01f *13/00*

A shaker apparatus which has a platform for horizontally shaking a load which is carried by the platform. A base which has a mass considerably greater than that of the platform is situated beneath the latter, and a drive means is carried by the base and operatively connected with the platform for horizontally shaking the platform with respect to the base. A counterbalance means is operatively connected with the drive means to move therewith for horizontally balancing the apparatus as well as for substantially eliminating tilting moments about a horizontal axis, so that the base need not be fixed to any stationary structure and instead can simply rest on any supporting



surface without any tendency for the apparatus to creep or "walk" along this supporting surface during operation of the apparatus even though the latter is not bolted or otherwise fixed to a stationary structure.

3,430,927
RECEPTACLE MOVING MIXER
Edward G. Pouzar, 5115 Dobson St., Skokie, Ill. 60076
Filed Nov. 6, 1967, Ser. No. 680,890
U.S. Cl. 259—88 **1 Claim**
Int. Cl. B01f *9/10*

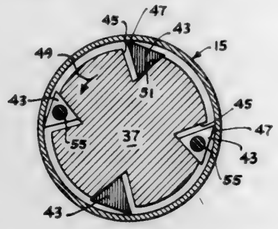


A mixer having a rotating support for a removable receptacle and a stirrer blade adjustable radially within the receptacle about its support and coaxially with respect to the center axis of the receptacle; a support for the blade cooperating with a locking member provided by the blade to adjustably position the same within the receptacle in relation to the material therein to be mixed.

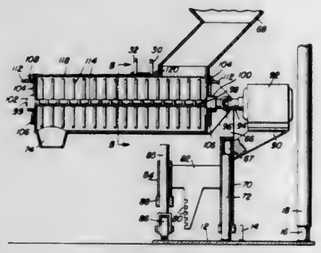
3,430,928
SCRAPING APPARATUS
Robert L. Smith, Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,695
U.S. Cl. 259—109 **9 Claims**
Int. Cl. B01f *15/06, 7/02;* **F28f** *13/12*

Heat exchange apparatus having a slotted shaft and a plurality of polygonal scrapers mounted for sliding

movement in the slots of the shaft for scraping a wall of a heat exchanger. Said scrapers being movable by centrifugal force, upon rotation of the shaft into scraping contact with the wall.



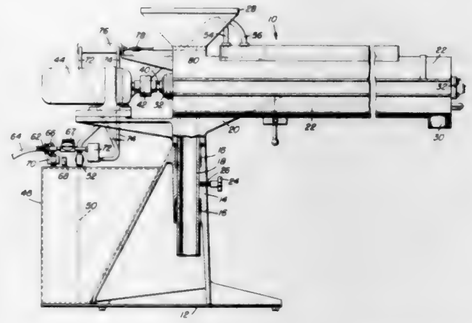
3,430,929
CONTINUOUS OPERATION MULLING APPARATUS AND METHOD FOR ACCURATELY PROPORTIONING FOUNDRY SAND INGREDIENTS
Ralph E. Kawecki, New Britain, Conn., assignor to Southington Manufacturing, Inc., Southington, Conn., a corporation of Connecticut
Filed Nov. 16, 1967, Ser. No. 683,542
U.S. Cl. 259—146 **25 Claims**
Int. Cl. B28c *7/12*



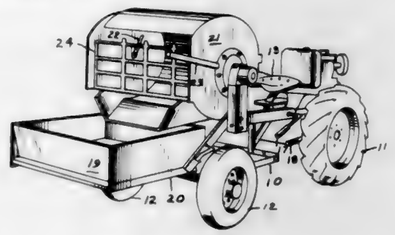
This invention is a continuous operation mulling apparatus and method for accurately proportioning foundry sand ingredients. In this invention, the foundry sand ingredients are continuously gravity fed into a mulling trough at spaced apart points at an ingredients receiving end, and are discharged continuously at the other end. Each ingredient is metered, and the formula may be changed by changing the metering. The timing of the mulling operation is changeable by changing the inclination of the mulling trough. Further, the mulling trough is pivotal 90° to either side at a center point, swinging about a center under the sand feed hopper, so that a number of separate receptacles may be placed in a semi-circle and when one receptacle is filled, the trough discharge spout may be moved to the next receptacle without stopping the continuous operation.

3,430,930
PNEUMATICALLY FED CONTINUOUS OPERATION MULLING APPARATUS AND METHOD FOR ACCURATELY PROPORTIONING FOUNDRY SAND INGREDIENTS
Ralph E. Kawecki, New Britain, Conn., assignor to Southington Manufacturing, Inc., Southington, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 683,542, Nov. 16, 1967. This application Apr. 4, 1968, Ser. No. 718,874
U.S. Cl. 259—146 **10 Claims**
Int. Cl. B28c *7/04*

This invention is a pneumatically fed continuous operation mulling apparatus and method for accurately proportioning foundry sand ingredients in that the metering and feeding of the sand and the liquid ingredients are operated by pneumatic pressure, rather than being solely gravity fed or metered. As a result, in this invention, liquid ingredient supply tanks may be placed at or below the level of an elongate mulling trough into which the ingredients are fed separately at one end and discharged in mulled condition at the other end in a continuous operation.



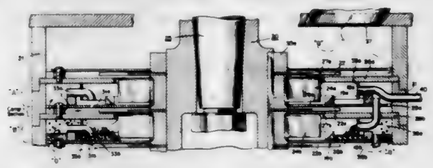
3,430,931
MORTAR MIXING MACHINE
Albert G. Desko, 34 Shauna Drive, Fairview, Pa. 16415
Filed Oct. 20, 1967, Ser. No. 676,810
U.S. Cl. 259—178 **4 Claims**
Int. Cl. B28c *5/10, 7/16*



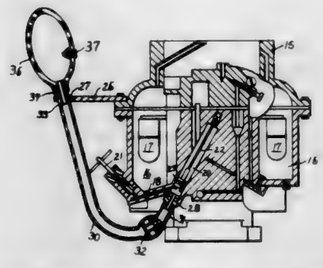
The mortar mixer disclosed herein provides a convenient self-propelled portable mixer and mortar box combination which enables bricklayers and other such persons to move their mortar from the place where the dry mortar is received to the place where the mortar is being used or where bricks are being laid with the minimum of physical effort. The agitator in the drum mixes the mortar while it is being moved. The mixer is being driven by an engine at the rear of the mixer near the driving wheels while the mixing drum and mortar box are at the front. The mortar box support is low enough for convenient use.

3,430,932
METHOD AND APPARATUS FOR CONTACTING CONTINUOUS AND DISPERSE PHASE SUBSTANCES
William L. Kuechler, Jenkintown, Pa., assignor to Entoleter, Inc., Hamden, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 301,480, Aug. 12, 1963. This application Sept. 18, 1967, Ser. No. 671,920
U.S. Cl. 261—28 **24 Claims**
Int. Cl. B01d *19/00, 15/00*

A contacting method and apparatus in which a greater density substance (e.g., a liquid) is dispersed in a high velocity, inwardly spiralling flow of a lesser density substance (e.g., a gas) within a contacting zone. A circulating suspension of innumerable small particles of the liquid in the gas, confined within the zone, is formed by the balancing of the centrifugal and centripetal forces exerted on the liquid particles.

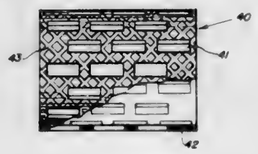


3,430,933
PRIMER ATTACHMENT FOR CARBURETORS
Melvin C. Taggart, Rte. 2, Box 22, Potlatch, Idaho 83855
Filed Dec. 14, 1967, Ser. No. 690,502
U.S. Cl. 261—34 **5 Claims**
Int. Cl. F02m *71/00, 1/16*



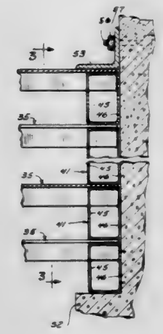
A primer attachment for a carburetor is described for assisting in the starting of a relatively constant r.p.m. gasoline engine that does not have an accelerator fuel pump. The carburetor attachment includes a threaded tubular fitting that replaces the exterior plug used to provide access to the main fuel nozzle chamber. Tubing is connected to the fitting. A compressible bulb is connected to the tubing for forcing air through the tubing and into the main fuel nozzle chamber to push fuel into the carburetor throat prior to starting the engine. A check valve is mounted in the tubing for preventing fluid flow from the main nozzle chamber.

3,430,934
PACKING ELEMENT FOR FLUID COLUMNS
Josef Weishaupt, Pullach im Isartal, Germany, assignor to Linde Aktiengesellschaft, Hollriegelskreuth, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 396,484, Sept. 15, 1964. This application May 25, 1967, Ser. No. 641,354
Claims priority, application Germany, Sept. 16, 1963, G 38,699
U.S. Cl. 261—94 **6 Claims**
Int. Cl. B01d *47/14*



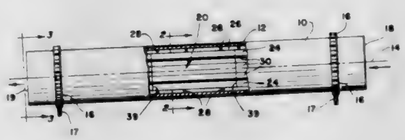
Packing element for fluid columns and the like with a thin-walled, preferably tubular body provided on all or most of its surface with an array of perforations of specified dimensions designed to be bridged by membranes of liquid whereby a liquid film covers substantially the entire inner and outer wall surface of the body as in an imperforate element, and two orthogonal arrays of parallel grooves on the external surface of said body.

3,430,935
TRICKLING BAR ASSEMBLY FOR BLOW-OUT TOWERS
Leo Lawrence Garrett, Orlando, Fla.; The Florida National Bank at Orlando, administrator, C.T.A. of said Leo L. Garrett, deceased
Filed Oct. 23, 1965, Ser. No. 503,994
U.S. Cl. 261—109 **9 Claims**
Int. Cl. B01d *19/00*



A trickling bar assembly for blow-out towers in which a water supply is trickled through the assembly which is made up of stacked layers, each layer comprising a row of parallel nonwarping T-bars (which may be cut from conventional metal stock) supported at their ends by tubes which may be metal, rectangular in cross section. Each tube is notched downwardly through its top wall and a side wall lying under the T-bars to receive the leg of the T, the end of which bears approximately against the unnotched side wall of the tubular support. The notches of successive levels are staggered to stagger the bars, and the top flange of each T is wider than the spacing between the bars above to catch water dripping through.

3,430,936
HEAT EXCHANGE STRUCTURE FOR ROTARY KILNS
Grant W. Metzger, Menlo Park, Calif., assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts
Filed May 23, 1967, Ser. No. 640,709
U.S. Cl. 263—33 **8 Claims**
Int. Cl. F27b *7/04*



A rotary kiln for heat treatment of pulverulent materials, such as Portland cement raw materials. The kiln is a refractory-lined cylindrical metal shell with an internal heat exchange structure composed of a central opening and a series of circumferentially-arranged relatively thin metal-walled compartments. The compartments carry the material through the kiln and are made up of

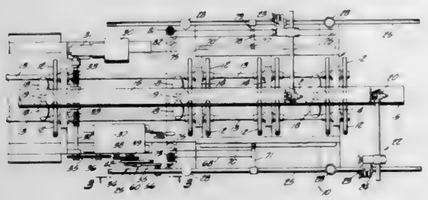
readily detachable and replaceable modular metal units. In operation, the kiln rotates on an inclined axis, and the material to be heated passes through the compartments from the upper inlet end to the discharge end of the shell. A stream of hot gases, from the combustion of fuel is delivered to the discharge end of the kiln and is passed through the compartments and the central opening of the heat exchange structure in countercurrent flow to the material.

3,430,937
EVAPORANT HOLDER
Cary R. Spitzer, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 17, 1966, Ser. No. 529,594
U.S. Cl. 263—48 **6 Claims**
Int. Cl. F27d *11/02, 5/00*



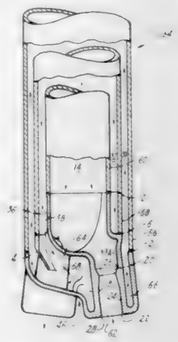
A resistively heated evaporant holder formed of a shaped metal foil and being provided with a laminated protective coating of nickel alumina and a ceramic overcoat on the reservoir portion of said holder with integral conductive tabs extending from opposite ends of the reservoir portion.

3,430,938
SIMPLIFIED AUTOMATIC PIPE CUTTING MACHINE
Marvin J. Blackburn, Pasadena, Calif., assignor to Vernon Tool Co., Ltd., Alhambra, Calif., a corporation of California
Filed Oct. 28, 1966, Ser. No. 590,349
U.S. Cl. 266—23 **12 Claims**
Int. Cl. B21d *43/28*



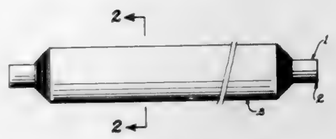
An automatic pipe cutting machine for cutting pipe along a wide variety of complex parameters suitable for welding to other pipes at various angles. The machine utilizes easily and quickly adjustable mechanisms for changing the machine from one type of cutting pattern to another using a minimum number of adjustable components. The equipment embodies simple means for minimizing and compensating for errors which otherwise would be present to an objectionable degree in performing certain cutting operations. The mechanism utilizes an adjustable eccentric having a connecting rod drive to the carriage supporting the cutting torch and is optionally connectible to the carriage from either side of the eccentric. If one mode of connection is used, the compensation is positive whereas it is negative if the opposite mode of connection is employed.

3,430,939
OXYGEN INJECTION NOZZLE WITH EXTERNALLY PROJECTING CONDUITS
Walter V. Berry, Pittsburgh, Pa., assignor to Berry Metal Company, Harmony, Pa., a corporation of Nevada
Filed Apr. 2, 1965, Ser. No. 445,100
U.S. Cl. 266—34 **18 Claims**
Int. Cl. C21c *5/46;* **B05b** *15/00*



An oxygen injection nozzle head for forming a high temperature furnace oxygen injection lance by jointure to a shank having concentric fluid-conducting channels therein, the nozzle head having a substantially spherically curved oxygen-ejecting face with a plurality of water cooled oxygen-emission passageways with wall portions thereof projecting beyond the face surface and defining an intermediate space therebetween, said passageways opening as ports, at least a portion of each of said wall portions being of double-walled thickness to provide an internal fluid-flow cavity therein and adjacent to each of said passageways.

3,430,940
REFRACTORY COATED COMPOSITE OXYGEN LANCE
George H. Criss, Pittsburgh, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,416
U.S. Cl. 266—35 **4 Claims**
Int. Cl. C21c *5/46, 7/02;* **F16l** *9/14*

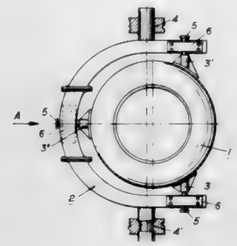


A refractory-coated lance comprising a tubular metal base surrounded by a plurality of layers of moisture-free, chemically-bonded, refractory aggregate separate by flexible metal foil.

3,430,941
CONVERTER HAVING A CARRYING STRUCTURE OPEN ON ONE SIDE
Josef Lambrecht and Hermann Schubert, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Oct. 20, 1965, Ser. No. 498,927
Claims priority, application Austria, Oct. 21, 1964, A 8,924/64
U.S. Cl. 266—36 **2 Claims**
Int. Cl. C21c *5/50*

Support means for a converter carried by a horseshoe-shaped frame are described. Three mounts are provided,

each including a generally hemispherical bushing resiliently engaging a mating socket in the frame. Three pins are fixed to the converter vessel, each passing through a respective bushing with a loose spline coupling to permit a

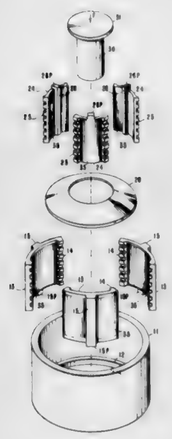


small amount of play. The combination of bushing shape, loose spline and resilient bushing mount accommodates variable thermal expansion of the vessel and frame to minimize stresses.

ERRATUM

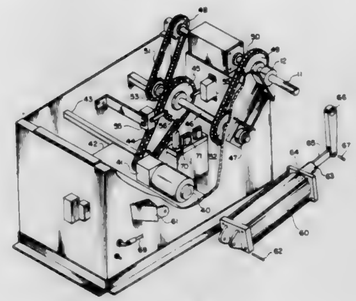
For Class 267—1 see:
Patent No. 3,430,915

3,430,942
BELLEVILLE SPRING ASSEMBLY WITH ELASTIC GUIDES
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention by Louis R. Toth, Montrose, and William F. MacGlashan, Jr., Pasadena, Calif.
Filed May 17, 1967, Ser. No. 640,789
U.S. Cl. 267—1 **5 Claims**
Int. Cl. F16f *1/00, 3/00*



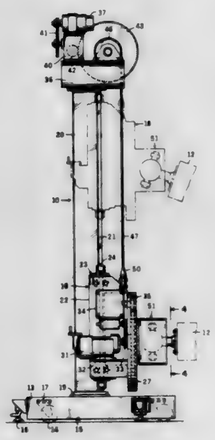
A plurality of flexible inner and outer retainers which maintain a plurality of Belleville springs, properly spaced from one another by means of grooves in the retainers within which the inner and outer peripheries of the springs are supported. The retainers are in turn supported so that under load when the inner and outer radii of the springs decrease and increase respectively, the retainers flex to accommodate such changes in dimensions within the elastic limits of the retainers.

3,430,943
APPARATUS FOR TURNING TRUSS JIG
James D. Adams, Colorado Springs, Colo., assignor to J. D. Adams Co., Colorado Springs, Colo., a corporation of Colorado
Filed June 26, 1967, Ser. No. 648,789
U.S. Cl. 269—20 **6 Claims**
Int. Cl. B25b *1/18;* **B23q** *3/18*



A chain drive and fluid motor drive is combined to turn a "flop-over" roof truss jig from a horizontal position to a position 180° horizontally therefrom, and to provide a braking or cushioning action during the operation of turning over the jig. The fluid motor drive coacts with a chain drive to start the pivoting action of the truss jig, and both provide for moving the truss jig from a horizontal to a vertical position. From the vertical position to either horizontal position the cylinders act as shock absorbers or brakes to ease the jig down to the horizontal position.

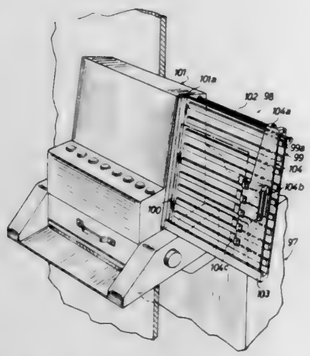
3,430,944
HEAD AND TAILSTOCK MANIPULATOR
Anthony K. Pandjiris, St. Louis, and Arthur I. Frederick, Webster Groves, Mo., assignors to The Pandjiris Weldment Co., St. Louis, Mo., a corporation of Missouri
Filed Apr. 5, 1967, Ser. No. 628,586
U.S. Cl. 269—61 **13 Claims**
Int. Cl. B23q *3/18*



A pair of universal couplings support a workpiece therebetween in any preselected horizontal or inclined position by adjustment of the heights of crossheads reciprocatively mounted on associated columns of cooperat-head and tailstock units, the workpiece being rotated

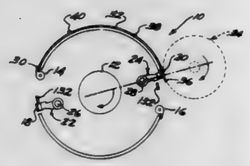
through the universal couplings in any adjusted position. At least one unit is movable relative to the other unit to adjust the horizontal spacing between and any lateral misalignment of the universal couplings as the workpiece position is adjusted by selective height adjustment of the crossheads and upon rotation of the workpiece by the universal couplings.

3,430,945
SHEET FEEDING APPARATUS
Richard Wick, Grunwald, Wolfgang Kwiatkowski, Unterhaching, and Helmut Schausberger, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Apr. 3, 1967, Ser. No. 627,934
Claims priority, application Germany, Apr. 29, 1966, A 52,307
U.S. Cl. 271—42 **6 Claims**
Int. Cl. B65h *3/24*



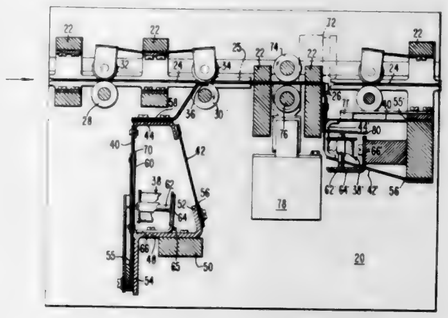
A sheet feeding apparatus wherein a pusher reciprocates in front of a back support for stacked sheets to advence the sheets into the housing of a developing machine during movement from a retracted to an extended position. The speed of the pusher is limited, at least during travel to extended position, to prevent uncontrolled displacement of sheets with reference to each other and particularly to ensure that the sheets come to a halt at the very instant when the pusher completes its forward stroke to extended position. The speed limiting means may comprise an air brake and/or a motor-driven power train which can advance the pusher from the retracted to extended and back to retracted position in response to a single revolution of an output shaft.

3,430,946
SHEET TENSIONING AND TRANSFER MECHANISM FOR PRESSES
Carl O. Siebke, Pittsburgh, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1966, Ser. No. 602,857
U.S. Cl. 271—51 **20 Claims**
Int. Cl. B65h *5/12, 5/14*



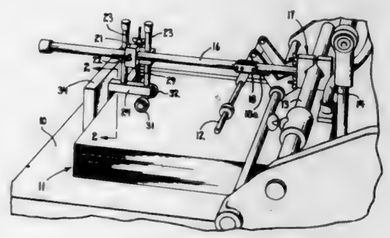
Apparatus in a rotary press sheet transfer cylinder for pulling a sheet taut on the outer surface or periphery of the cylinder. Suction devices positioned on the periphery of the cylinder are secured to arm members that are in turn secured to an actuating shaft supported within the cylinder. The trailing edge of the sheet to be transferred is engaged by the suction devices and the shaft with the arms secured thereto is rotated to pull the sheet taut over the peripheral surface of the cylinder.

3,430,947
RECORD CARD HANDLING AND REGISTERING APPARATUS
Daniel H. Davis, Jr., Ann Arbor, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 20, 1967, Ser. No. 624,364
U.S. Cl. 271—53 **13 Claims**
Int. Cl. B65h *9/06, 29/46*



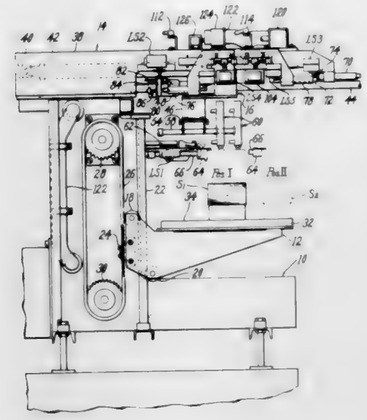
The disclosure embraces a card guideway along which cards are fed singly to a "ready station" where a card is freely thrust with its leading edge against a retractable abutment or registering bar by a second abutment engaging the trailing edge of the card, the abutments being moved by electromagnets acting through flexure interposers.

3,430,948
SHEET AND PILE HOLDER FOR PRINTING PRESS
Earl M. Sage, 8931 Roy Road, Indianapolis, Ind. 46219
Filed Oct. 5, 1967, Ser. No. 673,116
U.S. Cl. 271—61 **3 Claims**
Int. Cl. B65h *1/04*



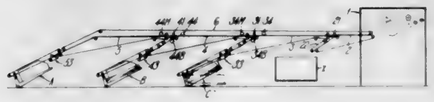
A pile holder which is adjustably attached to the feed end of a flatbed cylinder press and urges the pile of sheets to be fed into the press in proper position, and rollers movable with relation to the pile holder adjustably spring biased into holding engagement with the uppermost sheet on the pile to assure even feed of the sheets to the press.

3,430,949
FABRIC HANDLING MACHINES
Donald F. Herdeg, Beverly, and Paul E. Morgan, Melrose, Mass., assignors to USM Corporation, Boston, Mass., a corporation of New Jersey
Filed Sept. 18, 1967, Ser. No. 668,574
U.S. Cl. 271—63 **10 Claims**
Int. Cl. B65h *3/08, 29/00*



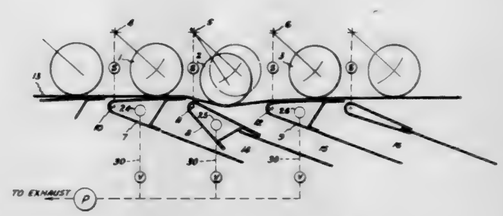
A machine for feeding fabric sheets singly from a stack of sheets or from a plurality of stacks to a work station or plurality of stations, having a novel means for controlling pick-up and release of the sheet during an operating cycle. A pick-off device and cooperating arm are effective to successively remove single plies of regular or irregular shaped fabric from a stack or selectively from one of a plurality of stacks which may be of varying heights, and deposit the ply with accuracy at a selected location during successive operations.

3,430,950
SHEET FEEDING MECHANISM
Hugh Robert Waring Marsh and Frank William Wilshin, London, England, assignors to Masson Scott, Thrissell Engineering Limited, Summerstown, London, England, a corporation of Great Britain
Filed Dec. 20, 1966, Ser. No. 603,285
Claims priority, application Great Britain, Dec. 23, 1965, 54,705/65
U.S. Cl. 271—64 **12 Claims**
Int. Cl. B65h *3/04, 3/44*



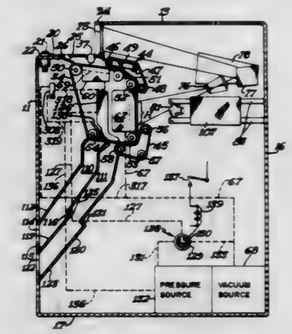
A device is disclosed for diverting to a plurality of stacking devices sheets fed in succession along a main path. Deflector means is provided to successively deflect sheets from the main path to branch paths leading to the stacking devices. Means is provided for controlling the deflector so that the stacking devices have idle periods sequentially in rotation so that during the idle periods of each stacking device sheets are diverted to the other stacking devices in order that the idle stacking device may be unloaded.

3,430,951
MAIL SORTING LETTER DIVERTER
Lubor Rene Hulka, 43 Farnell St., West Ryde, New South Wales, Australia, and Frederick Margarson Bisgrove Hynes, 17 Violet St., Balgowlah, New South Wales, Australia
Filed Apr. 20, 1967, Ser. No. 632,299
U.S. Cl. 271—64 **5 Claims**
Int. Cl. B65h *29/60*



A sorting diverter for letters or similar flat articles wherein each of a series of adjacent traps coacts with an associated roller and wherein between said traps and rollers a driven belt propels the letters across the inlet sides of all unoperated traps, and when a letter is to be diverted, the appropriate trap opens up its inlet side being tilted inwards, the associated roller simultaneously distorting the belt partly into the open trap so that the letter enters a chute associated with that trap instead of continuing across the inlet sides of succeeding traps.

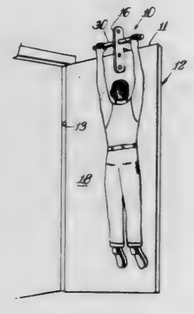
3,430,952
FEEDING APPARATUS FOR SHEET MATERIAL
John G. Benjamin, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application May 28, 1965, Ser. No. 459,695, now Patent No. 3,358,554, dated Dec. 19, 1967. Divided and this application Aug. 8, 1967, Ser. No. 672,662
U.S. Cl. 271—74 **11 Claims**
Int. Cl. B65h *29/15, 29/24*



Sheet material feeding apparatus is shown wherein a sheet material to be fed is inserted into a passageway, detected by a radiation sensitive means, is engaged and

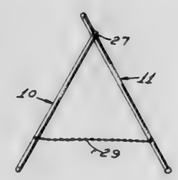
moved along said passageway by a feeding means. Further, the apparatus disclosed herein includes means for removing wrinkles from a sheet as the material passes between a pair of selectively engaged belts. Also, the apparatus disclosed herein includes use of at least one belt formed of a sufficiently foraminous material to permit a negative pressure to be selectively extended therethrough to the under surface of the sheet material whereby the sheet material is maintained in contact with the belt by means of a differential pressure existing between the surfaces of the sheet material.

3,430,953
HANGING TYPE THERAPEUTIC DEVICE HAVING ADJUSTABLE HANDLE HEIGHT
Macy O. Teetor, 24 Orpheum Ave., Metairie, La. 70005
Filed July 1, 1965, Ser. No. 468,822
U.S. Cl. 272—62 **16 Claims**
Int. Cl. H63b *1/02*



A therapeutic device for mounting on the upper horizontal edge of a door and having a horizontally extending, adjustable height handle permitting a user to hang therefrom or perform various types of exercises.

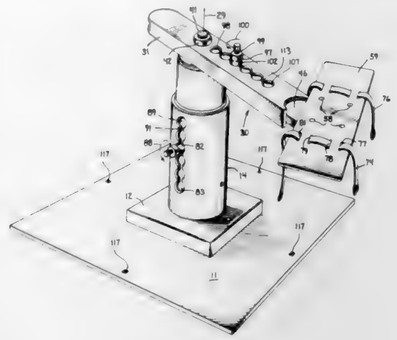
3,430,954
EXERCISE AND GYMNASTIC STAND
Grant W. Massey, St. Clair Shores, Mich., assignor, by direct and mesne assignments, of two-thirds to James A. Kollar, Birmingham, Mich.
Filed Mar. 17, 1967, Ser. No. 623,906
U.S. Cl. 272—62 **9 Claims**
Int. Cl. A63b *1/00;* **F16m** *11/38*



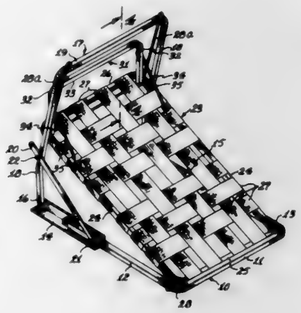
Gymnastic stand formed by two U-shaped members being reversely triangularly positioned relative to one another. A joint connects the legs of one U-shaped member to the curved knee portions of the second U-shaped member. A pair of tie linkages inter-connects the curved knee portions of the first U-shaped member to the leg portions of the second U-shaped member to limit movement of the members.

3,430,955
ABDUCTOR EXERCISING THERAPEUTICAL APPLIANCE
Maurice L. Mack, 2258 N. Meridian St., Apt. 109, Indianapolis, Ind. 46208
Filed Dec. 30, 1966, Ser. No. 606,377
U.S. Cl. 272—80 **9 Claims**
Int. Cl. A63b *21/12, 21/06, 21/02*

An appliance adapted to receive an arm of the user and permit the user to freely move his or her arm in circles of selectable diameter in a horizontal plane. The appliance includes a base for table mounting, an upstanding post arrangement thereon which is vertically telescopic and adjustable for the desired height, a horizontally extending arm mounted atop the column through antifriction bearings rotatable on a first vertical axis, with an arm support pad mounted through antifriction bearings to the arm, the arm being telescopic so that the vertical axis of rotation of the pad on the arm is positionable at various desired spacings from the first axis of rotation of the arm.

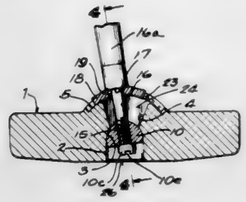


3,430,956
FOOT AND LEG EXERCISER
Alexander T. Borgeas, 129 W. Catalina Drive, Phoenix, Ariz. 85013
Filed Aug. 15, 1966, Ser. No. 572,396
U.S. Cl. 272—83 **2 Claims**
Int. Cl. A63b *21/02, 21/12*



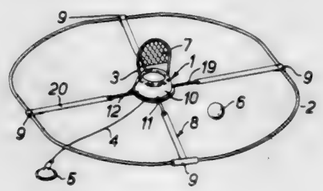
A therapeutic apparatus for automatically inclining the legs from a horizontal to a vertical sloping pitched-up position to aid in controlling the circulation in the legs and feet of a patient. The legs are positioned on a hinged platform which is spring biased upward sufficiently to neutralize the weight of the legs. On one end of the platform may be located a pivoted foot exerciser which can be pivoted by the foot again a spring resistance.

3,430,957
LOCKABLE GOLF CLUB HEAD ADJUSTMENT
Ernest R. Andis, 3528 N. Bay Drive, Racine, Wis. 53402
Filed June 1, 1967, Ser. No. 642,930
U.S. Cl. 273—80.1 **2 Claims**
Int. Cl. A63b *53/06;* **F16m** *11/10;* **A47f** *5/00*



An adjustable head for a golf club having means for preventing inadvertent adjustment after the desired head position has been selected. A snap-in shield is provided whereby special tools must be used to remove the shield before the adjustment can be changed.

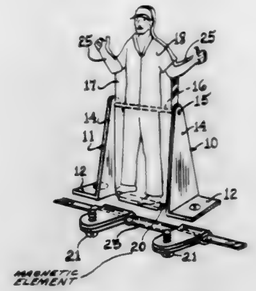
3,430,958
FLOATABLE SELF-CENTERING TARGET
Thomas Ashley Lakeman, High Branches, Collington Rise, Bexhill, Sussex, England
Filed Jan. 19, 1967, Ser. No. 610,380
U.S. Cl. 273—105 **11 Claims**
Int. Cl. A63b *67/10, 63/00;* **B63b** *21/52*



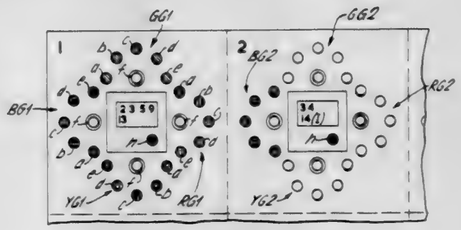
This invention consists of improvements in game apparatus including two goal assemblies each of which is to be disposed at one end of the playing area which is preferably a swimming bath so that the apparatus floats in the water. Each goal assembly consists of a goal supported on a plastic or other support and held in the middle of the assembly by three, four or more flexible rays which connect the goal to an outer circular tube. The rays are shorter than the normal distance between the goal and the circular tube so that the goal is properly disposed at the centre of the circle. Instead of using two goals a simple game may be played using one assembly.

3,430,959
TARGET HAVING MEANS FOR OPENING THE REEDS OF A SWITCH
Henry S. Ross and Marcine P. Wolverton, both of 10136 Pacific, Franklin Park, Ill. 60131
Filed Nov. 1, 1966, Ser. No. 591,194
U.S. Cl. 273—127 **2 Claims**
Int. Cl. A63b *71/00, 63/00*

A pivotally supported magnet-carrying target moved by contact of a projectile over and above a playing field which houses a magnetically controlled switch, the components of which move in response to the presence or absence of the magnetic influence of the target magnet as the same is pivoted over the playing field by the projectile.



3,430,960
BOARD GAME APPARATUS FOR SIMULATING COMPUTER OPERATION
Stephen Ivan Warman, London, England, assignor to Data Laboratories Limited, London, England, a British company
Filed June 14, 1965, Ser. No. 463,639
Claims priority, application Great Britain, June 12, 1964, 24,595/64
U.S. Cl. 273—131 **17 Claims**
Int. Cl. A63f *3/00*

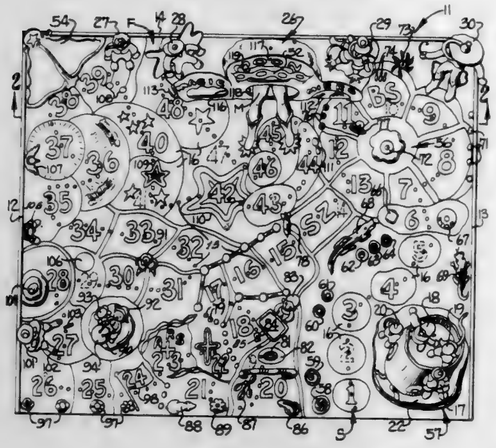


A game apparatus for simulating the operation of a computer, said apparatus comprising a playing board divided into a plurality of uniquely identified fields, each field representing a computer flip-flop with gate input terminals simulated by visually distinguishable groups of indicia. The apparatus further comprises groups of playing pieces to be associated with said indicia, the pieces of each group having visual characteristics matching those of one group of indicia. Each field on the playing board comprises a plurality of indicia matching the identification indicia on some of the other fields, whereby the play is directed from one field to one or more other fields, thereby simulating the progression of signals in a computer.

3,430,961
GAME APPARATUS COMPRISING A BOARD REPRESENTING AN IMAGINARY PLANET
La Nell M. Burn, Box 285, Isle of Palms, S.C. 29451
Filed Jan. 17, 1966, Ser. No. 523,008
U.S. Cl. 273—134 **9 Claims**
Int. Cl. A63f *3/04, 1/18*

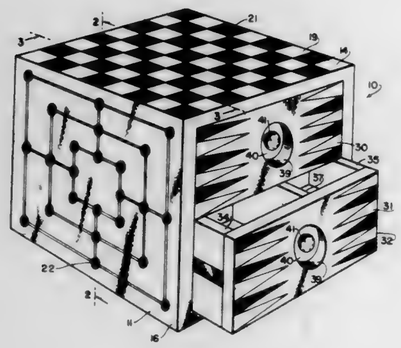
A board game apparatus including a board having a surface representing a planet both pictorially and with

three-dimensional figures and having a path for registering movement of playing pieces controlled by associated cards, indicia on the board surface and a chance device,



together with a figurine partially obscured by a member adapted to be removed by the winning player after movement through the entire length of the path.

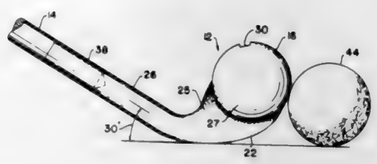
3,430,962
CUBICAL GAME PIECE CONTAINER HAVING DIFFERENT GAME BOARD PATTERNS ON ITS FACES
Thomas G. Davenport, 344 E. 19th St., New York, N.Y. 10003
Filed Dec. 27, 1965, Ser. No. 516,231
U.S. Cl. 273—136 **3 Claims**
Int. Cl. A63f *3/02*



A cube is formed with five walls and an open end with the five faces of the cube having different game boards formed thereon. Drawers slide into the open end of the cube, the drawers having interior spaces completely enclosed by the upper wall of the cube and by drawer walls, having front portions flush with the open end of the cube when the drawers are closed, and having means holding the drawers closed as any desired game board is turned upward, said front portions jointly providing a sixth game board.

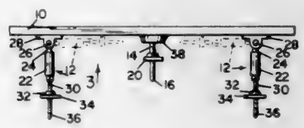
3,430,963
GOLF PUTTER
John J. Wozniak, 30106 Gruenberg, Warren, Mich. 48092, and Edward J. Jacques, 53333 Aulger Road, Rochester, Mich. 48063
Filed Mar. 22, 1967, Ser. No. 625,121
U.S. Cl. 273—164 **2 Claims**
Int. Cl. A63b *53/00, 53/04, 53/14*

A golf putter includes a head having the shape of a cylinder, a shaft and a narrow runner connecting the shaft to a convex side of the head. The runner is longitudinally and transversely curved throughout its length and extends from a central part of the head to the lower end of the shaft. The length and longitudinal curvature of the runner and the diameter of the head are such that when the shaft



is positioned at an angle of approximately 30–50 degrees to a horizontal putting surface, the lowermost convex side of the head is positioned above the horizontal surface and the head may be moved on said runner so that a convex side of the head impacts the ball above the center of the ball to impart overspin thereto. The upper surface of the head includes a lengthwise extending sighting groove.

3,430,964
GOLF PRACTICE DEVICE
Sylvester M. Budzinski, 76 Gage St., Worcester, Mass. 01605
Filed Apr. 11, 1967, Ser. No. 629,990
U.S. Cl. 273—195 **4 Claims**
Int. Cl. A63b *69/36, 57/00*

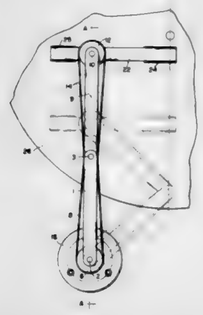


Golf practice device comprising a platform which may be merely for supporting the ball to be struck or it may be large enough for the player to stand on with the ball in place in front of him on the platform. The platform is made adjustable in a very simple manner as by two longitudinally adjustable pivotable legs and one non-pivotable leg so that uphill, side and downhill shots can be practiced by the golfer with the golfer either standing on the incline equally with the ball or standing on a flat with the ball on the incline.

3,430,965
PHONOGRAPH PICKUP ARM
Hideo Matsushita, 34, 3-chome, Nishihara, Shibuya-ku, Tokyo, Japan
Filed Jan. 27, 1967, Ser. No. 612,123
Claims priority, application Japan, Jan. 29, 1966, 41/5,044
U.S. Cl. 274—23 **8 Claims**
Int. Cl. G11b *3/12*

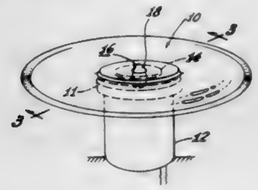
The invention is concerned with a multisection pickup arm, the individual sections of which are so dimensioned and interconnected that the stylus operatively connected

to a free end portion of one of the sections moves in a straight line path, when riding within the spiral grooves



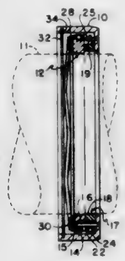
of a rotating record disk, from the outer peripheral portion of the spiral grooves toward the center part thereof.

3,430,966
TRANSPARENT RECORDING DISC
David Paul Gregg, Los Angeles, Calif., assignor, by mesne assignments, to Gauss Electrophysics, Inc., Santa Monica, Calif., a corporation of California
Filed Apr. 3, 1967, Ser. No. 627,701
U.S. Cl. 274—42 **3 Claims**
Int. Cl. G01d *15/34*



The invention is particularly concerned with an improved disc-type record for optical recordings, and with a turntable assembly which is particularly adapted to drive such a record. The record is a transparent plastic and the recordings are formed in spiral grooves as opaque coatings.

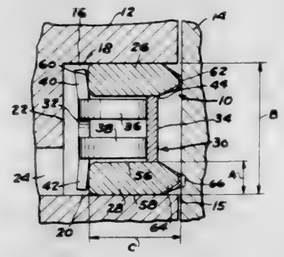
3,430,967
SEAL FOR A HIGH SPEED SHAFT
Arnold E. Junker, Bridgeport, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Oct. 13, 1966, Ser. No. 586,520
U.S. Cl. 277—137 **7 Claims**
Int. Cl. F16j *15/16*



This disclosure relates to a carbon seal having two sealing elements, the first of which is a one-piece carbon ring with a single crack maintained in firm engagement with the shaft by a garter spring. The second element is a carbon ring, a portion of which is shaped to conform to the shaft and the remaining portion of which is enlarged with respect to the shaft. A spring positioned between the ring and the seal casing serves to maintain the shaft-shaped portion in contact with the shaft directly behind the crack in the primary sealing ring, so that together the two carbon rings provide effective sealing.

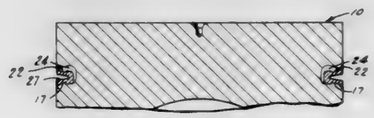
3,430,968
PISTON RING ASSEMBLY
Donald M. Hesling and Calvin N. De Bruin, Muskegon, Mich., assignors to Sealed Power Corporation, Muskegon, Mich., a corporation of Michigan
Filed Feb. 24, 1966, Ser. No. 529,847
U.S. Cl. 277—139 **9 Claims**
Int. Cl. F16j *9/06, 15/00;* **F02f** *5/00*

A three-piece piston oil ring assembly comprising a nonbottoming, circumferential abutment radially corrugated expander-spacer of the type disclosed in U.S. Patent 2,789,872 and a pair of oil control rings biased by the expander-spacer radially outwardly into oil wiping engagement with the cylinder wall and axially apart into



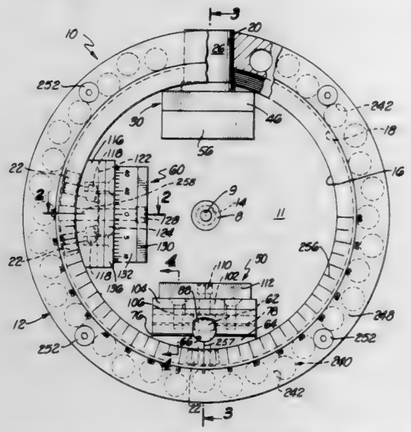
side sealing contact with the walls of the piston ring groove. The rings have an unusually large axial dimension, about double that of the prior art steel rails hitherto used with an expander-spacer of the aforementioned type in three-piece oil ring assemblies. These "overwidth" rings are effective to prevent carbon lock-up of the ring assembly even under heavy-duty operating conditions.

3,430,969
PISTON WITH RING GROOVE REINFORCEMENT
Harry E. Clary, Chesterland, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 25, 1966, Ser. No. 552,898
U.S. Cl. 277—189.5 **5 Claims**
Int. Cl. F16j *9/22, 9/00*



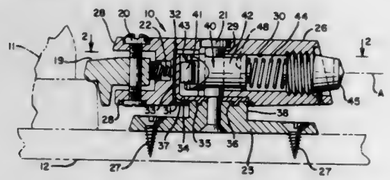
Piston assemblies composed of aluminum alloy bodies and ferrous metal ring groove inserts wherein the insert is received within the groove in the piston body by virtue of a mechanical fit, without metallurgical bonding, and has an area to weight ratio of at least 60 square inches per pound to reduce the temperature differential which would normally exist between the metal of the piston and the ring groove insert under service conditions.

3,430,970
MULTIFORM CHUCK
Raymond J. Gannon, Jr., 6753 W. 86th Place, Los Angeles, Calif. 90045
Filed Apr. 16, 1965, Ser. No. 448,748
U.S. Cl. 279—112 **20 Claims**
Int. Cl. B23b *31/16, 5/22;* **B25b** *1/02*



A tubular chuck having jaw mounting means in the bore, adjustable in angular, chordal, radial and axial directions to rigidly retain workpieces of any configuration in any position, eccentric or concentric to the axis of the bore.

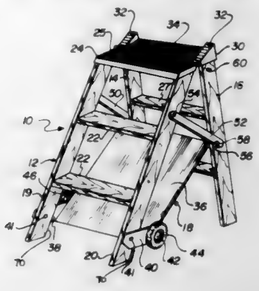
3,430,971
SKI BINDING
Bernard E. Berlenbach, 220 Shoreline Highway, Mill Valley, Calif. 94941
Filed Jan. 10, 1967, Ser. No. 608,315
U.S. Cl. 280—11.35 **12 Claims**
Int. Cl. A63c *9/081*



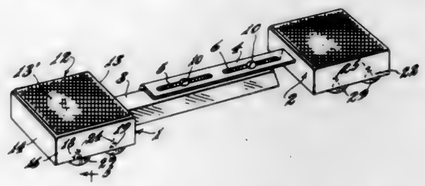
A ski binding comprising a support base adapted to be mounted on a ski runner and a body member including a boot-holding means for releasably connecting a ski boot to the runner, the body member being provided with a vertical bore fitted with a pivot pin for mounting it relative to the runner, a central cavity housing a cam member and including means for sealing the cavity from dirt, grime, etc. exterior of the body member, and a horizontal bore intersecting the vertical bore and pivot pin fitted with a cam piston slotted to engage the pivot pin and having a head fitted with a roller adapted to engage the face of the cam member with minimum friction.

3,430,972
COMBINED STEPLADDER-CART
Armin Fiedler, 1109 W. North Shore Ave., Chicago, Ill. 60626
Filed Aug. 11, 1966, Ser. No. 571,788
U.S. Cl. 280—30 **1 Claim**
Int. Cl. B62b *1/04*

1. A combined stepladder-cart comprising: a stepladder having a plurality of steps affixed to a pair of step supports and a platform-step affixed across the upper ends of said pair of step supports, a pair of support legs having a platform-step affixed across the upper ends thereof and a plurality of steps affixed between them in spaced relation, hinge means affixed to said platform-steps hingedly fixing said stepladder and said support legs together and in a fashion such that said support legs can be pivoted to extend the length of said stepladder, said platform-step affixed across the upper ends of said support legs having a continuous sloped surface which engages the upper surface of said platform-step affixed across the upper ends of said step supports for providing additional strength and for retaining said stepladder and said support legs in extended alignment, and a wheeled platform pivotally affixed to the lower end of said step supports and positioned between said stepladder and said support legs, said platform being pivotal and the end thereof being engageable with the lower surfaces of said step supports to positionably support said wheeled platform in a substantially perpendicular position with respect to said stepladder so as to form a handcart, locking braces having locking slots therein pivotally affixed to respective ones of said step supports and locking pins affixed to respective ones of said support legs for locking said support legs in a fixed position with respect to said stepladder.



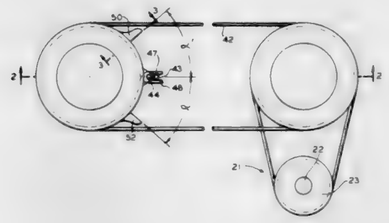
3,430,973
APPLIANCE DOLLY
Andrew Vartanian and Haig Vartanian, Philadelphia, Pa., assignors to Gem Marketing Corporation, Atlantic City, N.J., a corporation of New Jersey
Filed May 26, 1967, Ser. No. 641,611
U.S. Cl. 280—35 **2 Claims**
Int. Cl. B62d *21/14;* **B62b** *1/04, 3/02*



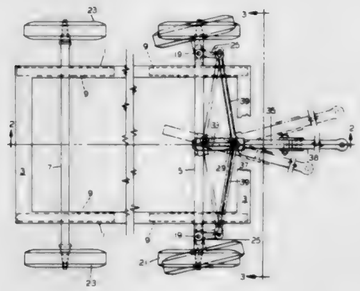
This invention relates to an appliance dolly which has been designed so that it will give maximum strength and efficiency and maximum economy in manufacture.

3,430,974
VEHICLE STEERING APPARATUS
Frank J. Schenkelberger, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 28, 1966, Ser. No. 605,471
U.S. Cl. 280—93 **7 Claims**
Int. Cl. B62d *7/06*

A steering apparatus embodying a pair of steering wheels, one of which may be positively disposed to a desired turn position, and at least the other of said steering wheels having a resilient tread portion and together with tracking means associated with such other wheel so that upon traction or movement of the vehicle the resilient tire tread in engagement with the ground or floor is deflected laterally effecting application of steering torque to the latter wheel to cause it to track in accordance with the turn of the steered wheel.



3,430,975
TRAILER STEERING ARRANGEMENT
Lloyd J. Wolf, 2425 Irving Blvd., Dallas, Tex. 75207
Filed Feb. 8, 1967, Ser. No. 614,729
U.S. Cl. 280—103 **11 Claims**
Int. Cl. B62d *13/00, 7/16*



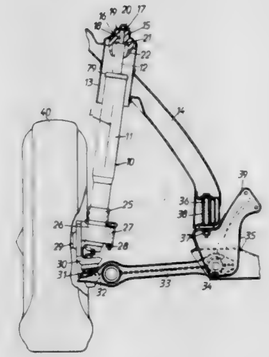
A road trailer having an automotive-type front axle, a draft tongue pivoted to the front end of the trailer and movable along its axis relative to the pivot, steering links pivotally connected to the tongue forwardly of the tongue pivot when the trailer is being towed and rearwardly of the tongue pivot when the trailer is being pushed by the tongue, shifting of the steering link pivots being accomplished by axial movement of the tongue respectively responsive to towing or pushing forces on the tongue, whereby the trailer front wheels are properly steered irrespective of the direction of movement.

3,430,976
LEAF-SPRING SUSPENSION FOR AUTOMOBILE VEHICLES AND THE LIKE, ESPECIALLY FOR INDUSTRIAL VEHICLES
Jean Vautier, Lyon, France, assignor to Automobiles M. Berliet, Lyon, Rhone, France, a corporation of France
Filed May 24, 1966, Ser. No. 552,595
Claims priority, application France, May 25, 1965, 18,354
U.S. Cl. 280—124 **2 Claims**
Int. Cl. B60g *3/16, 3/28, 11/02*

A suspension for automobiles and like vehicles which prevents rotation of an axle about itself comprising a leaf spring pivotally fastened at its ends to brackets on the vehicle's chassis and having an axle fixedly mounted at substantially the center of the spring and a member mounted parallel to and vertically spaced from half of the leaf spring between the axle and one of the brackets. Half of the leaf spring, the parallel member, the axle, and one bracket form a quadrilateral which readily deforms when the axle is vertically displaced but which opposes pivotal movement of the axle about itself.



3,430,977
HYDROPNEUMATIC SUSPENSION DEVICES
Wilhelm Riehl, Raunheim am Main, Germany, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,592
Claims priority, application Germany, Dec. 3, 1965, O 11,303
U.S. Cl. 280—124 **14 Claims**
Int. Cl. B60g *17/08;* **F16f** *9/10*

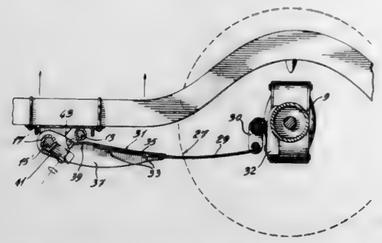


A hydropneumatic suspension device comprising a damper tube for hydraulic fluid; a hollow piston rod having one end disposed within the damper tube and including in its hollow interior a storage space serving as a pressure reservoir; a damper piston slidably disposed within the damper tube and connected to said one end of the piston rod divides the interior of the damper tube into a working space and an annular space surrounding the piston rod, and is formed with at least one duct interconnecting the working space and the annular space; and a valve displaceable by movement into engagement with a resilient abutment in the tube to establish a connection between the working space and the storage space.

3,430,978
STABILIZING DEVICE FOR A VEHICLE
Paul Henri Fortier, 4467 Delanaudiere St., Montreal, Quebec, Canada
Filed Feb. 23, 1967, Ser. No. 618,041
U.S. Cl. 280—124 **4 Claims**
Int. Cl. B60g *11/10*

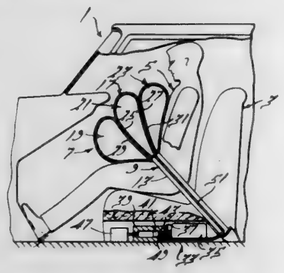
Stabilizing device for motor vehicle formed of a pair of parallel torsion rods extending transversely of the subframe of the vehicle and secured at one of their ends

to the subframe with the other ends free. A pair of torque arms have one end fixed to the vehicle rear axle



and the other end to one of the two torsion rods at the free end thereof.

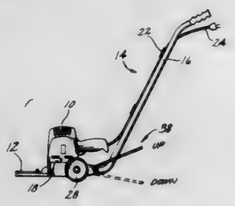
3,430,979
INFLATABLE CUSHIONING DEVICE
Sydney L. Terry, Grosse Pointe Farms, and Robert B. Batchelor, Birmingham, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,242
U.S. Cl. 280—150 **12 Claims**
Int. Cl. B60r *21/08, 21/10*



Lap belt device having an inflatable bag connected thereto, the bag being inflatable to provide a resilient brace between the upper torso of a passenger and the upper legs of the passenger.

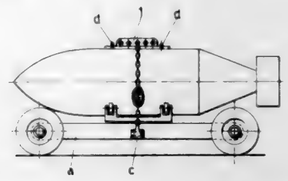
The present invention relates to an inflatable cushioning device, and more particularly to an inflatable device for restraining the forward movement of the upper torso of a passenger in a rapidly decelerating vehicle.

3,430,980
SUPPORTING STAND
Charles W. Hill, Arlington, Va., assignor to General Electric Company, a corporation of New York
Filed Sept. 1, 1967, Ser. No. 665,093
U.S. Cl. 280—150.5 **8 Claims**
Int. Cl. B60s *9/04*



The disclosure shows a supporting stand for use with a power garden-type tool so that the tool can be operated remotely as part of an assembly.

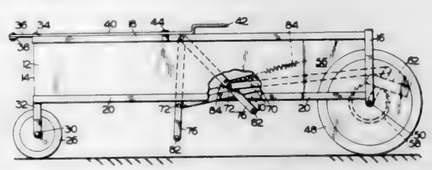
3,430,981
SYSTEM FOR THE SAFE ANCHORING OF BOMBS OR CONTAINERS TO A CONVEYING MEANS
Michele Tarantola, Via Quintino Sella 3, Rome, Italy
Filed June 8, 1967, Ser. No. 644,662
Claims priority, application Italy, June 25, 1966, 35,420/66
U.S. Cl. 280—179 **6 Claims**
Int. Cl. B60p *7/00;* **B62b** *1/00, 5/00*



This invention is concerned with a sling in a form of a chain by which a bomb, torpedo or similar arm is tied down to a conveying means, a spring being inserted across a length of the chain for rendering the tie resilient and adjustable.

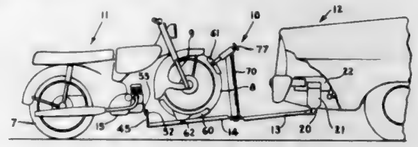
When loads of ammunition and particularly aerial bombs are to be transported from one place to another on an aerodrome or on runways, conveyance means are provided with support cradles that is dollies which are towed for long distances often at a remarkable speed.

3,430,982
SELF-PROPELLED HARVESTING VEHICLE
Alvin A. Despain and Amasa Mac Belnap, both of 4152 Stortz Ave. NE., Salem, Oreg. 97303
Filed Sept. 27, 1967, Ser. No. 670,999
U.S. Cl. 280—255 **4 Claims**
Int. Cl. B62m *1/04, 5/00;* **F16h** *27/02*



A vehicle body having a seat at its rearward end, a produce supporting platform at its forward end and an intermediate open space through which to reach garden produce, is supported upon front steering wheels and upon driven rear wheels. A ratchet type sprocket on each rear wheel is releasably engageable by a driving pawl carried by an arm connected pivotally to a lever which is actuated through a link connection by a foot pedal.

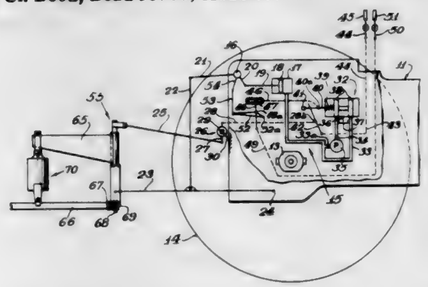
3,430,983
TRAILER HITCH FOR MOTORCYCLES
John A. Jones, 19104 SE. Clinton St., Gresham, Oreg. 97030
Filed Feb. 8, 1967, Ser. No. 614,665
U.S. Cl. 280—402 **6 Claims**
Int. Cl. B62d *53/04;* **B60p** *3/06*



A hitch-type device for towing one or more motorcycles behind an automobile. The device clamps the front wheel

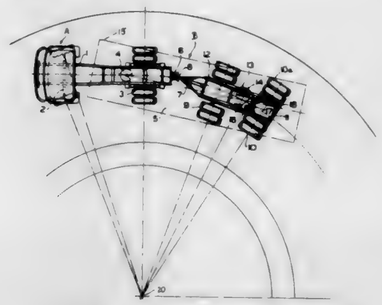
of a motorcycle and holds the front wheel in elevated position so that the motorcycle travels with only its rear wheel on the ground. The device has its own kingpin pivot for turning corners, the front wheel of the motorcycle being clamped in fixed relation to the motorcycle frame so that the front wheel fork will not turn.

3,430,984
WEIGHT TRANSFER SYSTEM
Pierce F. Richardson, Oakbrook, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,077
U.S. Cl. 280—405 **1 Claim**
Int. Cl. B60d; B62d *53/00;* **A01b** *63/112*



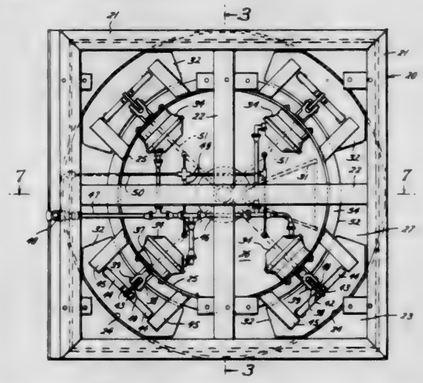
A hitch linkage mechanism for attaching trailed equipment to a tractor vehicle having a hydraulic power lift device for alternatively raising and lowering the linkage responsive selectively to variations in draft load from the equipment or from a plurality of manually controlled mechanisms, and wherein a frame connected between links of the hitch mechanism facilitates the attachment of the trailed equipment to the tractor and permits transference of a pre-selected amount of weight from the equipment being trailed to the tractor.

3,430,985
TRACTOR AND TRAILER CONSTRUCTION
Willi Hildebrandt, Parkring 7, Emmerich, Germany, and Aloysius T. van Huet, Schoolstraat 9, Pannerden, Netherlands
Continuation-in-part of application Ser. No. 428,668, Jan. 28, 1965. This application Jan. 6, 1967, Ser. No. 607,721
Claims priority, application Germany, Feb. 1, 1964, H 51,550; Jan. 7, 1966, H 58,176
U.S. Cl. 280—426 **11 Claims**
Int. Cl. B62d *53/06*



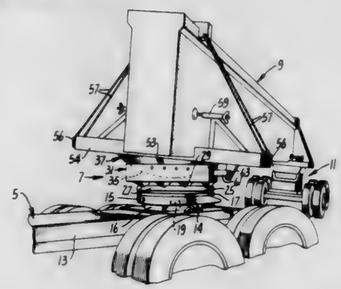
A tractor and semitrailer construction wherein the truck frame of the semitrailer is articulately hitched to the rear end of the tractor frame by a variable-length stabilizer. The rear axle of the truck frame is mounted on an element of a first antifriction bearing which is rotatable with reference to the truck frame about a first vertical axis, and the truck frame is mounted on a second antifriction bearing one member of which is carried by the semitrailer frame and is rotatable with reference to the truck frame about a second vertical axis. A motion transmitting device connects the one element of the first bearing with the one member of the second bearing in such a way that the rear axle turns about the first axis in a clockwise direction when the semitrailer frame turns about the second axis in a counterclockwise direction, or vice versa.

3,430,986
ANTI-JACKKNIFE DEVICE FOR FIFTH-WHEEL TRACTOR-TRAILER CONNECTIONS
John R. Long, 1529 E. Park Lane, Pasadena, Tex. 77502
Filed June 27, 1967, Ser. No. 649,188
U.S. Cl. 280—432 **8 Claims**
Int. Cl. B62d *13/00, 53/08*



An anti-jackknife device for fifth-wheel connections between a tractor and a trailer employing a brake connection for braking angular movement between the tractor and trailer. The device includes a king pin support attachable to the trailer, a clutch plate carried by the support engageable with the fifth-wheel for angular movement therewith about the king pin, and brake means engageable with the clutch plate in response to appropriate braking pressures to restrain said angular movement.

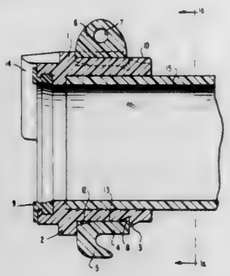
3,430,987
FIFTH WHEEL FOR VEHICLE
William A. Whitmire, Castro Valley, and Jack S. Webber, Walnut Creek, Calif., assignors to Bigge Drayage Co., a corporation
Filed May 23, 1967, Ser. No. 640,622
U.S. Cl. 280—438 **4 Claims**
Int. Cl. B62d *53/08*



A fifth wheel structure for tractor-trailer vehicles of the type wherein the trailer can tilt relative to the tractor

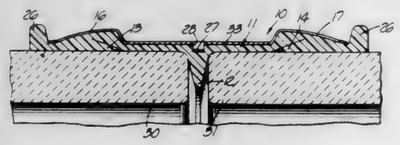
without putting a strain on the vehicle or the load wherein an arcuate member supports a rocker member in a bath of oil. In a preferred embodiment, a plastic insert of low friction coefficient rests between the two moving members.

3,430,988
PIPE COUPLING HAVING IDENTICAL HALVES FOR JOINING PLASTIC PIPES
Johann Karp, Mondorf, and Friedhelm Krebsbach, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Sept. 27, 1965, Ser. No. 490,314
Claims priority, application Germany, Oct. 2, 1964, D 45,547
U.S. Cl. 285—5 **6 Claims**
Int. Cl. F16l *37/08, 19/04*



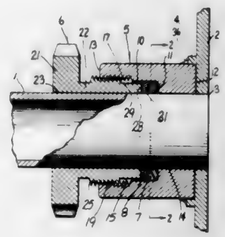
A coupling for each end of plastic pipes, to be connected together including a coupling body rigidly attached to the pipe and a harder and more rigid unitary annular ring connected to the outer circumference of the coupling body. Preferably, the coupling body is of the same plastic material as the pipe to provide a strong connection therewith and the ring is harder and more rigid to withstand the coupling stresses without deformations so that leaks will not occur. The coupling body may be telescoped with respect to or axially aligned with the pipe and connected therewith by welding, or the like. The ring may be made of hard and rigid synthetic plastic, metal or the like. The ring and coupling body may be provided with interengaging splines, or the like, to prevent relative rotation and may be provided with suitable wedged and conical surfaces so that the ring may be snapped over the coupling body by deforming the softer coupling body.

3,430,989
PIPE COUPLING
Paul H. Wendt, Arcadia, Calif., assignor to Pacific Clay Products, Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 642,757, June 1, 1967. This application Dec. 20, 1967, Ser. No. 692,071
U.S. Cl. 285—110 **6 Claims**
Int. Cl. F16l *21/00, 49/00*



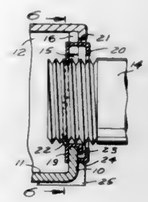
A coupling for connecting pipe ends which may vary in diameter and roundness has a tubular body formed of elastomeric material which has spaced internal deformable lips for contact with the outside surface of ceramic pipe ends, and the body is encircled by a spring steel shell. The shell has two series of axially extending slits encircling the deformable lips, so that the slit portions of the metal shell may expand radially to accommodate deformation of the sealing lips when pipe ends are inserted into the body, and so that the portion of the metal shell between the slit portions may resist shear loads between the pipe ends.

3,430,990
COUPLING
Donald R. Nelson, Worcester, Mass., assignor to Goddard Industries, Inc., Worcester, Mass., a corporation of Massachusetts
Filed Nov. 2, 1966, Ser. No. 591,565
U.S. Cl. 285—158 **2 Claims**
Int. Cl. F16l *37/00, 41/00*



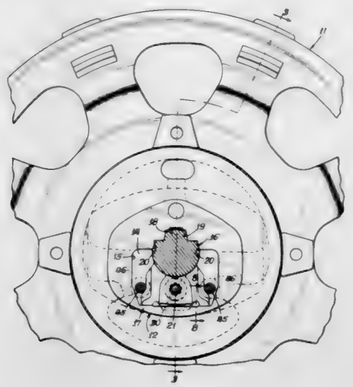
A coupling for a vacuum system in which a tube is secured in alignment with an opening in the wall of the system. A sleeve is welded within an annular flange on the wall. The sleeve has an internal, annular shoulder section coaxial with the tube and within which the resilient O-ring is positioned. A nut has a threaded shank which threads into the sleeve and compresses the O-ring so that it exerts radial force against the tube. A washer is interposed between the O-ring at the end of the shank of the nut.

3,430,991
SELF-HOLDING NUT FOR WALL OF ENCLOSURE
Noel A. Otto, Whippany, N.J., assignor to Automatic Switch Company, a corporation of New York
Filed June 15, 1967, Ser. No. 646,265
U.S. Cl. 285—206 **6 Claims**
Int. Cl. F16l *15/00;* **H02g** *3/18;* **F16b** *39/00*



Ring having internal screw thread located adjacent inner face of wall of housing and engages threaded fitting extending through hole in wall. Second ring adjacent outer face of wall has inturned peripheral rim to space ring away from wall a distance greater than length of overhang of housing cover past the wall. Integral web joins the two rings, web fitting into identation in edge of wall to prevent rotation of rings. Integral tab projects from one ring toward the other and engages edge of hole.

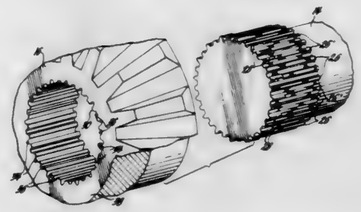
3,430,992
WEDGE WHEEL SECURING ASSEMBLY
John S. Palmer, Clarendon Hills, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1967, Ser. No. 632,351
U.S. Cl. 287—52.06 **8 Claims**
Int. Cl. F16b *3/06*



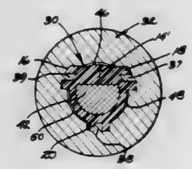
An assembly for releasably securing a tractor wheel in variable driving relation with an axle. A generally central opening in an enlarged hub-like portion of the wheel forms a housing for receiving (a) the axle in splined relation and (b) a sub-assembly of two oppositely tapered members mounted on a rotatable shaft and slidably arranged in variable spaced relation on the axle for movement, upon rotation of the shaft, of wedges embodied therein into and out of wedging engagement with opposing generally parallel longitudinally convex ramps of the housing. One member, in freely rotatable relation on the shaft, is held against movement longitudinally thereof: the other is threaded on the shaft, which, when the sub-assembly is in operative position and the members held against rotation, functions as a screw and causes said other to move longitudinally of the shaft as the latter is rotated. To facilitate release of the wheel, in the event that one of the members should fail to loosen upon approriate rotation of the shaft, supports in the form of cradles extending longitudinally of the members on opposite sides thereof in axially parallel relation with the shaft are provided to seat removable implements in the form generally of dumb-bells. The latter have radially extending terminal flanges engageable with complementary flanges of the housing and the members to limit movement of the other member relative to the axle. A dual arrangement of dumb-bells and associated parts, upon continued appropriate rotation of the shaft enables the distribution of retractive force alike to the opposing wedges of each member, consequent breaking of the wedging bond, and release of the members and wheel, while averting bending of the shaft.

3,430,993
CONNECTOR
Leonard J. Leshinsky, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,209
U.S. Cl. 287—53 **7 Claims**
Int. Cl. F16d *1/06, 1/10*

A spline coupling in which first and second parts are secured for rotation together by meshing splines. There are radially extending locking members formed adjacent to the ends of a first series of splines on the first part which engage an external shoulder on the second part when the parts are assembled to hold the members together. Blind assembly of the parts is made possible by forming certain grooves in the second part with a depth sufficient to accommodate the passage of the locking members on the first part therethrough. After the splined portion of the first part is passed through the second part, it can be relatively rotated to align the locking members with the external shoulder and again axially moved into meshing engagement with the second part to an extent limited by the engagement of the locking members and the shoulder.



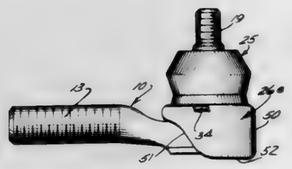
3,430,994
INSULATING HANDLE CONNECTOR AND METHOD OF MAKING SAME
Miner S. Keeler II, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 15, 1967, Ser. No. 623,366
U.S. Cl. 287—53 **6 Claims**
Int. Cl. B60b *27/00;* **F16c** *3/10;* **B22d** *7/04*



The subject matter of this invention comprises a manual or hand-operated handle and a connector element for non-rotatively coupling the handle to a control shaft which becomes heated in use. The connector element is extruded in long lengths from insulating material such as synthetic resin or plastic, and the extrusion is subsequently cut to size to form individual connector elements. The connector element extrusion is made as an open extrusion, having a lateral slit-like opening which extends longitudinally thereof. It also has a non-round central cavity and a series of longitudinal ridges on its outer periphery. The control shaft to be coupled to a handle is inserted into the non-round cavity of the individual connector element, and the connector element is then circumferentially contracted so that it may be inserted into an appropriate recess in the rear surface of the handle, with the aforementioned ridges on the outside of the connector element fitting into appropriate slot-like lateral enlargements in the handle recess. Circumferential contraction of the connector element closes the lateral opening therein and contracts the central cavity, thereby causing the connector element to grip the control shaft. The inherent plastic memory of the element opposes its contracted condition, thereby urging the ridges on the outer periphery of the connector into and against the inside of the slot-like enlargements of the handle recess to tight-

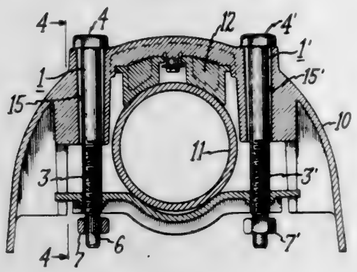
ly hold the handle upon the connector. The relative size and shape of the outer periphery of the connector element and the handle recess is not such as to bring adjacent surfaces thereof into contact, however. Instead, the handle recess is sufficiently larger than the connector to provide substantial air gaps therebetween which greatly augment the isolation of the handle from the heat of the control shaft.

3,430,995
BOOT SEAL RETAINERS
Edward J. Herbenar, Detroit, Richard Cass, Birmingham, and Eugene R. Kutcher, Warren, Mich., assignor to TRW Inc., a corporation of Ohio
Filed May 12, 1964, Ser. No. 366,846
U.S. Cl. 287—87 **6 Claims**
Int. Cl. F16c *11/06;* **F16j** *15/50*



1. In combination with a pivot joint having a generally cylindrical housing with an eye and a projecting stem normal to the housing and a stud pivoted in the eye with a shank projecting from one side of the eye substantially axially of the housing and normal to the stem, a seal and retainer assembly encircling the housing which comprises a flexible tubular boot having a first end surrounding and embracing the stud shank and a second end surrounding and embracing the eye, a boot harness having a rim embracing the second end of the boot and means depending from the rim bottomed on the eye opposite said one side and straddling said stem, said rim loading said second end of the boot into tight engagement with the eye and said depending means holding the rim against axial displacement relative to the eye.

3,430,996
ADJUSTING BOLT
Vincent J. Ulatowski, Exton, Pa., assignor to General Electric Company, a corporation of New York
Filed Sept. 8, 1966, Ser. No. 578,090
U.S. Cl. 287—189.36 **6 Claims**
Int. Cl. F16b *1/00, 7/00, 23*



Bolt used for adjusting luminaire slipfitter has a fixed head at one end, a threaded portion intermediate its ends for adjustably engaging a slipfitter clamp member, and a nut at its other end force-fitted onto a splined portion of the bolt.

3,430,997
PANEL JOINT
Robert L. Propst, Ann Arbor, and James O. Kelley, Saline, Mich., assignors to Herman Miller Inc., Zeeland, Mich., a corporation of Michigan
Filed Mar. 17, 1967, Ser. No. 623,878
U.S. Cl. 287—189.36 **10 Claims**
Int. Cl. F16b *1/00, 2/24;* **A47g** *29/02*



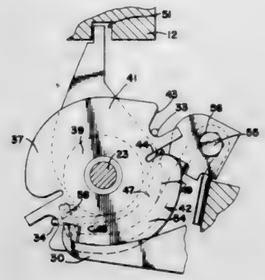
Each of the panels in a space divider system is provided with upper and lower wedge blocks. The upper wedge blocks have an inclined surface directed upwardly and away from their associated panel edges while the lower wedge blocks have an inclined surface directed downwardly and away from their associated panel edges. When the panels are butted together, the adjacent upper and lower wedge blocks each form opposed, generally triangular wedging surfaces. Upper and lower draw blocks, having generally V-shaped recesses therein adapted to fit over and compress the upper and lower wedge blocks together, are connected by an elongated tie bar. The tie bar has a screw therein affective to shorten or lengthen selectively its vertical dimensions. The draw blocks are drawn together by means of the tie bar to force the wedge blocks into closer and closer relationship with one another, thus rigidifying the panel joint.

Each of the panel edges is provided, additionally, with a channular recess wherein there is positioned an elongated hanger frame. The hanger frame comprises a pair of elongated box-like beams, each having a surface extending from the interior base of the flange and forming an open area between the base of the recess and the surface. Each of the surfaces is provided with a plurality of vertically aligned slots and a hanger clip, having a curved shank with at least two hook portions thereon, is adapted to be inserted into the slot by rotating the shank portion about vertical axes to clear the adjacent flange till the hook portions pass into the open areas. The hanger clip is then dropped downwardly for positive engagement with the hanger frame. In this manner, an accessory article may be supported from each edge of a single panel independently of the panel joint and, thus, the accessory article need not be removed when the panel joints are unlocked for rearrangement of the system. It is understood that this abstract is not to be utilized to limit the scope of this invention.

3,430,998
CORD HOLDER KEEPER
William K. Ralston, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,172
U.S. Cl. 289—14 **5 Claims**
Int. Cl. B65h *69/04*

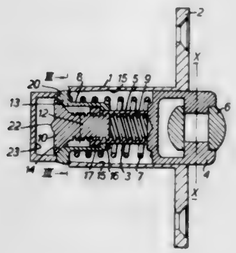
A cord holder assembly for use in a twine knotter mechanism and having a pair of axially spaced, notched

disks flanking a cleaner plate and a flexible keeper spring. The assembly is rotatable between a first position wherein the disks' notches are disposed for receiving a strand, and a second position wherein the disks' notches coop-



erate with the keeper spring to securely grip the received strand. The cleaner plate presents a contact surface positioned to cooperate with the keeper spring to retain the strand as the assembly moves from the first to the second position.

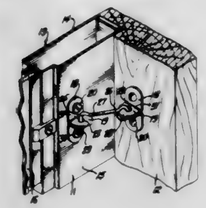
3,430,999
DOOR CATCHES
Michael Joseph James, Cheltenham, England, assignor to Micro and Precision Mouldings (Cheltenham) Limited, Cheltenham, England
Filed Feb. 6, 1967, Ser. No. 614,163
Claims priority, application Great Britain, Feb. 5, 1966, 5,163/66
U.S. Cl. 292—75 **8 Claims**
Int. Cl. E05c *19/04*



A roller door catch comprises a housing in which a plunger is slidably mounted, the plunger being spring loaded to a position in which a roller at the outer end of the plunger projects from the housing for engagement with a keeper mounted on the door frame. Reciprocation of the plunger within the housing, on door opening and closure, automatically and continually adjusts the outward projection of the roller.

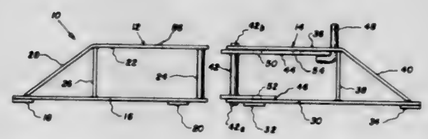
3,431,000
DOOR LATCH
Paul H. Choiniere, 1544 Connie, Madison Heights, Mich. 48071
Filed Aug. 7, 1967, Ser. No. 658,729
U.S. Cl. 292—95 **1 Claim**
Int. Cl. E05c *19/10;* **E05b** *15/02*

A fastening means of the hook and eye type for securing aluminum doors and windows to the casing. The fastening means is comprised of twin T-shaped sheet metal members fastened to the door and casing respectively, and



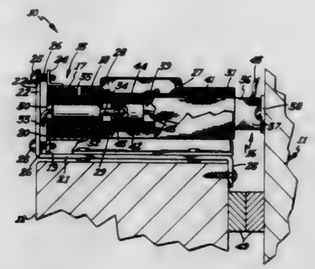
a hook catch for securing the two fastening members together.

3,431,001
SECURING MEANS FOR DOORS AND THE LIKE
La Verne R. Olsen, Rte. 2, Box 152, Osage, Iowa 50461
Filed Sept. 19, 1967, Ser. No. 668,891
U.S. Cl. 292—218 **3 Claims**
Int. Cl. E05c *3/04*



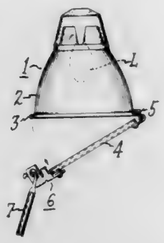
A mechanism which serves as a latch for a pair of relatively large doors, and also serves as handles for said doors, comprising a truss-like member extending outwardly from a surface of each door, wherein one member has spaced pivotable latch portions to engage the other member.

3,431,002
MAGNETIC DOOR LATCH
Hans L. Melgaard, Mound, Minn., assignor to Despatch Oven Company, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 14, 1966, Ser. No. 594,230
U.S. Cl. 292—251.5 **6 Claims**
Int. Cl. E05c *19/16;* **H01f** *7/08*



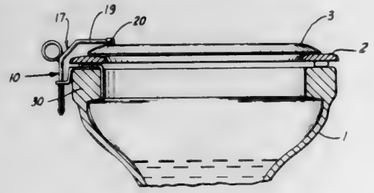
An electromagnetic door latch including an armature fixed to the door frame and a stator coil mounted on the door and surrounding the armature when the door is closed. A male connector on the stator and female connector on the armature mate when the door is closed thus completing the coil circuit, and energizing the coil. The energized coil attracts the armature and thus latches the door. A manual switch is provided for de-energizing the coil.

3,431,003
LATCH DEVICE
William D. Bacon, Jr., East Flat Rock, and Robert G. Kilpatrick, Hendersonville, N.C., assignors to General Electric Company, a corporation of New York
Filed July 14, 1967, Ser. No. 653,479
U.S. Cl. 292—256 **7 Claims**
Int. Cl. B65d *45/20*



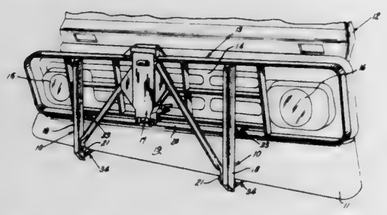
Latch for hinged glass cover of industrial luminaire comprises a swingable latch member pivotally secured to a plate fixed to the metal frame of the glass cover and having an aperture for engagement by a pole for opening and closing the latch.

3,431,004
TOILET SEAT FASTENER
James E. Schell, P.O. Box 91, Clute, Tex. 77531
Filed June 9, 1967, Ser. No. 644,988
U.S. Cl. 292—258 **4 Claims**
Int. Cl. A47k *13/24*; **B65d** *45/20*



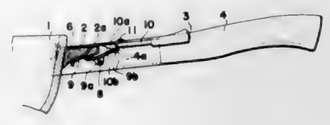
A toilet lid securing device having a rigid clamp portion for attaching to a toilet bowl flange and an arm piece rotatingly mounted on the rigid clamp outside of the toilet bowl. A spring is mounted on the arm piece to bias the arm against the toilet lid in its closed position. A finger ring is rigidly affixed to the arm piece to enable a person to rotate the arm piece out of engagement with the toilet lid.

3,431,005
VERTICAL BUMPER GUARD ATTACHMENT
Marvin J. Priefert, R.R. 1, Mount Pleasant, Tex. 75455
Filed Aug. 25, 1967, Ser. No. 663,392
U.S. Cl. 293—65 **6 Claims**
Int. Cl. B60r *19/04, 27/00*



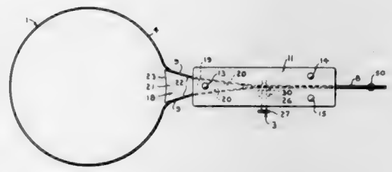
The bumper attachment includes a mounting member for a tow hitch wherein the mounting member is extended transversely of an adjacent to the bumper outer face. Opposite the outer face, the mounting member is formed with a longitudinally extended recess or indented section of a length only a little shorter than the width of the bumper. The bottom surface of the recess faces the bumper outer face and includes a pair of reversely inclined sections that converge together at a junction outwardly from the bumper outer face. A clamping unit attached to the mounting member adjacent each end of the recess is connectable with a corresponding edge of the bumper. Located between the bottom surface of the recess and the bumper outer face is an adjustable abutment means, the adjustment of which predetermines the angle of attachment of the mounting member relative to the bumper.

3,431,006
DETACHABLE HANDLE APPARATUS FOR CASSEROLE DISHES OR THE LIKE
Seiichi Makita, Nagoya-shi, Aichi-ken, Japan, assignor to Nippon Toki Kabushiki Kaisha, Nagoya-shi, Aichi-ken, Japan, a corporation of Japan
Filed Sept. 8, 1966, Ser. No. 577,904
Claims priority, application Japan, May 27, 1966, 41/48,903
U.S. Cl. 294—31 **5 Claims**
Int. Cl. A47j *45/10*



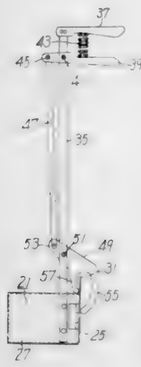
A detachable handle apparatus for connection with an object having an integral extension extending therefrom, said handle apparatus including a handle portion which is secured with respect to the extension by means of a clamping member pivotally connected with respect to the handle portion and adapted to be cammed into a locking engagement with the extension by means of a locking lever connected with respect to said handle portion for pivotal movement in a horizontal plane.

3,431,007
HANDLE ASSEMBLY
Roy Paulsen, 748 Water St., Hobart, Ind. 46342, and Ronald L. Day, 611 Gladys St., Michigan City, Ind. 46360
Filed Mar. 9, 1967, Ser. No. 621,980
U.S. Cl. 294—31.2 **7 Claims**
Int. Cl. A47j *45/10*



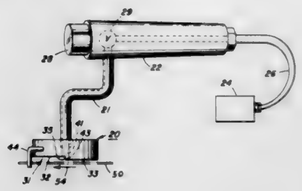
The invention is directed to a handle assembly which comprises a handle and a band for supporting a container and an extension on the band which is slidably adjustable in the handle, and the handle is provided with a forwardly extending formation for engaging a container in order to stabilize the connection between the band and container.

3,431,008
PORTABLE SCAVENGING MEANS FOR REMOVING FECES OF ANIMALS AND OTHER UNTOUCHABLE SOLIDS
Takeki Narita, 25–13, 1-chome, Kitamagome, Ota-ka, Tokyo, Japan
Filed Nov. 14, 1967, Ser. No. 682,962
Claims priority, application Japan, July 22, 1967, 42/47,314
U.S. Cl. 294—55 **6 Claims**
Int. Cl. A01b *1/02*; **A47f** *13/08*



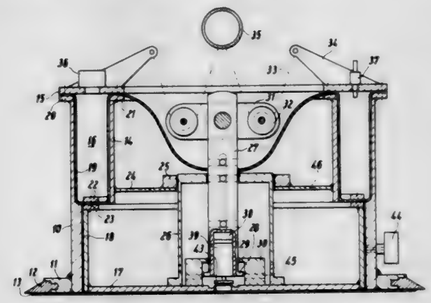
This disclosure relates to an invention in the portable scavenging means for removing feces of animals as dogs, and other untouchable solids from as streets. It is believed that there his not been proposed any means for such a peculiar purpose as this invention other than extremely primitive means. The portable scavenging means in accordance with this invention is a stick having a box on the lower end thereof. The box has a lid which may be opened from the top of the stick and automatically closed.

3,431,009
PICKUP DEVICE FOR SUPPORTING WORKPIECES ON A LAYER OF FLUID
Walter Kester Mammel, Yardley, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 6, 1967, Ser. No. 607,792
U.S. Cl. 294—64 **7 Claims**
Int. Cl. B66c *1/00*



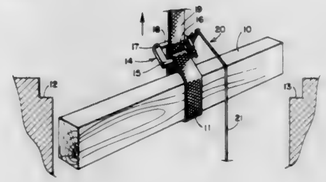
A pickup device has a step formed across a working face and a passageway, intersecting the step through which pressurized fluid is passed to exert a reduced pressure head on a semiconductor slice to support the slice on a layer of fluid while applying a lateral force to drive the slice against a stop.

3,431,010
VACUUM LIFTING DEVICE, PREFERABLY FOR FLAT OBJECTS
Rudolf Glanemann, Greven, Germany, assignor to Vacu-Lift Maschinenbau-Gesellschaft mit beschränkter Haftung, Greven, Westphalia, Germany, a firm
Filed Sept. 6, 1967, Ser. No. 665,883
Claims priority, application Germany, July 25, 1968, G 48,369
U.S. Cl. 294—64 **7 Claims**
Int. Cl. B66c *1/02*



A vacuum lifting device, preferably for flat objects, is provided, wherein an outer cylinder, adapted to be placed on an object to be lifted, has in its interior a piston and thereabove an inner cylinder of a diameter leaving an annular chamber between both cylinders into which a U-shaped flexible sheet gasket extends from above. A cover provided with a non-return valve and an air discharge valve closes the annular chamber on top. The piston has a geared down piston rod in the lower end of which a reversing valve including an operating cylinder is provided which automatically opens and closes.

3,431,011
RELEASABLE LUMBER SLING DEVICE
John L. Martin, Santa Monica, and Robert J. MacKey and Warren H. Bower, Los Angeles, Calif., assignors to Beven-Herron, Inc., Torrance, Calif., a corporation of California
Filed Mar. 2, 1967, Ser. No. 620,091
U.S. Cl. 294—75 **6 Claims**
Int. Cl. B66c *1/18*



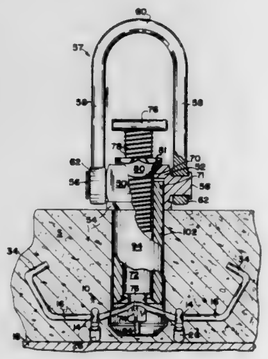
This disclosure relates to a lumber sling device which may be actuated from a remote distance to release the sling from its load. The device includes a frame means defining a rectangular shape such that one end of a lumber sling can be secured to one side of the rectangular shape and the sling then passed around a load to be carried with a portion extending up through the rectangular shape to bear against the opposite side. The portion of the sling extending up through the rectangular shape connects to a hoisting mechanism such as a crane. Another side of the rectangular shape constitutes a latch mechanism connected to a control line such as a string or cord which dangles down from the latch mechanism. The arrangement is such that when a load of lumber is carried to an elevated level and set in a desired position such that the load on

the sling is relieved, an operator from a remote location such as below the lumber or on the ground, can pull the line which will operate the latch mechanism and open up the rectangular shape in such a manner that the sling may be pulled free of the load without the necessity of an operator manually removing the sling.

3,431,012
ANCHOR INSERT AND PICKUP UNIT FOR A CONCRETE SLAB

Peter D. Courtois, Des Plaines, and George J. Eriksson, Morton Grove, Ill., assignors to Superior Concrete Accessories, Inc., Franklin Park, Ill., a corporation of Delaware

Filed Oct. 23, 1967, Ser. No. 677,400
U.S. Cl. 294—86 **8 Claims**
Int. Cl. E04b *1/60;* **B66c** *1/10*



An improved anchor insert adapted to be positioned on the foundation surface of a concrete slab form so that when concrete is poured into the form the insert becomes embedded therein, and an improved separate pickup unit including a torque stem which, when introduced through a hole in the concrete leading to the embedded insert and then twisted through an angle of 90°, becomes interlocked with the insert. A bail on the pickup unit enables the latter to be hoisted for slab-elevating purposes.

3,431,013
COMBINATION ROUND AND HEXAGONAL PUSHER GRIPS

Nickolas Hoyson, 321 Academy St., Carnegie, Pa. 15106

Filed Oct. 5, 1967, Ser. No. 672,901
U.S. Cl. 294—102 **2 Claims**
Int. Cl. B65h *5/14*



Combination round and hexagonal pusher grips to provide ease for an operator of a machine to handle hexagonal bars, round bars, and the like, which bars are cold drawn steel of all sizes and dimensions. The pusher grips are provided so that the flat side is down and edges into a V-slot in the grips, and at least three or more bars may be handled by the grips of the invention at one time with less effort and resulting in greater production and better quality.

3,431,014
HEADWIND DEFLECTOR

Erich Fritsch, Mettmann, Germany, assignor to Fritsch & Co. HG, Mettmann, Germany

Filed Dec. 9, 1966, Ser. No. 600,662
Claims priority, application Germany, Dec. 11, 1965, F 29,249
U.S. Cl. 296—1 **10 Claims**
Int. Cl. B60r *13/08, 27/00*

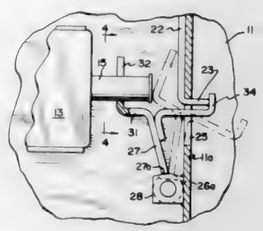


A deflector for the headwind which develops during movement of a vehicle, such deflector having a deflecting portion which extends along a transversely extending edge portion bounding the front end of an opening provided in the vehicle body, and a mounting portion adapted to be fastened to this front edge portion. Fastening means is provided securing the deflector to the front edge portion, and positioning means is releasably connectable to the mounting portion prior to fastening thereof to the front edge portion and receivable in a recess provided along the front edge portion to thereby position the deflector in predetermined relationship relative to the front edge portion during fastening with the fastening means.

3,431,015
LADING SUPPORTING AND SEPARATING MEANS

Henry D. Breen, Chicago, and Russell M. Loomis, Palos Heights, Ill., assignors to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 10, 1967, Ser. No. 615,139
U.S. Cl. 296—24 **9 Claims**
Int. Cl. B62d *33/04;* **B61d** *45/00, 17/00*

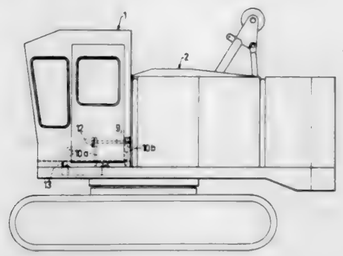


A lading separating and support means for a freight-carrying body is provided by a combination of elongated apertured tracks that extend along the opposed side walls of the body and are arranged for cooperation with rectangular planar panels that may be mounted on the tracks selectively in a horizontal or upright attitude. The panels have outwardly extending support pins for entry into apertures on the track means, and the track means are movable between an operative position spaced inwardly from the wall of the body, and an inoperative position spaced closely adjacent the wall of the body, the latter so as to create minimum interference with normal storage of lading within the body.

3,431,016
METHOD OF REDUCING THE PROFILE OF A VEHICLE

Just Henrik Mundt-Petersen and Karl Åke Eriksson, Landskrona, Sweden, assignors to Aktiebolaget Landsverk, Landskrona, Sweden

Filed Jan. 3, 1967, Ser. No. 607,023
Claims priority, application Sweden, Dec. 7, 1966, 208/66
U.S. Cl. 296—28 **8 Claims**
Int. Cl. B60p *9/00;* **B60r** *27/00;* **B60s** *11/00*

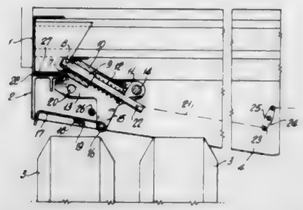


A vehicle having an operator control cab which is hinged on one of its outer walls to a portion of the vehicle body to enable the cab to be swung about the hinge axis into an inclined position to reduce its effective vertical height at a certain point on the vehicle for clearance purposes during transportation. Preferably the hinge axis lies in a horizontal plane located between the midpoint and base of the cab.

3,431,017
CONTAINER TRUCK LOCKING MECHANISM

Jean-Jacques Joseph, Paris, France, assignor to Frangeco, Societe Anonyme Francaise, Puteaux, Hauts-de-Seine, France, a corporation of France

Filed Nov. 13, 1967, Ser. No. 681,994
Claims priority, application France, Nov. 10, 1966, 83,178
U.S. Cl. 296—35 **6 Claims**
Int. Cl. B62d *33/02;* **B60p** *7/08;* **B61d** *45/00*

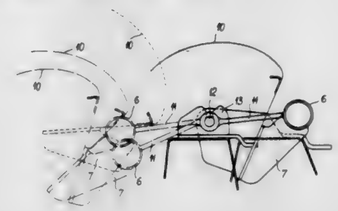


A container truck comprising a truck unit having an upper plane surface and a container unit having a bottom surface for engagement with said first surface in the loaded position is fitted with retractable locking means. The locking device comprises essentially a perforate locking plate fast on and extending inwardly at predetermined incline angle from the bottom surface of the container, and a cooperating locking mechanism upon the truck comprised of a pivotally mounted support and an operating lever therefor, to operate the same between a retracted or inoperative position below the surface of the truck and an operative position of projection beyond said surface. Sliding mounted upon said support is a locking bolt fitted with spring means, to urge the same, in the operative position of the support, into locking engagement with a perforation of said plate, to firmly connect and lock said units.

3,431,018
CONVERTIBLE SEATS FOR AUTOMOTIVE VEHICLES

Georges Caron, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France

Filed May 29, 1967, Ser. No. 641,779
Claims priority, application France, July 15, 1966, 69,502
U.S. Cl. 297—66 **3 Claims**
Int. Cl. B60n *1/10;* **A47c** *13/00*

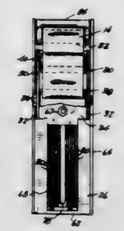


Convertible seat for automotive vehicles which comprises displaceable bench and backrest elements, characterised in that said backrest is mounted by means of double hinge means on the one hand about a cylindrical tubular member and on the other hand about a pair of cylindrical coaxial members carried each by a lever rigid with said tubular member and disposed respectively adjacent one and the other end thereof, the axes of said hinge means being parallel to the longer sides of said backrest.

3,431,019
INERTIA RETRACTING DEVICE WITH ENERGY ABSORBING ELEMENT

Gerald F. Lewis, Berkley, and David P. Jones, Detroit, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.

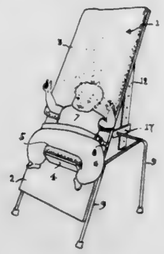
Filed Apr. 21, 1967, Ser. No. 632,646
U.S. Cl. 297—386 **11 Claims**
Int. Cl. B60r *21/10*



An energy absorbing seat belt mounting device having a belt retracting unit permitting unrestrained feed-out of the extended occupant restraining portion of the belt from a stored position in response to normal movements of the occupant. The seat belt travels through a set of locking rollers which react to an excessive belt feed-out rate by clamping the belt to the retractor mounting member to prevent a further extension of the belt from the retracting unit. An excessive feed-out rate corresponds to a sudden belt extension caused by inertial forces tending to displace the occupant from his seat during a sudden deceleration of a vehicle.

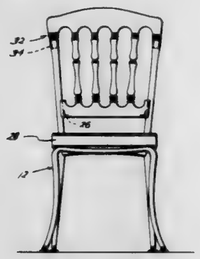
The locking rollers and retracting unit are mounted on a yoke which is mounted to the vehicle for movement in a direction corresponding to the movement of the belt. A predetermined tensile force acting on the belt, with the locking rollers in a clamped condition, causes the yoke to move at a controlled rate as a set of teeth scrape a series of grooves in an expandible energy absorbing element. The groove scraping action absorbs the deceleration forces acting on the occupant through the belt.

3,431,020
THERAPEUTIC SUPPORTING DEVICE
Maurice Tyndall, 5503 91st Ave., Edmonton, Alberta, Canada
Filed Oct. 24, 1966, Ser. No. 589,068
U.S. Cl. 297—378 **1 Claim**
Int. Cl. B60n *1/02;* **B60r** *21/10*



Apparatus for suporting a child encased in a congenital hip cast. It includes a flat back board tiltably mounted on a supporting framework. A crotch block, which fits snugly between the legs of the cast supports the weight of the child and cast and prevents them from tipping to either side. A strap is provided to secure the child to the board. Means are provided to fix the board at any upright angle in spaced relation above the floor.

3,431,021
CHAIR
Wayland B. Parker, South Boston, Va., assignor to Schlumberger Limited (Schlumberger N.V.), Houston, Tex., a corporation of the Netherlands Antilles
Filed Apr. 5, 1967, Ser. No. 628,742
U.S. Cl. 297—445 **10 Claims**
Int. Cl. A47c *3/00*



A chair is provided with upwardly extending tubular metal back supporting members. An intricately designed molded plastic back has portions near its upper, outer edge which extend downwardly into mating reception within the tubular back support members. Portions near the lower edge of the molded plastic back have concave surfaces therein for matingly engaging the side of the tubular back support members. This construction provides for the assembly of the structural members of a chair made from dissimilar materials while maintaining continuity in the appearance of the construction.

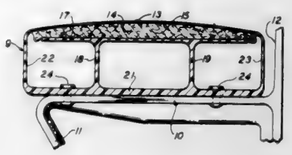
3,431,022
CHAIR CONSTRUCTION
Robert P. Poppe and Donald E. McNally, Grand Rapids, Mich., assignors to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed May 29, 1967, Ser. No. 641,780
U.S. Cl. 297—445 **29 Claims**
Int. Cl. A47c *5/00, 7/00, 1/12, 11/00*

A chair construction having a relatively thin seat portion suspended along both of its side edges between a pair of horizontally extending rail portions forming a part of a frame arrangement, in which the side edges of the seat portion are flared to provide a dovetail and each of the rail portions have a dovetailed groove forward therein, such that the seat portion is attached to the rail portions by sliding engagement of such flared enlargements and grooves to form a dovetail joint, which then supports the seat portion in a sling suspension. Also, a support structure is provided which extends between the aforesaid rail portions to maintain a desired separation thereof when



weight is placed upon the seat portion. The support structure is spaced beneath the seat portion for the most part, but has a support shoe at each end which is disposed immediately beneath and in contact with the underside of the seat portion immediately inwardly of the aforesaid dovetailed joint. Also, leg structures are provided for the chair which have portions lying laterally adjacent the rail portions and secured to the aforesaid support structure so as to clamp the rail portions between the leg structures and the end extremities of the support structure.

3,431,023
SEAT FOR A BENCH
Paul G. Anderson, Ontario, Calif., assignor of thirty-three and one-third percent each to Freeman A. Parsons and Floyd H. Wells, San Bernardino, Calif.
Filed Jan. 23, 1967, Ser. No. 610,839
U.S. Cl. 297—452 **4 Claims**
Int. Cl. A47c *7/16, 27/12, 31/00*

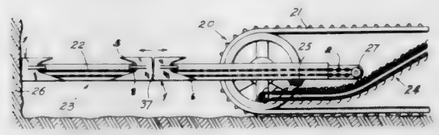


A seat or back for a bench, adapted to be supported by braces horizontally spaced, comprising an elongate "Fiberglas" tube with internal ribs extending the length of the tube. The ribs hold a pad support spaced from the load bearing wall of the tube. A resilient pad lodges between the tube load bearing wall and the support on the ribs. The ribs, pad and pad support are coextensive with the tube.

3,431,024
COAL-CUTTING TOOL
Ernst Braun and Gert Braun, Essen-Heisingen, Germany, assignors to Halbach & Braun, Maschinenfabrik, Wuppertal-Barmen, Germany, a German company
Filed Mar. 27, 1967, Ser. No. 626,060
Claims priority, application Germany, May 18, 1966, H 59,432
U.S. Cl. 299—34 **10 Claims**
Int. Cl. E21c *25/22*

Cutting tool for the mining of minerals such as coal, comprising a lower ramp knife with a forward cutting edge and an ascending surface terminating at a throat

flared to one side for laterally deflecting, onto an adjoining conveyor trough or other receptacle, mineral lumps riding up that surface; a shorter upper ramp knife extends forwardly from this throat and diverges upwardly from the ascending surface of the lower knife while curving away from the discharge side of the throat, the lateral boundaries of the two ramp knives on the side opposite the discharge side lying substantially in a com-



mon vertical plane beyond which a still shorter ripping knife projects forwardly and laterally outwardly between these boundaries. The entire assembly may be symmetrically duplicated on two halves of a tool body designed for reciprocating motion along a conveyor trough onto which the mineral lumps are to be discharged, the halves being advantageously hinged together to allow lifting of the lower knife for reducing its drag during reverse motion.

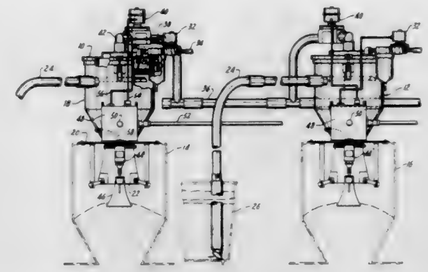
3,431,025
WELDED SPOKED WHEEL
Bruce N. Smith, P.O. Box 197, Newcastle, N.H. 03854
Continuation of application Ser. No. 535,428, Mar. 18, 1966, which is a division of Ser. No. 268,178, Mar. 26, 1963, now Patent No. 3,251,978, dated May 17, 1966. This application Oct. 9, 1967, Ser. No. 674,013
U.S. Cl. 301—59 **1 Claim**
Int. Cl. B60b *1/04*



A wire spoke wheel of all-welded construction for use with baby carriages or the like. The spokes are welded at their outer ends to an annular rim and at their inner ends to a hub. The hub includes a central tube and a cap having an axially directed flange at each end of the hub. The inner ends of the spokes are positioned and welded between the edges of the caps and the ends of the tube.

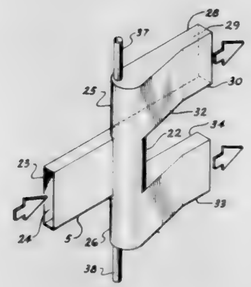
3,431,026
MATERIAL TRANSPORTING DEVICE
John D. Russell, 1361 Pittsburgh Road, Franklin, Pa. 16323
Filed Nov. 30, 1966, Ser. No. 598,103
U.S. Cl. 302—27 **10 Claims**
Int. Cl. B65g *53/04, 53/28*

A sequencing central vacuum loader system having a vacuum source and preferably a source of compressed air interconnected with multiple vacuum loaders so that the individual loaders are sequentially supplied with material followed by blow back air applied to the filters of all of the loaders simultaneously after which the sequential



supplying of material recommences except that loaders with filled hoppers are by-passed in a fraction of a second with material being supplied only to those loaders not having filled hoppers.

3,431,027
FLOW DIVIDER FOR PNEUMATICALLY CONVEYED STRINGY MATERIAL
Edward L. Kochey, Jr., Colebrook, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 691,043
U.S. Cl. 302—28 **8 Claims**
Int. Cl. B65g *53/42, 53/52*

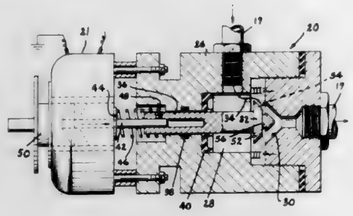


An apparatus for dividing a stream of pneumatically conveyed stringy material into two streams. The inlet to a cylindrical chamber is eccentrically located to provide a whirling motion within the chamber. An outlet is located at each end of the cylindrical chamber to allow lateral movement of the material in both directions from the inlet. An outlet duct is located at each end eccentric of the cylinder centerline to receive the material in the direction of the whirling motion. The outboard side of this outlet duct is flush and tangent with the cylinder wall. The inboard side of the duct is flared to be approximately flush with the opposite side of the cylinder.

3,431,028
BRAKE SYSTEM AND METHOD OF OPERATION
Herbert G. Yoder, R.R. 3, Bellefontaine, Ohio 43311
Filed Feb. 21, 1966, Ser. No. 532,518
U.S. Cl. 303—6 **5 Claims**
Int. Cl. B60t *13/46;* **F16k** *31/04, 51/00*

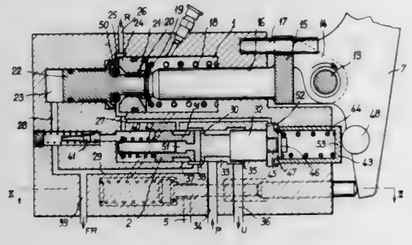
Brake system for front and back wheel brakes having a common source of pressure fluid for the actuation thereof in which a flow restrictor is serially connected between

the source and the front brake actuators to delay the build-up of pressure in the front brake actuators together with



means to make the restrictor selectively effective or ineffective.

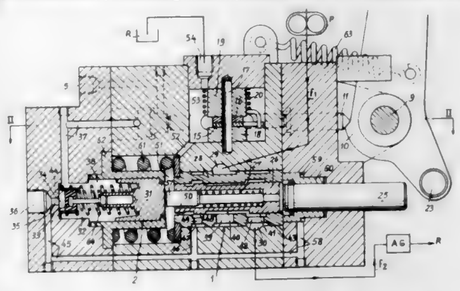
3,431,029
POWER-ASSISTED HYDROSTATIC BRAKING SYSTEMS FOR TRACTOR VEHICLES AND THEIR TRAILERS
Raymond Bouell and Gérard Gardeux, Billancourt, France, assignors to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France
Filed Oct. 24, 1967, Ser. No. 677,573
Claims priority, application France, Nov. 24, 1966, 84,824
U.S. Cl. 303—7 **8 Claims**
Int. Cl. B65t *13/00;* **B60t** *13/74, 13/16*



A hydrostatic braking system wherein each brake pedal is solid with the movable member controlling the master cylinder delivering the hydrostatic fluid pressure and acts mechanically and simultaneously on said master cylinder and on the brake selector, and also on the servo-action distributor adapted to transmit to a piston of said master cylinder and if necessary to the braking system of the trailer, in the case of a tractor vehicle, a hydrodynamic pressure corresponding to the effort exerted on the brake pedal and permitting of maintaining in the brake cylinders a pressure proportional to said effort.

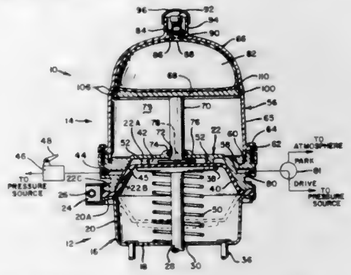
3,431,030
HYDRODYNAMIC BRAKING DEVICES WITH HYDROSTATIC SAFETY FEATURE FOR TRACTOR VEHICLES WITH OR WITHOUT TRAILERS
Raymond Bouell and Gérard Gardeux, Billancourt, France, assignors to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France
Filed Oct. 24, 1967, Ser. No. 677,696
Claims priority, application France, Nov. 23, 1966, 84,635
U.S. Cl. 303—7 **10 Claims**
Int. Cl. B60t *13/00;* **F16b** *7/00*

In this device the brake pedals act in succession on a selector, a hydrodynamic braking distributor and through the latter on a master cylinder, said distributor comprising two concentric slide valves one of which permits isolating the fluid reservoir from the valves of the brake selector, causing said valves to communicate with the fluid hydrodynamic circuit and producing a fluid pressure increment in the brake lines, the other slide valve, during its movement, causing said pressure to be adjusted, the



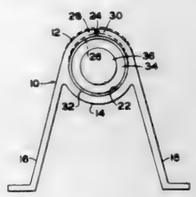
master cylinder causing in turn, under the control of the first slide valve, the safety brake application in case of stoppage of the hydrodynamic circuit feed pump.

3,431,031
VEHICLE BRAKE OPERATOR
Ernest C. Ike, Cloverdale, Calif., assignor to Wiz Corporation, San Francisco, Calif., a corporation of California
Filed Jan. 28, 1965, Ser. No. 428,765
U.S. Cl. 303—9 **15 Claims**
Int. Cl. B60t *13/46*



A brake operating unit includes a cylinder and piston movable therein. One end of the cylinder is closed and means are provided to supply fluid under pressure to this closed end to move the piston into a brake released position. An air filled pressurized bladder is located in the other end of the cylinder and biases the piston toward the closed end of the cylinder. When pressure is released from the closed end of the cylinder the piston is moved by the pressurized bladder to the brake applied position.

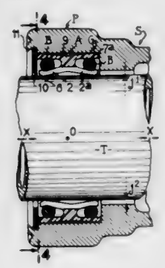
3,431,032
ANNULAR SPLIT BEARING HOUSING
Walter D. Haentjens, R.D. 31, Sugarloaf, Pa. 18249
Original application Dec. 30, 1964, Ser. No. 422,255, now Patent No. 3,335,481, dated Aug. 15, 1967. Divided and this application Mar. 24, 1967, Ser. No. 625,717
U.S. Cl. 308—15 **2 Claims**
Int. Cl. F16c *13/00, 39/00, 35/00*



A bearing housing cast in varying degrees of thickness and cooled unevenly to set up stresses which after boring

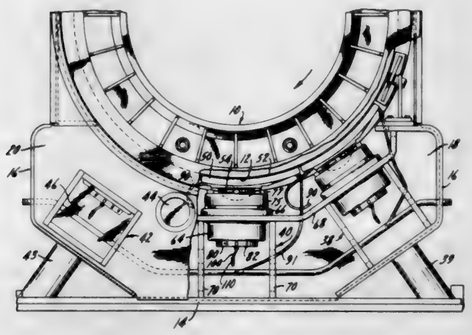
and splitting of the housing allow it to compress inwardly reducing the size of the bore to clamp securely onto a bearing carried thereby.

3,431,033
ELASTICALLY YIELDABLE ELEMENT FOR A BEARING AND A BEARING INCLUDING SAID ELEMENT
Marcel Dangauthier, Paris, France, assignor to Societe Industrielle et Commerciale des Automobiles Peugeot, Paris, France, a French body corporate
Filed July 28, 1967, Ser. No. 656,928
Claims priority, application France, Sept. 7, 1966, 75,470
U.S. Cl. 308—26 **4 Claims**
Int. Cl. F16c *27/02, 35/02, 33/02*



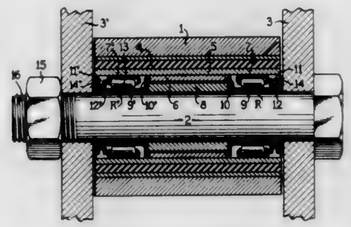
Elastically yieldable element comprising a main ring of a rigid but elastically yieldable material having a radial section roughly in the shape of an H lying on its side, that is, having two pairs of outer and inner flanges forming therebetween lateral recesses, the inner flanges being cut by slots spaced circumferentially equal distances apart, and elastomer second rings disposed in the recesses and compressed between the flanges.

3,431,034
SUPPORTING MEANS FOR BEARINGS AND THE LIKE
Guy L. Saunders, Toronto, Ontario, Canada, assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 24, 1967, Ser. No. 611,297
U.S. Cl. 308—73 **4 Claims**
Int. Cl. F16c *17/06, 17/08*



Adjustable supports for mill trunnions, in which pistons are adjustable within cylindrical guides, each piston supporting a bearing for the trunnion, a fluid system for moving the pistons, for adjustment toward the trunnion, and means for securing the pistons in adjusted position.

3,431,035
FLEXIBLE BEARING IN PARTICULAR FOR AN AUTOMOBILE VEHICLE SUSPENSION
Marcel Dangauthier, Paris, France, assignor to Societe Industrielle et Commerciale des Automobiles Peugot, Paris, France, a French body corporate
Filed June 19, 1967, Ser. No. 647,040
Claims priority, application France, June 21, 1966, 66,215
U.S. Cl. 308—184 **3 Claims**
Int. Cl. F16c *27/00*



A flexible bearing incorporated in an arm of an automobile vehicle suspension and comprising two needle rolling bearings interposed between a rigid tubular element surrounded by a flexible sleeve and a spindle which is rotatable relative to said arm.

3,431,036
SUBMERGIBLE ANTIFRICTION BEARINGS
C Walton Musser, Palos Verdes Estates, Calif., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 8, 1967, Ser. No. 644,598
U.S. Cl. 308—187 **11 Claims**
Int. Cl. F16c *1/24, 33/78*

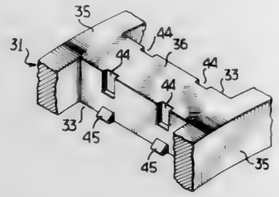


An anti-friction bearing having means associated therewith for controlling the flow of lubricant and gas to and from its rolling elements. A substantially stationary shield at one side of the bearing defines a lubricant inlet, and on the opposite side a rotary shield serves as an impeller to eliminate from between the races of the bearing excess fluid whereby the bearing may operate, even when fully submerged, at relatively high speed without undue rise in temperature.

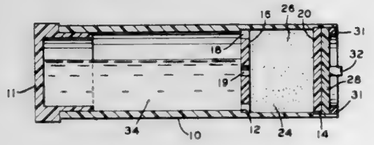
3,431,037
RETAINER LUG CONSTRUCTION
Carl F. Benson, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed July 3, 1967, Ser. No. 650,690
U.S. Cl. 308—217 **4 Claims**
Int. Cl. F16c *33/46*

This subject has to do with a retainer for rolling bearing elements wherein the retainer is of the type which includes a pair of side rims and bars extending at spaced intervals between the side rims and combining therewith to define

pockets. This disclosure particularly has to do with the formation of retaining lugs on the bars with the lugs projecting into the pockets. The lugs are formed by means of punches which form grooves in the faces of the lug defining walls of the pockets with the resultant material being extruded under controlled conditions remote from the grooves generally normal to the face of the bar to define lugs.

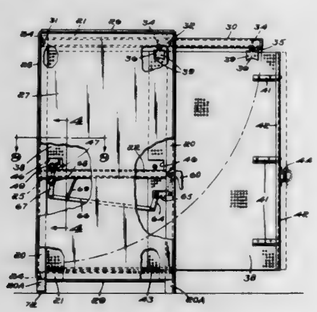


3,431,038
HUMIDIFIER DEVICE
Martin Berliner, 100 Water St., Brooklyn, N.Y. 11201
Filed Aug. 15, 1967, Ser. No. 660,629
U.S. Cl. 312—31 **3 Claims**
Int. Cl. A24f *25/02*



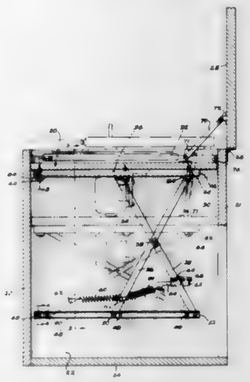
Unitary humidifier to be placed in humidors, food containers, and the like, having a water reservoir in communication with a chamber of tightly packed fibrous, water-absorbent material with an adjustable opening to the surrounding area to emit moisture laden air with varying amounts of moisture.

3,431,039
STORAGE CABINET
Robert G. Marks, 35 Cottage St., Watertown, Mass. 02172
Filed May 15, 1967, Ser. No. 638,315
U.S. Cl. 312—221 **16 Claims**
Int. Cl. E05c *7/06, 13/04;* **E05b** *65/46*



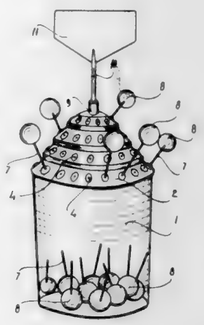
Cabinets provided with overhead tracks slidably supporting panels to which objects are attached and which are slidable from storage into exposed positions, with means holding the other panels in storage when one is exposed, with means locking all of the panels within the cabinet.

3,431,040
PLATFORM ELEVATION CONTROL MECHANISM
Malcolm T. Phelps and Carl H. Little, Jamestown, N.Y., assignors to Weber-Knapp Company, Jamestown, N.Y.
Filed Aug. 22, 1967, Ser. No. 662,405
U.S. Cl. 312—272 **4 Claims**
Int. Cl. A47b *97/00, 81/00;* **C11b** *1/00*



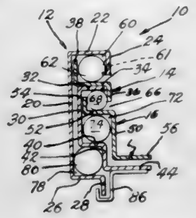
An improved platform elevation control mechanism which is particularly adapted to control the raising and lowering of a platform in a record player cabinet or the like wherein the cabinet includes a swinging top cover or lid and wherein the platform carries the weight of the record player mechanism and records, and other accessories such as the tuner, amplifier, etc.; and wherein the platform rises and lowers in response to manual movements of the cabinet cover.

3,431,041
DISPLAY CONTAINER
Enrique Bernat Fontlladosa, 184 Paris St., Barcelona, Spain
Filed Nov. 17, 1965, Ser. No. 508,196
U.S. Cl. 312—284 **2 Claims**
Int. Cl. A47f *3/00, 7/00*



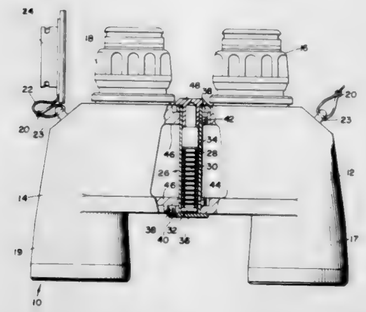
A display container for articles having a stem. A transparent vessel holds a supply of the articles and the cover has a series of truncated cone convergent steps extending to a vertex which has a cylindrical member extending outwardly for a display card. Each step of the convergent steps has a series of openings with pieces tightly fitted therein and each of the pieces has a blind bore to hold the stems. Each of the pieces is also provided with a flange contacting the outer surface of the cover.

3,431,042
CANTILEVER LOADING EXTENSIBLE DRAWER RAIL
John Pipe, Grand Rapids, Mich., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 18, 1965, Ser. No. 497,266
U.S. Cl. 312—339 **6 Claims**
Int. Cl. A47b *88/10*



Drawer supporting and straddling rail assemblies achieving excellent retained alignment between the rails in the individual assemblies due to both vertical and lateral compressive loading on each of the individual balls between the rails, such compressive loading resulting from the torsional force applied with unique cantilever loading of the assembly, this cantilever loading being accomplished by the drawer rail having specially arranged and oriented cantilever loading portions.

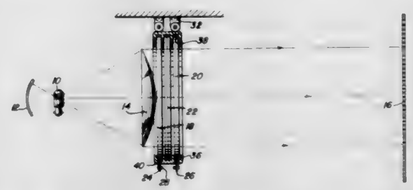
3,431,043
BINOCULAR INTERPUPILLARY HINGE ASSEMBLY WITH FRICTIONAL O-RINGS
Patrick J. Cassidy and Milton L. Quammen, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 24, 1965, Ser. No. 510,147
U.S. Cl. 350—75 **7 Claims**
Int. Cl. G02b *7/12, 7/00;* **E05d** *11/08*



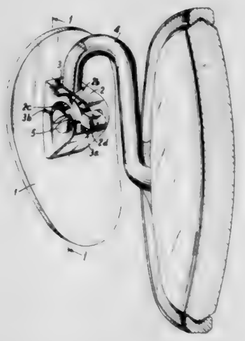
A frictional hinge device for connecting two halves of a binocular and holding them at a proper interpupillary setting. The hinge device includes a sleeve secured to one half of the binocular and a friction shaft secured to the other half and having grooves therein for receiving resilient O-rings whereby insertion of the shaft into the sleeve creates friction engagement between the binocular halves.

3,431,044
DIMINUTIVE MECHANICAL METHOD OF CHANGING COLOR AND COLOR SATURATION
William T. Clark III, Alexandria, La. (Box 63, 31 McAlister Drive, New Orleans, La. 70118)
Filed Jan. 4, 1965, Ser. No. 422,900
U.S. Cl. 350—158 **4 Claims**
Int. Cl. G02c *1/24*

A relatively simple mechanical apparatus and method for producing various colors and color saturation from a light source consist of a first polarizing element and a multiple refractive element, relatively rotatable with one another, and a second polarizing element relatively rotatable with both said first polarizing element and said multiple refractive element.



3,431,045
EYEGLASSES WITH ADJUSTABLE NOSE PADS
Anton Dietrich, Munich, Germany, assignor to Optische Werke G. Rodenstock, Munich, Germany
Filed Feb. 19, 1965, Ser. No. 434,016
Claims priority, application Germany, Feb. 20, 1964, O 9,969; Jan. 9, 1965, O 10,593
U.S. Cl. 351—137 **4 Claims**
Int. Cl. G02c *5/12*

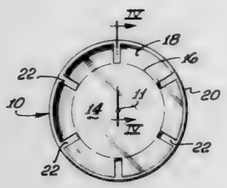


A nose pad mounting construction for an eyeglass frame includes a carrier element, of deformable material which has a portion projecting from a surface of the nose pad and having walls defining a bore substantially parallel to the nose pad surface and extending along the pivot axis of the nose pad. A holder for securement to the eyeglass frame has a cap member loosely laterally embracing the carrier element, with the inner edge of the cap member being initially spaced from the surface of the nose pad. A bolt extends transversely through the cap member and, with substantial clearance, through the bore. The carrier element is selectively deformable by pressure applied between the nose pad and the outer end of the carrier element to expand its wall laterally into engagement with the inner surface of the cap member and to deform its outer wall inwardly against the bolt to engage the inner edge of the cap member with the nose pad.

3,431,046
FLEXIBLE POLYETHYLENE CORNEAL CONTACT LENS
Tom J. Conrad, Venice, and Glenn O. Dayton, Jr., Los Angeles, Calif., and Max Arlin, Boulder City, Nev., assignors to Studies, Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 14, 1964, Ser. No. 345,004
U.S. Cl. 351—160 **1 Claim**
Int. Cl. G02c *7/04*

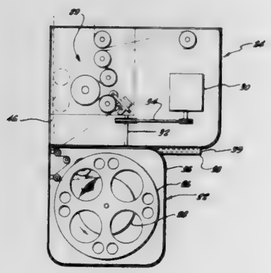
A corneal contact lens having a generally concave-convex shape, said lens being constructed of a plastic

material which is soft, sufficiently transparent and wettable to the tear fluid of the eye to be acceptable in the optical trade, flexible enough to conform to the shape of the eye as the lens moves thereacross, and is lighter than the tear fluid of the eye so that the lens will float on the tear fluid. A method of making a contact lens as described above from polyethylene by heating the polyethylene to a temperature at which said polyethylene becomes amorphous, shaping the amorphous polyethylene to the shape of a corneal contact lens, and quenching the



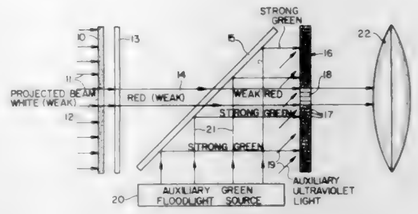
polyethylene while in said shape to a temperature below 150° F. so that the resulting polyethylene has a low degree of crystallinity, thereby imparting clearness to the polyethylene. If it is desired to grind the polyethylene to close tolerances the temperature of the polyethylene should be lowered to below minus 30° F. prior to such grinding. To impart sufficient wettability to the polyethylene the surface of the polyethylene should be oxidized so that said polyethylene is capable of being wetted by the tear fluid of the eye and thereby be attracted to the eye by capillary action.

3,431,047
FILM MAGAZINE AND RECEPTACLE
Joseph H. Lancor, Jr., Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Continuation-in-part of application Ser. No. 485,768, Sept. 8, 1965. This application Dec. 3, 1965, Ser. No. 511,429
U.S. Cl. 352—72 **6 Claims**
Int. Cl. G03b *23/02*



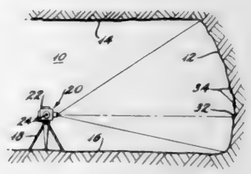
A film supply and take-up station for motion picture film. The station comprises a mounting structure for a cassette and the cassette itself. A supply and take-up reel are mounted in a coaxial relationship on opposite sides of a partition in the cassette. Suitable indexing means are provided on the cassette and the mounting structure for quickly registering and subsequently locking the cassette in position on the mounting structure. Auxiliary drive means are mounted on the structure and are adapted for operative engagement with a drive linkage on the cassette for providing power to turn the supply and take-up reels.

3,431,048
PROJECTION SYSTEM HAVING SECONDARY IMAGE CARRIER
Bruno F. Ludovici, Owego, N.Y., and Gerhard K. Megla, Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 18, 1966, Ser. No. 587,485
U.S. Cl. 353—22 **11 Claims**
Int. Cl. G03b *21/26*



An image projection system in which an image is transferred from a primary image carrier to an intermediate image carrier, a photochromic glass plate, which is illuminated by a high intensity light to provide the projected image. The photochromic glass plate is initially darkened by an ultraviolet light. A weak red light which has passed through a primary image carrier bleaches an image on the photochromic glass plate which is identical to that contained on the primary image carrier.

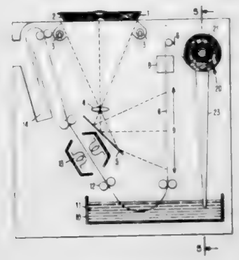
3,431,049
METHOD IN ROCK BLASTING OPERATIONS FOR MARKING OUT DRILL HOLE PATTERNS
Bo Gunnar Nordgren, 4 Mabarsstigen, Lahall, Sweden
Filed Sept. 7, 1966, Ser. No. 577,652
Claims priority, application Sweden, Sept. 9, 1965, 11,759/65
U.S. Cl. 353—121 **4 Claims**
Int. Cl. G03b *21/12*



A method of making holes for explosives for use in the blasting of rock faces in tunnels. The method includes the steps of preparing a projector slide in which the hole positions are located on a reduced scale corresponding to the ratio of the sizes of the rock face and the slide and are adjusted for the particular profile of the rock face, optically projecting an image of the slide onto the rock face, and drilling holes for explosives at the positions indicated by the image.

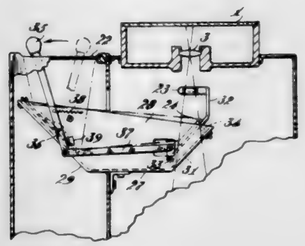
3,431,050
COMBINATION PAPER AND DEVELOPER SUPPLY
Charles S. Jenkins, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 4, 1967, Ser. No. 607,174
U.S. Cl. 355—10 **9 Claims**
Int. Cl. G03g *15/10*

A single package containing both paper and developer. The paper is wound about a core within which is sufficient developer to be used with the amount of paper wound about the core. When the package is placed in a



copying machine, the developer will automatically be fed to a reservoir from which it may be accessed.

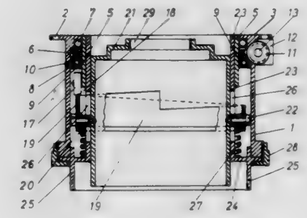
3,431,051
PHOTOCOPIER
William P. Tosti, Milford, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed June 22, 1967, Ser. No. 648,149
U.S. Cl. 355—45 **3 Claims**
Int. Cl. G03b *13/28*



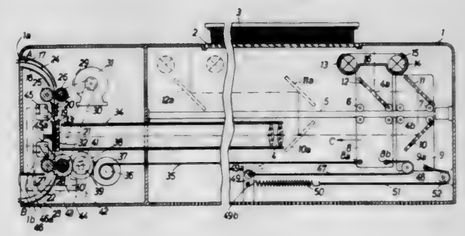
A photographic apparatus for making enlarged prints of microfilm or small opaque records in which an image of a record in a record window is projected along a path by a first objective lens to a reading window. Also in the projection path is a second objective lens and a reflector mounted on a common sub-frame carrier which is pivotally mounted to permit image projection to the reading window in one position and image projection to light-sensitive material in another position as controlled by an actuator connected to the sub-frame carrier.

3,431,052
AUTOMATIC FOCUSING DEVICE FOR PHOTOGRAPHIC REPRODUCER
Alex Jacknau, Berlin-Spandau, Germany, assignor to AGFA-Gevaert Aktiengesellschaft, Munich, Germany
Filed Oct. 21, 1966, Ser. No. 588,456
Claims priority, application Germany, Oct. 22, 1965, J 29,232
U.S. Cl. 355—58 **10 Claims**
Int. Cl. G03b *27/36*

1. An automatic focusing device for a photographic reproducer mounted upon a column upon which it is vertically adjustable relative to its object surface, said reproducer having a lens and image plane the distance between which is adjustable in accordance with the distance of said reproducer from said object surface, said device comprising a tubular housing connected to said reproducer, said lens being attached to a lens tube which is mounted to slide axially within said tubular housing whereby its distance from said image plane is varied, circular cam and follower means mounted within said tubular housing and providing axial movement therewithin in response to its rotation, connecting means coupling said lens tube to said circular cam and follower means whereby axial movement of said lens tube is obtained in response to said rotation of said circular cam and follower means, circular drive means mounted upon said tubular housing and connected to said circular cam and follower means whereby said circular cam and follower means is rotated, rack and pinion gear means mounted substantially parallel to said column for providing a rotational output related to the position of said reproducer upon said column, and transmission means connecting said rack and pinion means to said circular drive means whereby the axial position of said lens is automatically adjusted relative to said image plane in response to movement of said reproducer upon said column relative to said object surface.

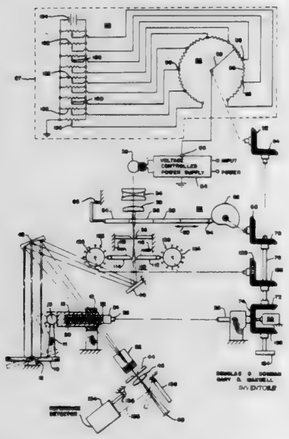


3,431,053
OPTICAL COPYING APPARATUS
Richard Wick, Grunwald, near Munich, Fritz Waschk, Munich, and Jurgen Orthmann, Grunwald, near Munich, Germany, assignors to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Oct. 14, 1965, Ser. No. 495,904
Claims priority, application Germany, Oct. 24, 1964, A 47,429
U.S. Cl. 355—66 **15 Claims**
Int. Cl. G03b *27/70*



An optical copying apparatus wherein the admission of a photosensitive sheet results in energization of a clutch for two reflectors which deflect images of successive zones of a stationary subject into a lens so that the lens focusses the images on the travelling carrier. One of the reflectors travels at half the speed of the other reflector and the reflectors automatically return to starting positions on completion of an exposure.

3,431,054
MONOCHROMATOR DEVICE
Douglas D. Doonan, Irondequoit, and Gary B. Maxwell, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Oct. 29, 1965, Ser. No. 505,683
U.S. Cl. 356—100 **11 Claims**
Int. Cl. G01j *1/32;* **G01n** *21/22*



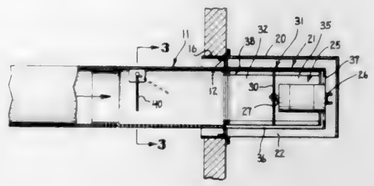
2. The combination comprising:
a source of radiant flux having an output energy level determined by the amount of electrical power applied thereto and generating a range of radiant flux wavelengths corresponding to at least a predetermined range of wavelengths;
an electrically controllable power supply circuit connected to said source of radiant flux for applying electrical power thereto, the amount of power applied to said source of radiant flux being determined by applying an electrical control signal thereto;
a monochromator device receiving said radiant flux on an entrance slit and dispersing said radiant flux on an exit slit thereby providing an output radiant flux through said output slit having a limited band of wavelengths, said monochromator device including means for variably positioning said dispersed radiant flux on said exit slit so that said wavelengths included in said band of wavelengths is variable over said predetermined range of wavelengths;
drive means coupled to said means for variably positioning said dispersed radiant flux for scanning said monochromator device over said predetermined range of wavelengths;
a plurality of filters;
means coupled to said drive means for selectively positioning at least one of said plurality of filters adjacent to one of said slits for filtering said radiant flux applied thereto;
variable control signal generating means coupled to said drive means to generate a preset electrical control signal that varies in a manner that is approximately inversely related to the flux level of the monochromator device output flux as said monochromator device is scanned over said predetermined range of wavelengths;
circuit means coupling said variable control signal generating means to said power supply circuit to apply said electrical control signal thereto whereby the output energy level of said source of radiant flux is varied so that the energy level of flux received by said monochromator device is correspondingly varied in a manner that its output flux tends to remain substantially constant as said monochromator device is scanned over said predetermined range of wavelengths, and
an adjustable slit mechanism positioned adjacent one of said slits and being coupled to said drive means to open or close the slit therebetween in a preset manner to cooperate with said electrical control signal to hold the flux level of said monochromator device output flux substantially constant.

3,431,055
CLEANING DEVICE
George M. Lowery, 1612 N. Ricketts, Sherman, Tex. 75090
Filed July 8, 1966, Ser. No. 563,818
U.S. Cl. 401—28 **7 Claims**
Int. Cl. A46b *11/00;* **A61h** *11/00*



A device for rubbing against a person's body, the device containing soap or shampoo which is released therefrom upon the person's body, the device having a handle at each opposite end so that it may be conveniently handled in being drawn across the body skin.

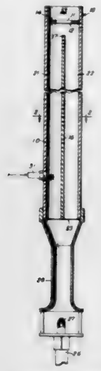
3,431,056
FORCED DRAFT VENT ASSEMBLY
Donald E. Winegardner, Huntington, Ind., assignor to The Majestic Company, Inc., Huntington, Ind., a corporation of Indiana
Filed May 19, 1967, Ser. No. 639,865
U.S. Cl. 431—20 **3 Claims**
Int. Cl. F23n *3/08;* **H01h** *35/40*



A forced draft vent assembly for a gas log including a conduit and a swingably mounted sail positioned in the conduit and sensing the movement of air through the conduit. The sail is connected to a variable resistor which controls the speed of an electric motor driving the air moving impeller. In one embodiment the impeller is a blower downstream of a hanging sail while in another embodiment the impeller is a propeller upstream of an upright spring mounted sail.

3,431,057
GAS FUELED IGNITER
Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,671
U.S. Cl. 431—263 **3 Claims**
Int. Cl. F23q *7/10*

An ignition device formed principally of an elongated tubular element into which a gas-air mixture is supplied. A partition extends lengthwise within the tubular element which serves to separate the gaseous mixture moving through the device into two portions. Ignition of the portion of the gas-air mixture at one side of the partition provides ignition for both portions at the downstream end



of the partition. The device serves as an ignition device for various type burners.

3,431,058
PIEZOELECTRICALLY IGNITED GAS TORCH
George H. Hufferd, Lyndhurst, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed Mar. 30, 1962, Ser. No. 183,830
U.S. Cl. 431—264 **5 Claims**
Int. Cl. F23q *3/00;* **B23k** *5/22*

1. A piezoelectrically ignited gas burning torch connectable to a source of gas comprising, in combination: housing means including a conduit for gas; piezoelectric means operably disposed in relation to said housing means and piezoelectrically responsive to compressive stress application; means structurally associated with said housing means for establishing a jet of gas in flow communication with the gas source, said jet being located in an environment of substantially atmospheric pressure; means connected to said piezoelectric means for applying a compressive force thereto over a relatively long period of time to permit dissipation of a substantial part of the piezoelectric charge generated by the stressing of said



piezoelectric means, then to suddenly relieve the stress over a period of time which is short compared to the aforesaid period of time and adapted to generate an electric potential; a conductive circuit including means electrically connected with said piezoelectric means to effect said dissipation, and a spark gap connected in series with said piezoelectric means, said spark gap being located in operable proximity to said gas jet; and wherein said means for applying a compressive force to said piezoelectric means includes a hydraulic fluid volume displacement force multiplying means for transmitting and intensifying the compressive force.

CHEMICAL

3,431,059
ZIRCHROME MINERAL DYEING PROCESS FOR PRODUCING CELLULOSIC MATERIALS WITH A PLURALITY OF DEGRADATION RESISTANCE FACTORS
Charles J. Conner and Gary S. Danna, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Jan. 30, 1967, Ser. No. 613,073
U.S. Cl. 8—52 **26 Claims**
Int. Cl. D06m *1/00;* **D06p** *1/00*

A practical method for producing cellulosic materials with a "pearl gray" finish with a plurality of degradation resistance factors. This method has been designated the title Zirchrome Process, and reduces a multibath treatment to a single bath application wherein a hexavalent chromium compound and an inhibited reducer are applied with zirconyl ammonium carbonate, with or without a fungicide and/or wax. The reduction to a "pearl gray" colored mineral dyeing is effected by either a heat cure or simply by allowing the impregnated material to air dry. The finished cellulosic materials have an accepted coloration, microbiological degradation resistance, and water repellency. These characteristics are imparted to cellulosic materials, such as textiles, through a single-bath application.

3,431,060
AEROSOL DETERGENT COMPOSITIONS
John Harlan Pickin, Madison, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,353
U.S. Cl. 8—137 **2 Claims**
Int. Cl. D06l *1/12;* **C09k** *3/30*

An aerosol detergent composition containing a propellent and a mixture of surface active agent and a textile optical brightening agent. The aerosol detergent composition is useful in pretreating highly soiled areas of textile materials prior to laundering in an aqueous detergent.

3,431,061
PRESERVING METHOD FOR OUTDOOR STORAGE OF WOOD USED IN PAPER MANUFACTURE
Richard R. Chase and James C. McKee, Savannah, Ga., assignors to Union Bag-Camp Paper Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,692
U.S. Cl. 21—60.5 **2 Claims**
Int. Cl. A61l *15/00*

A method for the outside storage of a pile of wood pieces, such as cordwood, pulpwood or wood chips used as the raw material in paper manufacture in order to preserve the pile in outside storage prior to manufacturing paper from the preserved pile consisting essentially of encasing the pile of wood pieces and the atmosphere between these pieces in a flexible membrane which is highly resistant to the passage of oxygen and to moisture vapor, the limited consumption of oxygen within the membrane-encased pile on standing causing the level of oxygen within the encased atmosphere to reach a value below 0.5% of oxygen by volume and thereby preventing destructive microbial and fungal growth to thereby minimize rotting, decay, insect attack and similar deterioration and make the stored wood usable for high quality paper manufacture.

3,431,062
ANTIEVAPORANT PROCESS AND COMPOSITION
Richard C. Fox, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Oct. 26, 1964, Ser. No. 406,554
U.S. Cl. 21—60.5 **3 Claims**
Int. Cl. C09k *3/00;* **E03b** *3/40*

Composition for retarding water evaporation consist-

ing essentially of from 70 to 99.4% by weight of a hydrocarbon oil, from 0.5 to 10% by weight of a wax and from 0.1 to 20% by weight of a copolymer of an alkyl methacrylate and vinyl pyrrolidone.

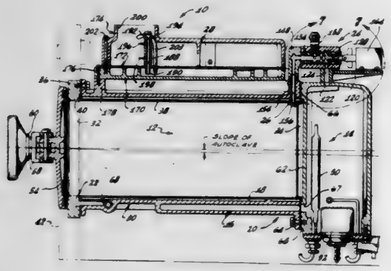
3,431,063
PROCESS AND COMPOSITION FOR RETARDING WATER EVAPORATION
Richard C. Fox, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Oct. 26, 1964, Ser. No. 406,587
U.S. Cl. 21—60.5 **4 Claims**
Int. Cl. C09k *3/00;* **E03b** *3/40*

Composition for retarding water evaporation consisting essentially of from 70 to 99.4% by weight of a hydrocarbon oil, from 0.5 to 10% by weight of a wax and from 0.1 to 20% by weight of an alkenylsuccinic acid, anhydride, ester or amide.

3,431,064
ANTIEVAPORANT PROCESS AND COMPOSITION
Richard C. Fox, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,800
U.S. Cl. 21—60.5 **3 Claims**
Int. Cl. C09k *3/00;* **E03b** *3/40*

Composition for retarding water evaporation consisting essentially of from 70 to 99.4% by weight of a hydrocarbon oil, from 0.5 to 10% by weight of a wax and from 0.1 to 20% by weight of rosin, polymerized rosin, maleic acid modified rosin, hydrogenated rosin, disproportionated rosin, amine and ester derivates of same.

3,431,065
AUTOCLAVE
Emil R. Schipanski, San Jose, Calif.
(3843 Carol Ave., Fremont, Calif. 94538)
Filed Apr. 6, 1965, Ser. No. 445,933
U.S. Cl. 21—96 **5 Claims**
Int. Cl. A61l *1/00, 3/00, 5/00*

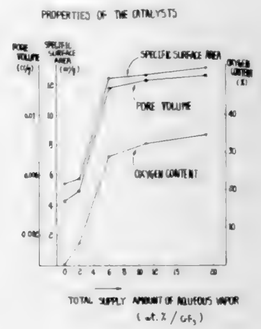


An autoclave comprising: (a) a sterilization chamber having an outer pressure wall and an inner liner spaced therefrom and having a top steam port at one end and a bottom condensate port at the other end, both ports communicating with the interior of the liner; (b) a steam boiler which is in contact with a limited area of the pressure wall of the sterilization chamber so that some heat passes from the boiler into the sterilization chamber whether steam flows from the boiler to the sterilization chamber or not; a condenser vented to atmosphere and communicating with both the steam and condensate ports; a thermostatic control valve regulating flow of steam and air through the condensate port; and a two-position control valve for passing steam from the boiler through the steam port when in one position and for exhausting steam through the steam port to atmosphere through the condenser when in a second, normal position.

3,431,066
METHOD FOR PRODUCING YTTRIUM ALUMINUM OXIDE GARNET CRYSTALS
Russell Seitz, Elberon, N.J., assignor of one-third to Albert C. Nolte, Jr., New York, N.Y.
No Drawing. Filed Sept. 24, 1965, Ser. No. 490,069
U.S. Cl. 23—20 **1 Claim**
Int. Cl. C22b *59/00*

Yttrium aluminum oxide garnet crystals are produced by reacting yttrium oxide and aluminum oxide in molten sodium aluminum fluoride and then cooling the melt to crystallize thereout the resultant yttrium aluminum oxide.

3,431,067
METHOD OF MANUFACTURING A FLUORINATION CATALYST
Kaoru Kato, Toyonaka-shi, and Shigeyoshi Ogawa, Sultashi, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan
Filed Jan. 18, 1966, Ser. No. 521,394
Claims priority, application Japan, Jan. 23, 1965, 40/3,536
U.S. Cl. 23—88 **13 Claims**
Int. Cl. C01b *9/08;* **B01j** *11/78*



Anhydrous chromium fluoride is heated at 300° to 750° C. in a stream of a gaseous mixture of molecular oxygen and water vapor to provide an improved activated amorphous fluorination catalyst.

At least 6 weight percent of water vapor is used based on the weight of chromium fluoride being activated.

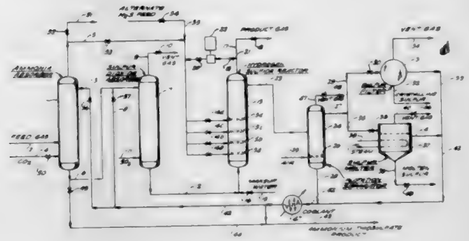
3,431,068
METHOD OF PREPARING ALKALI METAL HALIDES
George A. Burk, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 27, 1966, Ser. No. 560,878
U.S. Cl. 23—89 **10 Claims**
Int. Cl. C01d *3/12, 3/10, 3/00*

Alkali metal halides substantially free of halates are prepared by reacting elemental bromine or iodine with an alkali metal hydroxide in a liquid saturated alcohol or ketone or a liquid saturated aldehyde.

3,431,069
PRODUCTION OF SODIUM TRIPOLYPHOSPHATE
Robert B. Hudson, St. Louis, Mo., and Robert E. Mesmer, Oak Ridge, Tenn., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 12, 1967, Ser. No. 645,498
U.S. Cl. 23—106 **8 Claims**
Int. Cl. C01b *25/30*

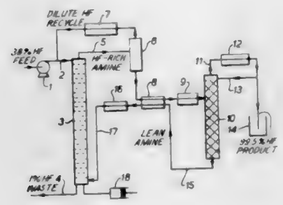
Sodium tripolyphosphate products are produced having an assay of from about 91% to essentially 100% by weight of sodium tripolyphosphate, a Form I sodium tripolyphosphate to Form II sodium tripolyphosphate weight ratio of from about 1:5 to about 3:1 and a water insoluble content of less than 0.20% by weight by calcining sodium orthophosphate salts at elevated temperatures in the presence of from about 0.03% to about 5% of a potassium source. Calcination temperatures are significantly lowered by the practice of the invention.

3,431,070
METHOD OF TREATING AMMONIA AND HYDROGEN SULFIDE GASES TO PRODUCE AMMONIUM THIOSULFATE AND SULFUR THEREFROM
James L. Keller, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Apr. 28, 1964, Ser. No. 363,212
U.S. Cl. 23—115 **15 Claims**
Int. Cl. C01b *17/64, 17/04*



A process for producing ammonium thiosulfate and sulfur in which ammonia is absorbed in an aqueous solution of ammonium thiosulfate and reacted with sulfur dioxide in the absence of any substantial quantity of hydrogen sulfide, the product of this reaction being then reacted with hydrogen sulfide to yield aqueous ammonium thiosulfate and sulfur. The ammonium thiosulfate and sulfur can be recovered from the aqueous media.

3,431,071
RECOVERY OF HYDROGEN FLUORIDE
Malcolm Patrick Simpson, Harwell, William Horton Hardwick, Upton, Peter Desmond Blundy, Leeds, and David Rowland Morris, London, England, assignors to United Kingdom Atomic Energy Authority, London, England
Continuation of application Ser. No. 149,104, Oct. 31, 1961. This application Apr. 27, 1965, Ser. No. 453,381
Claims priority, application Great Britain, Nov. 10, 1960, 38,724/60; Mar. 10, 1961, 8,881/61; May 1, 1961, 15,770/61
U.S. Cl. 23—153 **8 Claims**
Int. Cl. C01b *21/52;* **C07c** *87/23*



A process for recovering strong hydrogen fluoride from an aqueous solution thereof comprises contacting the solution with a solvent-free, water-insoluble liquid tertiary aliphatic amine of the class of amine having hydrofluorides which are water insoluble liquids and preferably of the class wherein each aliphatic group attached to the nitrogen atom is a primary fully saturated alkyl group of 6 to 10 carbon atoms having a chain of at least 6 carbon atoms terminating at the nitrogen atom; separating from the mixture an organic liquid phase which contains the amine and hydrogen fluoride, probably in the form of the amine hydrofluoride; and heating such separated phase to a temperature sufficient to decompose the amine hydrofluoride to recover hydrogen fluoride therefrom.

3,431,072
PROCESS FOR RECOVERY AND USE OF SULFUR DIOXIDE
Maurice Rozie, Ville D'Avray, and Pierre Desire, Saint-Clair-du-Rhone, France, assignors to Societe Progil, Paris, France
Filed Mar. 27, 1967, Ser. No. 626,200
U.S. Cl. 23—165 **8 Claims**
Int. Cl. C01b *17/60, 25/18, 17/56*

A process for utilizing sulfur dioxide contained within the effluents from the manufacture of sulfuric acid employing the contact process, which involves reacting such effluent mixture with the residual liquors obtained in the manufacture of alkali metal phosphates by the neutralization of phosphoric acid with alkali metal hydroxides and carbonates, converting the resulting mixture containing corresponding alkali metal sulfites and/or bisulfites with oxygen or sulfuric acid, and employing the resulting neutral sulfate-containing mixture as a reactant in the wet process for producing phosphoric acid.

3,431,073
METHOD OF PRODUCTION OF ACTIVE BERYLLIUM OXIDE POWDERS
Kazuo Kobayashi and Michiaki Yamauchi, Nagoya, Japan, assignors to NGK Insulators, Ltd., Nagoya, Japan, a corporation of Japan
Filed Dec. 21, 1964, Ser. No. 420,041
Claims priority, application Japan, Dec. 26, 1963, 38/70,013
U.S. Cl. 23—183 **7 Claims**
Int. Cl. C01f *3/00*

Active beryllium oxide powders having a large surface area are prepared by dissolving a beryllium compound such as the sulfate, carbonate, acetate, nitrate, chloride, oxalate, or hydroxide in an aqueous solution of sulfuric acid, nitric acid, hydrochloric acid or ammonium hydroxide to give a beryllium salt solution, adjusting the pH of the solution between 1.5 and 5.0, evaporating said aqueous solution so as to produce a viscous of flossy residue of beryllium compound and thermally decomposing the beryllium compound at a temperature of from 300 to 1,200° C.

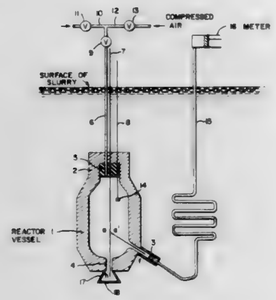
3,431,074
PROCESS FOR THE PRODUCTION OF HIGHLY AMORPHOUS CARBON BLACK
Merrill E. Jordan, Walpole, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Nov. 15, 1966, Ser. No. 594,446
U.S. Cl. 23—209.3 **5 Claims**
Int. Cl. C09c *1/56*

1. A process for producing amorphous carbon black which comprises:
(a) providing a thermal plasma having a temperature of at least about 6000° K. plasma fuel elements of Group VIII of the Mendeleev Periodic Table,
(b) charging carbon feedstock into said thermal plasma,
(c) treating the resulting plasma effluent at above about 2500° F. with chlorine or bromine, and
(d) recovering the resulting carbon black as product.

3,431,075
PRODUCTION OF CARBON BLACK
Thomas J. Gunnell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,262
U.S. Cl. 23—209.4 9 Claims
Int. Cl. C09c 1/50

1. In a process for producing carbon black wherein, a plurality of streams of hot combustion gases resulting from the combustion of like combustible mixtures of a hydrocarbon fuel and an oxidant are introduced into a generally cylindrical first zone having a diameter greater than its length, a hydrocarbon feedstock is introduced along the longitudinal axis of said first zone, said feedstock surrounded by a moving blanket of hot combustion gases passes into an axially aligned generally cylindrical second zone having a length greater than its diameter, and carbon black product is recovered from the gaseous effluent from said second zone, the improvement comprising: producing at least one of said streams of hot combustion gases by burning a combustible mixture of a hydrocarbon fuel and an oxidant containing an amount of oxidant which is less than the stoichiometric amount required for the burning of said fuel; and producing at least one other of said streams of hot combustion gases by burning a combustible mixture of a hydrocarbon fuel and an oxidant containing an amount of oxidant which is greater than the stoichiometric amount required for the burning of said fuel.

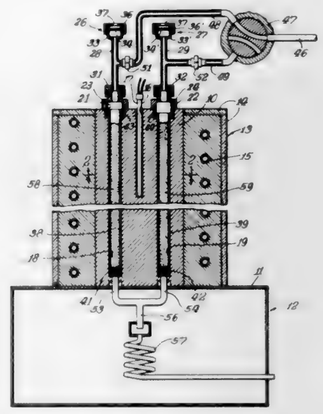
3,431,076
METHOD AND APPARATUS FOR THE DETERMINATION OF FREE SULPHATE ION IN SLURRIES
Raymond Frederick Hall and Kenneth Arthur Sherwin, Ipswich, Suffolk, England, assignors to Fisons Fertilizers Limited, Felixstowe, Suffolk, England
Filed July 6, 1966, Ser. No. 563,254
Claims priority, application Great Britain, July 8, 1965, 28,961/65
U.S. Cl. 23—230 15 Claims
Int. Cl. G01n 31/02; C01b 25/18



1. A method for estimating free sulphate ion in a wet process phosphoric acid slurry which comprises reacting, in measured proportions, the liquid phase of said slurry with a liquid reagent which undergoes an irreversible exothermic reaction with sulphate ion and measuring the rise in temperature produced by the reaction of the sulphate ion and the slurry, and deducing therefrom the concentration of free sulphate ion in said slurry.

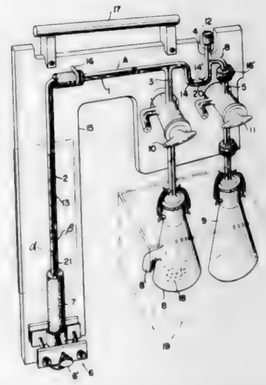
3,431,077
ANALYTICAL APPARATUS
Joseph D. Danforth, 1332 Broad St., Grinnell, Iowa 50112
Filed July 18, 1966, Ser. No. 565,853
U.S. Cl. 23—253 10 Claims
Int. Cl. G01n 31/08

1. An analytical apparatus comprising means defining a plurality of heated and temperature-controlled chambers adapted to contain a solid test material, each of said chambers having an inlet and an outlet, means for introducing a carrier gas selectively into the inlet of any one



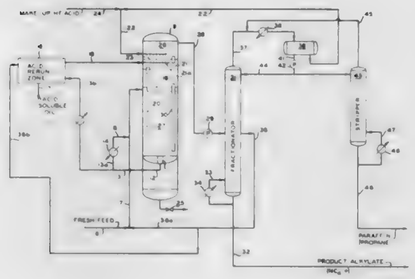
of said chambers, and a single chromatographic column having a fluid connection with the outlet of each of said chambers for receiving effluent gas therefrom.

3,431,078
RESPIRATION MEASURING APPARATUS
Yasutsugu Yokohama, Chiba-ken, Japan, assignor to Yasutsugu Yokohama, Chiba-ken, and Nikko Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Oct. 27, 1966, Ser. No. 590,075
U.S. Cl. 23—254 4 Claims
Int. Cl. G01n 31/00



1. A respiration measuring apparatus comprising a main capillary tube provided with a scaled capillary section, a liquid reservoir connected to scaled capillary tube, said reservoir being provided with a compression adjusting means, a first branch capillary tube branched from said main capillary tube and connected to a reaction vessel, a second branch capillary tube branched from said main capillary tube at a point more remote from said scaled capillary section than said first branch capillary tube, a control vessel connected to said second branch capillary tube and means to introduce a relatively small quantity of liquid into said main capillary tube.

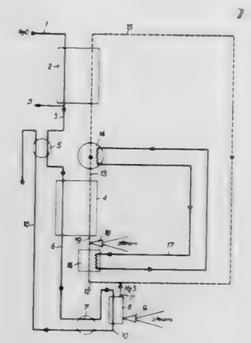
3,431,079
ALKYLATION
Charles C. Chapman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,727
U.S. Cl. 23—260 2 Claims
Int. Cl. B01j 1/00; C07c 3/54



1. Alkylation apparatus comprising: means for alkylation of an alkylatable hydrocarbon with an alkylating compound in the presence of HF acid; vessel means communicating with said alkylation means for permitting separation of the resulting reaction effluent into an upper hydrocarbon phase and a lower acid phase; vertical baffle means positioned in said vessel adjacent the point of introduction of said effluent thereto and extending downwardly in said lower acid phase; a plurality of contacting means positioned within said vessel in said hydrocarbon phase, a plurality of downcomers associated with each of said contacting means and wherein the lowermost of said downcomers is remotely positioned from said baffle means and has the lower outlet thereof below the lower edge of said baffle means; first conduit means for introducing HF acid at a first opening on said vessel means adjacent the separated hydrocarbon phase; second conduit means for withdrawing a stream from said hydrocarbon phase; a fractionation zone communicating with the downstream end of said second conduit means; third conduit means for recovering product alkylate from the bottom portion of said fractionation zone; fourth conduit means for withdrawing a stream from said acid phase, an acid rerun zone communicating with the downstream end of said fourth conduit means; fifth conduit means for passing rerun acid from said rerun zone to a second opening on said vessel adjacent the separated hydrocarbon phase and below said first opening.

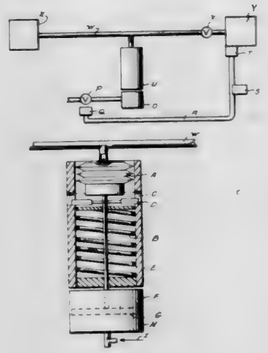
3,431,080
APPARATUS FOR THE PRODUCTION OF HEAVY WATER
Michel Rostaing, Orsay, France, assignor to Commissariat à l'Energie Atomique, a French establishment
Filed Nov. 13, 1964, Ser. No. 410,951
Claims priority, application France, Nov. 15, 1963, 953,836
U.S. Cl. 23—270.5 1 Claim
Int. Cl. B01d 59/22

Heavy water is produced by the countercurrent isotope exchange process in two exchange zones at different temperatures between a current of liquid water which is the deuterium source and a current of the H_2S gas which is the exchange medium. High pressure superheated steam from a boiler drives a steam turbine which is operatively connected to drive the blower for circulating the H_2S gas and to drive an electrical alternator. Expanded steam



leaving the turbine passes in parallel flow through a pair of heat exchangers and is then returned to the boiler for reheating.

3,431,081
APPARATUS FOR METERING AND MIXING POLYURETHANE COMPONENTS
Harry Edwards and Charles Frederick Kenyon, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Nov. 1, 1963, Ser. No. 320,633
Claims priority, application Great Britain, Nov. 23, 1962, 44,355/62
U.S. Cl. 23—285 8 Claims
Int. Cl. B01f 3/08



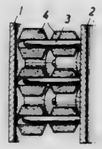
An apparatus for the generation of polyurethane products is disclosed. The apparatus includes conventional polyurethane component metering and mixing units, and a flexible container surge compressor is used on at least one of the conduits connecting a metering unit to the mixing unit. The flexible container surge compressor is subjected to a permanent load and also has pneumatic means for imposing an additional load, with the pneumatic means controlled in a manner that the additional load is placed on the flexible container surge compressor immediately upon cessation of metering and mixing. The use of the disclosed apparatus allows the production of polyurethane products, such as foams, of more uniform quality.

3,431,082

TUBE FURNACE PROVIDED WITH FILLING BODIES

Jan Sellin, Monthey, Switzerland, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed July 12, 1965, Ser. No. 471,054
Claims priority, application Germany, Nov. 5, 1964, S 94,051
U.S. Cl. 23—277 **27 Claims**
Int. Cl. F23j *3/00*



There is disclosed in reaction apparatus tubes for tube furnaces provided with filling bodies. A vertically arranged outer tube has an axially extending concentrically arranged inner tube whose latter outer wall is spaced from the inner wall of the outer tube. This provides for counterflow, however, there may be in place of the inner tube a rod member extending axially within the outer tube. Filling bodies are supported from the inner tube or the rod. In one form carrier elements in the form of uniformly spaced apart radially extending pins are welded at one end to the outer surface of the inner tube or rod. In another form shelf-like members extending in uniform spaced apart radial direction are secured to the outer surface of the inner tube or rod. In the case of the pins, the filling bodies have an aperture therethrough and they are slidably received on the pins. These filling bodies may be annular with oppositely extending frustrum of a cone ends and two may be pushed onto a carrier pin. The outer bodies in a radial direction have a greater diameter so that the intervals between the individual filling bodies in the peripheral direction remain approximately equal. In the concept where the carriers are shelf-like members arranged in a uniform geometrical manner, the filling bodies are freely supported. The filling bodies here may take the shape of generally cylindrical members. The filling bodies in all cases are held in position with respect to each other in a uniform predetermined arrangement whereby equal flow conditions exist at all points within the tube and the weight of the filling bodies is carried by the respective carrier elements.

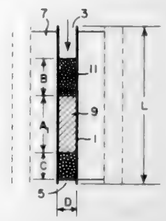
3,431,083

TUBULAR CATALYTIC REACTOR INCLUDING HEATING AND COOLING MEANS WITHIN THE REACTOR

Sten-Åke Bergstrand, Ingenjorsvagen, Perstorp, Sweden, assignor to Perstorp Aktiebolag, Perstorp, Sweden

Filed Sept. 22, 1964, Ser. No. 398,313
Claims priority, application Sweden, Sept. 23, 1963, 10,342/63
U.S. Cl. 23—288 **4 Claims**
Int. Cl. B01j *9/00;* **C07c** *47/04*

A multi-tubular reactor for the oxidation of methanol in the production of formaldehyde having a first or preheating section, a second section having catalyst bodies within the tubes and a third or cooling section, all the sections being surrounded by a body of heat transfer liquid, the first and the third sections of the tubes having solid inert material therein to increase heat transfer between the gases flowing through the tubes and the surrounding liquid. For space velocities in the order of 5–20 m.³ gas per liter of catalyst volume per hour, the lengths of the sections would be: preheating section about 200–700 mm.,



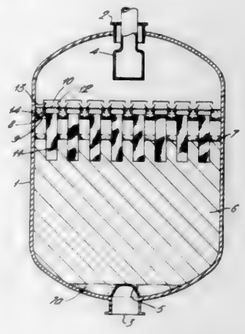
catalyst section about 150–1000 mm., and cooling section about 200–600 mm.

3,431,084

FIXED-BED CATALYTIC OPERATIONS

George Forbes, Hornchurch, Essex, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England

Filed Sept. 7, 1966, Ser. No. 577,716
Claims priority, application Great Britain, Sept. 15, 1965, 39,355/65
U.S. Cl. 23—288 **6 Claims**
Int. Cl. B01j *9/04*



1. Apparatus suitable for carrying out fixed-bed catalytic reactions comprising a closed, vertical reactor capable of holding a bed of catalyst and having an upper inlet and a lower outlet, a tray across the upper part of the vessel, chimneys extending upwardly from the tray, screening means within the chimneys extending downwardly through the chimneys into the catalyst bed when the latter is in position, and cowls above the chimneys, having two entrances one above the other, which allow entry of fluids into and through the chimney only with an initially upward direction of flow, the lower entrance being on a horizontal level with the top of the chimney and the upper entrance being above the top of the chimney.

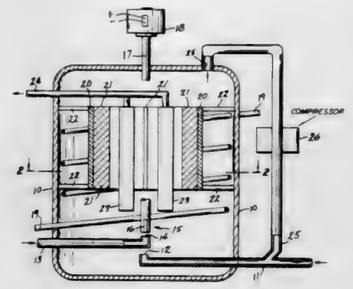
3,431,085

HYDROGENATION APPARATUS PROVIDED WITH INTERNAL FILTER FOR SEPARATING REACTION PRODUCT

Joseph J. Cimerol, Hamden, William M. Clarke, North Haven, and William I. Denton, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Original application Mar. 12, 1964, Ser. No. 351,398, now Patent No. 3,356,728, dated Dec. 5, 1967. Divided and this application May 19, 1967, Ser. No. 651,078
U.S. Cl. 23—288 **5 Claims**
Int. Cl. B01j *9/04*

A process and apparatus for continuously reacting hydrogen with aromatic polyamine compounds to form aromatic polynitro compounds are described. The process utilizes a high ratio of catalyst to aromatic polynitro compound fed to the reactor.



The apparatus is a pressure vessel having an internal filter means positioned adjacent to an agitator to permit withdrawal of the liquid reaction product while retaining the catalyst in contact with the reactants.

3,431,086

PROCESS FOR PREPARING MINERAL ION EXCHANGERS AND EXCHANGERS SO OBTAINED

Léon Henri Baetsle and Daniel Joseph Huys, Mol, Belgium, assignors to Studiecentrum Voor Kernenergie S.C.K., a Belgian public utility establishment

Filed June 21, 1965, Ser. No. 465,501
Claims priority, application Belgium, June 25, 1964, 649,746
U.S. Cl. 23—315 **5 Claims**
Int. Cl. C01b *29/00;* **C22b** *59/00*

An alkali metal antimonate is mixed with hydrochloric or nitric acid and the acidity adjusted to 1 M; upon standing a precipitate of hydrated antimony oxide (polyantimonic acid) forms, which is filtered, washed with 1 M HCl, and dried in air followed by heating to 100° C.

Chlorosulfonic acid, sulfuric acid, telluric acid or phosphoric acid, may also be included in the antimonate-acid mixture before adjusting the acid level thereby producing a precipitate incorporating the anion of the added acid.

These products are stable in HCl or HNO_3 solutions from about 2–3 M to substantially neutral, and exhibit interesting and useful ion exchange properties, with a pronounced selectivity for Sr^{++} in acid media.

3,431,087

METHOD FOR THE PREPARATION OF HIGH PURITY NITRONIUM SALTS

Stephen J. Kuhn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,299
U.S. Cl. 23—356 **7 Claims**
Int. Cl. C01b *21/20*

1. A process for preparing high purity nitronium salts substantially free from nitrozonium salt impurities which comprise: introducing a fluorine containing Lewis acid substance into a solution of a nitric acid ester and substantially anhydrous hydrogen fluoride while maintaining the temperature of the reaction mixture between about 20° C. and the freezing point of the mixture, said Lewis acid substance being a member selected from the group consisting of boron trifluoride, silicon tetrafluoride and phosphorus pentafluoride and said nitric acid ester being an alkyl nitric acid ester corresponding to the general formula $RONO_2$ where R represents an alkyl group having from 1 to about 5 carbon atoms, the relative proportion of said nitric acid ester and substantially anhydrous hydrogen fluoride in the initial reaction solution ranging from about 1/1 to about 2/1 on a molar basis and the ratio of said Lewis acid substance to said nitric acid ester ranging from about 1 to about 3 of the stoichiometric molar quantity needed for salt production thereby to precipitate directly in said reaction mixture the corresponding high purity nitronium salt substantially free from nitrozonium salt impurities.

3,431,088

PREPARATION OF AMIDOSULFURYL FLUORIDE BY THE REACTION OF TRICHLOROPHOSPHONITRIDOSULFURYL CHLORIDE WITH HYDROGEN FLUORIDE

Ludwig Konrad Huber, Philadelphia, and Harry Creston Mandell, Jr., Wayne, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 1, 1965, Ser. No. 528,004
U.S. Cl. 23—357 **3 Claims**
Int. Cl. C01b *21/54, 21/18, 21/10*

Amidosulfuryl fluoride is prepared by the reaction of trichlorophosphonitridosulfuryl chloride with hydrogen fluoride in the presence of a suitable Lewis acid as a catalyst.

3,431,089

REACTION PRODUCTS AND PROCESSES

Vaughn A. Engelhardt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 199,572
U.S. Cl. 23—358 **11 Claims**
Int. Cl. C01b *35/00, 21/00*

1. A compound of the formula

$$M_a(B_{20}H_{18})_b$$

wherein a and b are the smallest positive whole numbers which satisfy the equation

$$b=\frac{a\cdot\text{valence of M}}{2}$$

and M is a cation selected from the class consisting of

NH_4^+, RNH_3^+, $R_2NH_2^+$, $NH_2NH_3^+$, $R'NHNH_3^+$, $R'NHNR'H_2^+$, and $R'_2NNH_3^+$,

wherein R and R′ are monovalent organic groups of up 18 carbons bonded to the nitrogen through carbon.

3,431,090

LOW MELTING METALLIC ARTICLES REINFORCED WITH MODIFIED CHRYSOTILE

Orlando A. Battista, Yardley, Pa., and Frank J. Karasinski, Trenton, N.J., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

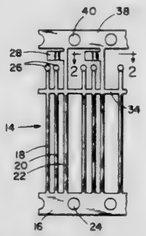
No Drawing. Continuation-in-part of application Ser. No. 578,118, Sept. 9, 1966. This application Aug. 7, 1967, Ser. No. 658,657
U.S. Cl. 29—182.5 **3 Claims**
Int. Cl. B22f *3/26, 5/00, 9/00*

A shaped article of improved physical properties consisting of a major proportion of a low melting point (below about 1575° C.) metal and a minor proportion of submicron sized particles of a chrysotile which has been chemically modified to produce a ratio of SiO_2 to MgO of between about 1.05 and 1.30. Also disclosed is a method of producing the article by making a dry mixture of metal powder and the submicron sized chemically modified chrysotile, pressing the mixture to produce billet and then sintering, extruding under pressure or otherwise working the billet.

3,431,091
WIRES FOR ARC WELDING HAVING A LOW CARBON CORE AND A ZINC COATING
Pierre Soulary, Croissy-sur-Seine, France, assignor to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
No Drawing. Filed Mar. 2, 1966, Ser. No. 531,062
Claims priority, application France, Mar. 18, 1965, 9,677
U.S. Cl. 29—183.5 **3 Claims**
Int. Cl. C01f *7/00;* **C01b** *31/30, 33/06*

A steel wire for gas-shielded electric arc welding consists essentially of about 0.1% by weight of carbon, 0.1–0.25% by weight of aluminum, 0.4–0.6% by weight of silicon, 0.5–2% by weight of manganese, balance essentially iron, and a coating of metallic zinc on the wire in the quantity 0.04–0.5% by weight of the wire and having a thickness greater than 0.1 micron. Thus, the disadvantages of high zinc or high aluminum are avoided, despite the use of low silicon, by using small quantities both of zinc and of aluminum.

3,431,092
LEAD FRAME MEMBERS FOR SEMICONDUCTOR DEVICES
William L. Lehner, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Continuation of application Ser. No. 501,550, Oct. 22, 1965. This application Dec. 21, 1967, Ser. No. 692,396
U.S. Cl. 29—193.5 **2 Claims**
Int. Cl. H01l *1/10*



A plastic encapsulated semiconductor device is provided, including a stamped metallic member of a particular configuration for use in the assembly and encapsulation of a plurality of semiconductor devices. The metallic member is comprised of a lead mounting portion extending the full length thereof, defining one longitudinal extremity, and a plurality of leads in spaced parallel groups extending at right angles to the lead mounting portion. A tie bar also extends the full length thereof, parallel to the lead mounting portion and integral with each lead to maintain the leads a predetermined distance apart during fabrication of the devices. One lead in each of the spaced groups includes a die mounting area at one end of the body thereof, extending at right angles to the lead body. The remaining leads in each group are shorter than the lead which includes the die mounting area, and each has an end located in a position convenient for wire connections therefrom to a semiconductor die on the die mounting area of the remaining lead.

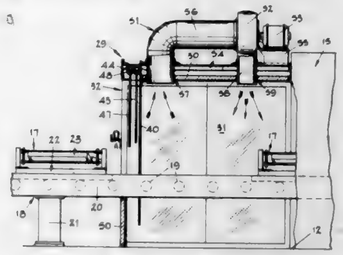
3,431,093
INSTANT-IGNITING CHARCOAL
Jerry M. Kreinik, Parkersburg, W. Va., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 10, 1967, Ser. No. 608,283
U.S. Cl. 44—6 **5 Claims**
Int. Cl. C10l *9/10*

An instant-igniting product is made by treating charcoal with a mixture of 20 to 95% of saturated higher alcohols whose carbon chains contain 12–18 carbon atoms and 5 to 80% of saturated higher carboxylic acids whose carbon chains contain 12–18 carbon atoms. The appearance and ease of ignition of the treated charcoal can be improved by applying a flammable polymer coating which also makes the treated charcoal completely clean handling. The addition of a small amount of nitrocellulose to the saturated higher alcohol and carboxylic acid treating mixture makes a harder coating on the charcoal that is easier to ignite than similar coatings which do not contain nitrocellulose.

3,431,094
HYDROCARBON LIQUIDS CONTAINING POLYPHENYL SUBSTITUTED LOWER ALKYLENES
Arnold M. Leas, Ashland, Ky., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
No Drawing. Continuation-in-part of application Ser. No. 276,865, Apr. 30, 1963. This application Jan. 23, 1967, Ser. No. 610,763
U.S. Cl. 44—80 **9 Claims**
Int. Cl. C10l *1/04*

A hydrocarbon liquid of improved thermal stability, particularly a jet fuel, comprising a major proportion of a hydrocarbon liquid and a minor proportion sufficient to improve the thermal stability thereof of polyphenyl substituted lower alkanes and lower alkylenes such as diphenyl methane, triphenyl methane, 1,1,2-triphenyl ethane, 1,1,2,2-tetraphenyl ethane, 1,2-diphenyl ethylene, 1,1,2,2-tetraphenyl ethylene, etc.

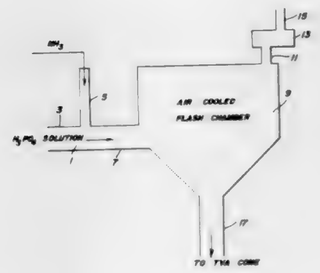
3,431,095
GLASS BENDING FURNACE
Robert E. Ross, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Nov. 24, 1965, Ser. No. 509,559
U.S. Cl. 65—274 **2 Claims**
Int. Cl. C03b *23/02, 29/00*



A furnace for bending glass sheets which includes a heating chamber, a doghouse chamber, and an additional preheat chamber communicating with the entrance end of the doghouse chamber. A fan and associated ducts are provided to recirculate the atmosphere within the preheat chamber and the recirculation flow draws heated air from the heating chamber through the doghouse chamber and in so doing forces the heated air to flow beneath sheets as they are conveyed through the furnace.

3,431,096
PROCESS FOR REDUCING THE EVOLUTION OF FLUORINE VALUES FROM TRIPLE SUPERPHOSPHATE FERTILIZER
Richard N. Hill and Harry S. Brackney, Lakeland, Fla., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Continuation-in-part of application Ser. No. 595,022, Nov. 17, 1966. This application Dec. 21, 1966, Ser. No. 603,571
U.S. Cl. 71—41 **2 Claims**
Int. Cl. C05b *1/06*

In abstract, this invention is directed to a process for substantially reducing the evolution of fluorine values from triple superphosphate fertilizer comprising preparing said fertilizer by reacting phosphate rock with phosphoric acid to which a nitrogen-containing material se-



lected from the group consisting of ammonia and urea has been added in an amount such that the thus added nitrogen will be equivalent, on a weight basis, to about 0.4–1.25% of the resulting triple superphosphate.

3,431,097
METHOD OF PREVENTING REVERSION IN THE PREPARATION OF AMMONIUM PHOSPHATES BY THE ADDITION OF VERMICULITE
Adolfo MacCragh, Ellicott City, Moises G. Sanchez, Severna Park, and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 14, 1965, Ser. No. 513,853
U.S. Cl. 71—43 **3 Claims**
Int. Cl. C05b *11/08, 11/06*

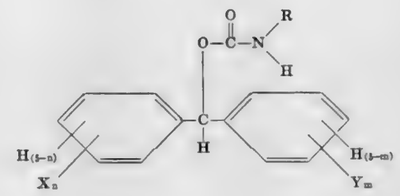
A method for preparing a fertilizer material comprising acidulating phosphate rock with an acid selected from a group consisting of nitric, phosphoric and sulfuric acids and mixtures thereof. Vermiculite is added to the acidulate to block reversion of the phosphorus to its citrate-insoluble form. The acidulate is neutralized by the addition of ammonia to raise the pH of the mixture to at least 6.

3,431,098
PROCESS IMPROVEMENTS IN THE MANUFACTURE OF COMPLEX FERTILIZERS
Honoré Trimbach, Grand-Couronne, and Pierre Dumont, Cleon, France, assignors to Potasse & Engrais Chimiques, Paris, France
No Drawing. Filed Mar. 11, 1966, Ser. No. 533,432
Claims priority, application France, Mar. 12, 1965, 8,968
U.S. Cl. 71—43 **9 Claims**
Int. Cl. C05g *1/06*

1. In a process for the production of complex fertilizers comprising a nitrate, a sulfate and water-soluble P_2O_5, which process comprises digesting phosphate rock with nitric acid; adding sulfate ions in order to form water-soluble P_2O_5; and ammoniating the digested reaction mixture, the improvement in said process comprising:
(a) ammoniating said digested reaction mixture to a pH higher than about 4.5;
(b) adding sufficient sulfuric acid to lower the resultant ammoniated reaction mixture of step (a) to a pH of about 2–3; and
(c) re-ammoniating the resultant acidified reaction mixture from step (b) to a pH higher than about 4.5; whereby there are obtained less viscous reaction mixtures as compared to a process wherein steps (b) and (c) are not included.

3,431,099
SUBSTITUTED AND UNSUBSTITUTED N-LOWER ALKYL BENZHYDRYLCARBAMATES AS HERBICIDES
David P. Mayer and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, a corporation of Delaware
No Drawing. Original application May 10, 1965, Ser. No. 454,746, now Patent No. 3,365,484, dated Jan. 23, 1968. Divided and this application Sept. 27, 1967, Ser. No. 680,286
U.S. Cl. 71—106 **9 Claims**
Int. Cl. A01n *9/20, 9/12, 5/00*

A herbicidal composition comprising an inert carrier and as an essential active ingredient, in a quantity toxic to weeds, a compound of the formula



wherein R is alkyl; X and Y are independently selected from the group consisting of halogen, nitro, alkyl, alkenyl, alkoxy, and alkylthio; and *m* and *n* are integers from 0 to 5, provided that a maximum of three of X and Y are nitro.

3,431,100
AUSTENITIC STEEL SUITABLE FOR EXHAUST VALVES SUBJECT TO GREAT STRESSES
Franc Pecnik, Dusseldorf-Oberkassel, Germany, assignor to Edelstahlwerk Witten Aktiengesellschaft, Witten (Ruhr), Germany
Filed Mar. 9, 1966, Ser. No. 533,036
Claims priority, application Germany, Mar. 11, 1965, G 43,052
U.S. Cl. 75—125 **8 Claims**
Int. Cl. C22c *41/02, 39/26, 39/10*

Austenitic steel alloy suitable for exhaust valves characterized in that cobalt and copper are included in the alloy. The alloy can be heat treated by annealing at about 1,150–1,250° C. for about 30–3 minutes, and precipitation hardened at about 900–1000° C. for 60–30 minutes.

3,431,101
STEEL FOR HOT WORKING DIE HAVING ALLOYING ELEMENTS OF SILICON, CHROMIUM AND ALUMINUM
Tatsuro Kunitake, 47-104, 8, 6-chome, Higashitoyonaka-cho, Osaka Prefecture, Toyonaka, Japan, and Tadashi Kato, % Sumikin Apartment House, 1 of 1, of 35, Tomino-Odori, Kokura-ku, Fukuoka Prefecture, Kita-kyushu, Japan
No Drawing. Filed June 23, 1965, Ser. No. 466,460
Claims priority, application Japan, June 26, 1964, 39/36,567
U.S. Cl. 75—124 **3 Claims**
Int. Cl. C22c *39/26, 39/44;* **C21c** *1/58*

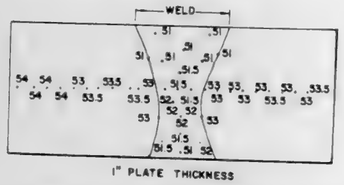
A low alloy hot-working die steel is disclosed in which the thermal crack resistivity is substantially improved by the addition of aluminum to the steel. The steel consists essentially of 15 to .5 C, 10 to 3.0% Si, less than 1.2% Mn, 0.5 to 3% Cr, .01 to 1.5% Mo, .01 to 1% V, .01 to 1.7% Al, the rest Fe, and a total of less than 1% impurities taken from the group consisting of Cu, P and S.

3,431,102

FUSION WELDING FILLER METAL WITH CHROMIUM NICKEL AND VANADIUM ALLOYING ELEMENTS

Rupert E. Key, Fort Worth, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware

Filed Oct. 20, 1966, Ser. No. 588,027
U.S. Cl. 75—128 3 Claims
Int. Cl. C22c *39/26, 39/20, 39/50*



1. A weld filler metal alloy for use with high strength, low alloy, deep hardening steels which permits superior weldability of such steels, said alloy having the characteristics when used therewith of low crack sensitivity, low preheat requirements, very high heat treat response and characteristics substantially similar to the base weld material following heat treat, consisting in percent by weight of: carbon from about 0.34% to about 0.39%, manganese from about 0.53% to about 0.75%, silicon from about 0.35% to about 0.50%, chromium from about 1.00% to about 1.20%, vanadium from about 0.14% to about 0.25%, molybdenum from about 0.65% to about 0.85%, nickel from about 0.20% to about 0.40%, phosphorous 0.01% maximum, sulfur about 0.01% maximum, and the remainder iron inclusive of minute impurities.

3,431,103

PROCESS FOR THE MANUFACTURE OF FERROSILICON

Hugo Querengasser, Hermulheim, near Cologne, Johannes Krause, Knapsack, near Cologne, Klaus Frank, Hermulheim, near Cologne, and Johann Cziska, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,070
Claims priority, application Germany, Mar. 11, 1965, K 55,505
U.S. Cl. 75—133 14 Claims
Int. Cl. C22c *1/10, 1/04, 1/02*

A process for producing ferrosilicon by introducing and treating quartz, carbon and iron in a reduction furnace, whereby at least the quartz and carbon components are introduced in the form of briquettes or pellets whose carbon component consists of

(A) Coal having a caking capacity of 4–10 and

(B) Non-caking coal or non-caking coke, the ratio of (A) to (B) being about 2:1 to 1:5.

3,431,104

ZIRCONIUM BASE ALLOY

Harold H. Klepfer, Pleasanton, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,731
U.S. Cl. 75—177 3 Claims
Int. Cl. C22c *15/00*; C21d *1/26*

The disclosure is directed to a zirconium based alloy having a high resistance to corrosion in superheated steam at 400° to 650° C. and having a high resistance to hydrogen absorption and low susceptibility to hydrogen embrittlement. The alloy consists essentially of a copper content in the range of about 1.5 to 1.7 at. percent, an iron content in the range of about 0.35 to 0.55 at. percent, with the remainder zirconium. In addition, a structure can be produced from the alloy having even greater improved corrosion resistance by treating, working and fabricating the alloy at temperatures below 765° C.

3,431,105

PROCESS FOR MANUFACTURING PARTS PROVIDED WITH A SINTERED SURFACE LAYER

Friedrich Heck, Deilinghofen, Germany, assignor to Duria-Werk Karl Kempf G.m.b.H., Neuss (Rhine), Germany

Filed Feb. 12, 1968, Ser. No. 704,917
U.S. Cl. 75—208 5 Claims
Int. Cl. B22f *7/04*

A process for manufacturing parts provided with a sintered surface layer containing depressions, comprises forming the sintered layer on the part and then forming the depressions in the layer by a technique which may be conventional and then, after the formation of the depressions, the layer is compressed using a flat press tool acting on the surface of the layer so that material in the layer is forced laterally into the depressions. The depressions may consist of a series of grooves formed side-by-side and the sintered layer is then formed and grooved by applying sintering powder in a layer to the surface of the part, partially sintering this layer of powder and then compressing the partially sintered layer using a ridged press tool so that grooves are pressed into the layer at the same time as the layer is compressed. After this the layer is further sintered and then subjected to the final operation of compression using the flat press tool.

3,431,106

PHOTOCONDUCTIVE ZINC OXIDE COATING COMPOSITIONS AND METHOD OF PRODUCING THEM

Gilbert E. Mason and Howard L. Armbruster, Columbus, Ohio, assignors to American Zinc Company, a corporation of Maine

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,255
U.S. Cl. 96—1.8 15 Claims
Int. Cl. G03g *7/00*

Photoconductive zinc oxide, a powdered, friable, fusible, water-insoluble resin having a high electrical resistance, a blending agent, and water, as a coating composition, applied to a substrate and heated to fuse the resin and produce a photoconductive coating.

3,431,107

DYE DEVELOPER IMAGE TRANSFER SYSTEMS

Walter J. Weyerts, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 28, 1967, Ser. No. 656,679
U.S. Cl. 96—3 12 Claims
Int. Cl. G03c *7/30*

Increased print densities are produced in dye developer diffusion transfer systems by processing exposed negatives in the presence of dimethylsulfoxide, 2,2'-thiodiethanol, or a mixture thereof.

3,431,108

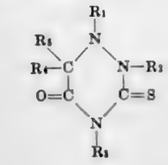
SILVER COMPLEX DIFFUSION TRANSFER PROCESS

Jozef Frans Willems, Wilrijk-Antwerp, George Frans van Veelen, Mortsel-Antwerp, and Maria Louis De Haes, Edegem, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

No Drawing, Filed Oct. 11, 1966, Ser. No. 585,734
Claims priority, application Great Britain, Oct. 11, 1965, 42,970/65
U.S. Cl. 96—29 5 Claims
Int. Cl. G03c *5/54, 7/00*

1. Photographic silver complex diffusion transfer process according to which a positive image of an original is

obtained by development of an image-wise exposed light-sensitive silver halide emulsion layer and diffusion of non-developed complex silver halide from the emulsion layer into an image-receiving material where the complexed silver halide is converted in the presence of development nuclei into a silver-containing image, wherein said process is carried out in the presence of at least one compound corresponding to the following general formula or to a tautomeric structure thereof:



wherein:

each of R_1, R_2, R_3, R_4 and R_5 is hydrogen, alkyl or aryl, with the proviso, however, that at least one of the substituents R_2 and R_3 is hydrogen; R_4 and R_5 may also represent the atoms necessary to complete a carbocyclic ring.

3,431,109

HEAT SENSITIVE DIAZOTYPE MATERIALS

Edward C. Bialczak, Mount Prospect, and William S. Murphy, Niles, Ill., assignors to Addressograph-Multigraph Corporation, Charles Bruning Division, Mount Prospect, Ill., a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,484
U.S. Cl. 96—49 4 Claims
Int. Cl. G03c *1/60*

This invention concerns a heat developable diazotype reproduction material using a paper base precoated with a film of polyvinyl alcohol. A sensitizing solution containing a diazonium compound and an alkaline donor such as urea or thiourea is applied to the precoated surface of the paper base. The polyvinyl alcohol film prevents the alkaline donor from being absorbed by the paper base, thereby providing reproduction material having improved shelf life.

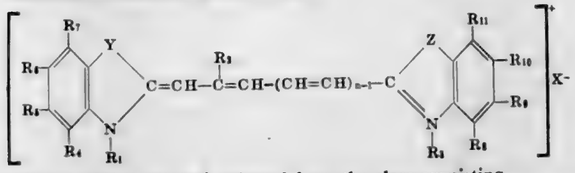
3,431,110

SUPER-SENSITIZED PHOTOGRAPHIC SILVER HALIDE LIGHT-SENSITIVE MATERIALS

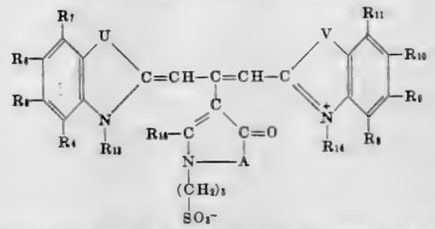
Geoffrey Ernest Ficken, Douglas James Fry, and Elvin Frederick William Thurston, Ilford, Essex, England, assignors to Ilford Limited, Ilford, England, a British company

No Drawing. Filed Apr. 8, 1965, Ser. No. 446,733
Claims priority, application Great Britain, Apr. 20, 1964, 16,271/64
U.S. Cl. 96—104 6 Claims
Int. Cl. G03c *1/28*

A super-sensitized combination of dyes and photographic silver halide emulsions is disclosed, wherein the emulsions contain dye of the formula:



where Y and Z are each selected from the class consisting of —S, —Se, —NR_{12} and —CH=CH—, R_1 and R_3 are each selected from the class consisting of alkyl, carboxyalkyl, carbamoylalkyl and sulphoalkyl, R_2 is selected from the class consisting of hydrogen and lower alkyl, R_5, R_6, R_9 and R_{10} taken separately are each selected from the class consisting of hydrogen, halogen, alkyl, aryl, alkoxy and trifluoromethyl, R_4 and R_8 taken separately are hydrogen, R_4 and R_5 taken together form part of a benzene ring, R_8 and R_9 taken together form part of a benzene ring, R_7 and R_{11} taken separately are hydrogen, R_6 and R_7 taken together form part of a benzene ring, R_{11} and R_{10} taken together form part of a benzene ring, R_{12} is selected from the class consisting of alkyl and aryl, n is an integer from 1 to 2 and X is an anion, and a dye of formula:



where R_4, R_5, R_6, R_7, R_8, R_9, R_{10} and R_{11} have the values just assigned, and R_{13} and R_{14} are lower alkyl, A is selected from the class consisting of —O and NR_{17}, R_{16} and R_{17} are each selected from the class consisting of hydrogen, alkyl, aralkyl and aryl, and U and V are O.

3,431,111

CYANINE DYES

Leslie G. S. Brooker and Earl J. Van Lare, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application 573,183, Aug. 18, 1966. This application Jan. 17, 1967, Ser. No. 609,791
U.S. Cl. 96—106 23 Claims
Int. Cl. G03c *1/10*

Cyanine dyes are provided which feature an imidazo-[4,5-b]quinoxaline nucleus. Light sensitive emulsions containing such dyes are also provided.

3,431,112

FOOD BAR AND METHOD FOR MAKING

Jack R. Durst, Osseo, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,821
The portion of the term of the patent subsequent to June 6, 1984, has been disclaimed
U.S. Cl. 99—1 12 Claims
Int. Cl. A23l *1/00, 1/40*

A compact, solid food unit characterized as possessing hardness, frangibility and water dispersible characteristics is imparted by utilization of a binder which provides a structural matrix for discrete edible food particles. The binder is comprised of a discontinuous phase of fat globules encapsulated by a continuous phase of water and a hydrophilic film former.

3,431,113

PROCESS OF TREATING CHEESE WHEY

Douglas R. Braatz, Shawano, Wis., assignor to Peebles Foods, Inc., Shawano, Wis., a corporation of Wisconsin

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,314
U.S. Cl. 99—57 16 Claims
Int. Cl. A23c *23/00, 21/00, 5/00*

A process of recovering lactose from a rennet type cheese whey in which the whey is concentrated at a tem-

perature in excess of 49° C. and the lactose crystallized at temperatures above 38° C. under quiescent conditions existing for at least six hours.

3,431,114
PREPARATION OF BAKED LEAVENED PRODUCTS
Meredith P. Sparks, 704 Highland Ave., Westfield, N.J. 07090
No Drawing. Filed Oct. 19, 1965, Ser. No. 498,129
U.S. Cl. 99—86 9 Claims
Int. Cl. A21d *13/08*

Baked leavened products such as cake, cookies and the like are prepared using as the leavening agent halogenated hydrocarbons which are liquid at ambient temperatures and pressures, boiling within the range of about 25° C. to 100° C.

3,431,115
PROCESS FOR MAKING BAKERS' CHEESE
Edward T. Biasi and John G. Skibiak, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 21, 1966, Ser. No. 522,153
U.S. Cl. 99—116 8 Claims
Int. Cl. A23c *19/02*; A01j *25/11, 25/00*

In a process for making bakers' cheese following formation of cheese curd and whey, the latter are heated in the range of between 95° and 160° F. depending upon the desired moisture content of the final cheese product, and then the curd and whey are centrifugally separated in a centrifuge having an axial screw conveyor, after which they are discharged from the centrifuge without any need for recirculation.

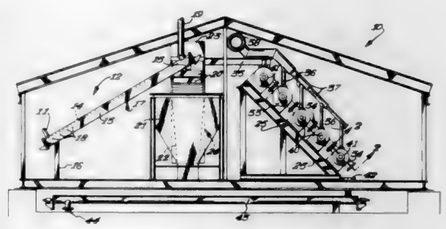
3,431,116
PROCESS FOR THE PRODUCTION OF CONFECTIONERY FATS
Reuben O. Feuge, Norman V. Lovegren, and Betty B. Gajee, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 5, 1965, Ser. No. 477,621
U.S. Cl. 99—118 7 Claims
Int. Cl. A23d *5/02*; A23g *1/00*

This invention relates to a process for producing confectionery fats using as a starting material the stearine fraction obtained in the solvent winterization of cottonseed oil. The process of the invention comprises the steps of selectively hydrogenating cottonseed oil stearine to accomplish the conversion of the linoleic acid groups of the cottonseed oil stearine to oleic acid groups, the hydrogenation being carried out without the concurrent production of trans-isomers and subsequent to the hydrogenation the removal of saturated glycerides from the selectively hydrogenated product via a fractional crystallization.

3,431,117
PRODUCT AND PROCESS FOR PREPARING FROZEN WHIPPED TOPPING COMPOSITION
George John Lorant, Scarborough, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 29, 1965, Ser. No. 505,739
U.S. Cl. 99—139 8 Claims
Int. Cl. A23l *1/14*; A23g *5/00*

A frozen whipped topping comprising fat, protein, emulsifier, stabilizer and water is prepared by homogenization of the mix of ingredients at pressures above 6000 p.s.i., followed by whipping and freezing the homogenized mix; the topping is characterized by its stability both upon thawing and refrigerated storage.

3,431,118
PROCESS AND APPARATUS FOR COAGULATING AND DRYING BLOOD
Christian D. Macy, deceased, late of Austin, Minn., by Laura G. Macy, special administratrix, Austin, Minn., and Harold B. Butler, Austin, Minn., assignors to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,570
U.S. Cl. 99—199 4 Claims
Int. Cl. B01d *1/02*; A23j *1/06*



The continuous drying of animal blood by passing blood through an upwardly inclined coagulation chamber and injecting steam at the lower end of the chamber to coagulate the blood. The coagulated blood passes out of the chamber on to an evaporation screen to separate the liquid residue from the semi-solid blood particles. The particles pass through a plurality of vertically spaced-apart elongate heating chambers to progressively dry the blood. The particles are impinged against the heating surfaces of each heating chamber while they are allowed to flow slowly through each chamber and to overflow by action of gravity into the next adjacent chamber primarily in response to the influx of additional particles.

3,431,119
PROCESS FOR THE DEHYDRATION OF SUBSTANCES OF ANIMAL OR VEGETABLE ORIGIN
Henri Griffon, 2 Place Mazas, Paris, France
No Drawing. Continuation of application Ser. No. 261,484, Feb. 27, 1963. This application Aug. 31, 1967, Ser. No. 664,887
Claims priority, application France, Feb. 27, 1962, 889,306, Patent 1,323,626; Jan. 28, 1963, 922,812
U.S. Cl. 99—204 8 Claims
Int. Cl. A23b *7/02*

A substance of vegetable or animal origin is dehydrated by mixing finely divided particles of the food with less than 50 percent, calculated on dry solids, of starch and sufficient water to form a fluid creamy mixture which is then spread into a thin layer about 2 mm. thick and dehydrated to 6–15 percent moisture content with a current of air at a temperature such that the temperature of the mixture during drying does not exceed 37° C.

3,431,120
METAL PLATING BY CHEMICAL REDUCTION WITH AMINEBORANES
Lavern M. Weisenberger, Highland Park, Mich., assignor to Allied Research Products Incorporated, Baltimore, Md., a corporation of Maryland
No Drawing. Filed June 7, 1966, Ser. No. 555,715
U.S. Cl. 106—1 11 Claims
Int. Cl. C23c *3/04*

An aqueous chemical plating solution comprising a soluble nickel, cobalt, or copper metal salt, an amine borane and a soluble salt of heptagluconic acid.

3,431,121
GELATINE COMPOSITIONS
Ronald Williams, 5 Mainway, Alkrington, Middleton, England
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,667
Claims priority, application Great Britain, Mar. 15, 1966, 11,197/66
U.S. Cl. 106—14.5 5 Claims
Int. Cl. C08h *1/00*

A gelatine composition used in the formation of rollers and blankets employed in the printing and the tin plate coating industries having incorporated therewith an additive selected from the group consisting of N-phenyl morpholine and 8-hydroxy quinoline to control the surface tackiness thereof.

3,431,122
INK COMPOSITIONS FOR MARKING FOOD PRODUCTS
Clarence W. Wilson, Ontario, Calif., assignor to Sunkist Growers, Inc., Los Angeles, Calif., a corporation of California
No Drawing. Continuation of application Ser. No. 290,228, June 24, 1963. This application July 12, 1967, Ser. No. 652,985
U.S. Cl. 106—22 7 Claims
Int. Cl. C09d *11/00*

The present invention relates to a substantially water-resistant ink for marking food products consisting essentially of a water-soluble triphenylmethane derivative dye and a solvent consisting essentially of a mixture of glycerol monooleate and glycerol dioleate as well as the process of marking food products with such ink.

3,431,123
WATERLESS MOLDING SAND
Arthur H. Zrimsek and George J. Vingas, Rolling Meadows, Ill., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 508,851, Nov. 19, 1965. This application Feb. 27, 1968, Ser. No. 708,523
U.S. Cl. 106—38.35 8 Claims
Int. Cl. B28b *7/34*

An improved molding sand composition is made up of silica sand, a clay such as bentonite and ethylene oxide adduct of nonylphenol, dinonylphenol, octylphenol or castor oil.

3,431,124
CERAMIC DIELECTRIC
Shigekazu Hayashi, Setagaya-ku, Tokyo, and Sadao Kobayashi and Shinobu Fujiwara, Yuri-gun, Akita-ken, Japan, assignors to TDK Electronics Company, Limited, Tokyo, Japan, a corporation of Japan
Filed June 10, 1964, Ser. No. 373,949
U.S. Cl. 106—39 2 Claims
Int. Cl. C04b *35/46*

A dielectric having a high dielectric constant, a low temperature coefficient and loss coefficient, a high stability and a low deterioration rate consisting of a ceramic composed of 2 to 97 mol percent of $CaTiO_3$, 3 to 40 mol percent or $La_2O_3 \cdot 2TiO_2$ and 0 to 95 mol percent of $MgTiO_3$.

3,431,125
SYNTHETIC GEMSTONES
John Gordy, 1011 Dennis Crescent E., Richmond, British Columbia, Canada
No Drawing. Filed July 12, 1965, Ser. No. 471,417
U.S. Cl. 106—42 4 Claims
Int. Cl. C04b *35/08, 35/14, 35/46*

Synthetic gem-like crystals which possess substantially the following molecular formula ratio:

	Moles
XO	0.893
M_2O_3	0.083
ZO_2	1.100

In the above formula XO represents a metal oxide wherein X is a divalent ion such as calcium, beryllium, magnesium or barium; M_2O_3 is a metal oxide wherein M is a trivalent metal ion selected from the group consisting of aluminum, chromium, iron, manganese, nickel and mixtures thereof; and ZO_2 represents a metal oxide of a tetravalent compound such as silicon, titanium and germanium. The aforesaid gem-like crystals are made by:

(1) Combining XO, M_2O_3 and ZO_2 (or equivalents thereof) in the ratio given above;

(2) Heating the mixture to above its flux point of about 1100 to 1200° C.; and

(3) Cooling the flux to obtain the desired crystals.

3,431,126
METHOD FOR PRODUCING PORCELAIN SUITABLE FOR INSULATOR
Hiroshi Fukui, Nagoya, Japan, assignor to NGK Insulators, Ltd., Mizuho-ku, Nagoya, Japan, a corporation of Japan
No Drawing. Filed Apr. 19, 1965, Ser. No. 449,270
Claims priority, application Japan, Apr. 27, 1964, 39/23,721
U.S. Cl. 106—46 3 Claims
Int. Cl. C04b *35/14, 33/26*

A method for producing porcelain having a total crystal content of about 35 to 75% by weight and comprising about 25 to 50% cristobalite, about 5 to 15% quartz and the essential balance mullite crystal, based on the total weight of porcelain, said method comprising mixing 20 to 30% by weight of feldspar, about 40 to 55% by weight of quartz and about 30 to 50% by weight of clay, shaping the mixture, drying the shaped mass and firing said mass at a temperature of about 1,250° C. to 1,380° C. The raw materials are selected to yield about 65 to 80% by weight of SiO_2, about 2.0 to 4.0% by weight of alkali oxide, about 0.5% to 1.5% by weight of Fe_2O_3, about 0.2 to 1.3% by weight of TiO_2, less than about 0.5% by weight of each of CaO and MgO and less than about 1.0% by weight of other impurities, wherein the SiO_2/Al_2O_3 ratio is about 2.8 to 4.5 and the K_2O/Na_2O ratio is about 0.01 to 1.5.

3,431,127
PROCESS OF IMPROVING THE ANTI-BLOCKING CHARACTERISTICS OF REGENERATED CELLULOSE TUBING AND THE PRODUCT RESULTING FROM SAID PROCESS
Robert J. Baetzel, Chicago Heights, and Henry Majewski, Chicago, Ill., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 308,365, Sept. 12, 1963. This application May 15, 1967, Ser. No. 638,664
U.S. Cl. 106—168 13 Claims
Int. Cl. C08b *21/20, 21/00*; C09k *3/00*

By dispersing a fatty acid partial ester of a polyhydric alcohol into a viscose solution, a regenerated cellulosic tubing can be obtained which exhibits substantially improved anti-blocking characteristics.

3,431,128
ASPHALTIC COATING COMPOSITIONS CONTAINING N-ALKYL AMINO ACIDS
Thornton K. Jones, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Mar. 25, 1964, Ser. No. 354,781
U.S. Cl. 106—273 4 Claims
Int. Cl. C08h *13/00*; C09d *3/24*; B32b *11/00*

1. As a roof coating material of superior weathering ability, an air blown asphaltic composition having a ring and ball softening point in the range of 130° F. to 250°

F. and containing from 0.1% to 10% by weight of an N-alkyl amino acid of the general formula

$$R—N(H)_x(CH_2CH_2COOH)_y$$

in which R is an alkyl radical of from 8 to 22 carbon atoms, y is a whole number of from 1 to 2, and $x+y=2$.

3,431,129
FILM-FORMING POLYMERIC ORGANIC COMPOUND STABILIZED AGAINST ULTRAVIOLET LIGHT DEGRADATION WITH A KETOPHENOXY SILANE

Roshdy M. Ismail, Spich, Germany, assignor to Dynamit Nobel AG., Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Aug. 17, 1966, Ser. No. 572,880
Claims priority, application Germany, Aug. 20, 1965, D 48,017
U.S. Cl. 106—187 **5 Claims**
Int. Cl. C08b *27/66, 27/42*

Ultra violet stabilizer for film-forming polymers, which stabilizer is a ketophenoxy silane.

3,431,130
PROCESS OF PREPARING FINE PARTICLE PIGMENTS

Gino A. Ratti, Jr., Holland, Mich., assignor, by mesne assignments, to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,709
U.S. Cl. 106—309 **10 Claims**
Int. Cl. C09b *67/00*

Dry pigments of or having fine particle size and dispersibility are produced without agglomeration or aggregation by dehydrating a pigmentary presscake with a low boiling organic solvent and combining with mixing a solid salt dispersing agent which is thermally stable under the conditions of mixing but is volatilizable when heated to temperatures below that at which the pigment decomposes. The dispersing agent and the solvent are removed from the pigment by heating to volatilization.

3,431,131
METHOD OF PRODUCING IMAGES

Robert B. Hartman, Bridgeport, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,357
U.S. Cl. 117—.5 **10 Claims**
Int. Cl. B41k; B41m *5/00*

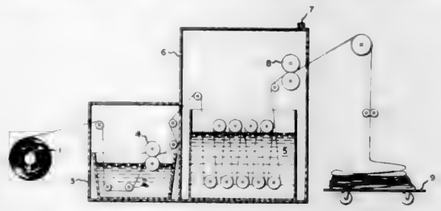
A process for producing images of things such as fingerprints wherein a coalescible film has a coalescible coating upon which the image is imprinted and which is then subjected to heat or pressure to change the cell structure so that appropriate portions will change from an opaque condition to a transparent condition.

3,431,132
PROCESS OF HOT WATER AGING OF WOOL TREATED WITH AN ANTI-FELTING AGENT

Osborne C. Bacon, Pennsville, N.J., and Samuel B. Cupp, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 11, 1966, Ser. No. 533,722
U.S. Cl. 117—7 **2 Claims**
Int. Cl. D06m *3/02;* **C08g** *17/00*

An improved process for finishing wool to impart desirable properties such as resistance to felting, shrinkage and the like, said improvement consisting of applying to the wool about 0.5 to 5.0 weight percent of an acid chloride-containing polymeric shrink-proofing agent dissolved in a non-flammable, inert, chlorinated solvent having no reactive hydrogen, for example, an ethylene/vinyl acetate/methacrylyl chloride copolymer dissolved in trichloroethylene, and thereafter curing said treated wool

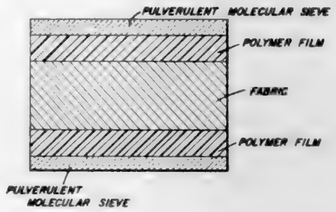


with water at about 160° to 212° F. for about 0.5 to 10 minutes.

3,431,133
FABRIC COATED WITH BINDER AND PULVERULENT MOLECULAR SIEVE AND PROCESS OF MAKING SAME

George L. Braude, North Linthicum, and Edwin W. Lard, Bowie, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Oct. 12, 1966, Ser. No. 586,143
U.S. Cl. 117—24 **11 Claims**
Int. Cl. A62d *9/00;* **A62b** *17/00*



6. An article of manufacture comprising a self-supporting, flexible, breathable, protective, self-decontaminating laminate, said laminate having:

(a) a substrate comprising a fabric made from fibers;

(b) a flexible, breathable film of film-forming polymer, said film being impregnated through and bonded to the substrate, thereby to form two exposed surfaces of said film, the substrate:film weight ratio being about 200:1 to 3:1;

(c) at least one coating comprising at least one molecular sieve, said molecular sieve being in pulverulent form and having a pore diameter of about 4–10 A. and a particle diameter of about 3–800 microns, said coating being bonded at least to one exposed surface of the film of polymer, the substrate:molecular sieve weight ratio being about 50:1 to 3:1.

10. The article of claim **6**, said article having a coating of the pulverulent molecular sieve bonded to two surfaces of the film of polymer.

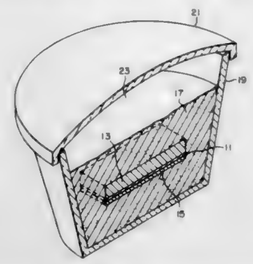
3,431,134
METHOD OF ACTIVATION OF PHOSPHOR

William A. Thornton, Jr., Cranford, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a Corporation of Pennsylvania

Filed Oct. 20, 1965, Ser. No. 498,922
U.S. Cl. 117—33.5 **12 Claims**
Int. Cl. C09k *1/12, 1/06;* **B44d** *1/14*

Method of forming and activating a thin layer of phosphor matrix material. The unactivated phosphor matrix material is deposited on a substrate and covered with a thin continuous spacing film which is permeable to activator constituents. Such covered member is then placed

proximate activator constituent-containing material and heated to activate the phosphor. The method is particu-



larly adapted to producing electroluminescent zinc sulphide by using a magnesium fluoride spacing film.

3,431,135
REDUCING FLAME TREATMENT OF POLYETHYLENE TEREPHTHALATE FILM PRIOR TO ALUMINIZING

John J. Keane and John C. Lough, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 469,317, July 2, 1965. This application June 13, 1966, Ser. No. 556,882
U.S. Cl. 117—46 **4 Claims**
Int. Cl. C23c *13/02;* **B32b** *15/08*

Metallized polyethylene terephthalate film produced by first subjecting a surface of the film to a reducing flame, and thereafter depositing on the treated surface a coating of metal, e.g., aluminum, deposited from a vapor of the metal.

3,431,136
FERROUS METAL ARTICLES WITH METAL GALVANIC COATINGS AND FLUOROCARBON COPOLYMER TOP LAYERS

Frederic B. Stilmar, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

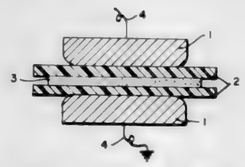
No Drawing. Filed Dec. 10, 1964, Ser. No. 417,515
U.S. Cl. 117—70 **6 Claims**
Int. Cl. B44d *1/14;* **C23f** *15/00*

A durable corrosion-resistant composition comprising a ferrous metal substrate, an intermediate layer of a coating containing zinc or aluminum, and a top layer of a copolymer of at least one fluorine-containing olefin and an acid group-containing olefin.

3,431,137
ELECTRIC FIELD POLYMERIZATION

Thomas A. Fadner, Rumford, Maine, assignor to Oxford Paper Company, New York, N.Y., a corporation of Maine

Continuation-in-part of application Ser. No. 289,606, June 21, 1963. This application April 17, 1967, Ser. No. 631,197
U.S. Cl. 117—93.1 **6 Claims**
Int. Cl. C08d *13/16;* **B44d** *1/44*



Polymeric resinous materials are deposited on a fibrous or porous substrate by subjecting a substrate-monomer system to an alternating electric field.

3,431,138
METHOD FOR COATING PHARMACEUTICAL FORMS WITH METHYL CELLULOSE

Joel Ronald Zingerman, Westfield, N.J., and Louis Nasir Elowe, Madison, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

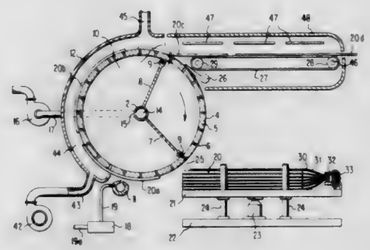
No Drawing. Continuation-in-part of application Ser. No. 343,944, Feb. 11, 1964. This application July 14, 1967, Ser. No. 653,345
U.S. Cl. 117—100 **2 Claims**
Int. Cl. C08b *21/26*

Invention relates to a method of applying a pharmaceutical coating composition composed of ethanol, chloroform and low viscosity methylcellulose to a moving mass of pharmaceutical forms such as tablets, granules, pills and the like, heated to a temperature of from about 50 to 70° C.

3,431,139
PROCESS AND APPARATUS FOR SUCCESSIVELY WITHDRAWING INDIVIDUAL ARTICLES FROM A STACK

Joachim Stroszynski, Wiesbaden, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

Filed July 18, 1966, Ser. No. 565,800
Claims priority, application Germany, July 21, 1965, K 56,669
U.S. Cl. 117—119.8 **10 Claims**
Int. Cl. B44d *1/08;* **B05c** *11/12;* **B65h** *3/10*



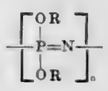
A stack of articles includes a plurality of individual flexible articles to be removed which are separated from one another by interleaved smooth films. The leading edges of the articles are uncovered, and the films extend beyond the opposite trailing edges of the articles and are fixed to the supporting structure. A hollow rotatable drum having subatmospheric pressure therein has apertures in the periphery thereof for removing the topmost article from the stack, and means is provided adjacent the periphery of the drum for coating an article and then drying such coated article while adhered to the drum, whereupon the article is removed from the drum and conveyed to a remote position.

3,431,140
OIL AND WATER REPELLENT TEXTILES

Michael Thomas Beachem, Somerset, N.J., assignor to American Cyanamid Company, Stamford, Conn., a Corporation of Maine

No Drawing. Filed June 30, 1965, Ser. No. 468,553
U.S. Cl. 117—121 **4 Claims**
Int. Cl. D06m *15/30, 15/36*

Oil and water repellency are imparted to textiles by applying about 0.25% to 5% of a poly-bis(polyfluoroalkoxy)phosphonitrile of the formula



where R is alkyl (C_2–C_{18}) substituted by at least two fluorine atoms on each carbon atom except the one attached to oxygen and n is a number between 25 and 12,000.

3,431,141
HIGH TEMPERATURE OXIDATION RESISTANT ARTICLES

James E. Eorgan, Boyertown, Pa., assignor to Kawecki Chemical Company, New York, N.Y., a corporation of Pennsylvania

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,415
U.S. Cl. 117—135.1 **10 Claims**
Int. Cl. B32b *15/00;* **C23c** *17/00*

1. A composite refractory article comprising a refractory metal base material the surface of which is protected against high temperature oxidation by a substantially impervious coating of an oxidation resistant material comprising from about 85 to 99% by weight of mixed zirconium diboride and titanium diboride wherein the weight ratio of ZrB_2 to TiB_2 is between about 1:3 and 3:1, and from about 1 to 15% by weight of silicon.

3,431,142
METHOD OF IMPROVING WEARING QUALITIES OF ORGANIC FIBERS AND FABRICS

Herbert Schwarz, St. Petersburg, Fla., assignor to Petchen Corporation, St. Petersburg, Fla., a corporation of Florida

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,096
U.S. Cl. 117—139.5 **4 Claims**
Int. Cl. C08j *1/32;* **C10m** *3/00*

A stable aqueous emulsion comprising a mixture of a major part by weight of a tetra (C_3–C_{12} alkyl) ortho-silicate, and minor parts by weight of a non-ionic emulsifier and a cationic emulsifier with a small amount of an organic solvent being permissibly present. The emulsion is used in a method for imparting to textiles increased resistance to wear and abrasion.

3,431,143
PROCESS FOR SIZING PAPER WITH EPOXY SILICONE AND RESULTING PRODUCTS

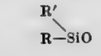
Gordon C. Johnson, Tonawanda, and Samuel Sterman, Williamsville, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 22, 1965, Ser. No. 450,192
U.S. Cl. 117—155 **12 Claims**
Int. Cl. D21h *1/40, 3/62*

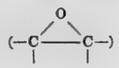
As an article of manufacture, a paper having improved resistance to penetration by water, said paper containing as a sizing agent an epoxysilicone having the general formula:

$$MD_xU_yM'_q$$

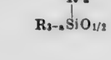
wherein D represents an R_2SiO unit in which R is a monovalent hydrocarbon radical free of acetylenic unsaturation; U represents a unit selected from the class consisting of



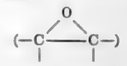
and $R'SiO_{3/2}$ in which R is a monovalent hydrocarbon radical free of acetylenic unsaturation and R′ is a monovalent organic radical containing at least one vicinal epoxy



group; M and M′ are in each occurrence an end-blocking unit having the formula:



in which R is a monovalent hydrocarbon radical free of olefinic unsaturation, R′ is a monovalent organic radical containing a vicinal epoxy



group, a has a value from 0 to 1 inclusive; q as a value of 1 when U is an

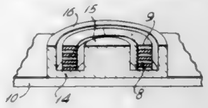


unit and a value of $(y+1)$ when U is an $R'SiO_{3/2}$ unit, x is an integer having a value of from 10 to about 10^5, y is an integer having a value of from 1 to about 10^2, the sum of x, y and q being such that the silicone compound $MD_xU_yM'_q$ has a molecular weight of from about 10^3 to about 10^6 and the ratio of epoxy-containing units to units containing no epoxy groups is within the range of from about 0.0001 to 0.5.

3,431,144
METHOD FOR MANUFACTURING MICROMINIATURE COILS

Keiske Yawata, Masamichi Shiraishi, and Hiroshi Shiba, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Nov. 24, 1964, Ser. No. 413,445
Claims priority, application Japan, Dec. 26, 1963, 38/70,382
U.S. Cl. 117—212 **1 Claim**
Int. Cl. H01f *27/28;* **H01c** *7/00;* **C23c** *13/00*



A helical coil of the order of 1 mm. in diameter is made by

(a) Arranging in an enclosure a vapor source of conductive material and a vapor source of insulating material spaced from a substrate with an apertured mask in between a shield between the vapor sources,

(b) Evacuating the enclosure,

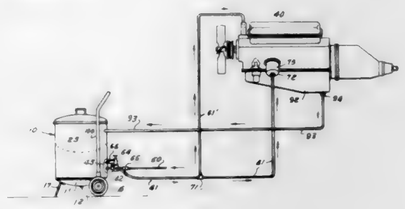
(c) Producing rotation between the substrate and the sources, and

(d) Heating the sources to cause the vapor source materials to pass through selected apertures in the mask and continually deposit on the substrate and alternately on each other to form the coil.

3,431,145
METHOD FOR FLUSHING AND CLEANING INTERNAL COMBUSTION ENGINES

Frank D. Riley, 11103 Lake June Road, Mesquite, Tex. 75149

Filed Nov. 12, 1964, Ser. No. 410,356
U.S. Cl. 134—22 **2 Claims**
Int. Cl. B08b *3/10*



A method for flushing and cleaning the lubricating system of internal combustion engines by injecting thereinto a petroleum derivative solvent from a vessel having upper and lower communicating chambers, with compressed air from the lower chamber, through the oil filter tube, in the upper portion of the system, and the filter opening in the crankcase, simultaneously, and expelling the solvent through the crankcase drain outlet to the upper chamber, filtering the expelled solvent into the lower chamber and repeating the cycle through the lubricating system.

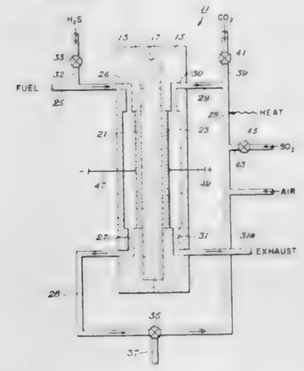
ERRATUM

For Class 134—22 see:
Patent No. 3,430,641

3,431,146
METHOD OF OXIDIZING RESIDUAL H_2S TO SO_2 IN A FUEL CELL

James K. Truitt, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,255
U.S. Cl. 136—86 **3 Claims**
Int. Cl. H01m *27/30*



Disclosed is a fuel cell and method wherein hydrogen sulfide is combined with a fuel gas containing free hydrogen and introduced into contact with the fuel electrode of the fuel cell. The spent fuel leaving the fuel electrode is reacted in a conduit interconnecting the fuel electrode exhaust gas outlet with the oxidizer electrode inlet to convert the residual hydrogen sulfide present in the spent fuel into sulfur dioxide. An oxidizer is also fed into the oxidizer electrode inlet along with the spent fuel and sulfur dioxide.

3,431,147
PLATFORM STYLE AMPULE BREAKER

Clark C. Cleveland, Bennington, Vt., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 7, 1961, Ser. No. 101,602
U.S. Cl. 136—90 **1 Claim**
Int. Cl. H01m *17/06*

1. A battery of the spin activated type comprising:

a plurality of annular stacked plates having annular spaces therebetween forming the anodes and cathodes of a plurality of cells;

spacers between said plates;

a frangible bottle containing electrolyte positioned within the annular opening formed by said plates;

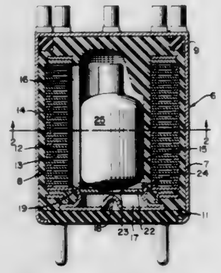
insulating means disposed between said bottle and said plates and surrounding all but a single hollow longitudinal opening adjacent to said plates and said bottle extending the length of said plates;

a metal cap supporting said bottle substantially rigid against ordinary shocks but giving way completely against a certain predetermined shock;

said metal cap formed with a cylindrical wall extending into said annular opening and having integral dimples extending therefrom;

a washer supported on said dimples within said wall to receive said bottle in physical contact therewith;

a plurality of integral nonresilient inturned tabs within said cylindrical wall and engaging the top of said washer on its outer periphery whereby said washer is restrained from movement and forms a non-resilient support for said bottle against said ordinary shocks;



and a breaking knob integral with said metal cap and in the path of movement of the bottle under the influence of said predetermined shock to shatter said bottle upon engagement therewith to permit passage of said electrolyte through said longitudinal opening to said cells.

3,431,148
DEFERRED ACTION BATTERY HAVING UNITARY PLASTIC CASING

Kenneth R. Jones, Mequon, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed July 16, 1964, Ser. No. 383,159
U.S. Cl. 136—90 **7 Claims**
Int. Cl. H01m *17/06*

1. A deferred action battery substantially activated by the ingress of electrolyte comprising a plurality of cells, each including an anode electrode and a cathode electrode spaced apart to define a reactive space therebetween, said cells being disposed in overlying relationship and having spaced peripheral edge portions, terminal conductors secured to selected ones of said electrodes and extending outwardly therefrom, and a single unitary casing completely enclosing said plurality of cells and sealingly engaging substantially the entire peripheral edge portions of each of said cells to thereby isolate said reactive spaces and to define peripheral walls therefor, said unitary casing being provided with transverse openings at the edges of each of said cells to provide for the ingress and egress of electrolyte to said reactive space, said unitary casing including a hood covering each of said transverse openings and spaced from said electrodes to define a manifold providing fluid communication between said reactive spaces, each of said hoods being apertured to provide ports for ingress and egress of said electrolyte to said manifold.

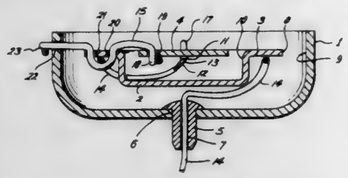
3,431,149
HEAT FLUX SENSOR ASSEMBLY

James E. Webb, Administrator of The National Aeronautics and Space Administration with respect to an invention of Gerald P. Robinson, High Ridge, and Duane E. Crofts, Florissant, Mo.

Filed Nov. 27, 1967, Ser. No. 685,764
U.S. Cl. 136—213 **9 Claims**
Int. Cl. H01v *1/30*

In radiant heat flux sensors, greater thermal isolation from irrelevant and undesirable heat sources may be ac-

quired by providing a heat conductive shield including an annular heat radiating fin between the flux sensing element and the sensor mount housing. By equating the MC_p/A ratio of the heat shield with that of the sensor



element and providing appropriate surface areas of both the sensing element and the radiating fin with substantially identical

$$\frac{\text{absorptivity}}{\text{emissivity}}$$

ratios, the radiative heat transfer between the two parts may be substantially reduced.

3,431,150

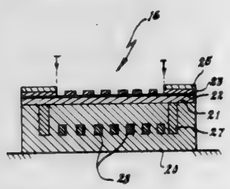
PROCESS FOR IMPLANTING GRIDS IN SEMICONDUCTOR DEVICES

Russell P. Dolan, Jr., Concord, Bobby L. Buchanan, Carlisle, and Sven A. Roosild, Billerica, Mass., assignors to the United States of America as represented by the United States Air Force

Filed Oct. 7, 1966, Ser. No. 586,001

U.S. Cl. 148—1.5 **1 Claim**

Int. Cl. H01 *7/54, 7/50, 7/48*



A method of making field effect semiconductor devices with buried grids including the steps of bombarding a semiconductor substrate with monoenergetic ions after a gold mask has been etched through a photo resist located thereon.

3,431,151

POLYESTER RESINS

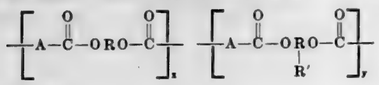
Dorothy Ann Carvalho, East Norwich, N.Y., and Martin Hauser, Edward John Schriffert, and George Sidney Sprague, Stamford Conn., assignors to American Cyanamid Company, Stamford, Conn. a corporation of Maine.

No Drawing. Filed Feb. 23, 1967, Ser. No. 619,119

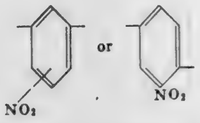
U.S. Cl. 149—19 **8 Claims**

Int. Cl. C06b *1/00, 11/00;* **C08g** *17/08*

The invention relates to polyester resins of the formula



wherein A is a



group, R is an alkylene, a $-(CH_2)_n-O-(CH_2)_n-$ or a



radical, n is a number from 1 to 10, R′ is hydroxy alkyl and the ratio of x:y ranges from about 100:0 to 100:10, respectively. These polyester resins are useful as rocket propellants when admixed with a plasticizer, a fuel such as aluminum, magnesium, boron or carbon, an oxidizer such as ammonia, guanidine, hydrazine, the alkali metal or alkaline earth metal chromates, dichromates, permanganates, nitrates, chlorates or perchlorates and a cross linking agent.

3,431,152

COMPOSITIONS CONTAINING AROMATIC SULFONYL AZIRIDINE AS CURING AGENTS

Martin Hauser and George Sidney Sprague, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

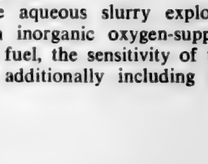
No Drawing. Filed Mar. 23, 1967, Ser. No. 627,249

U.S. Cl. 149—19 **5 Claims**

Int. Cl. C06c *1/00, 11/00, 15/00*

This invention relates to compositions containing compounds having the formula

(I)



wherein Ar is an aromatic hydrocarbon moiety, e.g. benzene, toluene, xylene, durene, naphthalene, etc. R, R^1, R^2 and R^3 are, individually, hydrogen or a lower alkyl radical and n is a whole, positive integer of 2 or 3. These compounds are useful as cross-linking agents in propellant or explosive compositions containing fuels such as aluminum, magnesium, boron or carbon, an oxidizer such as ammonia, hydrazine, guanidine and alkali or alkaline earth metal chromates, dichromates, permanganates, nitrates, chlorates, or perchlorates, a plasticizer and a carboxy-terminated polymer.

3,431,153

SOLIDIFIED PLASTIC MATRIX CONTAINING WHITE PHOSPHOROUS

William O. Seals, Budd Lake, Thomas E. Dunigan, Oak Ridge, and Jean P. Picard, Morristown, N.J., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Oct. 16, 1967, Ser. No. 676,383

U.S. Cl. 149—19 **11 Claims**

Int. Cl. C06d *1/02*

A plastic matrix containing white phosphorous for use at elevated temperatures as the smoke generating contents of an artillery marking shell.

3,431,154

AQUEOUS SLURRY EXPLOSIVE COMPOSITION CONTAINING A CHLORINATED ORGANIC COMPOUND AS SENSITIZER

Cornelius James Noel Kelly, Simsbury, Conn., and Robert Franklin Knott, Mont St. Hilaire, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Continuation-in-part of application Ser. No. 684,519, Nov. 20, 1967. This application July 31, 1968, Ser. No. 748,915

U.S. Cl. 149—38 **12 Claims**

Int. Cl. C06b *1/04*

In pourable aqueous slurry explosive compositions comprising an inorganic oxygen-supplying salt, water, thickener and fuel, the sensitivity of the composition is improved by additionally including in the mixture a chlorinated organic compound and a material which arrests the migration of any air or gas bubbles which have been introduced or occluded into the composition. In large diameter cartridges for unconfined detonation or in compositions for use in 4 inch or larger diameter boreholes, the gas bubble arrester may be omitted.

3,431,155

WATER-BEARING EXPLOSIVE CONTAINING NITROGEN-BASE SALT AND METHOD OF PREPARING SAME

Colin Dunglinson and William M. Lyerly, Hagerstown, Md., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 2, 1967, Ser. No. 643,064

U.S. Cl. 149—47 **17 Claims**

Int. Cl. C06b *1/04, 21/00, 11/00*

Water-bearing explosives comprising nitrogen base salt sensitizer and a process for their manufacture employing the crude aqueous reaction product of nitrogen base and oxidizing acid.

3,431,156

COMPLEX CRYSTALLINE PICRATE EXPLOSIVE CONTAINING ENTRAPPED AMOUNTS OF LEAD AZIDE

Joseph F. Kenney, Bridgeport, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware

No Drawing. Filed Oct. 20, 1967, Ser. No. 676,739

U.S. Cl. 149—26 **37 Claims**

Int. Cl. C06c *1/02;* **C07f** *7/24*

Novel primary explosives and methods of forming such explosives. All of the new explosives are characterized by a clathrate type structure in which a crystal of a complex picrate explosive serves as a host crystal and entraps within its crystalline structure large additional amounts of lead azide, and are useful in detonators, primers, fuses and like devices.

3,431,157

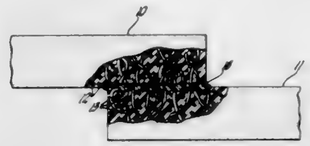
METHOD OF BONDING GLASS FIBER REINFORCED PLASTIC PANELS TO OTHER MATERIALS

Kenneth J. Mack, Rochester, Minn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 20, 1965, Ser. No. 514,893

U.S. Cl. 156—82 **12 Claims**

Int. Cl. B32d *27/36, 31/20*



1. A method for bonding a cured glass fiber reinforced plastic panel to other materials comprising the steps of burning away the surface layer of plastic from the surface of the plastic panel portion to be joined, said burning step exposing glass fibers which adhere well to adhesives, applying a layer of an adhesive to the exposed glass fibers, pressing said other material which adheres well to adhesives on top of said adhesive layer, and curing said adhesive layer, said cured adhesive layer adhering tightly to said panel and said other material.

4. A method as described in claim 1 wherein said surface is burned by an oxygen-acetylene flame.

3,431,158

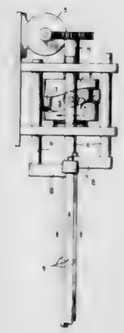
WORKING PROCEDURE OF AND APPARATUS FOR THE MANUFACTURE OF REINFORCED PLASTIC TUBES

Ulrik Poulsen, Parkvej 28, Virum, Denmark

Filed Sept. 22, 1965, Ser. No. 489,316

U.S. Cl. 156—173 **4 Claims**

Int. Cl. B31c *3/00;* **B65h** *54/00*



A longitudinally divided mandrel with a drive cam and individual cam followers connected to each of the mandrel sections for advancing the majority of sections together to carry tubing formed thereon, while withdrawing fewer mandrel sections rapidly to a starting position to again proceed forwardly with other mandrel sections and continue transportation of the formed tubing.

3,431,159

MANUFACTURE OF MOULDINGS FROM ACRYLONITRILE COPOLYMERS

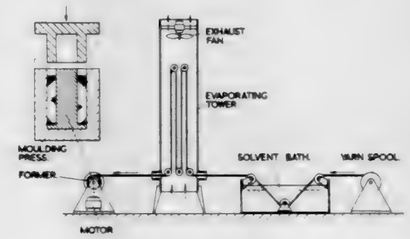
David Gordon, 27 Thaxted Way, Waltham Abbey, Essex, England, and Henry Warburton Hall, The Willows, 20 Claremont Ave., Woking, Surrey, England

Filed June 14, 1965, Ser. No. 463,523

Claims priority, application Great Britain, June 17, 1964, 25,044/64

U.S. Cl. 156—180 **9 Claims**

Int. Cl. D04h *3/08;* **B29d** *7/14*



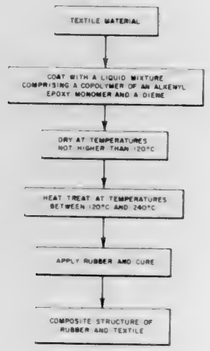
Solid integral mouldings of polyacrylonitrile copolymer are prepared by wetting acrylonitrile copolymer fibres with a solution of an organic solvent admixed with an organic diluent, evaporating the wetted fibres content of solution until the fibres contain between 75% and 85% of organic solvent, and hot pressing the fibres to plasticise them and form a solid integral moulding.

3,431,160
METHOD OF MAKING A WEAR-RESISTANT SLIDING-SURFACE STRUCTURE
Akira Usui and Michiharu Kurokochi, Numazu-shi, and Shigeo Sugiyama, Sunto-gun, Japan, assignors to Usui Kokusai Sangyo Kabushiki Kaisha, Shizuoka-ken, Japan, a joint-stock company of Japan
Filed Sept. 4, 1964, Ser. No. 394,477
Claims priority, application Japan, Sept. 6, 1963, 38/46,695; Mar. 30, 1964 (utility model), 39/23,875
U.S. Cl. 156—228 3 Claims
Int. Cl. B32b *31/04*



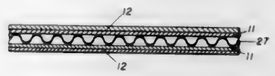
A method for fabricating wear-resistant, sliding-surface materials which comprises: disposing a wire mesh sieve so that its lower surface is parallel to and at a selected distance from the working surface of a pressure applying flat plate, distributing through the sieve mesh and into the space so formed between said two surfaces a starting material powder of polytetrafluoroethylene resin and of the order of 35% powder material selected from the group consisting of graphite, molybdenum, lead, cadmium, molybdenum disulfide, glass, and mixtures thereof until said space is uniformly filled; removing the sieve to leave a uniformly distributed powder layer; pressure bonding the said powder layer so formed to a sheet of mesh fabric to form an integral laminated material; and heating said integral laminated material to cause sintering thereof.

3,431,161
METHOD OF BONDING SYNTHETIC FIBER MATERIALS TO RUBBERS
Bernardino Vecellio, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy
Filed Mar. 4, 1964, Ser. No. 349,470
Claims priority, application Italy, Mar. 12, 1963, 5,170/63
U.S. Cl. 156—330 24 Claims
Int. Cl. C09j *5/02*



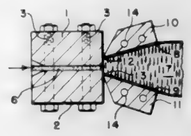
A textile reinforcing material is contacted with a liquid mixture containing an unsaturated epoxy copolymer having pendent epoxy groups, said copolymer having been obtained by free radical copolymerization of at least one conjugated diene with at least one alkenyl epoxy monomer. The impregnated textile material is dried to partially cross link the epoxy groups to the textile material, contacted with rubber stock, and the composite structure is vulcanized.

3,431,162
CORRUGATED CONTAINERBOARD AND THE PROCESS OF TREATING THE SAME
Richard M. Morris, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Apr. 6, 1965, Ser. No. 445,890
U.S. Cl. 161—133 3 Claims
Int. Cl. B32b *3/38, 9/06, 29/06*



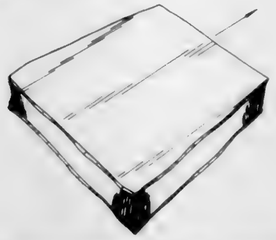
A water resistant linerboard which retains its strength under high humidity conditions is made by impregnating 1 to 5 lbs. per thousand square feet of a starch extended phenol-formaldehyde resin wherein the molecular weight ratio of formaldehyde to phenol ranges from 0.9 to 3.0 only into the outer surfaces of a rosin sized linerboard. The linerboard can be used to make corrugated containerboard in a conventional manner.

3,431,163
FOAMED ALIPHATIC RESIN PRODUCTS HAVING ELONGATED CELLS AT RIGHT ANGLES TO A SURFACE SKIN AND THEIR MANUFACTURE
John Harold Gilbert, Chepstow, England, assignor to Monsanto Chemicals Limited, London, England, a British company
Filed June 29, 1965, Ser. No. 468,052
Claims priority, application Great Britain, July 9, 1964, 28,280/64
U.S. Cl. 161—161 15 Claims
Int. Cl. B32b *3/12, 27/32, 7/02*



Foamed aliphatic thermoplastic resin products comprising a mass of substantially parallel elongated cells oriented at right angles to an enclosing surface skin and exhibiting a density drop across the mass such that the density is lowest at the center and increases in an outward direction; processes for making such products by extruding a foamable composition through a die orifice into a zone of lower pressure defined by stationary surfaces which, at their upstream ends, are spaced apart by a distance 1.5–5 times greater than the width of the die orifice and are spaced gradually further apart from each other along the direction of extrusion and which are cooled sufficiently to solidify the resin in contact with them and thus create a frictional drag; and dies suitable for use in such processes.

3,431,164
FOAMED POLYVINYLAROMATIC RESIN PRODUCTS HAVING ELONGATED CELLS AT RIGHT ANGLES TO A SURFACE SKIN AND THEIR MANUFACTURE
John Harold Gilbert, Chepstow, England, assignor to Monsanto Chemicals Limited, London, England, a British company
Filed June 1, 1965, Ser. No. 460,215
Claims priority, application Great Britain, June 2, 1964, 22,745/64
U.S. Cl. 161—161 26 Claims
Int. Cl. B32b *3/12, 27/30*



Foamed polyvinylaromatic resin products comprising a mass of substantially parallel elongated cells oriented at right angles to an enclosing surface skin; processes for making such products by extruding a foamable composition through a die orifice into a zone of lower pressure defined by stationary surfaces which are spaced gradually further apart from each other along the direction of extrusion and which are cooled sufficiently to solidify the resin in contact with them and thus create a frictional drag; and dies suitable for use in such processes.

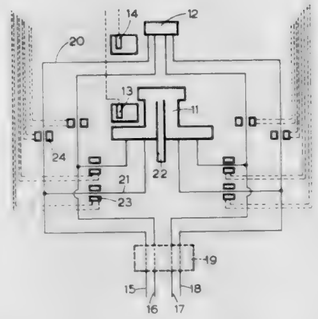
3,431,165
PROCESS FOR CHEMICAL RECOVERY AND ODOR ABATEMENT OF KRAFT LIQUOR
Winslow H. Buxton, Jr., Albany, Oreg., assignor to Western Kraft Corporation, Albany, Oreg., a corporation of Oregon
Filed Apr. 19, 1965, Ser. No. 449,102
U.S. Cl. 162—30 8 Claims
Int. Cl. D21c *11/08, 11/06*

Malodorous constituents are removed and values recovered from gasses resulting from the kraft lignocellulose pulping process by scrubbing the gasses with the dilute alkaline weak wash solution resulting from washing the solid dregs or calcium carbonate mud which are products of the process.

3,431,166
METHOD OF MAKING PAPER WHICH DISSOLVES IN WATER CONTAINING PAPERMAKING FIBERS AND FIBROUS CELLULOSE-GLYCOLIC ACID
Yasuo Mizutani, Kiryu-shi, and Shoichi Sakamoto and Yasuaki Ishibashi, Yoshihara-shi, Japan, assignors to Mishima Paper Manufacturing Co., Ltd., Tokyo, Japan
Continuation-in-part of application Ser. No. 466,596, June 24, 1965. This application Dec. 27, 1967, Ser. No. 693,782
Claims priority, application Japan, Oct. 14, 1964, 39/58,160
U.S. Cl. 162—135 2 Claims
Int. Cl. D21d *3/00;* D21h *3/72, 5/00*

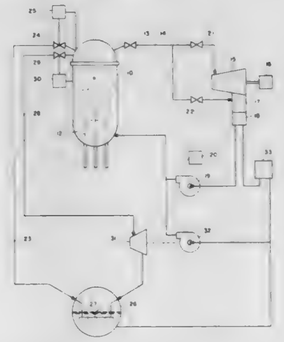
A method of making paper which dissolves or rapidly disintegrates in water, which comprises (a) heating a paper web comprising fibrous cellulose-glycolic acid having degree of substitution of 0.1 to 0.8, at such a temperature and for such a time as will enable it not to dissolve or disintegrate during the alkali impregnation which follows, (b) impregnating the heat-treated web with an aqueous solution of an alkali selected from the group consisting of sodium compounds and potassium compounds such that the paper web takes greater than that weight of alkali neutralizing equivalent to the cellulose-glycolic acid, and (c) heating the impregnated paper web to dry it.

3,431,167
APPARATUS FOR TESTING FOR NUCLEAR FUEL ELEMENT SHEATHING FAILURE
Stanley Hackney, Appleton, near Warrington, and Daniel Fraser Davidson, Eastham, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed July 5, 1967, Ser. No. 651,219
Claims priority, application Great Britain, July 22, 1966, 33,031/66
U.S. Cl. 176—19 6 Claims
Int. Cl. G21c *17/06, 15/00*



Apparatus for testing for the occurrence of fuel element sheathing failure in a nuclear reactor core cooled by liquid metal employs a chamber at which to detect the presence of fission products by conventional detection means, sampling pipes extending from the vicinity of the fuel elements to said chamber for carrying liquid metal coolant, and selectively operable devices each associated with a sample pipe for altering by means of electromagnetic interaction with liquid metal in the respective pipe the relationship of the flow impedances in the pipe between one promoting flow and one substantially preventing flow. The devices may constitute electromagnetic pumps or electromagnetic brakes. Various alternative configurations of device position and sampling pipe layout are described.

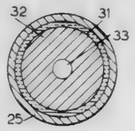
3,431,168
REACTOR COOLING SYSTEM
Jens E. Kjemtrup, Los Gatos, Calif., assignor to General Electric Company, a corporation of New York
Filed June 26, 1967, Ser. No. 648,751
U.S. Cl. 176—55 5 Claims
Int. Cl. G21c *15/00;* F22b *1/00*



This describes an auxiliary cooling system for removing decay heat from a nuclear reactor and for maintain-

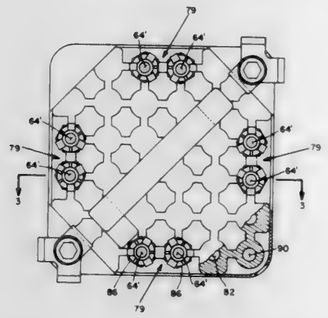
ing the coolant level in the reactor vessel in the event that the normal circulation system must be closed. A pressure relief valve allows decay steam to escape into a body or pool of coolant. A portion of the escaping steam is applied to a turbine which drives a pump for supplying coolant from a storage tank to the reactor vessel to maintain the coolant level. The system thus remains operable even in the event of loss of normal and auxiliary A-C electrical power.

3,431,169
NUCLEAR REACTOR FUEL ELEMENTS
John Peter Ellington, Paddington, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 19, 1966, Ser. No. 602,927
Claims priority, application Great Britain, Dec. 30, 1965, 55,235/65
U.S. Cl. 176—68 **4 Claims**
Int. Cl. G21c *3/22*



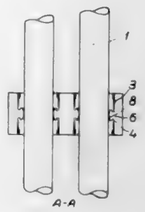
A nuclear reactor fuel element comprising sheathing exposed externally to flowing coolant and containing ceramic nuclear fuel whose density in aggregate is less than (for example 85%) maximum theoretical density so as to provide distributed voidage, has a solid interlayer having thermal insulating properties disposed in contact between sheathing and fuel. The interlayer contains no fissile or fertile atoms, and serves to increase the operating temperature of the fuel, and therefore to lower its compressive creep strength, whereby irradiation-induced swelling of the fuel is absorbed in said voidage.

3,431,170
NUCLEAR REACTOR FUEL BUNDLE
James L. Lass and Dominic A. Venier, San Jose, Calif., assignors to General Electric Company, a corporation of New York
Filed Dec. 7, 1966, Ser. No. 599,865
U.S. Cl. 176—78 **7 Claims**
Int. Cl. G21c *3/32, 3/10*



This describes a fuel bundle for a nuclear reactor comprising a plurality of fuel rods positioned between upper and lower tie plates, the upper tie plate being readily removable to permit ready interchange of the fuel rods.

3,431,171
FUEL ASSEMBLY FOR NUCLEAR REACTORS WITH FUEL RODS POSITIONED BY SPRINGS CARRIED BY A GRID
Constan Glandin, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Original application May 17, 1965, Ser. No. 456,234, now Patent No. 3,380,890, dated Apr. 30, 1968. Divided and this application Apr. 24, 1967, Ser. No. 633,675
Claims priority, application Sweden, June 3, 1964, 6,722/64
U.S. Cl. 176—78 **11 Claims**
Int. Cl. G21c *3/30*



The rods in a nuclear reactor fuel assembly are positioned by a grid formed of rigid spacers extending longitudinally of the rods and having elongated springs also extending longitudinally of the rods engaging the rods at angularly spaced points to position the rods.

3,431,172
LIVE CELL DILUENT AND PROCESS
Ambrose H. J. Rajamannan, Anoka, Minn. (103 Landmark Drive, Eastern Heights, Ithaca, N.Y. 14850)
No Drawing. Continuation-in-part of application Ser. No. 418,304, Dec. 14, 1964. This application July 12, 1965, Ser. No. 471,424
U.S. Cl. 195—1.8 **9 Claims**
Int. Cl. C12k *9/00;* **A01n** *1/02*

This disclosure concerns the problem of providing a suitable carrier preservative for freezing live cells and is particularly useful in the field of preserving cells for insemination in a buffered extract of dried egg yolk.

3,431,173
PROCESS FOR THE PREPARATION OF 17α-ACYLOXY-21-HYDROXY-PREGNANES
Willem Frederik van der Waard and Jan de Flines, Delft, Netherlands, assignors to Koninklijke Nederlandsche Gist & Spiritusfabriek N.V., Delft, Netherlands, a corporation of the Netherlands
No Drawing. Filed Apr. 24, 1967, Ser. No. 632,888
Claims priority, application Netherlands, Apr. 25, 1966, 6605515
U.S. Cl. 195—51 **5 Claims**
Int. Cl. C12b *1/00;* **C07c** *167/00*

Novel process for the preparation of 17α-acyloxy-21-hydroxy steroids of the pregnane series from the corresponding 17α,21-diacyloxy steroids with *Flavobacterium dehydrogenans* with excellent yields.

3,431,174
SYNTHESIS OF STEROIDS
Samuel C. Pan, Metuchen, Pacifico A. Principe, South River, and Barbara Junta, Somerset, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,304
U.S. Cl. 195—51 **7 Claims**
Int. Cl. C12b *1/00*

16-hydroxyestranes are prepared by a two-step process which involves first 16-hydroxylating a 10-nor-Δ^4-androstene by treatment with the enzymes of a 16-hydroxylating microorganism, and then subjecting the 16-hydroxy compound formed to the action of enzymes of a 1-dehydrogenating microorganism.

3,431,175
METHOD FOR THE PREPARATION OF A LIPOPROTEIN LIPASE BY CULTIVATING ORGANISMS
Kei Arima and Gakuzo Tamura, Tokyo, Teiiti Narasaki, Kita-gun, and Yoshio Nakamura and Takashi Saiki, Tokyo, Japan, assignors to Amano Seiyaku Kabushiki Kaisha, Nagoya, Aichi Prefecture, Japan
No Drawing. Filed July 7, 1965, Ser. No. 470,206
Claims priority, application Japan, July 18, 1964, 39/40,492
U.S. Cl. 195—62 **2 Claims**
Int. Cl. C12k *1/10;* **C12d** *13/10*

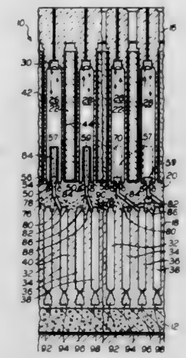
"Microbial lipoprotein lipase" which is similar to but distinguishable from lipoprotein lipase obtained from animals, is produced by culturing *Pseudomonas fluorescens, Pseudomonas schulkilliensis, Pseudomonas saccharophila, Pseudomonas aeruginosa, Mucor hiemalis, Mucor javanicus, Mucor mandshuricus, Mucor flavus, Mucor circinelloides, Streptomyces aureus, Streptomyces parvus, Serratia marcescens, Aeromonas hydrophila, Bacillus megatherium, Bacillus cereus* or *Bacillus subtilis.*

3,431,176
PREPARATION OF URICASE
Juichiro Fukumoto, Takarazuka, and Takehiko Yamamoto, Amagasaki, Japan, assignors to Toyo Boseki Kabushiki Kaisha, Osaka, Japan
No Drawing. Filed Jan. 17, 1967, Ser. No. 609,746
Claims priority, application Japan, Feb. 2, 1966, 41/6,346
U.S. Cl. 195—66 **4 Claims**
Int. Cl. C12d *13/10*

Uricase is prepared by cultivating yeast to adaptively produce uricase in the yeast cells, followed by extraction of the uricase from the yeast cells. The extraction procedure is characterized by contacting the cells with an aqueous solution of inorganic salt having an ionic strength higher than 2.0 and a pH of from 3 to 8, and then subjecting the treated cells to suspension in or dialysis against an aqueous solution of inorganic or organic salt having an ionic strength less than 1.0 and a pH of from 7.0 to 11.0 to effect the uricase extraction.

3,431,177
HORIZONTAL COKE OVENS WITH CONTROLLED TWO STAGE HEATING AND AIR ADMISSION
Erich F. Schön, Blankensteiner Strasse 37, Bochum, Germany
Filed June 9, 1966, Ser. No. 556,397
U.S. Cl. 202—135 **14 Claims**
Int. Cl. C10b *5/02*

1. A horizontal coke oven battery comprising a plurality of spaced apart coke oven chambers and a plurality of heating walls therebetween, at least one of said heating walls comprising a pair of spaced apart heating wall liners and a multiplicity of transversely extending spaced apart binders between said heating wall liners defining a plurality of vertically extending heating flues, each of said flues having means at the bottom thereof for introducing rich gas therein, a refractory deck underlying said coke oven chambers and said heating walls, a plurality of regenerators underlying said refractory deck, a first air passage extending through said deck and communicating a first of said regenerators with the bottom of at least one of said heating flues, the upper end of said first air passage terminating at the bottom of said heating flue at a point horizontally spaced from said rich gas introducing means, a second air passage extending through said deck and terminating at a point substantially above the bottom of said heating flue for communicating a second of said regenerators with said heating flue at a level substantially above the bottom of said flue, said first regenerator being in non-communicating relation with said second air passage, said second regenerator

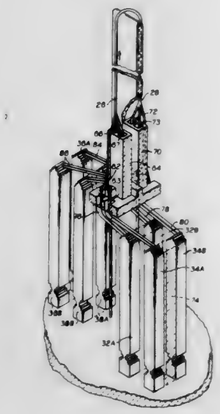


being in non-communicating relation with said first air passage, means for regulating the air supply to said first regenerator and means for regulating the air supply to said second regenerator, whereby to regulate the total air supply to said heating flue and to proportion said air supply between said first and second air passages.

3,431,178
COMPOUND COKE OVEN BATTERY WITH CONTROLLED TWO STAGE HEATING AND AIR ADMISSION
Erich F. Schön, Blankensteiner Strasse 37, Bochum, Germany
Filed June 9, 1966, Ser. No. 556,396
U.S. Cl. 202—135 **17 Claims**
Int. Cl. C10b *5/02, 5/12*

1. A compound coke oven battery adapted to operate alternatively on rich gas and on lean gas, said coke oven battery comprising a plurality of spaced apart coke oven chambers and a plurality of heating walls therebetween at least one of said heating walls comprising a pair of spaced apart heating wall liners and a multiplicity of transversely extending spaced apart binders between said heating wall liners defining a plurality of vertically extending heating flues, each of said heating flues having means at the bottom thereof for introducing rich gas therein, a refractory deck underlying said coke oven chambers and said heating walls, a plurality of regenerators underlying said refractory deck, a multiplicity of transversely extending spaced apart partition walls disposed in one of said regenerators and defining a plurality of vertically extending end to end first and second regenerator sections therein, a multiplicity of transversely extending spaced apart partition walls disposed in another of said regenerators and defining a plurality of vertically extending end to end third and fourth regenerator sections therein, a first passage extending through said deck and communicating one of said first regenerator sections with the bottom of one of said heating flues, the upper end of said first passage terminating at the bottom of said heating flue at a point horizontally spaced from said rich gas introducing means, a second passage extending through said deck and terminating at a point substantially above the bottom of said flue, said second passage communicating one of said second regenerator sections with said heating flue, a third passage extending through said deck and communicating one of said third regenerator sections with the bottom of said heating flue, said third passage terminating at the bottom of said heating flue at a point hori-

zontally spaced from said rich gas introducing means and from said first passage, a fourth passage extending through said deck and terminating at a point substantially above the bottom of said flue, said fourth passage communicating one of said fourth regenerator sections with said heating flue, said first regenerator section being in non-communicating relation with each of said second, third and fourth passages, said second regenerator section being in non-communicating relation with each of said first, third and fourth passages, said third regenerator section being in non-communicating relation with each of said first, second and fourth passages, said fourth regenerator section being in non-communicating relation with each of said first, second and third passages, means for supplying air to said first and second regenerator sections during both rich gas and lean gas operation, means for alternatively supplying air to said third and fourth regenerator sections during rich gas operation and lean



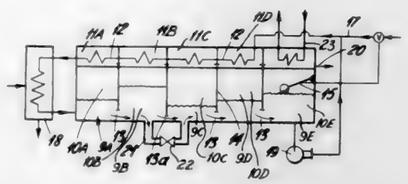
gas to said third and fourth regenerator sections during lean gas operation, means for regulating the air supply to said means for supplying air to said first and second regenerator sections, means for proportioning said air supply as between said first and second regenerator sections, means for regulating the supply of air and lean gas to said means for alternatively supplying air and lean gas to said third and fourth regenerator sections, and means for proportioning said air supply and said lean gas supply as between said third and fourth regenerator sections, whereby to regulate the total air supply to said flue and to proportion said air supply as between said first and third passages and said second and fourth passages during rich gas operation and to regulate the air supply and the lean gas supply to said flue and to proportion said air supply as between said first passage and said second passage and said lean gas supply as between said third passage and said fourth passage during lean gas operation.

3,431,179
DISTILLAND BY-PASS MEANS MULTI-STAGE EVAPORATORS HAVING

Roy Starmer, Durham, England, assignor to Applied Research and Engineering Limited, Durham, England, a British company

Filed Dec. 15, 1966, Ser. No. 601,961
Claims priority, application Great Britain, Dec. 21, 1965, 54,045/65
U.S. Cl. 202—173 **5 Claims**
Int. Cl. B01d *3/42, 3/02*

A multi-stage evaporator comprising a succession of stages, a submerged passage between each stage and the succeeding stage to allow a liquid to flow through the stages and, connecting at least one set of two succeeding

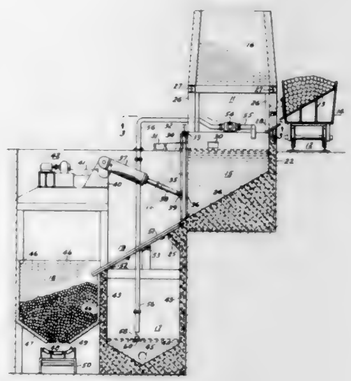


stages, a by-pass passage, in addition to the aforesaid passage, means being provided for controlling the rate of flow of liquid through the by-pass passage whereby the flow through the evaporator can be increased or decreased.

3,431,180
IMMERSION QUENCHING APPARATUS

Victor A. Neubaum, Coopersburg, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Dec. 4, 1964, Ser. No. 415,880
U.S. Cl. 202—227 **9 Claims**
Int. Cl. C10b *39/04, 39/08*

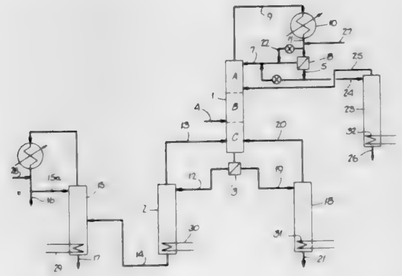


Apparatus for immersion quenching of hot coke carried thereto periodically by a car which receives the coke as it is pushed from the ovens of a battery of coke ovens. The apparatus includes a stationary reservoir located at an elevation below that of the coke car and having a bottom which is sloped toward a side wall that has a discharge opening extending upwardly from the reservoir bottom. The reservoir opening is equipped with a gate, and a sealing device interposed between the gate and the sides and bottom of the opening prevents the escape of quenching water from the reservoir when the gate is closed. A transfer grate extends downwardly and outwardly from adjacent the reservoir bottom to a coke receiver which is at a lower elevation than the reservoir. A receiver adjacent to and at a lower elevation than the transfer grate receives quenched coke which slides over the grate after being discharged from the reservoir. The water from the reservoir passes through openings in the grate into a sump.

3,431,181
METHOD OF SEPARATING METHANOL FROM LOW BOILING ALIPHATIC ESTERS AND WATER BY AZEOTROPIC DISTILLATION WITH A HYDROCARBON

Albert Bouniot, Melle, France, assignor to Melle-Bezons (Societe Anonyme), Melle, Deux-Sevres, France, a corporation of France

Filed June 14, 1967, Ser. No. 646,021
Claims priority, application France, June 22, 1966, 66,486
U.S. Cl. 203—8 **16 Claims**
Int. Cl. B01d *3/36;* **C07c** *29/28*

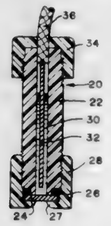


This disclosure describes a distillation procedure for separating methanol-low boiling aliphatic ester azeotropes and water utilizing a hydrocarbon entrainer which contains from four to seven carbon atoms and forms a low boiling azeotrope with methanol during the distillation procedure, partial refluxing of a separated methanol layer of the distillate controls the desired temperature level and composition in the lower part of the distillation column.

3,431,182
FLUORIDE SENSITIVE ELECTRODE AND METHOD OF USING SAME

Martin S. Frant, Newton, Mass., assignor to Orion Research, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 4, 1966, Ser. No. 525,197
U.S. Cl. 204—1 **12 Claims**
Int. Cl. B01k *3/06*

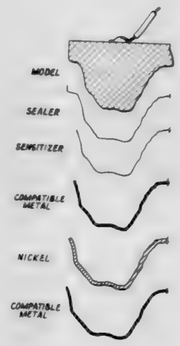


A potentiometric type electrode for and method of detecting fluoride ion activity in solution, the electrode having, as its ion-sensitive element, a membrane of substantially imporous, solid, ionic fluoride substantially insoluble in the solution. The membrane is contacted at one surface by the solution and at the other surface by a reference electrolyte providing a fixed contact potential. Exemplary membranes are formed of fluorides of the lanthanide series of selected rare earth metals, preferably as single large crystals.

3,431,183
METHOD OF MAKING DENTURES

Barrie F. Regan, 1760 Manor Drive, Hillsborough, Calif. 94010

Filed June 4, 1965, Ser. No. 461,455
U.S. Cl. 204—4 **5 Claims**
Int. Cl. C23b *7/00;* **A61c** *13/22*



A method of making dentures which comprises essentially electroforming three layers of metals on a replica of the mouth with the first and third layers formed of a tissue compatible metal and the intermediate layer formed of an unstressed metal stronger than the tissue compatible metal. The electroforming operation is interrupted to embed a bubble of stop-off material in the metal backbone of the denture, and the bubble is subsequently opened and the stop-off material removed to provide an anchor and parting line for gum replica material of the denture.

3,431,184
ELECTROCHEMICAL CYANATION OF SELECTED AROMATIC COMPOUNDS

Sam Andreades, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,752
U.S. Cl. 204—59 **12 Claims**
Int. Cl. B01k *1/00;* **C07c** *121/60, 121/50*

Mono and dicyano carbocylic aromatic and nitrogen heterocyclic aromatic compounds are produced by passing a direct current of electricity through a solvent or mixture of solvents containing a cyanide-containing compound and a carbocyclic aromatic or nitrogen heterocyclic compound. The aromatic reactant contains 1–4 rings and bears not more than four substituents. The process is conducted at a temperature of about −50 to +100° C. at an anode potential (versus a Saturated Calomel Electrode) of the order of +0.5 to +3.5 volts using an essentially inert anode.

3,431,185
HYDROCARBON LEAD PRODUCTION

Gene C. Robinson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 22, 1964, Ser. No. 377,097
U.S. Cl. 204—59 **2 Claims**
Int. Cl. B01k *1/00*

This application relates to a mixture of tetraorganolead compounds and an electrolytic process for the production of the mixture by electrolyzing a liquid composition comprising a vinylic Grignard reagent and an alkyl halide.

3,431,186
ELECTROLYTIC PROCESS FOR THE CLEAVAGE OF THIOL ESTERS OF AROMATIC CARBOXYLIC ACIDS

Leopold Horner, Mainz-Bretzenheim, and Heinz Neumann and Rolf Geiger, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,063
Claims priority, application Germany, Feb. 25, 1965, F 45,353
U.S. Cl. 204—73 **1 Claim**
Int. Cl. C07b *7/00;* **B01k** *1/00*

1. A process for the cleavage of thiol esters of aromatic carboxylic acids, which comprises, passing a unidirectional current through an aqueous acidic mixture of a thiol ester and a tetraalkyl ammonium salt in contact with a cathode at a potential sufficient to electrolytically reduce compounds of the general formula

R—CO—S—R'

in which R represents a phenyl radical which may be substituted by a low molecular alkyl, alkoxy or halogen, R' represents a low molecular alkyl, cycloalkyl having 5–8 carbon atoms, a phenyl or phenylalkyl which may be substituted by a low molecular alkyl, and the radical of an amino acid or of a peptide.

3,431,187
GOLD RECOVERY

Leslie E. Lancy, Ellwood City, Pa., assignor to Lancy Laboratories, Inc., Zelienople, Pa., a corporation of Pennsylvania

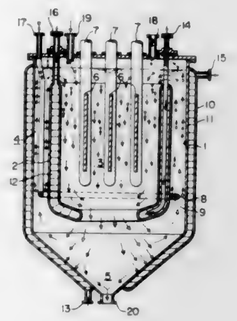
Filed Nov. 22, 1965, Ser. No. 508,987
U.S. Cl. 204—109 **13 Claims**
Int. Cl. C22d *1/12;* **C23b** *5/28*

1. An electroplating method of economically recovering gold in solution from a washing water waste solution employed to wash off dragout from gold plated workpieces provided by a gold electroplating operation, including a waste solution having a low concentration of gold content, and irrespective of the type of solution used in the previous gold plating operation on the workpieces whether of a cyanide, acid or neutral type which comprises, collecting the waste solution from said washing operation, progressively converting the waste solution to an alkaline cyanide solution having a pH above that at which poisonous cyanide gas will be evolved by adding alkali metal cyanide and hydroxide as required, progressively moving the converted solution through an electroplating bath having anode and cathode plates, progressively plating out gold from the solution on the cathode plates in the form of metallic gold, and progressively returning said solution to said washing operation.

3,431,188
PROCESS AND APPARATUS FOR PHOTOCHEMICAL REACTION

Shoichi Ito, Ichiro Kawamoto, and Yoichiro Hara, Minami-ku, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Nov. 18, 1964, Ser. No. 412,136
U.S. Cl. 204—157.1 **8 Claims**
Int. Cl. B01j *1/10, 1/00*



A process for carrying out the photochemical reaction of a liquid reactant utilizing different degrees of apparent density of liquids and due to the inclusion of a gaseous reactant an apparatus for carrying out said process. The process utilizes a partition device in specific arrangement whereby the liquid reactant is caused to circulate inside and outside said partition device by gravity due to the difference in apparent density, resulting from the inclusion of gaseous reactant without any additional means for such operation.

3,431,189
METHOD OF MAKING AN EXPANDED CELLULAR BODY OF POLYMER

Robert D. Offenhauer, Pennington, and Peter Scheiner, Princeton, N.J., assignors to Mobil Oil Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 17, 1966, Ser. No. 572,908
U.S. Cl. 204—159.18 **10 Claims**
Int. Cl. B01j *1/10;* **C08f** *47/08*

An expanded cellular polymer is produced by incorporating into a polymer a triazoline compound photodecomposable to produce nitrogen gas, and exposing the resulting mixture to electromagnetic radiation to decompose the compound to produce nitrogen gas that is trapped in the polymer to form a multiplicity of gas-filled cavities thereby producing the expanded cellular polymer.

3,431,190
PHOTOCHEMICAL CYCLOADDITION REACTION PROCESS

Leon Starr, Plainfield, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 24, 1965, Ser. No. 466,802
U.S. Cl. 204—162 **14 Claims**
Int. Cl. B01j *1/10, 1/00;* **C07c** *3/24*

Increased yields in photochemical syntheses photosensitized with benzophenone are obtained by the use of a second photosensitizer. The second photosensitizer and the amount used per mole benzophenone is 1–3 moles acetone, 0.7–3.5 moles acetophenone, or 1.3–3 moles 1,3,5-triacetylbenzene.

3,431,191
PROCESS FOR PRODUCING 5,10-SECO-STEROIDS

Georg Anner, Basel, Basel-Land, Charles Meystre, Reinach, Jaroslav Kalvoda, Basel, Basel-Land, and Hellmut Ueberwasser, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

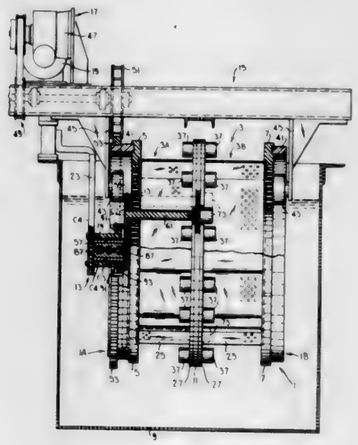
No Drawing. Filed June 28, 1965, Ser. No. 467,691
Claims priority, application Switzerland, July 3, 1964, 8,781
U.S. Cl. 204—158 **33 Claims**
Int. Cl. C07c *171/07;* **B01j** *1/10*

Process for the manufacture of new 5,10-seco-steroids of the androstane and pregnane series that contain in position 10 at least one hydrogen atom or, starting from it, a double bond, wherein a 5-hydroxy-steroid of the androstane or pregnane series containing no further oxidizable hydroxyl group is reacted with a member selected from the group consisting of an oxidizing heavy-metal acylate while being irradiated with ultraviolet light, and a compound that contains monovalent, positive iodine. The products of the invention are useful in the same manner as the comparable 5,10-cyclo derivatives but their metabolizing rate is more favorable. They are, thus, useful as andogens, anabolics, progestatives and agents capable of regulating the mineral metabolism and the blood cholesterol level, as well as being intermediates.

3,431,192
PLATING APPARATUS

Leonard P. Kumpf, Affton, Mo., assignor to Lasalco Incorporated, St. Louis, Mo., a corporation of Missouri

Filed June 9, 1965, Ser. No. 462,617
U.S. Cl. 204—213 **13 Claims**
Int. Cl. C23b *5/78*

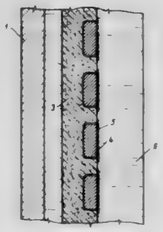


Plating apparatus comprising an electrically nonconductive barrel for holding work to be electrolytically treated. In a first embodiment, the barrel comprises two sections disposed end-to-end and has a flat electrode ring removably clamped between flanges at the inner ends of the two sections. The ring has a bare inner rim projecting into the interior of the drum for establishing electrical contact with the work to be treated, and has an insulation coating on the part thereof clamped between the two barrel sections. Current collector means connected to the ring includes a conductive center hub having a pair of current-carrying part-cylindric inserts biased apart by a spring. A second type of hub has inboard and outboard axial seals and means responsive to rotation of the barrel for maintaining the outboard seal under compression. In a second embodiment, a nonconductive barrel is split longitudinally into two sections and a generally U-shaped electrode is clamped between flanges of the two sections, the electrode having a nonconductive coating on the portion clamped between the flanges and a bare inner rim projecting into the interior of the drum.

3,431,193
ELECTROLYZER FOR A SIMULTANEOUS PRODUCTION OF CHLORINE AND ALKALINE CARBONATES

Jan Balej, Ivo Paseka, Jiří Vondrák, and Albert Regner, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia

Filed May 2, 1966, Ser. No. 546,855
Claims priority, application Czechoslovakia, Apr. 30, 1965, 2,854/65
U.S. Cl. 204—266 **8 Claims**
Int. Cl. B01k *3/10*



1. An electrolyzer for simultaneously producing chlorine and alkaline carbonates comprising an anode, a cathode, a porous electrically insulating diaphragm mounted on said cathode, a metal coating provided only on the side of said cathode facing said diaphragm, said coating having a hydrogen overvoltage by at least 200 millivolts higher than the voltage on the other side of the cathode, and means for introducing carbon dioxide into the cathode space on the side remote from said anode.

3,431,194
PROCESS FOR LOWERING THE POUR POINT OF A MIDDLE DISTILLATE

William Bartok and Robert H. Shabaker, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 512,521, Dec. 8, 1965. This application Oct. 14, 1966, Ser. No. 586,681
U.S. Cl. 208—89 **13 Claims**
Int. Cl. C10g *35/08, 39/00*

A process for lowering the pour point of a middle distillate in which said distillate is fractionated into light and heavy fractions. The heavy fraction is hydroisomerized and reblended with the light fraction.

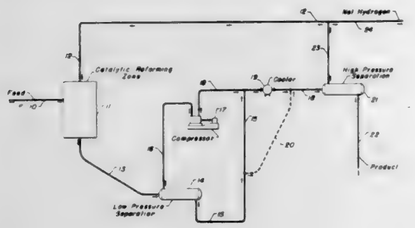
3,431,195
PURIFYING MAKE HYDROGEN IN A CATALYTIC REFORMING PROCESS

Dana H. Storch, Wilmette, and Newt M. Hallman, Mount Prospect, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,202
U.S. Cl. 208—101 **8 Claims**
Int. Cl. C10g *35/04, 35/08, 35/00*

Process for the catalytic reforming of hydrocarbons in the presence of hydrogen, preferably, to produce gasoline

boiling range products. Relatively impure hydrogen for recycle purposes is purified by compressing and contact-



ing this hydrogen with a portion of the liquid phase reformed.

3,431,196

HYDROCRACKING CATALYST AND PROCESS

Robert M. Dobres, deceased, late of Silver Spring, Md., by Amalie B. Dobres, executrix, Silver Spring, Md., and John L. Warthen, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 499,036, Oct. 20, 1965. This application Feb. 21, 1967, Ser. No. 617,711

U.S. Cl. 208—111 **6 Claims**

Int. Cl. C10g *13/04;* **B01j** *11/26*

Z–14 US zeolite promoted silica-alumina catalysts impregnated with from 2 to 12 percent nickel, cobalt and mixtures thereof are used in catalytic hydrocracking of hydrocarbons.

3,431,197

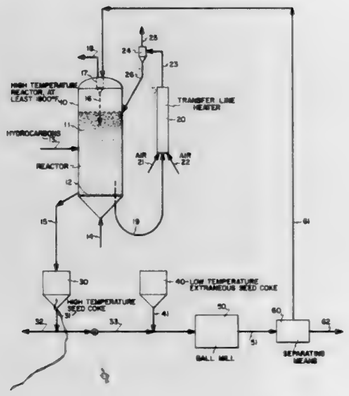
FLUID COKING USING EXTRANEOUS SEED COKE

Charles E. Jahnig, Rumson, and Robert W. Schnepf, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,496

U.S. Cl. 208—127 **10 Claims**

Int. Cl. C10g *9/32;* **C10b** *55/10*



1. In a coking process for forming larger coke particles from smaller seed coke particles which includes the steps of (a) fluidizing and forming a bed of particulate coke within a high temperature reaction zone, (b) withdrawing particulate coke from said reaction zone and passing same through a heating zone to elevate the temperature of the coke, thence returning the heated coke to the reaction zone to supply process heat while maintaining the fluidized bed at a temperature of at least about 1800° F., (c) contacting the particulate coke solids of the bed with a hydrocarbon to form a gaseous effluent and to deposit coke on the coke solids particles, and (d) withdrawing particulate coke from the fluidized bed of the reaction zone as product, the improvement comprising (e) transferring from an extraneous process to the fluidized bed of the reaction zone a low temperature seed coke formed at temperatures ranging from about 900° F. to about 1400° F., said coke seeds being of particle size ranging from about 325 mesh to about 40 mesh.

3,431,198

TWO-STAGE CATALYTIC HYDROGENATION OF A DEWAXED RAFFINATE

Maurice K. Rausch, South Holland, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1966, Ser. No. 600,785

U.S. Cl. 208—143 **6 Claims**

Int. Cl. C10g *23/02, 23/04*

A process for providing odorless, tasteless, low pour point mineral lubricating oils is provided by subjecting a solvent refined, solvent dewaxed raffinate mineral oil derived from crude oil having a characterization factor of at least 11.5, to a two-stage catalytic hydrogenation process. The first stage is over a sulfur-resistant hydrogenation catalyst at defined hydrogenation conditions and in the presence of hydrogen, and then the product is treated by contact with a platinum group metal-alumina catalyst at defined hydrogenation conditions and in the presence of hydrogen.

3,431,199

METHOD OF SEPARATING AROMATIC HYDROCARBONS FROM MIXTURES CONTAINING THEM

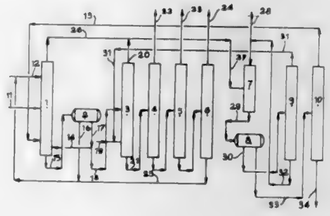
Cesare Reni and Luigi Lugo, Milan, Italy, assignors to Società Italiana Resine S.p.A., Milan, Italy

Filed Jan. 20, 1967, Ser. No. 610,535

Claims priority, application Italy, Jan. 26, 1966, 1,740/66

U.S. Cl. 208—325 **17 Claims**

Int. Cl. C10g *21/12*



Method of separating aromatic hydrocarbons from liquid hydrocarbon mixtures by charging the mixture to a multi-stage extractor at high temperature with a high boiling organic selective solvent, collecting a liquid extract phase with a high aromatic hydrocarbon content and a raffinate liquid phase essentially comprising non-aromatic hydrocarbons, conveying the extract after cooling to a decanter in which two distinct liquid phases are separated, recycling the heavier liquid phase to the extractor, conveying the lighter liquid phase to an azeotropic distillation column to which acetone vapor is admitted, and after fractionation, conveying as a reflux to the bottom of the extractor the lighter fraction of the non-aromatic raffinate together with any aromatic hydrocarbons present in the raffinate.

3,431,200

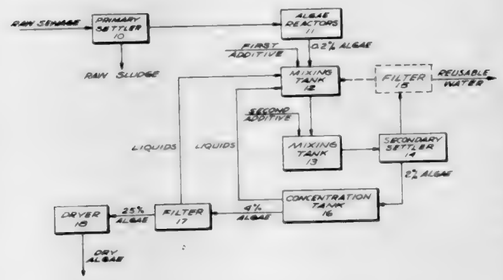
FLOCCULATION OF SUSPENSIONS

Noah S. Davis, Northridge, and Oren J. Foust, Granada Hills, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed June 13, 1967, Ser. No. 645,816

U.S. Cl. 210—10 **18 Claims**

Int. Cl. B01d *21/01;* **A01h** *13/00;* **C02b** *1/20*



A process is described for treating waste material for reducing the organic content thereof and recovering reusable water. Algae are photosynthetically grown in the wastes and the algae is recovered from the resultant slurry as an economically valuable product. In order to remove the algae from the slurry it is flocculated by sequential additions of calcium chloride and sodium hydroxide for producing calcium hydroxide in the suspension in a concentration below the solubility limit of calcium hydroxide. Such sequential additions induce instantaneous flocculation of the algae and permit ready settling and filtering thereof without introducing potentially toxic flocculating agents in the resultant product. Flocculation of other suspensions is also described.

3,431,201

HYPERFILTRATION PROCESS HAVING ION EXCHANGE PRETREATMENT

James S. Johnson and Kurt A. Kraus, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 29, 1967, Ser. No. 664,207

U.S. Cl. 210—23 **5 Claims**

Int. Cl. C02b *1/58;* **B01d** *13/00*

In a method of carrying out a hyperfiltration process for removing solute from an aqueous solution using a dynamically formed ion exchange membrane the improvement comprising using a hydrous oxide mass as an ion exchanger to remove interfering ions such as fluoride, phosphate, sulfate, and silicate from the solution before the solution is brought into contact with the membrane.

3,431,202

COMPLEX POLYMERIC PRODUCT AND PROCESS

Lloyd Eugene Van Blaricom and Frederic Alan Johnston, Shelton, Wash., assignors to ITT Rayonier Incorporated, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 459,091, May 26, 1965. This application Dec. 4, 1967, Ser. No. 687,915

U.S. Cl. 252—8.5 **2 Claims**

Int. Cl. C09k *3/00*

A polymeric zinc complex for use in controlling the rheological properties of aqueous clay base drilling muds, said zinc complex having been prepared by digesting a coniferous tree bark or quebracho wood in an aqueous solution of a sulfurous acid salt of sodium or potassium to obtain a sulfited polyphenolic extract and then reacting the sulfited extract with zinc salt to produce the polymeric zinc complex.

3,431,203

FRICTION BEARING OF THERMOPLASTIC MATERIAL AND PROCESS OF MAKING SAME

Werner Hartmann, Karlsruhe, Baden, Dietrich Schleede, Frankfurt am Main, and Felix Schülde, Neuenhain, Taunus, Germany, assignors to G. M. Pfaff A.G., Kaiserslautern, and Farbwerke Hoechst A.G., Frankfurt am Main, Hochst, Germany, both corporations of Germany

Continuation-in-part of applications Ser. No. 291,175, June 27, 1963, and Ser. No. 328,568, Dec. 6, 1963. This application Apr. 5, 1967, Ser. No. 628,731

U.S. Cl. 252—12.2 **15 Claims**

Int. Cl. C10m *7/25, 7/14*

Self-lubricating thermoplastic bearing material and slide guides, e.g. bearings for machines and other load bearing and frictionless structures, made of such material. The bearing material comprises a closed-pore type of porous polyolefin impregnated with a flowable lubricant which is occluded in the closed pores and which exudes during the operation of the bearing to lubricate the bearing material surface. The polyolefin preferably is polypropylene, low-pressure polyethylene, or a copolymer of ethylene or propylene with a minor amount of another monomer.

3,431,204

GREASE COMPOSITIONS

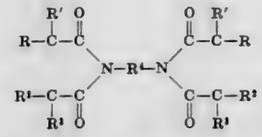
John J. Giammaria, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 8, 1965, Ser. No. 462,447

U.S. Cl. 252—28 **16 Claims**

Int. Cl. C10m *5/20, 5/02*

Grease compositions are provided containing minor amounts of sodium nitrite and a succinimide represented by the general formula



wherein R′, R^2 and R^3 are selected from the group consisting of hydrogen, alkyl and alkenyl, and R^4 is selected from the group consisting of alkylene and amino alkylene groups having at least 2 carbon atoms.

The use of the aforementioned combination of additives provides satisfactory antirust properties without substantial loss of oxidative stability.

3,431,205

PROCESS FOR PRODUCTION OF METAL BEARING CARBON BLACK

Wolfgang K. F. Otto, Spartanburg, S.C., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

No Drawing. Filed Sept. 17, 1965, Ser. No. 488,283

U.S. Cl. 252—62.55 **8 Claims**

Int. Cl. H01f *1/09;* **C23c** *11/02*

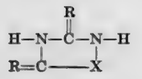
Trouble-free formation of magnetic carbon blacks, e.g. with reduced deterioration of furnace linings, is attained by decomposing a heat-decomposible compound of iron, nickel and/or cobalt in the cooling zone of a reactor in the presence of previously-formed carbon black particles.

3,431,206
COMPOSITIONS FOR AND PROCESSES OF BLEACHING TREATED TEXTILES

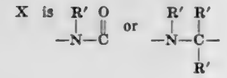
Thomas B. Hilton, Cincinnati, Ohio, and Xavier Kowalski, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,015
U.S. Cl. 252—99 **15 Claims**
Int. Cl. D06l *3/08;* **C11d** *3/065*

Compositions comprising an intimate mixture of about one molecular proportion of polychlorocyanurate having an alkali metal or alkaline metal earth cation in its molecular structure with from about 0.5 to 6 molecular proportions of an organic compound having in one tautomeric form the structural formula



where

X is  or

R is oxygen or NH, and R′ is hydrogen or an alkyl radical having from 1 to 10 carbon atoms provide effective bleaching of textiles treated with polymeric materials containing NH groups with little or no textile damage.

3,431,207
WATER-INSOLUBLE BACTERIOSTATS IN SOAP AND DETERGENT SOLUTIONS

Kenneth L. Russell, Nutley, N.J., assignor to Malmstrom Chemical Corp., Linden, N.J., a corporation of New Jersey

No Drawing. Filed June 28, 1965, Ser. No. 467,693
U.S. Cl. 252—106 **3 Claims**
Int. Cl. C11d *3/48*

1. A shampoo composition consisting essentially of an aqueous solution of a water-soluble synthetic organic detergent, said detergent constituting from about 10% to about 30% by weight of the composition, lanolin oil in an amount of from about 1% to about 3% of the composition, a water-insoluble bacteriostat constituting from about 0.3% to about 1.5% by weight of the composition and being selected from the group consisting of 3,4,4′ trichlorocarbanalide, a mixture of 5,4′ dibromosalicylanilide with 3,5,4′ tribromosalicylanilide, 2-hydroxy-5-chlorobenzoic acid, and 3′,4 dichloranilide, and a solubilizer for said bacteriostat, said solubilizer consisting of approximately 2% to 5% by weight of a nonionic polyethoxylated compound selected from the group consisting of polyethoxylated lanolin alcohol, polyethoxylated sorbitan mono-oleate and polyethoxylated nonyl phenol, said amount of said polyethoxylated compound serving also to render said lanolin oil soluble in said aqueous solution of the detergent.

3,431,208
DENTURE SPRAY

George A. Bailey, Mountainside, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,377
U.S. Cl. 252—106 **2 Claims**
Int. Cl. C11d *3/48*

Denture odor is alleviated by spraying the denture with a composition comprising 0.05–1.0% by weight of an orally acceptable germicide, 0.5–5.0% by weight of a film-forming hydrodural polymer and a mutual solvent in an amount sufficient to equal 100% by weight.

3,431,209
SOLVENT DEGREASING, SELF-EMULSIFYING CLEANING COMPOSITION

Myer Rosenfeld, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Continuation-in-part of application Ser. No. 391,341, Aug. 21, 1964. This application Aug. 26, 1966, Ser. No. 575,929
U.S. Cl. 252—118 **4 Claims**
Int. Cl. C11d *1/72, 1/74, 1/68*

A self-emulsifying cleaning composition for removing undesired coatings from metallic and painted surfaces comprising: cyclohexanol; ethylene glycol monobutyl ether; diethylene triamine-diacetone condensate; diglycol oleate; ethanolamine oleate; surface active amine alkyl aryl sulfonate; sorbitan oleate and lauric acid mixed with an organic solvent.

3,431,210
DETERGENT PROCESSES

Chung Yu Shen, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 1, 1966, Ser. No. 530,797
U.S. Cl. 252—135 **7 Claims**
Int. Cl. C11d *3/06, 3/20*

Particulate alkali metal tripolyphosphate of improved density is prepared by reacting trimetaphosphate with a strong base in the presence of a foaming agent and in the presence of a water soluble volatile oxygen containing organic compound having a boiling point below the temperature of the reaction medium. The alkali metal tripolyphosphates produced are useful as ingredients of detergent formulation.

3,431,211
AZEOTROPIC COMPOSITIONS

Albert W. Bauer, Wilmington, and Robert A. Gorski, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,541
U.S. Cl. 252—172 **2 Claims**
Int. Cl. C11d *7/50, 7/30*

An azeotropic composition of 93–97% by weight of 1,1,2,2, - tetrachloro - 1,2 - difluoroethane and 7–3% by weight of n-heptane. The composition is useful for the solvent cleaning of complex electronic circuitry.

3,431,212
VINYLIC GRIGNARD REAGENT COMPOSITION

Richard D. Gorsich, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Nov. 2, 1964, Ser. No. 408,400. Divided and this application Jan. 31, 1968, Ser. No. 701,865
U.S. Cl. 252—182 **5 Claims**
Int. Cl. C09k *3/00;* **C07f** *7/24*

A liquid composition comprising a vinylic Grignard reagent, about 1 mole of hydrocarbon halide per 3 moles of said vinylic Grignard reagent and at least 1 mole of a cyclic monoether.

3,431,213
ARYL GRIGNARD REAGENT COMPOSITION

Richard D. Gorsich, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Nov. 2, 1964, Ser. No. 408,401. Divided and this application Feb. 5, 1968, Ser. No. 703,520
U.S. Cl. 252—182 **5 Claims**
Int. Cl. C07f *7/26*

A liquid composition comprising an aryl Grignard reagent, about 1 mole of hydrocarbon halide per 3 moles of aryl Grignard reagent and at least 1 mole of a cyclic monoether per mole of aryl Grignard reagent.

3,431,214
COMPACTED SULFUR AND METHOD OF PRODUCING SAME

Harold McDonald, Harrington Park, N.J., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,823
U.S. Cl. 252—189 **11 Claims**
Int. Cl. C09k *3/00*

A method for making non-dusting, free flowing, stable sulfur pellets by compacting a mixture of sulfur with from about 2 percent to about 40 percent by weight of petrolatum.

3,431,215
EUROPIUM ACTIVATED STRONTIUM FLUOROBORATE PHOSPHOR

Charles F. Chenot, Towanda, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,663
U.S. Cl. 252—301.4 **5 Claims**
Int. Cl. C09k *1/66, 1/04*

A strontium fluoroborate phosphor activated by europium. The phosphor is useful in low pressure or high pressure electric discharge devices and cathode ray tubes.

3,431,216
EUROPIUM ACTIVATED STRONTIUM HALOBORATE PHOSPHOR

Charles F. Chenot, Towanda, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,541
U.S. Cl. 252—301.4 **6 Claims**
Int. Cl. C09k *1/66, 1/04*

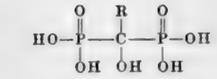
A europium activated strontium chloroborate or chlorofluoroborate phosphor activated by europium. The phosphor is useful in low pressure or high pressure electric discharge devices and cathode ray tubes.

3,431,217
ORGANIC PHOSPHOROUS ACID COMPOUND-CHROMATE CORROSION PROTECTION IN AQUEOUS SYSTEMS

Chih M. Hwa, Arlington Heights, Ill., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Sept. 22, 1966, Ser. No. 581,151
U.S. Cl. 252—389 **6 Claims**
Int. Cl. C23f *11/18, 11/12, 11/10*

1. A stable corrosion inhibiting composition consisting essentially of from 1 to 60 weight percent of a water-soluble hexavalent inorganic chromate corrosion inhibitor and from 40 to 99 weight percent, based on the combined weight of the organic phosphorous acid compound and the chromate, of a water-soluble organic phosphorous acid compound selected from the group consisting of an organic phosphorous acid having the formula:



wherein R denotes an alkyl group having from 1 to 5 carbon atoms; alkali metal, alkali earth metal, zinc, cobalt, chromium, lead, tin, nickel, ammonium, and ethanolamine salts of said phosphorous acid; mono- and dialkyl esters thereof with an aliphatic alcohol having from 1 to 4 carbon atoms; and mixtures thereof.

3,431,218
CONVERSION OF CLAYS TO CRYSTALLINE ALUMINOSILICATES AND CATALYSTS THEREFROM

Charles J. Plank, Woodbury, and Edward J. Rosinski, Deptford, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 186,794, Apr. 11, 1962. This application Oct. 26, 1966, Ser. No. 589,720
U.S. Cl. 252—455 **24 Claims**
Int. Cl. B01j *11/40*

This invention relates to a method of converting natural clays to crystalline aluminosilicate zeolites, to the preparation of improved hydrocarbon conversion catalysts from such zeolites, to the resulting catalysts, and to conversion of hydrocarbons in the presence of such catalysts. The invention involves synthesizing crystalline aluminosilicate zeolite by treatment of natural clay with a caustic-containing solution under such conditions of time and temperature as to effect conversion of at least a portion of the reaction mixture to a crystalline aluminosilicate zeolite. A further aspect of the invention involves compositing such crystalline zeolite with an inorganic oxide matrix and forming the composite into discrete catalyst particles, the crystalline zeolite having been subjected to ion-exchange to reduce the alkali metal content, e.g., sodium content thereof, either prior or subsequent to the compositing step.

3,431,219
CRYSTALLINE GALLIOSILICATES

Robert J. Argauer, Kensington, Md., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 8, 1967, Ser. No. 621,419
U.S. Cl. 252—455 **19 Claims**
Int. Cl. C01b *33/26, 33/28*

A synthetic crystalline sodium galliosilicate zeolite having a composition expressed in terms of oxide mole ratios, as follows: $0.9\pm0.2\ Na_2O:yGa_2O_3:zAl_2O_3:wSiO_2:xH_2O$ wherein z equals 0 to 0.9, y equals 0.1 to 1, $y+z$ equals 1, w equals in excess of 3 to 6, and x equals 3 to 12, said zeolite having an X-ray powder diffraction pattern essentially the same as that of crystalline aluminosilicate zeolite 13X. This crystalline zeolite may be obtained by: preparing an initial aqueous mixture having a pH of from about 10 to 14, the mixture having a composition, expressed in terms of oxide mole ratios, as follows:

Na_2O/SiO_2 from about 0.2 to 0.4,
$SiO_2/(Ga_2O_3+Al_2O_3)$ from about 7 to 30,
Al_2O_3/Ga_2O_3 from about 0 to 20,
H_2O/Na_2O from about 25 to 60,

to form a gel, maintaining the gel mixture at a temperature of from about 25 to 30° C. for a period of time from about 8 to 24 hours or longer, digesting at a temperature of from about 40 to 150° C. and preferably from about 80 to 110° C. for a time of from about 6 to 15 days, separating the gel, admixing therewith from about 0.5 to 2 volumes of sodium hydroxide (molar ratio H_2O/Na_2O from about 25 to 60) per volume of gel, the resulting crystallization having a pH of from about 10 to 14, and crystallizing at a temperature of from about 40 to 150° C. and preferably from about 80 to 110° C. for a time of from about 1 to 7 days to thereby form crystals. Alternatively, a mixed crystalline sodium galliosilicate may be obtained by preparing an aqueous mixture having a pH of from about 10 to 14 and having a

composition expressed in terms of oxide mole ratios as follows:

Na_2O/SiO_2 from about 0.2 to 0.4,
$SiO_2/(Ga_2O_3+Al_2O_3)$ from about 7 to 30,
Al_2O_3/Ga_2O_3 from about 1 to 20,
H_2O/Na_2O from about 25 to 60,

to form a gel, and maintaining the gel mixture at a temperature of from about 40 to 150° C. for a time of from about 3 to 20 days to form said crystals. The sodium content of the crystalline zeolite may be substantially replaced by subjecting the zeolite to ion exchange with a solution containing such cations as hydrogen, ammonium, metal cations from Groups I to VIII of the Periodic Table, or mixtures thereof, to provide a material highly suitable for the catalytic conversion of hydrocarbons.

3,431,220

PARTICULATE METAL CATALYSTS OBTAINED BY SUPPORT REMOVAL AND A BASE ACTIVATION TREATMENT

John S. Batzold, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,641
U.S. Cl. 252—472 **12 Claims**
Int. Cl. B01j *11/06*

Finely divided active catalysts produced by incorporating salts of noble metals, transition metals lanthanide series metals or mixtures thereof onto a support such as silica, alumina, calcium carbonate, ammonium carbonate, and ammonium oxalate; reducing the metal ions of said salts on the support, and removing the support to produce the finely divided catalysts. A strong base preferably a metal alkali base is used to remove the support, or is used subsequent to the removal of the support, and acts to enhance the activity of the finely divided catalysts.

3,431,221

CATALYZED WURTZ-FITTIG SYNTHESIS

Erwin Hoess, Wharton, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,265
U.S. Cl. 260—2 **4 Claims**
Int. Cl. C08g *31/34;* **C07f** *7/02*

Processes for synthesizing heat-stable compounds such as polyolefins, polyphenylenes, silanes, or silarylenes, by Wurtz-Fittig type reactions, which employ active hydrogen or oxygen containing compounds, or radical formers with sodium metal, including malonic esters, ketones, acetoacetic ester, aliphatic ketones, cyclopentadiene, phthalimid, pyrrole, iodobenzene, and the like.

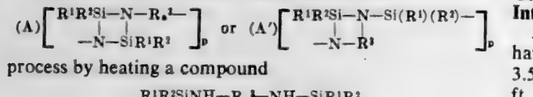
3,431,222

HIGH TEMPERATURE RESISTANT POLYMERIC CYCLOSILAZANES

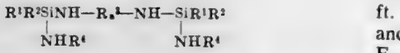
Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 496,702, Oct. 15, 1965, which is a continuation-in-part of application Ser. No. 399,814, Sept. 28, 1964. This application June 22, 1967, Ser. No. 647,944
U.S. Cl. 260—2 **24 Claims**
Int. Cl. C08g *31/30*

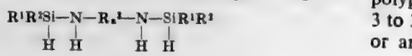
Novel polymers of repeating structural units



process by heating a compound



to split off amine and cyclize or by heating a compound



in the presence of a catalyst, e.g., an alkali metal or metal hydride, to split off hydrogen, the (A) compounds being formed when R^3 separates the nitrogen atoms by more than 3 aliphatic carbon atoms or meta or para spaced nitrogen atoms on an aromatic ring, otherwise the (A') compounds are formed.

3,431,223

PARTIAL ESTERS AS POLYOLS FOR POLYURETHANE FOAMS

Harold E. Reymore, Jr., Wallingford, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 10, 1966, Ser. No. 556,559
U.S. Cl. 260—2.5 **6 Claims**
Int. Cl. C08g *22/44, 22/18*

Novel polyols and polyurethane foams, derived therefrom by reaction with polymethylene polyphenyl isocyanates under foam producing conditions, are described. The novel polyols are the half esters derived by reacting a polycarboxylic acid intramolecular anhydride with a polyol of equivalent weight of 70 to 200 and average functionality of 2 to 8. The resulting polyols contain 1 free carboxyl group for each anhydride moiety in the starting materials. The polyurethane foams derived from these polyols by reaction with the above isocyanate are characterized by resistance to deformation on prolonged exposure to temperatures of 250° C. or higher.

3,431,224

POLYCARBONATE RESIN MIXTURES

Kenneth B. Goldblum, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 209,215, July 11, 1962. This application June 3, 1963, Ser. No. 284,799
U.S. Cl. 260—13 **2 Claims**
Int. Cl. C08g *39/00;* **C09j** *3/14*

1. A resin mixture comprising (1) poly(2,2-diphenyl propane)-carbonate and (2) a modifier comprising at least one member of the class consisting of polyethylene, polypropylene, polyisobutylene, a copolymer of ethylene and an alkyl acrylate, a copolymer of ethylene and propylene, a cellulose ester, a polyamide, a polyvinyl acetal, an alkyl cellulose ether, and a polyurethane elastomer, said modifier being present in said mixture in an amount ranging from about 0.25 to about 50% by weight of modifier and resin and in an amount sufficient to impart to said mixture a resistance to environmental stress crazing and cracking greater than that possessed by said polycarbonate resin.

3,431,225

MOLDING COMPOSITIONS COMPRISING ISOTACTIC POLYPROPYLENE BLEND, FILLER AND METALLIC SOAP

Norman D. Duncan, Vienna, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,725
U.S. Cl. 260—23 **4 Claims**
Int. Cl. C08f *29/02, 45/04, 45/58*

A molding composition which yields a molded part having an average notched izod impact strength of 2 to 3.5 ft. lbs./in., an average tensile strength of over 3500 ft. lbs./in., an average elongation at break of above 60% and an average heat deflection temperature of above 250° F. as disclosed. The composition comprises 60 to 67½% polypropylene blend having an average melt flow of from 3 to 3.4, 0.5 to 2.2% of a metallic soap and either a silica or an asbestos filler.

3,431,226

ACRYLIC POLYMER EMULSIONS

Henry Warson, Solihull, and George Andrew Reed, Thingwall, Birkenhead, England, assignors to The Dunlop Company Limited, London, England, a British company

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,777
Claims priority, application Great Britain, Nov. 19, 1963, 45,537/63
U.S. Cl. 260—29.7 **5 Claims**
Int. Cl. C08f *1/13, 15/40, 37/00*

Acrylic polymer emulsions which are thickenable on addition of alkali comprising a polymer of at least one acrylic monoester, a copolymerizable acid monomer and a cross linking monomer having at least two unsaturated groups are prepared by polymerizing the monomer mixture in at least three separate stages and allowing at least 85% of the monomers added at each stage to polymerize before adding the monomers of the following stages. Latices of these polymers exhibit superior viscosity stability when thickened with alkali.

3,431,227

PROCESS FOR PREPARING RUBBERY 1,3-DIENE POLYMERS BY POLYMERIZING 1,3-DIENES IN THE PRESENCE OF A PREFORMED POLYMER

Ernst-Guenther Kastning, Assenheim, Pfalz, and Herbert Naarmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine) Germany

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,404
Claims priority, application Germany, Nov. 7, 1964, B 79,249
U.S. Cl. 260—29.7 **3 Claims**
Int. Cl. C08d *7/00;* **C08g** *41/04, 41/02*

Process for preparing rubbery 1,3-diene polymers by polymerizing 1,3-dienes in aqueous emulsion in the presence of a preformed synthetic polyether, polyamide and/or polyurethane, said polymer having a crystallinity of more than 30% by weight, and having at least one vinyl and/or vinylidene group.

3,431,228

HOMOGENEOUS COPOLYMERS OF VINYLIDENE CHLORIDE AND VINYL CHLORIDE AND COATINGS THEREFROM

Wallace J. Miles, Rodger J. Lapham, and Harold G. Hahn, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,897
U.S. Cl. 260—32.8 **3 Claims**
Int. Cl. C08f *15/08;* **C09c** *3/74*

1. A solution of a crystallizable copolymer,
said copolymer being substantially homogeneous chemical composition and comprising about 14 to about 19 percent vinyl chloride and about 86 to about 81 percent vinylidene chloride in a
solvent comprising about 55 to about 20 percent of ketone selected from the group consisting of methyl ethyl ketone, acetone, methyl ethyl isobutyl ketone and mixtures thereof, and about 45 to 80 percent of an aromatic solvent selected from the group consisting of toluene, xylene, benzene, chlorobenzene, and mixtures thereof.

3,431,229

METHODS FOR PREPARING ORGANOPOLYSILOXANES USING DIARYLOXYTITANIUM OXIDE CATALYSTS

Leon Levene, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed July 12, 1967, Ser. No. 652,725
U.S. Cl. 260—33.4 **26 Claims**
Int. Cl. C08f *45/34, 45/28*

Methods for hydrolyzing trifunctional organic silanes such as methyltrialkoxysilane, phenyltrialkoxysilane, or mixtures thereof at neutral conditions using a diaryloxytitanium oxide hydrolysis catalyst such as diphenoxytitanium oxide. The resultant heat curable, solvent-soluble prepolymer is used to prepare excellent laminates, moldings, and hard, clear, flexible coatings.

3,431,230

ANTIPLASTICIZED POLYSULFONE ETHERS

Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 8, 1966, Ser. No. 577,839
U.S. Cl. 260—33.8 **6 Claims**
Int. Cl. C08g *23/00, 51/76*

The process for increasing the stiffness of a polymer having the recurring unit



wherein A is the residue of a dihydric phenol, comprising blending therewith at least one antiplasticizing compound containing at least one polarizing constituent selected from the group consisting of halogen, oxygen, nitrogen and sulfur atoms, at least two nonbridged rings of 4–8 atoms, having in at least 65% of the length of its molecule one dimension of less than about 5.5 Angstrom units, and having a glass transition temperature greater than —50° C. Exemplary of the antiplasticizers are the chlorinated polynuclear hydrocarbons such as chlorinated biphenyl and terphenyl.

3,431,231

SILICA AND SILICA-CONTAINING VULCANIZATES

Jules Darcy and John R. Dunn, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,816
Claims priority, application Canada, Feb. 9, 1966, 951,803
U.S. Cl. 260—41.5 **5 Claims**
Int. Cl. C08c *11/02*

An aminated non-pyrogenic siliceous oxide having an amine essentially all bound thereto in an amount equivalent to at least 0.5 part by weight of nitrogen per 100 parts by weight of oxide. The oxide has an average particle size of less than 50 microns. The amine is selected from alkylene diamines, polyalkylene polyamine, thiourea, monoalkanolamines and alkylene amines where alkylene and alkanol are radicals having 2 to 5 carbon atoms. The oxide may be used for form vulcanizable compositions with rubbery polymers.

3,431,232

PIPERIDINE N-OXIDE POLYOLEFIN STABILIZERS

Keisuke Murayama, Toshimasa Toda, Saburo Akagi, Tomoyuki Kurumada, and Ichiro Watanabe, Tokyo, and Atsushi Kitaoka, Nobeoka, Japan, assignors to Sankyo Company Limited, Tokyo, Japan, and Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,796
Claims priority, application Japan, Nov. 26, 1965, 40/72,645
U.S. Cl. 260—45.8 **6 Claims**
Int. Cl. C08f *51/60;* **C07d** *29/12*

Polyolefins are stabilized against deterioration resulting from exposure to light with piperidine N oxides.

3,431,233
NOVEL PIPERIDINE N-OXIDE POLYOLEFIN STABILIZERS

Keisuke Murayama, Syoji Morimura, Saburo Akagi, Tomoyuki Kurumada, and Ichiro Watanabe, Tokyo, and Atsushi Kitaoka, Nobeoka, Japan, assignors to Sankyo Company Limited, Tokyo, Japan, and Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,809
Claims priority, application Japan, Nov. 26, 1965, 40/72,646
U.S. Cl. 260—45.8 6 Claims
Int. Cl. C08f *51/60*; C07d *29/12*

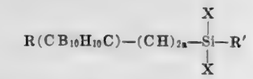
Polyolefins are stabilized against deterioration resulting from exposure to light with piperidine N-oxides.

3,431,234
THERMALLY STABLE POLYMERIC PRODUCTS

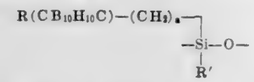
Marvin M. Fein, Westfield, Joseph Green, Dover, and Eugene L. O'Brien, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 344,562, Feb. 13, 1964, and continuation of application Ser. No. 400,547, Sept. 30, 1964. This application Dec. 12, 1966, Ser. No. 601,207
U.S. Cl. 260—46.5 7 Claims
Int. Cl. C08g *31/09*

Novel polymeric products of a carboranylsilane are prepared by reacting a compound of the formula



with water to form the polymer which consists of recurring units of the formula



wherein X is alkoxy or halogen, R and R′ are hydrogen, aliphatic, aryl or cycloaliphatic radicals and *a* is an integer including zero. A typical preparation of a polymer within the genus is by reacting methyl-4-(1-carboranyl)-butyldiethyloxysilane with water. Alternatively, methyl (1-methyl - 2 - carboranyl propyl)-dichlorosilane is reacted with water to form a polymer. These polymeric products because of their satisfactory thermal stability are suitable for applications such as potting resins, electrical insulation, etc.

3,431,235
POLYDIENE RESINS INCLUDING CYCLIZED POLYDIENE RESINS, METHOD OF MANUFACTURE AND USES

Hyman R. Lubowitz, Redondo Beach, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

No Drawing. Continuation-in-part of application 499,028, Oct. 20, 1965. This application Mar. 2, 1966, Ser. No. 531,026
U.S. Cl. 260—47 13 Claims
Int. Cl. C08g *33/10, 33/02, 30/00*

The present invention relates to a method of making hard polydiene resins and the products thereof. In particular a polydiene resin, such as dihydroxyl terminated 1,2-polybutadiene, is reacted at room temperature with an organic chain extender, such as 2,4-toluene diisocyanate, in the presence of a peroxide free radical initiator, such as dicumyl peroxide, whereby a stable elastomeric material having the peroxide molecularly dispersed therethrough is produced. At a subsequent period of time, the elastomeric material can be exposed to elevated temperatures whereupon the elastomer is cured to a hard resinous material.

3,431,236
METHOD OF ADDING AN ANTIOXIDANT TO A CONTINUOUS POLYMERIZATION PROCESS

Buell Edward Davenport, John Henry Flynn IV, and Alfred Jacobs, Chattanooga, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 13, 1966, Ser. No. 520,326
U.S. Cl. 260—45.75 4 Claims
Int. Cl. C08g *20/24, 51/62*

Injection of copper salt antioxidants just prior to the flasher in a continuous polymerization process yields a polyamide and yarn produced therefrom which exhibit high uniformity of copper content. The copper compound is injected in a nylon salt solution which comprises from 0.03% to about 1.0% by weight of the copper salt based on the total weight of the solution. The monomer to copper ratio must be from about 0.5:1 to about 16:1 inclusive. This process is used for the production of polycarbonamide yarns which are subjected to conditions where oxidation is an important factor in yarn degradation.

3,431,237
METHOD OF CURING EPOXY RESINS

Lawrence D. Harry, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 27, 1967, Ser. No. 625,962
U.S. Cl. 260—47 1 Claim
Int. Cl. C08g *30/12, 30/14, 30/16*

An epoxy resin prepared by the curing together of a poly loweralkylene glycol and a polyepoxide resin with an acid anhydride curing agent employing an accelerator therefor, is rendered more elastic by combining the polyepoxide and glycol with the accelerator, permitting the mixture to stand for 5 to 30 minutes or more as induction period, and then adding the curing anhydride material and completing the cure.

3,431,238
OXIDATION OF HALOPHENOLS

Willem Borman, Dalton, Mass., assignor to General Electric Company, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 399,325, Sept. 25, 1964. This application Dec. 22, 1967, Ser. No. 692,731
U.S. Cl. 260—47 8 Claims
Int. Cl. C08g *33/10, 33/00*

Preparation of lightly branched polyhalophenol and polyhalophenol copolymers by reaction of a halophenol with oxygen in the presence of a basic cupric salt and an amine. The process is applicable to phenols having halogen atoms substituted in both ortho positions relative to the hydroxyl groups. The polymers formed are lightly branched and have more than 0 and up to 1 branching unit per polymer unit.

3,431,239
MERCAPTAN TERMINATED POLYETHERS

Lester Morris, Ron E. Thompson, and Irvin P. Seegman, Encino, Calif., assignors to Products Research & Chemical Corporation, a corporation of California

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,699
U.S. Cl. 260—48 17 Claims
Int. Cl. C08g *23/20, 23/00*

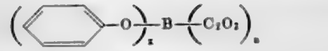
Mercaptan terminated liquid polyethers having the general formula $R—[A—O—B(SH)_{m-1}]_n$ wherein R is lower alkyl and ranges from C_2 to C_6, A is polyalkylene oxide or a mixture of polyalkylene oxides having alkyl radicals ranging from C_2 to C_4, the number of repeating alkylene units ranging from about 2 to 200, B is the fragment or grouping in the halogen-substituted organic compound $B(X)_m$ which results from the dehalogenation of $B(X)_m$, wherein X is halogen and *m* is an integer ranging 2 to 4, O is oxygen, SH is mercapto and *n* is an integer ranging from 2 to 4. Halogenated terminated polyethers which are intermediates for producing the above polymers. A method for producing such polymers which includes (1) reacting a polyalkylene oxide with an alkali metal, (2) reacting the thus formed metal alkoxide with a polyhalo organic compound, (3) reacting the product of (2) with a sulfur containing compound to produce a sulfur-containing halogen salt, and (4) hydrolyzing said salt with an alkaline compound and neutralizing the excess alkalinity.

3,431,240
ANHYDRIDE-CONTAINING LINEAR POLYARYLSULFONES

Herward A. Vogel, Oakdale Township, Washington County, and Hans T. Oien, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,124
U.S. Cl. 260—49 14 Claims
Int. Cl. C08g *25/00, 23/00*

Thermoplastic substantially linear polyarylsulfones having carboxy anhydride groups on the main chains thereof. These include polymers having recurring anhydride groups along the chains thereof as well as those having terminal anhydride groups. Also disclosed is a new class of compounds which are precursors of disclosed polymers. These compounds have the formula:



wherein *x* and *n* are 1–2, B is an organic group containing 6–13 carbon atoms and C_2O_3 is a carboxylic anhydride group.

3,431,241
MONOISOCYANATE CONDENSED RESORCINOL-ALDEHYDE RESINS

Roy H. Moult and Richard T. Hood, Murrysville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed May 15, 1967, Ser. No. 638,560
U.S. Cl. 260—54 9 Claims
Int. Cl. C08g *5/10, 5/18*; C09j *3/16*

Novel monoisocyanate condensed resorcinol-aldehyde resins are prepared by substantially dehydrating a resorcinol-aldehyde resin and reacting the dehydrated resin with from 2–20 mole percent of a monoisocyanate per mole of resorcinol in the initial resin. The novel resins are used in adhesive dips to bond polyester and other tire cord to rubber in tire manufacture.

3,431,242
PROCESS FOR PRODUCING FIBRIDS BY VIOLENT AGITATION

Paul F. Waters, Silver Spring, and Leo J. Muraro, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Feb. 27, 1967, Ser. No. 619,045
U.S. Cl. 260—67 7 Claims
Int. Cl. C08g *53/03*; C08f *47/03*

A process for producing a nonrigid wholly synthetic polymeric particle capable of forming paper-like structures by dissolving the polymer in a solvent, and then adding this solution to a nonsolvent for the polymer while violently agitating the mixture. A thermodynamic buffering agent is added to the solvent before dissolving the polymer.

3,431,243
PROCESS FOR PREPARATION OF POLY(ETHYLENE TERPHTHALATE) FROM COMPRESSED TEREPHTHALIC ACID

Seiji Uno, Seiji Kazama, and Fumio Uno, Iwakuni-shi, Yamaguchi-ken, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 4, 1963, Ser. No. 328,098
U.S. Cl. 260—75 6 Claims
Int. Cl. C08g *17/04*

1. In a process for the preparation of polyesters by direct esterification wherein a terephthalic acid component selected from terephthalic acid or a mixture of terephthalic acid with less than 20% of another organic bifunctional carboxylic acid selected from the group consisting of dicarboxylic acids and oxycarboxylic acids is reacted directly with a glycol of 2 to 10 carbon atoms to form bis(hydroxy alkyl) - terephthalate or a low-molecular-weight polymer thereof with subsequent polymerization of the resultant reaction product by heating under reduced pressure, the improvement which comprises employing a terephthalic acid component produced by mechanically compressing said terephthalic acid component with a sufficient compressional force so as to produce particles having an average diameter of not more than 8 mm. and bulk density of at least 0.8, the average diameter of said particles being at least that necessary to obtain a bulk density of at least 0.8.

3,431,244
PRODUCTION OF POLYACRYLONITRILE FIBRES

Graham John Brealey, Finham, Coventry, England, assignor to Courtaulds Limited, London, England, a British company

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,850
Claims priority, application Great Britain, Jan. 18, 1965, 2,125/65
U.S. Cl. 260—78.5 8 Claims
Int. Cl. C08f *1/30, 1/76, 3/76*

1. The process for the production of polyacrylonitrile fibre of improved color which comprises polymerizing acrylonitrile catalytically in an aqueous solution of an inorganic salt at an elevated temperature in the presence of a soluble titanium salt dissolved in the polymerization solvent and a free-radical forming azo catalyst, and spinning the resulting solution into fibres.

3,431,245
PRODUCTION OF NOVEL POLYMERS AND POLYMERIZATION PROCESS THEREFOR

Gerhard Wolfgang Helmut Scherf and John Frederick Henderson, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic of Canada

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,396
Claims priority, application Canada, Sept. 20, 1963, 884,971
U.S. Cl. 260—79.5 26 Claims
Int. Cl. C08f *25/00*; C08g *23/00*

Vulcanizable acrylic/unsaturated epoxy and acrylic/unsaturated epoxy/saturated epoxy polymers containing ether linkages in its backbone, prepared in the presence of a catalyst comprising an organometallic compound of a metal selected from Groups II and III of the Periodic

Classification of the Elements, said organometallic compound having at least one organic radical linked to the metal atom through a carbon atom.

3,431,246

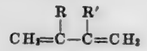
METHOD FOR THE PREPARATION OF ORGANIC COPOLYMERS OF HIGH MOLECULAR WEIGHT CONTAINING DOUBLE BONDS AND EPOXY GROUPS

Bernardino Vecellio, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,953
Claims priority, application Italy, Jan. 11, 1963, 627/63

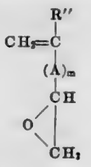
U.S. Cl. 260—80.7 **7 Claims**
Int. Cl. C08d *3/02;* **C08f** *19/00*

1. A method for the preparation of copolymers soluble in organic solvents and having an intrinsic "Vistex" viscosity, evaluated on said copolymers when obtained in emulsion, higher than 0.5, comprising copolymerizing a monomer having the formula



(type I)

wherein R and R', independently of each other, are selected from the group consisting of hydrogen, chlorine, and a methyl group, with a monomer having the formula



(type II)

wherein A is constituted by a bivalent organic radical, *m* is an integer lower than 2, whose value can also be zero, and R'' is a member selected from the group consisting of hydrogen, chlorine and a monovalent alkyl group containing up to 4 carbon atoms, the ratio by weight between the total of the monomeric units of type I and the total of the monomeric units of type II ranging between 98:2 and 1:4, said copolymerization being effected in aqueous emulsion with a free radical mechanism, at a temperature between 5 and 60° C. and at a pH from 6 to 8.

3,431,247

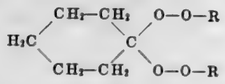
CHEMICAL PROCESS AND PRODUCTS

Nicolaas Joseph H. Gülpen, Weert, and Hans G. Gerritsen, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Filed July 20, 1964, Ser. No. 383,985
Claims priority, application Great Britain, July 22, 1963, 28,969/63

U.S. Cl. 260—88.2 **4 Claims**
Int. Cl. C08f *1/60, 3/02*

1. A process for preparing polyalkenes of low density which comprises polymerizing an alkene at a temperature of about 150°–230° C. and a pressure of at least about 500 kg./cm.² in the presence of an initiating quantity of an organic peroxide having the formula



in which at least one hydrogen of the cyclohexyl nucleus may be replaced by a substituent selected from the class consisting of alkyl and cycloalkyl radicals having from 1 to 6 carbon atoms and R is selected from the class consisting of tertiary alkyl and tertiary aralkyl radicals, said peroxide having a half-life time of about one-tenth of the total polymerization time.

3,431,248

PROCESS FOR PRODUCING CONJUGATED DIOLEFIN POLYMERS HAVING HIGH REGULARITY WITH A Co- OR Ni-CHELATE COMPOUND/ORGANOALUMINUM HALIDE CATALYST

Shu Kanbara, Akio Takahashi, Masayuki Nakano, and Toshio Hirose, Tokyo, Japan, assignors to Mitsui Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,963
Claims priority, application Japan, Oct. 30, 1963, 38/61,614

U.S. Cl. 260—94.3 **18 Claims**
Int. Cl. C08d *1/14, 1/16*

A process for producing a high molecular weight homo- or co-polymer of high regularity which comprises polymerizing conjugated diolefins with a catalyst system containing a Co or Ni metal chelate (the ligand is a cyclic compound and at least one of the carbon atoms which constitute the ring of the cyclic compound takes part in the chelate ring) and an organoaluminum halide.

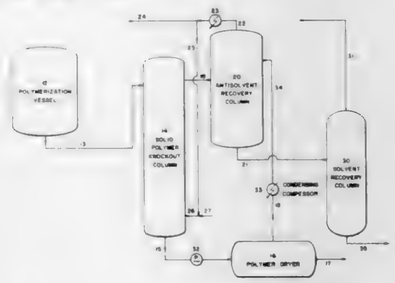
3,431,249

RECOVERY OF ALPHA-OLEFIN POLYMERS FROM SOLUTION

Byron B. Bohrer, Rosemont, and Stewart S. Kurtz, Jr., Merion, Pa., assignors, by mesne assignments, to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 544,027

U.S. Cl. 260—93.7 **6 Claims**
Int. Cl. C08f *3/02*



1. A process for recovering a solid alpha-olefin polymer from a polymerization solvent solution thereof which comprises contacting said solution with a liquid hydrocarbon antisolvent selected from the group consisting of saturated and unsaturated C_3 and C_4 hydrocarbons, at a pressure sufficient to maintain the resulting mixture in liquid phase and at a temperature of at least 35° F., thereby resulting in precipitation of solid polymer from solution, and thereafter separating the precipitated polymer from the solvent anti-solvent mixture.

3,431,250

PROCESS FOR THE PURIFICATION OF LOW-MOLECULAR POLYETHYLENE MASH

Manfred Rätzsch and Horst Grundmann, Leuna, Rolf Kilian, Bad Durrenberg, and Helmut Reinhardt, Weissenfels, Germany, assignors to VEB Leuna-Werke, Walter Ulbricht, Leuna, Germany

No Drawing. Filed Dec. 6, 1965, Ser. No. 512,006

U.S. Cl. 260—94.9 **3 Claims**
Int. Cl. C08f *1/88, 3/04*

Method for purifying low molecular weight polyethylene mashes consisting of about 30 to 50% by weight of crystalline wax and about 50 to 70% by weight of non-crystalline and oily components, said mashes accumulating during the high pressure polymerization of ethylene, which comprises the steps of heating the mashes to a temperature ranging from 100° to 300° C. in a closed pressureless vessel which contains a protective gas atmosphere, and subsequently separating the resulting mass into a bottom portion containing the impurities and a top portion containing the pure polyethylene mash.

3,431,251

TRIAZOLE TRIAZINES AND METHOD OF PREPARATION

Martin Hauser, Stamford, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,774

U.S. Cl. 260—140 **7 Claims**
Int. Cl. C07d *55/06;* **C07c** *115/00;* **C06c** *1/04*

High nitrogen monomers and polymers having 70 to 75% nitrogen prepared by flooding a mixture of guanazole and sodium nitrite with concentrated hydrochloric acid and subsequent reaction with triaminoguanidine. These materials are useful in formulating solid rocket fuel.

3,431,252

5,5-DIALKYL-D-RIBOFURANOSYL PURINE COMPOUNDS AND INTERMEDIATES

Edward Walton, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 1, 1966, Ser. No. 539,318

U.S. Cl. 260—209 **6 Claims**
Int. Cl. C07d *51/50;* **C07c** *47/18*

(5,5 - dialkyl - D - ribofuranosyl) - 2,6 - substituted purine compounds are prepared by treating a 2,3,5-tri-O-acyl-5,5-dialkyl-D-ribofuranosyl halide with a chloromercuri 2,6-substituted purine to form a 9-(2,3,5-tri-O-acyl - 5,5 - dialkyl - D - ribofuranosyl) - 2,6 - substituted purine and then hydrolyzing the acyl groups of the latter compounds. The 5',5'-dimethyladenosine demonstrates in vitro activity against *Diplococcus pneumoniae.*

3,431,253

FRUCTOSE FORMATION FROM GLUCOSE

Frederick W. Parrish, Natick, Mass., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,532

U.S. Cl. 260—209 **8 Claims**
Int. Cl. C07c *29/00;* **C13k** *9/00*

A process for conversion of glucose to fructose which comprises reacting a glucose solution with finely divided alumina having a pH in the range of 7.0 to 11.0 at a temperature from 35° to 70° C.

3,431,254

MODIFIED HYDROXYPROPYL CELLULOSE AND PROCESS

Eugene D. Klug, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 24, 1966, Ser. No. 542,178

U.S. Cl. 260—231 **13 Claims**
Int. Cl. C08b *11/14, 11/00*

As a new compound (and process of preparing) the reaction product of cellulose, propylene oxide and amino alkylation agent. The process is carried out in the presence of aqueous alkali.

3,431,255

PROCESS FOR THE CONTINUOUS MANUFACTURE OF LAUROLACTAM IN THE LIQUID PHASE

Günther Strauss and Walter Thomas, Marl, Germany, assignors to Chemische Werke Huls A.G., Marl, Germany

Filed Feb. 2, 1966, Ser. No. 524,395
Claims priority, application Germany, Feb. 3, 1965, C 35,001; Sept. 6, 1965, C 36,810

U.S. Cl. 260—239.3 **12 Claims**
Int. Cl. C07d *41/06*

In a process for the production of lactams such as laurolactam which comprises subjecting the corresponding oxime such as cyclododecanone oxime to a sulfuric acid rearrangement, the improvements of: mixing concentrated sulfuric acid with a solution of oxime in a hydrocarbon having a boiling point of about 80–200° C. with sulfuric acid at a temperature of about 20–50° C.; after separating the resultant solution of oxime in sulfuric acid from the solvent, conducting the rearrangement at about 90–120° C.; and then hydrolyzing the resultant solution in either a hydrocarbon having a boiling point of about 120–280° C., or the corresponding cycloalkanone, such as cyclododecanone, from the fractionating column used in connection with the production of the oxime. The process can be conducted either with the same or different solvents, and does not require the use of a neutralization step for hydrolysis. Dilute sulfuric acid is a by-product stream.

3,431,256

16α,17α-ETHYLENE AND SUBSTITUTED ETHYLENE PREGNANE DERIVATIVES AND PROCESS

John A. Zderic, Mexico City, Mex., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,084

U.S. Cl. 260—397.3 **16 Claims**
Int. Cl. C07c *169/34, 169/30, 173/00*

New 16α,17α-ethylene and 16α,17α-substituted ethylene derivatives of the pregnane series prepared by photochemical addition of an olefin or substituted olefin to a Δ^{16}-ene of the pregnane series useful as progestational agents.

3,431,257

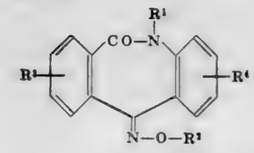
BASICALLY SUBSTITUTED DERIVATIVES OF 5,6-DIHYDRO - DIBENZO - [b,e] - AZEPINE - 6,11-DIONE-11-OXIME

Gerd Aichinger, Wuppertal-Vohwinkel, and Siegismund Schutz and Friedrich Hoffmeister, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,157
Claims priority, application Germany, Sept. 10, 1965, F 47,146

U.S. Cl. 260—239.3 **17 Claims**
Int. Cl. C07d *53/04, 53/06;* **A61k** *27/00*

There are provided new basically substituted derivatives of 5,6-dihydro-dibenzo-[b,e]-azepine-6,11-dione-11-oxime which are useful for their antidepressive activity and for the potentiation of the effect of noradrenalin and adrenalin on the central nervous system. The compounds have the formula:



wherein R^1 is hydrogen, alkyl of 1 to 4 carbon atoms or a basically substituted alkyl radical $—A^1B^1$, R^2 is hydrogen, alkyl of 1 to 4 carbon atoms or a basically sub-

stituted alkyl radical —A^2B^2, R^1 and R^2 not being both simultaneously hydrogen and at least one of R^1 and R^2 being a said basic alkyl radical, R^3 and R^4 are each hydrogen, halogen, alkyl of 1 to 4 carbon atoms or alkoxy of 1 to 4 carbon atoms, and —A^1B^1 and —A^2B^2 are identical or different in which A^1 and A^2 are each branched or straight alkylene of 1 to 6 carbon atoms and B^1 and B^2 are each selected from the group consisting of alkylamino, dialkylamino, pyrrolidino, piperidino, hexamethylene-imino, morpholino, thiomorpholino, N-alkylpiperazino and N-(2-hydroxyalkyl)-piperazino, of which alkyl has 1 to 6 carbon atoms.

3,431,258

STEROIDAL 4-HYDROXY-2-BUTENOIC ACID LACTONES

Yvon Lefebvre, Pierrefonds, Quebec, and Jean Marie Ferland, Ville St. Leonard, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 552,389, May 24, 1966. This application Apr. 10, 1967, Ser. No. 629,358

U.S. Cl. 260—239.57 **18 Claims**
Int. Cl. C07c *173/00;* **A61k** *17/00*

There are disclosed herein 2-[3′-, 11′-, or 17′-substituted androstan- or 4′-androsten- or 1′,4′-androstadien- or 4′-estren- or 1′,3′,5′(10′)-estratrien- or 1′,3′,5′(10′),6′,8′,(9′)-estrapentaen-17′-yl]-4-hydroxy-2-butenoic acid lactones and their 4-halogenated derivatives, as well as 23-desoxo-21-oxocard-20(22)-enolides and their 23-halogenated derivatives. The compounds are prepared by oxidation with a hypohalous acid of the corresponding 17-[3′-furyl]-steroid derivatives which are also disclosed. The compounds are useful as cardiotonic, anti-inflammatory, cholesterol lowering, and mineralocorticoid agents, and methods for their preparation and use are also given.

3,431,259

7-PHENYLACETAMIDOCEPHALOSPORANIC ACID DERIVATIVES

Kiyoshi Hattori, Ibaraki, and Sueo Atarashi, Kyoto, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a company of Japan

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,024
Claims priority, application Japan, Jan. 22, 1966, 41/3,794

U.S. Cl. 260—243 **6 Claims**
Int. Cl. C07d *93/08;* **A61k** *27/00*

Antibacterial cephalosporin compounds: morpholino- or N-mono-(or N,N-di-) substituted piperazinodithiocarboxylated derivatives of 7-(halo-and/or nitrophenyl) acetamido cephalosporanic acids and their preparations.

3,431,260

NOVEL KETO-HYDROXY-PERI-NAPHTHOXAZINES

Stanley M. Bloom, Waban, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Original application Dec. 4, 1963, Ser. No. 328,116, now Patent No. 3,320,063, dated May 16, 1967. Divided and this application Jan. 9, 1967, Ser. No. 607,886

U.S. Cl. 260—244 **6 Claims**
Int. Cl. C07d *87/00;* **G03c** *5/38*

Novel keto-1,3-peri naphthoxazines useful as silver halide developing agents are prepared by treating amino naphthoquinones with phenyl chlorocarbonate to form phenyl-5-(1,4 - naphthoquinonyl) - carbamates which are reduced to yield the desired naphthoxazines.

3,431,261

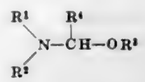
DIFLUORAMINO COMPOUNDS

Andrew Harper Dinwoodie, Dalry, Godfrey Fort, Ardrossan, and James Brown Parker, Kilwinning, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,742
Claims priority, application Great Britain, Feb. 28, 1964, 8,517/64

U.S. Cl. 260—249.6 **16 Claims**
Int. Cl. C07d *55/22, 49/34;* **C07c** *103/30*

1. A process for the preparation of a difluoramino compound which comprises reacting difluoramine in an inert atmosphere in the presence of an acid catalyst with a compound of the general formula:



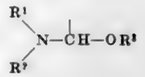
wherein

R^1 is selected from the class consisting of monovalent and divalent radicals having an electron attracting group adjacent the nitrogen atom, said radicals being composed of atoms selected from the group consisting of carbon, hydrogen, oxygen and nitrogen atoms;

R^2 is selected from the class consisting of hydrogen, alkyl and the atoms necessary to form a ring with R^1, R^3 or R^4 selected from the group consisting of carbon, hydrogen, oxygen and nitrogen atoms;

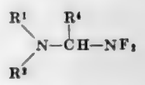
R^3 is selected from the class consisting of hydrogen, alkyl and the atoms necessary to form a ring with R^1, R^2 or R^4 selected from the group consisting of carbon, hydrogen, oxygen and nitrogen atoms; and

R^4 is selected from the class consisting of hydrogen, hydrocarbon radicals, the grouping of the formula



and the atoms necessary to form a ring with R^1, R^2 or R^3 selected from the group consisting of carbon, hydrogen, oxygen and nitrogen atoms.

8. A compound of the general formula



wherein R^1 and R^2 have the meanings given in claim 1 and R^4 also has the same meaning as given in claim 1 except that it is a group other than hydrogen unless either R^1 or R^2 is a cyclic group or forms part of a cyclic structure.

3,431,262

PYRAZOLO QUINOXALINES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 26, 1968, Ser. No. 715,983
U.S. Cl. 260—250 **2 Claims**
Int. Cl. C07d *51/78, 57/24*

6,7-dihydroxy-1H-pyrazolo-[3,4-b] - quinoxaline - 5,8-diones, optionally substituted in the 1-position with alkyl or aryl and in the 3-position with hydroxyl, alkyl or pyridyl (I) and their salts are prepared by condensing 3,4-diaminopyrazole (II) with rhodizonic acid (III) and,

if desired, forming a salt of the product. Compounds I are pharmacologically active, especially as anti-inflammatory agents and as diuretic agents.

3,431,263

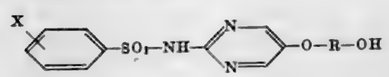
CERTAIN 2-BENZENESULFONAMIDO-5-OXYPYRIMIDINES

Hans Priewe, Klaus Gutsche, Hedwig Langecker, Heinz Gibian, Erich Gerhards, and Alois Harwart, Berlin, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,312
Claims priority, application Germany, Mar. 19, 1964, Sch 34,826; Mar. 25, 1964, Sch 34,858; Apr. 29, 1964, Sch 35,070

U.S. Cl. 260—256.5 **13 Claims**
Int. Cl. C07d *51/42*

Compounds of the formula



wherein X is hydrogen, halogen, lower alkyl, or lower alkoxy, and R is lower alkylene have a prolonged depressing effect on the blood sugar level. They are prepared by conventional methods or by Vilsmeier formylation of 2-alkoxy-1,4-dioxane, 2-halo-1,4-dioxane, or 1,4-dioxene followed by condensation of the formylation product with a benzenesulfoguanidine to close the pyrimidine ring.

3,431,264

9-CYANOACRIDANS AND PROCESS FOR THEIR PRODUCTION

Desmond Sheehan, Northford, and Rose Ann Clarke, Greenwich, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 5, 1965, Ser. No. 506,600

U.S. Cl. 260—279 **4 Claims**
Int. Cl. C07d *37/28;* **C09k** *1/02*

9-cyanoacridan derivatives and process for their production, and chemiluminescent method of using the acridan compounds.

3,431,265

QUATERNARY AMMONIUM SALTS OF GLYCERYL SULFATES AND SULFONATES

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,631

U.S. Cl. 260—286 **4 Claims**
Int. Cl. C07d *35/18;* **C07c** *143/00*

Quaternary ammonium salts of coconut monoglyceride sulfates and sulfonates, and alkyl glyceryl ether sulfates and sulfonates, having germicidal activity, are described.

3,431,266

METHOD FOR RECOVERY OF PYRIDINE BASES

Philip X. Masciantonio, Penn Township, Westmoreland County, and James H. Schelling, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Oct. 6, 1965, Ser. No. 493,507

U.S. Cl. 260—290 **6 Claims**
Int. Cl. C07d *31/16*

A hydrocarbon oil containing pyridine bases, referred to as pyridine is contacted with an aqueous solution of sulfuric acid having a concentration greater than about 50% by weight acid. The oil is separated from the resulting solution of pyridine sulfate and acid and the solution is heated to distill a pyridine-water composition exceeding the azeotrope. The latter is fractionated to distill pyridine-water azeotrope from anhydrous pyridine product. The residue and pyridine-water azeotrope are combined to treat more hydrocarbon oil.

3,431,267

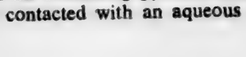
SUBSTITUTED 3-(3′-AMINOPROPYL)PIPERIDINES AND PROCESS FOR PREPARATION

Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 409,593, Nov. 6, 1964. This application Aug. 2, 1965, Ser. No. 476,684

U.S. Cl. 260—293 **2 Claims**
Int. Cl. C07d *29/28;* **A01n** *9/22*

2 - substituted-3(3′-aminopropyl)piperidines, useful as pesticides and fungicides, are prepared by catalytic hydrogenation of di- or tri-cyanoethylated ketones of the structure



where R is alkyl or aryl and R^1 is alkyl, aryl, hydrogen or a cyanoethyl group.

3,431,268

2,5-BIS(PYRIDYLETHYL)PYRROLES

John L. Archibald, Malvern, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,109

U.S. Cl. 260—293 **15 Claims**
Int. Cl. C07d *57/00;* **A16k** *17/00*

The compounds are 2,5 - bis(pyridylethyl)pyrroles which may be additionally substituted in the 1, 3, and 4 positions, and their acid-addition salts, and are useful as hypotensive agents. The compounds may be prepared by direct C-pyridylethylation of a suitable pyrrole with a 2- or 4-vinyl pyridine compound, in an acid medium, under an inert atmosphere.

3,431,269

N,N′-DIOLEOYL-2,2′-DI-PIPERIDYLMETHANE

Evald L. Skau, Robert R. Mod, and Frank C. Magne, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation-in-part of application Ser. No. 361,925, Apr. 2, 1964. This application Sept. 20, 1965, Ser. No. 488,823

U.S. Cl. 260—294 **1 Claim**
Int. Cl. C07d *29/30;* **C08f** *45/44*

A number of N,N-disubstituted long chain aliphatic amides are disclosed as being compatible plasticizers for vinyl chloride and vinyl chloride-vinyl acetate resinous polymers and copolymers, respectively, and for nitrile rubbers. The acyl moiety of the amide, when saturated, is an alkanoic acyl radical containing from 10 to 18 carbon atoms, and if unsaturated, is an alkenoic acyl radical containing from 18 to 22 carbon atoms. The amide nitrogen is, in all cases, a member of a nitrogen-carbon heterocyclic ring.

3,431,270
CERTAIN AMINOXYETHYL DERIVATIVES OF 2(1H)-PYRIDONES

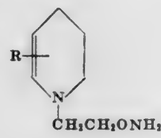
Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application May 6, 1964, Ser. No. 365,477, now Patent No. 3,317,515, dated May 2, 1967. Divided and this application Feb. 21, 1967, Ser. No. 617,488

U.S. Cl. 260—296 3 Claims

Int. Cl. C07d *31/32, 41/08, 93/14*

1. A compound selected from the group consisting of (1) a compound of the formula:



wherein R is selected from the group consisting of hydrogen and methyl, and (2) an acid addition salt thereof.

3,431,271
DIALDEHYDE AS DIKETONE-CYCLIC AMIDE CONDENSATION PRODUCTS

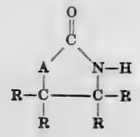
William Julius van Loo, Jr., Middlesex, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 26, 1965, Ser. No. 459,093

U.S. Cl. 260—307 5 Claims

Int. Cl. C07d *91/24, 85/26, 27/00*

As finishing agents capable of imparting crease resistance to cellulosic textiles without increasing their chlorine retention, condensation products of a dialdehyde or diketone with two mols of a cyclic amide of the structure



where A is oxygen, sulfur or alkylene and R is hydrogen or alkyl.

3,431,272
DIOXA-DIAZADISPIRO[4.2.4.2]TETRADECANE COMPOUNDS

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,914

U.S. Cl. 260—307 5 Claims

Int. Cl. C07d *85/26, 5/16, 31/40*

Dioxa - diazadispiro[4.2.4.2]tetradecane compounds, prepared by reacting two moles of an α-aminoalkyl substituted methanol with one mole of 1,4-cyclohexadione, have central nervous system stimulant, anorectic, antidepressant, hypotensive and analgesic activity.

3,431,273
1-OXA-4-AZASPIRO[4.5]-6,9-DECADIENE COMPOUNDS

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,915

U.S. Cl. 260—307 4 Claims

Int. Cl. C07d *85/26, 5/16, 31/40*

Spiro compounds having anorectic, antidepressant and diuretic activity are prepared by reacting an α-aminoalkyl substituted methanol with 4-lower alkyl-2,5-cyclohexadien-1-one having a 4-methyl substituent which is optionally substituted by from 1 to 3 chlorine atoms.

3,431,274
1-PHENYLBENZIMIDAZOLE-2-METHANOL

John W. Schulenberg, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 588,339, Oct. 21, 1966, which is a continuation-in-part of application Ser. No. 404,952, Oct. 19, 1964. This application Mar. 29, 1968, Ser. No. 717,404

U.S. Cl. 260—309.2 1 Claim

Int. Cl. C07d *49/38*

1-R-2-R'-benzimidazole 3-oxides, where R and R' are lower-alkyl or phenyl, at least one of R and R' being phenyl, having hyperglycemic and tranquillizing activities, are prepared by hydrogenating the appropriate 2-nitroanilines substituted on nitrogen by the groups R and COR'', where R'' is lower-alkyl, phenyl, 1-chloro-lower-alkyl or 1,1-dichloro-lower-alkyl. Also disclosed is 1-phenylbenzimidazole-2-methanol, having bacteriostatic properties.

3,431,275
3a,6a-DIAZAPENTALENES AND METHOD OF PREPARING THE SAME

Swiatoslaw Trofimenko, Philadelphia, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,092

U.S. Cl. 260—310 7 Claims

Int. Cl. C07d *49/26, 49/18*

3a,6a-diazapentalenes can be made by reacting a pyrazole compound with an allyl halide, halogenating, heating to cyclize the resulting halogen compound, and treating the product with a base.

The 3a,6a-diazapentalenes can be used to detect oxygen by this reaction to form colored compounds. Dicyanovinyl and tricyanovinyl substituted 3a,6a-diazapentalenes are dyes of high tinctorial strength.

3,431,276
PROCESS FOR PRODUCING IMIDE DERIVATIVES

Eric Nield, Ware, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Continuation-in-part of application Ser. No. 404,968, Oct. 19, 1964. This application May 16, 1966, Ser. No. 550,362

Claims priority, application Great Britain, Oct. 25, 1963, 42,231/63, 42,232/63; May 26, 1965, 22,401/65; Dec. 20, 1965, 53,826/65

U.S. Cl. 260—326.5 7 Claims

Int. Cl. C07d *27/18, 27/16*

Imides are produced from anhydrides of alpha, beta-ethylenically unsaturated cis alpha, beta dicarboxylic acids by reaction of the anhydride with an amine and cyclizing the formed amic acid in the presence of an acid catalyst containing sulfur or phosphorous.

3,431,277
METHOD OF PRODUCING EPISULFIDES

Sheldon Herbstman, Spring Valley, N.Y., and Jesse C. H. Hwa, Stamford, Conn., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,996

U.S. Cl. 260—327 7 Claims

Int. Cl. C07d *59/00;* **C07c** *149/26*

A process for preparing an episulfide. The process comprises reacting an organic polysulfide having at least one group consisting of two singly bound carbon atoms, one of which has a halogen atom attached thereto while the other is connected to a chain of at least two sulfur atoms with a base and isolating the so-obtained episulfide.

3,431,278
PHENYL VINYLENE OXALATES

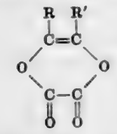
Peter Salvatore Forgione, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 7, 1963, Ser. No. 286,212

U.S. Cl. 260—340.2 2 Claims

Int. Cl. C07d *15/12;* **C08f** *17/00, 19/10*

1. A compound having the formula



wherein R and R' are selected from the group consisting of hydrogen and an aryl radical having from 6 to 10 carbon atoms, inclusive, at least one of said R and R' being an aryl radical selected from the group consisting of phenyl, tolyl, xylyl and naphthyl radicals.

3,431,279
CYCLIC ESTERS OF o-PHTHALIC ACID AND A GLYCOL ETHER

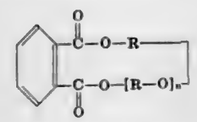
Wendell A. Ehrhart, Hellam, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 1, 1966, Ser. No. 530,787

U.S. Cl. 260—340.2 5 Claims

Int. Cl. C07d *19/00;* **C08f** *45/42*

A new class of macrocyclic diesters of o-phthalic acid or its anhydride and a glycol ether. The compounds are represented by the structural formula:



3,431,280
1,3-CYCLIC ACETAL-2-YL SUBSTITUTED ALKANALS, ALKANOLS AND ESTERS

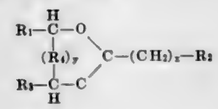
Heinz F. Reinhardt, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 237,298, Nov. 13, 1963, and Ser. No. 428,192, Jan. 26, 1965. This application June 15, 1967, Ser. No. 646,178

U.S. Cl. 260—340.9 6 Claims

Int. Cl. C07d *13/04;* **C08f** *3/40*

Compounds of the formula



where

R_1 and R_3 are hydrogen or various unsaturated radicals, R_2 is a

—CH_2OR or a diester group and

R_4 is methylene, ethylene, ethylidene or isopropylidene,

useful as film-forming components in coating compositions.

3,431,281
METHOD OF PREPARING 2-METHYLENE-1,3-DIOXOLANE

Albert R Sawaya, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed May 26, 1967, Ser. No. 641,467

U.S. Cl. 260—340.9 3 Claims

Int. Cl. C07d *13/04;* **C08f** *5/00*

A method of preparing 2-methylene-1,3-dioxolane which does not immediately spontaneously polymerize upon its preparation, by mixing 2-chloromethyl-1,3-dioxolane with a mixture which comprises a solution prepared by mixing liquid ammonia with an alkali metal such as sodium and potassium.

3,431,282
PHTHALIDE COMPOUNDS

Ryohei Oda, Ushiwaka-cho, Kita-ku, Kyoto, Hiroshi Fujii, Amagasaki, and Hiroyuki Moriga, Nishinomiya, Japan (all % Kanazaki Paper Mfg. Co., Ltd., 4, Ginza Higashi 4, Chou-ku, Tokyo, Japan)

No Drawing. Filed July 17, 1963, Ser. No. 295,803

U.S. Cl. 260—343.4 8 Claims

Int. Cl. C07d *5/38*

1. A process for the production of 3,3-bis-(4-dialkylaminophenyl)-phthalide comprising reacting a dialkyl aniline-aluminum chloride salt with phthalic anhydride at an elevated temperature in the liquid phase.

3,431,283
POLYMERISABLE BIS-AMIDES

Edward George Gazzard and James Nairn Greenshields, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

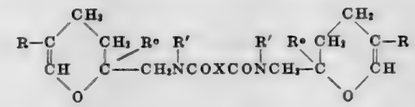
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,356

Claims priority, application Great Britain, Oct. 30, 1964, 44,350/64

U.S. Cl. 260—345.7 9 Claims

Int. Cl. C07d *7/10*

Polymerizable bis-amides of the formula:



wherein R^o and R represent hydrogen, lower alkyl or halogen; R' represents hydrogen or a hydrocarbon radical, and X represents the residue of an aromatic or saturated aliphatic dicarboxylic acid, $X(COOH)_2$.

3,431,284
PRODUCTION OF PURE PHTHALIC ANHYDRIDE FROM o-XYLENE

Helmut Nonnenmacher, Max Appl, Juergen Haug, and Konstantin Andrussow, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik, Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,397

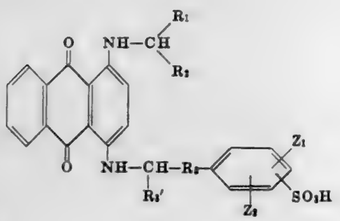
U.S. Cl. 260—346.4 6 Claims

Int. Cl. C07c *63/02, 63/18*

A process for producing pure phthalic anhydride which includes the steps of oxidizing o-xylene in contact with a catalyst containing vanadium oxide, recrystallizing the formed phthalic anhydride from o-xylene and thereafter fractionally distilling the phthalic anhydride. In a preferred embodiment the mother liquor obtained in the recrystallization step is used in the oxidation step. The process also finds particular importance where phthalic anhydride is produced from o-xylene in the presence of bromine or a volatile bromine compound. The process produces unusually pure phthalic anhydride.

3,431,285
SULFONATED 1-SEC-ALKYLAMINO-4-ARALKYLAMINO-ANTHRAQUINONES
Hans Rudolf Schwander, Riehen, Anton Zenhäusern, Reinach, Basel-Land, and Peter Hindermann, Bottmingen, Basel-Land, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,692
Claims priority, application Switzerland, Dec. 22, 1964, 16,533/64, 16,633/64
U.S. Cl. 260—371 **3 Claims**
Int. Cl. C09b *1/30;* **D06p** *3/24*

1. A dyestuff of the formula



wherein

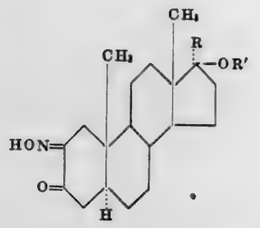
each of R_1 and R_2 represents lower alkyl,
R_3' represents alkyl of from 1 to 2 carbon atoms,
R_5 represents alkylene of from 1 to 2 carbon atoms,

the sum of carbon atoms in R_1, R_2, R_3' and R_5 ranging from five to eight,

Z_1 represents hydrogen, methyl, methoxy, chlorine or bromine, and
Z_2 represents hydrogen, methyl or methoxy.

3,431,286
2-ISONITROSO-3-OXO STEROIDS
Raymond O. Clinton, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 28, 1963, Ser. No. 254,479
U.S. Cl. 260—397.4 **3 Claims**
Int. Cl. C07c *169/22*

1. A compound of the formula



wherein R is a member of the group consisting of hydrogen and lower-alkyl, and R′ is a member of the group consisting of hydrogen and lower-carboxylic acyl.

3,431,287
PROCESS FOR THE PREPARATION OF 2-HYDROXYMETHYLENE-19-NOR-STEROIDS
Max Salomon de Winter, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 28, 1966, Ser. No. 605,181
Claims priority, application Netherlands, Jan. 15, 1966, 6600548
U.S. Cl. 260—397.4 **4 Claims**
Int. Cl. C07c *169/22, 169/34, 171/06*

According to the present process 2-hydroxymethylene-19-nor-steroids are obtained by reaction of a Δ^4-3-keto-10-formyl-steroid with an alkalimetal salt of a tertiary alcohol. This process is shorter and provides higher yields than the known process consisting in the reaction of a Δ^4-3-keto-19-nor-steriod with an alkyl formate in the presence of a strong base.

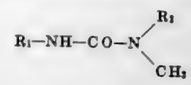
The respective end-products are important both on account of their biological properties and as intermediates for the preparation of other steroid derivatives.

3,431,288
TRIORGANOSTANNOXY ZIRCONIUM ALCOHOLATE DERIVATIVES OF DIALKANOLAMINE
Ambrose J. Gibbons, Jr., Catonsville, Md. and Richard E. De Marco, Waldwick, N.J., assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Nov. 10, 1964, Ser. No. 410,295, now Patent No. 3,361,775, dated Jan. 2, 1968. Divided and this application Apr. 24, 1967, Ser. No. 632,922
U.S. Cl. 260—429.3 **2 Claims**
Int. Cl. C07f *7/22, 7/00*

Novel stannoxy zirconium compounds have been presented in U.S. patent application S.N. 410,295, filed Nov. 10, 1964, now U.S. Patent No. 3,361,775. Presented in this application are derivatives of such stannoxy zirconium compounds wherein attachment of one or more of the acyloxy or alkoxy radicals on the zirconium atom is replaced by dialkanolamine residue such as the residue from diethanolamine. The compounds are useful as agents for conferring water repellancy to porous materials, as catalysts for organic reactions and they exhibit fungicidal properties.

3,431,289
HERBICIDAL, HALOGENATED UREA DERIVATIVE
Heinz-Eberhard Freund and Friedrich Arndt, Berlin, Germany, assignors to Schering A.G., Berlin, Germany
No Drawing. Filed Feb. 24, 1966, Ser. No. 538,490
Claims priority, application Germany, Mar. 12, 1965, Sch 36,680; Apr. 1, 1965, Sch 36,816
U.S. Cl. 260—453 **1 Claim**
Int. Cl. C07c *127/00*

Herbicidal agent of the general formula



in which R_1 represents 4-iodophenyl, 3-chloro-4-iodophenyl, or 3,4-dibromophenyl, and R_2 methoxy; or if R_1 is 3,4-dibromophenyl, also methyl.

3,431,290
PREPARATION OF CARBONATE ESTERS
Thomas N. Hall, Adelphi, Md., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Oct. 30, 1964, Ser. No. 407,929
U.S. Cl. 260—463 **6 Claims**
Int. Cl. C07c *69/76, 69/00*

1. A process for preparing the carbonate of a substituted carbinol selected from the group consisting of 4,4 - dinitro-1,7-heptanediol, 2,2,8,8-tetranitro-1,9-nonanediol, 2,2,8,8 - tetranitro - 4,6 - dioxa-1,9-nonanediol, 2,2-dinitro-1,3-propanediol 2,2,4,4-tetranitro-1,5-pentanediol, 2 methyl - 2 - nitro-1,3-propanediol, 2,2,6,6-tetranitro-1,7-heptanediol and carbinols represented by the structural formula ZCX_2CH_2OH wherein Z is selected from the group consisting of hydrogen, nitro, alkyl, aryl, aralkyl, and alkaryl and X is selected from the group consisting of nitro and a mixture of halo and nitro which comprises reacting said carbinol with phosgene in the presence of pyridine N-oxide.

3,431,291
(2-ALKYLIDENEALKANOYL)PHENOXY DERIVATIVES OF ACETONITRILE
Everett M. Schultz, Ambler, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,773
U.S. Cl. 260—465 **8 Claims**
Int. Cl. C07c *121/52*

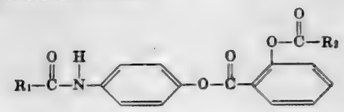
[(2 - alkylidenealkanoyl)phenoxy]acetonitrile products wherein the alkanoyl radical may be substituted at the 2-carbon by alkyl, trihalomethylalkyl, cycloalkyl, aryl or aralkyl and wherein the nucleus of the instant products may be substituted by from one to four moieties selected from halogen trihalomethyl, lower alkyl or a divalent hydrocarbylene chain.

3,431,292
OLEFINIC NITRILES BY AMMOXIDATION OF OLEFINS WITH PROMOTED ANTIMONY OXIDE-URANIUM OXIDE CATALYST
James L. Callahan, Bedford Heights, Robert K. Grasselli, Garfield Heights, and Warren R. Knipple, Bedford, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 311,657, Sept. 26, 1963. This application Dec. 23, 1966, Ser. No. 604,118
U.S. Cl. 260—465.3 **3 Claims**
Int. Cl. C07c *121/04, 121/10*

An olefin, such as propylene, is converted to an olefinic nitrile, such as acrylonitrile, by reaction in the gas phase with oxygen and ammonia in the presence of an antimony oxide-uranium oxide catalyst which has been promoted with at least one oxide of certain other promoter elements.

3,431,293
AMINO-PHENOL COMPOUNDS
Andrew Robertson, Newcastle-upon-Tyne, England, assignor to Sterling Drug Inc., New York, N.Y.
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,262
Claims priority, application Great Britain, Apr. 9, 1964, 14,821/64
U.S. Cl. 260—474 **2 Claims**
Int. Cl. C07c *103/12;* **A61k** *27/00*

The present invention provides compounds of the following structural formula:

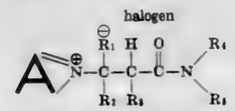


wherein R_1 and R_2 are lower alkyl groups containing from 1 to 4 carbon atoms.

The invention also provides pharmaceutical compositions comprising a compound of the indicated formula and a non-toxic pharmaceutical carrier therefor. The compounds of the invention exhibit analgesic, anti-inflammatory and antipyretic activity.

3,431,294
UNSATURATED BETA-HYDROXYALKYL CARBOXYLATE PREPARATION
Rostyslaw Dowbenko and Roger M. Christenson, Gibsonia, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,909
U.S. Cl. 260—486 **9 Claims**
Int. Cl. C07c *67/00, 69/60, 69/54*

This invention relates to a method of preparing beta-hydroxyalkyl esters of unsaturated carboxylic acids which comprises reacting an ethylenically unsaturated monocarboxylic acid with an alkylene oxide in the presence of a catalyst having the formula:



where A is selected from the group consisting of hydrocarbon radicals containing a chain of 5 carbon atoms forming with the nitrogen atom a six-membered pyridinium ring, and said hydrocarbon radicals having at least one of their hydrogen atoms replaced by a substituent selected from the group consisting of chlorine, bromine, iodine, fluorine and hydroxyl substituents, R_1, R_2, and R_3 are groups selected from the class consisting of (a) hydrogen, (b) halogen, (c) alkyl containing from 1 to 8 carbon atoms, (d) alkyl wherein a hydrogen atom is replaced by a substituent selected from the class consisting of a halogen atom and a hydroxyl group, (e) $—CONH_2$, (f) $—CH_2CONH_2$, (g) —COOH, (h) $—CH_2COOH$, and (i) $—CH_2COOR_6$, R_6 being selected from the class consisting of alkyl having from 1 to 8 carbon atoms with a substituent selected from the class consisting of a halogen atom and a hydroxyl group, and R_4 and R_5 are groups selected from the class consisting of hydrogen and alkyl having from 1 to 8 carbon atoms and radicals and groups obtained by replacement of a hydrogen atom of alkyl having from 1 to about 8 carbon atoms with a substituent selected from the class consisting of a halogen atom and a hydroxyl group. The products are useful as intermediates for thermosetting and thermoplastic polymers.

3,431,295
PROCESS FOR THE PREPARATION OF OPTICALLY ACTIVE LYSINE
Geertrudes H. Suverkropp, Beek, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,762
U.S. Cl. 260—501.11 **10 Claims**
Int. Cl. C07b *19/00;* **C07c** *99/12, 101/24*

There is provided an economically attractive process for resolving racemic mixtures of lysine by using an optical antipode of α-phenoxypropionic acid. Preferably the D-α-phenoxy propionic acid is used and the separation of the formed volts is accomplished by solvent extraction in at least three stages.

3,431,296
PROCESS FOR PREPARATION OF HIGH PURITY TEREPHTHALIC ACID
Yataro Ichikawa and Nobuo Suzuki, Iwakuni-shi, Yamaguchi-ken, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,034
Claims priority, application Japan, Oct. 10, 1963, 38/52,780; July 23, 1964, 39/42,156; Sept. 8, 1964, 39/51,285
U.S. Cl. 260—525 **7 Claims**
Int. Cl. C07c *51/42*

A process for the preparation of a highly purified terephthalic acid obtained from a reaction liquid resulting from the oxidation of a para-alkylbenzene with molecular oxygen in the presence of a cobaltic compound, by preparing a suspension of said crude terephthalic acid in a fatty acid wherein at least 50% of said terephthalic acid is kept in a solid form at a temperature of 180 to 230° C. and contacting this suspension with a molecular oxygen-containing gas.

3,431,297

PREPARATION OF ACETIC ACID BY CATALYTIC GAS-PHASE OXIDATION OF BUTENES

Rudolf Brockhaus, Marl, Germany, assignor to Chemische Werke Huls A.G., Marl, Germany

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,147
Claims priority, application Germany, Jan. 7, 1966, C 37,843
U.S. Cl. 260—533 8 Claims
Int. Cl. C07c *51/14, 51/32, 45/02*

Acetic acid is produced by the gas phase oxidation of butene in the presence of an aluminum vanadate or titanium vanadate catalyst.

3,431,298

PROCESS FOR THE PREPARATION OF OXADICARBOXYLIC ACIDS

Kazuo Saotome and Kenichiro Sato, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,075
Claims priority, application Japan, Jan. 5, 1965, 40/300; Feb. 3, 1965, 40/5,666, 40/5,667
U.S. Cl. 260—535 7 Claims
Int. Cl. C07c *59/22, 51/00, 55/02*

Oxadicarboxylic acids of the formula:

$$HOOC(CH_2)_n—O—(CH_2)_mCOOH$$

in which n is 3 or 4 and m is an integer of 5 to 15 are produced by a novel method which comprises heating an alcoholate of an oxycarboxylic acid salt of the formula $MO(CH_2)_m—COOM$, wherein m is an integer of 5 to 15 and M is an alkali metal, with γ-butyrolactone or δ-valerolactone, dissolving the resulting alkali salt of the oxadicarboxylic acid in water, acidifying the resulting solution with a mineral acid and recovering the produced oxadicarboxylic acid.

3,431,299

SODIUM SALT OF N-DICHLOROACETYL-DL-SERINE

Irving Levi, Montreal, Quebec, and Harold Blondal, Westmount, Quebec, Canada, assignors to Charles E. Frosst & Co., Montreal, Quebec, Canada, a corporation of Quebec

Continuation-in-part of applications Ser. No. 845,598, Oct. 12, 1959, and Ser. No. 18,885, Mar. 13, 1960. This application Feb. 17, 1961, Ser. No. 90,048
U.S. Cl. 260—534 1 Claim
Int. Cl. C07c *103/50*; A61k *27/00*

1. The sodium salt of N-dichloroacetyl-DL-serine.

3,431,300

PREPARATION OF 2-CHLORO-4-NITRO-6-METHYLBENZAMIDE

Edward F. Rogers, Middletown, and Robert L. Clark, Woodbridge, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,617
U.S. Cl. 260—558 3 Claims
Int. Cl. C07c *103/22, 103/02*

Anticoccidial 2-chloro-4 - nitro-6 - methylbenzamide is prepared by treating 2-chloro-4-nitro-6-methylaniline with an alkali metal nitrite under diazotization conditions and reacting the diazonium salt so produced with cyanide ion in the presence of nickel chloride to form 2-chloro-4-nitro-6-methylbenzonitrile which is then hydrolized with mineral acid. It is contemplated that dosage units containing the benzamide will be administered orally in the control of coccidiosis in poultry.

3,431,301

PROCESS FOR PRODUCING METHYLHYDRAZINE DERIVATIVES

Antonino Focella, Clifton, Harvey Gurien, Newark, and Albert Israel Rachlin, Verona, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 24, 1966, Ser. No. 536,962
U.S. Cl. 260—558 9 Claims
Int. Cl. C07c *109/02, 103/22*

1-methyl-2-[4-(alkylcarbamyl)benzyl]hydrazine hydrohalide salts, useful as cytastatic agents are prepared by reacting a 4-(alkylcarbamyl)benzaldehyde with methylhydrazine, hydrogenating the resulting hydrazone, and forming the hydrogen halide salt of the corresponding hydrazine. All the steps are conducted in the presence of a reaction solvent of the formula



wherein R^1, R^2 and R^3 are as hereinafter described.

3,431,302

CINNAMIC ACID DERIVATIVES

Carter N. Brown, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,739
U.S. Cl. 260—559 3 Claims
Int. Cl. C07c *103/26*; A61k *27/00*

Novel N-alkyl-N-alkynyl cinnamamides and methods of preparation thereof, having utility as neurosedatives.

3,431,303

6,11 - DIHYDRO-11-KETO-6-METHYL-3,6,10,12-TETRAHYDROXYNAPHTHACENE - 1,4-QUINONE-2-CARBOXAMIDE

Jerry Robert Daniel McCormick, Spring Valley, Ursula Joachim, White Plains, Elmer Raymond Jensen, Nanuet, and Newell Oscar Sjolander, Saddle River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Feb. 3, 1965, Ser. No. 430,184. Divided and this application Feb. 9, 1968, Ser. No. 704,227
Claims priority, application Canada, Jan. 26, 1966
U.S. Cl. 260—559 1 Claim
Int. Cl. C07c *103/26*

This disclosure describes 6,11-dihydro-11-keto-6-methyl - 3,6,10,12 - tetrahydroxynaphthacene - 1,4 - quinone-2-carboxamide useful as an intermediate for the preparation of physiologically active antibiotics of the tetracycline series.

3,431,304

2 - AMINOALKYLAMINO-BENZOPHENONES-OXIMES AND IMINES AND THE SALTS THEREOF

Rodney Ian Fryer, North Caldwell, Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,381
U.S. Cl. 260—570 6 Claims
Int. Cl. C07c *97/10, 131/00*; A61k *27/00*

2-(aminoalkylamino) benzophenones, derivatives thereof and process for their preparation. Such compounds are conveniently, for example, prepared by hydrolysis of the corresponding benzodiazepinone. They are useful in reversing central nervous system depression in warm blooded animals. For this purpose these compounds are preferably prepared as their pharmaceutically acceptable acid addition salt derivatives.

3,431,305

PROCESS FOR THE PRODUCTION OF 2-(PROPENYL)-2-CYCLOHEXENONE

Benjamin Thompson and Thomas E. Buckner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,191
U.S. Cl. 260—586 2 Claims
Int. Cl. C07c *45/00*

1. The process which comprises contacting cyclohexanone with propynyl alcohol in the presence of an acidic catalyst at a temperature of 70–200° C. and obtaining 2-(propenyl)-2-cyclohexenone.

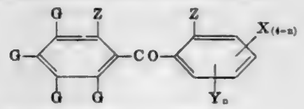
3,431,306

HYDROXYBENZOPHENONES CONTAINING BETA-CHLORO- OR SULPHATOETHYLSULPHONYL GROUPS

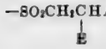
Frank Samuel Henry Head, Mellor, near Stockport, and Gerald Lund, Manchester, England, assignors to The Cotton Silk and Man-Made Fibres Research Association, Didsbury, England

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,599
Claims priority, application Great Britain, Oct. 26, 1963, 42,316/63
U.S. Cl. 260—591 11 Claims
Int. Cl. C07c *141/00*; D06m *13/26*

Benzophenone compounds of the formula



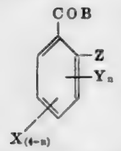
wherein Y is a group of the formula



and E is hydrogen or another substituent; A is a group which when combined with hydrogen forms an acid or a salt of a group which when combined with hydrogen forms an acid for example, halogen, sulphate ester or alkali metal salt of sulphate ester; n is an integer; Z is hydroxyl, hydrogen or another substituent but at least one Z is hydroxyl; and X and G are hydrogen or another substituent, such as hydroxyl or alkoxy. These compounds are prepared by a Friedel-Crafts reaction between, for example,



wherein T is hydroxyl, alkoxy or hydrogen and an acid halide of the formula



Use of the benzophenones as ultraviolet absorbers is disclosed.

3,431,307

RECOVERY OF CATALYST REACTION CONTROL DILUENT UTILIZED IN THE PREPARATION OF MONOVINYL ACETYLENE

Alfred Peter Kottenhahn, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 11, 1967, Ser. No. 629,884
U.S. Cl. 260—612 3 Claims
Int. Cl. C07c *41/12, 43/12, 43/04*

Method of recovering catalyst reaction control diluent, such as diphenyl ether, from the immiscible reaction control diluent phase resulting from the anhydrous preparation of monovinylacetylene; this recovery is achieved by diluting said diluent phase with a low boiling aliphatic hydrocarbon to precipitate tar followed by separating and recovering said reaction control diluent.

3,431,308

PROCESS FOR THE MANUFACTURE OF ETHERS OF POLYHYDRIC ALCOHOLS

Rolf Zimmermann, Wiesbaden-Biebrich, and Wolfgang Dathe, Wiesbaden, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,992
Claims priority, application Germany, Aug. 24, 1962, C 27,785; Dec. 22, 1962, C 28,748
U.S. Cl. 260—615 17 Claims
Int. Cl. C07c *41/10, 43/04*

1. A process for the manufacture of ethers of polyhydric alcohols which comprises reacting a polyhydric alcohol in which the alcoholic hydroxy groups are the sole functional groups and which is free from aliphatic unsaturation with a hydrocarbon mono-halide free from acetylenic unsaturation, in which a halogen of an atomic weight of at least 35 is bound directly to a saturated aliphatic carbon atom in the presence of an amount of an alkali metal hydroxide which is at least equivalent to the amount of the hydrocarbon halide, and in the presence of dimethylsulfoxide as a solvent and an entrainer which is inert towards the reactants, which forms an azeotrope with water and has a boiling point lower than dimethylsulfoxide and any azeotrope containing the latter and removing the water formed during the reaction from the reaction mixture by an azeotropic distillation, the reaction being carried out at a temperature up to the boiling point of dimethylsulfoxide.

3,431,309

TRANS-DI(HYDROXYALKYL)CYCLOBUTANES

Erich Marcus, Charleston, and Donald L. MacPeek, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application June 28, 1963, Ser. No. 291,260, now Patent No. 3,356,705, dated Dec. 5, 1967. Divided and this application Dec. 22, 1966, Ser. No. 603,742
U.S. Cl. 260—617 1 Claim
Int. Cl. C07c *31/18, 35/02*

The production of trans-di(omega-hydroxyalkyl)cyclobutane of the formula:



wherein y and z designate integers of from 0 to 8, by reacting a trans-divinylcyclobutane with an isoalkylaluminum, optionally growing the resulting polymer with ethylene, oxidizing the polymer, and then hydrolyzing the oxygenated polymer. These trans-di(omega-hydroxyalkyl) cyclobutanes can be employed as organic hardeners by reaction with di-epoxides to produce curable resins.

3,431,310

POLYALKYL CYCLOALKYL PHENOL POLYMERS

Bernard J. Davis and Larry B. Rosetti, Biloxi, Miss., assignors to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed Sept. 28, 1967, Ser. No. 671,246
U.S. Cl. 260—619 8 Claims
Int. Cl. C07c *37/12*; C08f *7/02*

This disclosure describes a method of preparing a modified phenol polymer in two stages. The first stage

consists in the formation of a Diels-Alder condensation product, which is subsequently polymerized into a polyalkyl cycloalkyl hydrocarbon, carrying cyclohexene groups. In the second stage this compound is reacted with a phenol, said phenol being attached to the olefinic group of the previously formed cyclohexene group.

3,431,311
PRODUCTION OF ALKANOLS

Leslie Ernest Cooper, Hull, and Kenneth George Pickup, London, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Continuation of application Ser. No. 215,264, Aug. 7, 1962. This application June 8, 1966, Ser. No. 556,243

Claims priority, application Great Britain, June 25, 1960, 22,335/60

U.S. Cl. 260—638 **14 Claims**

Int. Cl. C07c *29/14;* **B01j** *11/82*

1. The process for the production of an alkanol which comprises reacting in the vapor phase a compound selected from the group consisting of alkanals and alkenals having from 3 to 8 carbon atoms in the molecule with hydrogen in the presence of a supported catalyst selected from the group consisting of an unmodified copper catalyst and a copper catalyst modified with a modifier selected from the group of zinc, magnesium, chromium, iron and an alkali metal phosphate until at least 80% by weight of the aldehyde is converted to the alkanol, and reacting the vaporized product with hydrogen in the presence of a supported copper-nickel catalyst to convert the aldehyde to the corresponding alkanol, said process being carried out at a temperature in the range of about 130° to about 200° C.

3,431,312
HALTING PROCESS IN CONTINUOUS NITRATION OF AROMATIC HYDROCARBONS

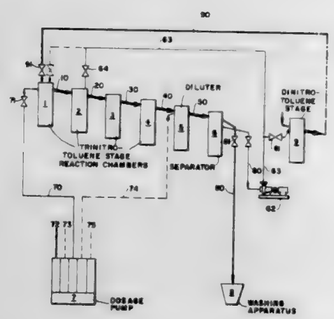
Karl Engelbert Ludwig Toischer and Horst Sigurd Max Bergmann, Cologne-Marienburg, Germany, assignors to Josef Meissner G.m.b.H. & Co., KG., Cologne-Bayenthal, Germany

Filed June 27, 1967, Ser. No. 649,321

Claims priority, application Germany, July 2, 1966, M 70,075

U.S. Cl. 260—645 **4 Claims**

Int. Cl. C07c *79/12*



In a process for producing a nitro aromatic compound by reacting aromatic hydrocarbons with a nitration acid in a plurality of nitration chambers arranged in cascade and succeeded by a separator, a method for safely bringing the process to the temporary halt by stopping the inflow of starting materials and the outflow of reaction products and recycling waste acid from the separator to one of the initial reaction chambers of the cascade until the secondary reaction in these chambers has been completed.

3,431,313
2-HALO-1,1,3,3-TETRAFLUOROPROPANES

Bernard M. Regan, Chicago, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Original application Feb. 2, 1966, Ser. No. 538,523, now Patent No. 3,362,874. Divided and this application Sept. 12, 1967, Ser. No. 667,065

U.S. Cl. 260—653 **3 Claims**

Int. Cl. C07c *19/08, 17/16;* **A61k** *13/00*

The compounds 2-chloro-1,1,3,3-tetrafluoropropane and 2-bromo-1,1,3,3-tetrafluoropropane, useful as inhalation anesthetics, and the method of preparing said compounds by reaction of 1,1,3,3-tetrafluoro-2-propyl p-toluenesulfonate and alkali halide at a temperature of about 200° C. to about 220° C.

3,431,314
PROCESS FOR CHLORINATING HYDROCARBONS

Eugene C. Olinger, William R. Bradley, and John H. Smith, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,912

U.S. Cl. 260—660 **7 Claims**

Int. Cl. C07c *17/10, 19/02*

1. A continuous method for chlorinating a detergent range paraffin or mixture thereof which comprises:

continuously introducing said paraffin to a vertically disposed reactor divided into a plurality of superimposed communicating reaction zones each of which has a provision for effecting a high liquid holdup whereby from about 40 to 80% of the total paraffin feed at a temperature of between about 210 and 320° F. is introduced into the topmost zone with the remaining portion of the paraffin feed at not in excess of about ambient temperature being parallelly introduced to each reaction zone other than the topmost zone;

continuously introducing chlorine gas to each of the reaction zones whereby the total amount of chlorine so introduced is such as to provide an overall external molar ratio of chlorine to paraffin of from about 0.15 to 0.40;

venting generated HCl from each of the reaction zones; and

continuously removing the chlorinated product from the last of said reaction zones.

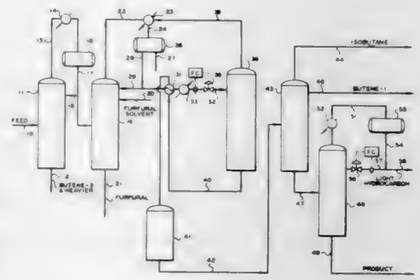
3,431,315
BUTENE-1 PURIFICATION

John M. Folz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 27, 1967, Ser. No. 626,160

U.S. Cl. 260—677 **6 Claims**

Int. Cl. C07c *11/02, 3/10*



Purification of butene-1 is effected by introducing a feed stream containing impurities such as isobutylene, water

and aldehydes into a fractionator wherein the feed stream is fractionated into an overhead product stream and a bottoms product stream. The bottoms product stream is a substantially dry and aldehyde free mixture of butene-1 and isobutylene. The overhead product stream contains substantially all of the aldehydes and water along with butene-1. The overhead stream is cooled thereby separating two phases, a water phase and a butene-1 phase. The butene-1 phase is recycled to the fractionator and the water phase, now containing the aldehydes, is removed.

3,431,316
CONVERSION OF OLEFINS

Robert L. Banks, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,205

U.S. Cl. 260—683 **6 Claims**

Int. Cl. C07c *3/28;* **C10g** *9/00*

Ethylene is converted to propylene by contact with a tungsten oxide or molybdenum oxide promoted silica catalyst. The conversion of ethylene to propylene can be used in combination with disproportionation to treat ethylene and propylene by-products produced in cracking naphtha to produce butene, or such products produced in producing butene from propylene by dehydrogenation and disproportionation.

3,431,317
POLYMERIZATION OF PROPYLENE

Emannel M. Amir, Baytown, Tex., assignor to Esso Research and Engineering Company

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,094

U.S. Cl. 260—683.15 **4 Claims**

Int. Cl. C07c *3/10*

Propylene is polymerized to its dimer and the lower molecular weight oligomers by using an alkyl aluminum dichloride catalyst alone at temperatures within the range of 30° to 100° C. and at pressures of 30 p.s.i. to the saturation pressure of propylene. About 50 percent of the dimer produced are 4-methyl-2-pentene and about 25 percent normal hexenes.

3,431,318
OLEFIN OLIGOMERIZATION

James D. McClure, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1967, Ser. No. 674,752

U.S. Cl. 260—683.15 **10 Claims**

Int. Cl. C07c *3/20;* **B01j** *11/00*

Terminal olefins are oligomerized to a mixture consisting principally of linear olefin dimers and trimers in the presence of a homogeneous oligomerization catalyst prepared from an alkali metal tetra-coordinate organoaluminate compound and a salt of divalent nickel and a halogenated chelating anion.

3,431,319
FOAMED POLYSTYRENE ARTICLES COATED WITH AN UNSATURATED POLYESTER RESIN HAVING MONOVINYL ETHER MONOMER

Melvin E. Baum, Monroeville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Feb. 17, 1967, Ser. No. 616,896

U.S. Cl. 260—861 **9 Claims**

Int. Cl. C09d *3/68;* **C08f** *21/02;* **B32b** *5/32*

Articles having a structure of foamed polystyrene are coated by a method which involves forming a layer on said article of a mixture of (1) an unsaturated polyester resin and (2) an ethylenically unsaturated polymerizable material selected from monovinyl ethers of the formula:

$$R—O—CH=CH_2$$

wherein R is an alkyl group having from 8–12 carbon atoms, a hydroxyalkyl group having from 4–12 carbon atoms or a hydroxypolyether group of the formula:

$$HO\left[\left(A—O\right)_n A\right]$$

wherein A is an alkylene group having from 2–3 carbon atoms and n is an integer from 1 to 15, and curing the coating without any substantial attack upon the polystyrene foam structure. The total mixture may be diluted with styrene to about 15–20% of the weight of the total mixture.

3,431,320
POLYESTER RESIN COMPOSITION HAVING A THICKENING AGENT THEREIN

Melvin E. Baum and Frank Fekete, Monroeville, and John A. Hatton, Verona, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 11, 1967, Ser. No. 689,595

U.S. Cl. 260—865 **6 Claims**

Int. Cl. C08f *21/00*

The viscosity of unsaturated polyester resins formed by dissolving the condensation polymers of unsaturated dicarboxylic acids and dihydric alcohols in ethylenically unsaturated copolymerizable monomers may be increased by adding a mixture of calcium oxide and either calcium hydroxide or magnesium oxide to the unsaturated polyester resin. These compounds initially inhibit the viscosity build-up which lengthens the pot life. Unsaturated polyester resins having thickening agents therein are useful in pre-coating of glass fiber mats.

3,431,321
WEATHER-RESISTANT UNSATURATED POLYESTER RESIN COMPOSITION

Darwin Fiske De Lapp, New Canaan, Conn., and William George Deichert, Flushing, N.Y., assignors to American Cyanamid Company, Stamford, Conn.

No Drawing. Filed July 22, 1965, Ser. No. 474,142

U.S. Cl. 260—872 **10 Claims**

Int. Cl. C08f *21/00;* **C08g** *17/10*

Substantially linear, water-insoluble, nongelled, unsaturated polyester resin compositions which can be converted to the cross-linked state and which comprise (1) the esterification reaction product of fumaric acid and a secondary, secondary isomer of a polypropylene glycol and (2) a glycol diacrylate and articles of manufacture produced therefrom, are disclosed.

3,431,322
DYEABLE POLYOLEFIN COMPOSITIONS AND PRODUCTS THEREFROM

John R. Caldwell and David G. Hedberg, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 20, 1962, Ser. No. 211,441

U.S. Cl. 260—873 **12 Claims**

Int. Cl. C08f *29/12;* **C08g** *17/04;* **D06p** *3/00*

1. A dyeable polyolefin fiber and film-forming composition susceptible of permanent dyeing by disperse dyes which comprises a poly-α-olefin containing from 1 to about 20% by weight distributed therein as a dye receptor of a high molecular weight polymer selected from the group consisting of the copolyester of terephthalic acid, isophthalic acid, and 1,4-cyclohexanedimethanol, the copolyester of ethylene glycol, 1,4-cyclohexanedimethanol, and terephthalic acid, wherein in each said copolyester the acid component may contain a minor amount of aliphatic dicarboxylic acid.

3,431,323
HYDROGENATED BLOCK COPOLYMERS OF BUTADIENE AND A MONOVINYL ARYL HYDROCARBON

Robert C. Jones, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 20, 1964, Ser. No. 338,795
U.S. Cl. 260—880 **10 Claims**
Int. Cl. C08f *45/68, 19/08*

Hydrogenated block copolymers having a superior combination of physical properties are prepared by block polymerizing a vinyl arene with butadiene in the presence of a polar compound to cause a limited amount of branching in the polybutadiene block and thereafter hydrogenating the polymer.

3,431,324
FLAME-RETARDANT AGENTS FOR THERMOPLASTIC PRODUCTS

Helen Currier Gillham, Princeton, N.J., and Allan Ellis Sherr, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application July 30, 1963, Ser. No. 298,577, now Patent No. 3,309,425, dated Mar. 14, 1967. Divided and this application Oct. 28, 1966, Ser. No. 590,230
U.S. Cl. 260—893 **6 Claims**
Int. Cl. C09k *3/28;* **C07c** *29/02, 29/04*

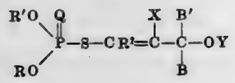
Thermoplastic polymers having improved flame-retardant properties are prepared by blending therewith minor amounts of a tributylvinylphosphonium bromide or iodide.

3,431,325
UNSATURATED CARBAMYL OR ACYLOXY CONTAINING PHOSPHOROTHIOATES AND PHOSPHORODITHIOATES

Sheldon B. Greenbaum, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

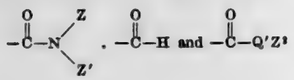
No Drawing. Continuation-in-part of application Ser. No. 322,526, Nov. 8, 1963. This application Feb. 28, 1966, Ser. No. 530,331
U.S. Cl. 260—938 **5 Claims**
Int. Cl. C07f *9/16*

Compounds of the formula



wherein:

R and R′ are alkyl of from 1 to about 6 carbon atoms;
Q is selected from the group consisting of oxygen and sulfur;
X is selected from the group consisting of chlorine, bromine, and hydrogen;
B and B′ are selected from the group consisting of hydrogen and alkyl of 1 to about 6 carbon atoms;
Y is selected from the group consisting of



wherein:

Z and Z′ are selected from the group consisting of hydrogen and an alkyl of 1 to about 6 carbon atoms;
Z^2 is selected from the group consisting of alkyl of 1 to about 6 carbon atoms, unsubstituted aryl of from 6 to about 14 carbons atoms, and chloro-substituted aryl of 6 to about 14 carbon atoms;
Q′ is selected from the group consisting of oxygen and sulfur; and
R^2 is selected from the group consisting of hydrogen, alkyl of from 1 to 6 carbon atoms and



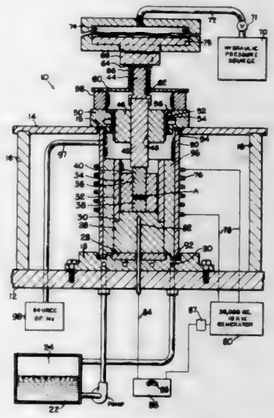
wherein B, B′ and Y are as described above, said X substituent being hydrogen only when Q is sulfur.

The compounds of this invention are useful as pesticides.

3,431,326
METHOD OF MAKING INFRARED TRANSMITTING ELEMENT

Eugene C. Letter, Walworth, N.Y., assignor to Bausch & Lomb Incorporated, a corporation of New York

Filed June 17, 1959, Ser. No. 821,040
U.S. Cl. 264—1 **8 Claims**
Int. Cl. B29d *11/00*

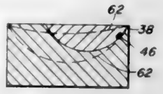


1. Method of making an infrared transmitting optical element comprising hot pressing a pulverulent mass of an alkaline earth fluoride from the group consisting of barium fluoride, calcium fluoride and strontium fluoride at a temperature of 500° to 1300° C. and a pressure of 2,000 to 60,000 p.s.i.

3,431,327
METHOD OF MAKING A BIFOCAL CONTACT LENS WITH AN EMBEDDED METAL WEIGHT

George F. Tsuetaki, 1105 W. Laurence, Chicago, Ill. 60640

Filed Aug. 31, 1964, Ser. No. 393,251
U.S. Cl. 264—1 **2 Claims**
Int. Cl. B29d *11/00*



A contact lens unit having a nonconcentrically disposed bifocal segment therein, in which said bifocal segment lies at least partially near an outer edge portion of the lens, and in which a dense metal insert portion is held in place inside said lens unit near a radially outer edge portion thereof, said insert being completely surrounded by the material comprising the contact lens unit, and held in place thereby without the use of adhesives or the like. A process for making such units is described, wherein a lens blank is prepared, a bifocal segment portion hollowed out, the metal insert placed in position, and the liquid plastic bifocal segment material poured in place covering the metal insert. The blank thus formed is then ground into a contact lens, and the metal insert, which serves to orient the lens in position on the eye, is disposed immediately adjacent the interface between the principal lens portion and the bifocal segment portion.

3,431,328
METHOD OF MAKING A STRONTIUM-90 RADIATION SOURCE

Forrest N. Case, Oak Ridge, and Thomas S. Mackey and Clyde E. McFarland, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Sept. 29, 1967, Ser. No. 671,882
U.S. Cl. 264—.5 **4 Claims**
Int. Cl. G21c *21/12*

A beta source comprising strontium-90 microspheres embedded in an aluminum matrix and encased in stainless steel, and a method of making it comprising providing a mixture of strontium-90 silicate microspheres and molten aluminum in a stainless steel container, forcing the molten aluminum into the voids between the microspheres, and cooling the resulting mass.

3,431,329
METHOD OF PREPARING A FUEL MATERIAL FOR USE IN A NUCLEAR REACTOR

George D. White and Joseph H. Handwerk, Joliet, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

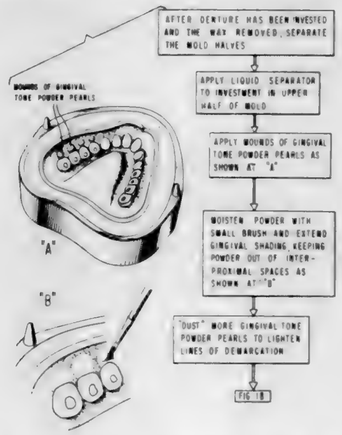
No Drawing. Filed Jan. 31, 1968, Ser. No. 701,858
U.S. Cl. 264—.5 **1 Claim**
Int. Cl. G21c *21/00*

A method of preparing a fuel material for use in a nuclear reactor. The method comprises mixing commercial uranium dioxide, zirconium diboride, and uranium hydride. The amount of uranium hydride added is that amount necessary to react with the hyperstoichiometric oxygen inherently present in commercial uranium dioxide. The mixture is then sintered in vacuum as an inert gas so as to obtain a fuel material containing a predetermined amount of boron as burnable poison.

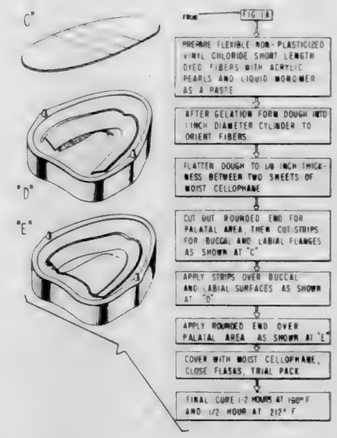
3,431,330
METHOD OF MOLDING DECORATIVE, VEINED, TRANSLUCENT, RIGID PLATE

John A. Cornell, Philadelphia, Pa., assignor to Sartomer Resins, Inc., Essington, Pa., a corporation of Pennsylvania

Original application Sept. 12, 1966, Ser. No. 578,613. Divided and this application May 15, 1968, Ser. No. 729,318
U.S. Cl. 264—17 **3 Claims**
Int. Cl. A61c *13/22*



Method of forming impact-resistant, veined plate comprising admixing flexible, nonplasticized vinyl chloride fibers of Afnor index greater than 450 with transparent acrylic pearls and liquid methyl methacrylate monomer to form a dough, flattening the dough, placing the dough

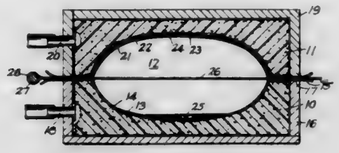


in a mold and curing in the mold at a temperature of 160–212° F. to produce a decorative, translucent, rigid product.

3,431,331
ANTICLOGGING BREATHABLE MOLD AND METHOD

Seymour Pincus, Brooklyn, and Edwin G. Krakauer, Roslyn Heights, N.Y., assignors to Kay Manufacturing Corp., a corporation of New York

Filed Feb. 16, 1965, Ser. No. 433,090
U.S. Cl. 264—45 **15 Claims**
Int. Cl. B29d *27/00*

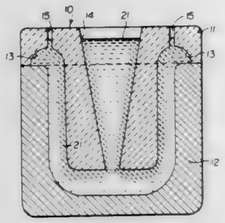


The breathable mold is of the type permitting removal and transportation of the casting of polyurethane foam before curing and while still in the form of foam gel. The open cells of the foam mold are guarded against clogging by a thin perforated barrier sheet as of polyethylene. Most of the perforations through the sheet are small enough to vent the mold cavity and to bar the passage of polyurethane foam elastomer material through the sheet and into the cells. In addition and optionally, a sheet of absorbent paper may be interposed between the plastic sheet and the mold wall to absorb any chance material penetrating the small perforations. Large perforations are used in the sheet only when a cover is to be automatically attached to the plastic sheet during the molding operation. In that case, the cover replaces and is used instead of the paper sheet. The large perforations are made at selected spots and permit the passage of foam which coats and adheres to the cover but does not pass completely through the cover to clog the mold cells.

3,431,332
CERAMIC CASTING TECHNIQUES

Howard B. Cummings, New Castle, Pa., assignor, by mesne assignments, to Interface Corporation, Parsippany, N.J., a corporation of Delaware

Filed July 16, 1962, Ser. No. 209,915
U.S. Cl. 264—86 2 Claims
Int. Cl. B28b *1/26*



1. A method of slip casting comprising providing porous bodies which cooperate to form a substantially closed mold cavity, rendering approximately one-half of the surfaces of said cavity impermeable and keeping said cavity filled with a slip until the cavity is filled with a relatively solidified cast mass of particles, said slip being cast by uni-directional solidification proceeding toward said impermeable surfaces.

3,431,333
METHOD FOR MAKING MECHANICALLY GROOVED PHONOGRAPH RECORDS

Nicola Fiornascente, 165 Valley Road, Montclair, N.J. 07042

Filed Jan. 4, 1967, Ser. No. 607,870
U.S. Cl. 264—107 5 Claims
Int. Cl. B29d *17/00*



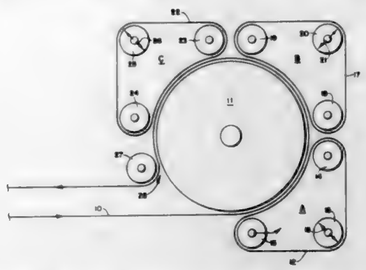
The method for making mechanically grooved phonograph records in which a lacquer master disc is thinly plated; the tin plating is removed from the master lacquer disc and it is shaped to fit a pressing die; from this shaped, thinly plated master disc, which has been preshaped, a preshaped plated mold disc is prepared; the preshaped plated mold disc is removed from the plated master disc; a preshaped heavily plated stamper disc is prepared; the preshaped heavily plated stamper disc is removed from the plated mold and is placed without further deformation, since it is preshaped, in the pressing die and phonograph records are pressed therefrom.

3,431,334
MANUFACTURE OF TEXTRYLS

Robert C. Williams, Richmond, Va., and John M. Haigh, Peabody, Mass., assignors to Albemarle Paper Company, Richmond, Va., a corporation of Virginia

Continuation-in-part of application Ser. No. 323,015, Nov. 12, 1963. This application Nov. 14, 1966, Ser. No. 637,857
U.S. Cl. 264—122 5 Claims
Int. Cl. D04h *13/00*

Process for the manufacture of a nonwoven synthetic fiber sheet comprising the simultaneous heating and compressing of an essentially dry textryl sheet comprising synthetic fibers and fibrids prepared on a Fourdrinier paper machine. The dry textryl sheet is simultaneously heated to a temperature sufficient to bond the synthetic

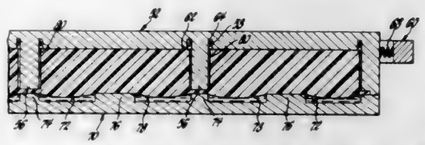


fibers with the fibrids and compressed against a smooth rigid surface at a pressure of at least 5 p.s.i.

3,431,335
METHOD AND APPARATUS FOR MAKING FILTERS

Dan C. Henning, Milwaukee, Wis., assignor to G. S. Staunton & Company, Inc., Birmingham, Mich., a corporation of Michigan

Filed Oct. 20, 1966, Ser. No. 588,096
U.S. Cl. 264—138 15 Claims
Int. Cl. B29c *3/00*; B29d *27/00*



1. A method of making a filter element from a batt of foam material and comprising the steps of:
making a cut partially through said butt around the periphery thereof and inwardly spaced from the edges thereof;
and compressing and heating the portions of said batt between said cut and said edges of said batt to form a peripheral flange adjacent one end of said batt.

3,431,336
FUNNEL SPINNING OF VISCOSE RAYON FILAMENTS

Akihiro Isobe, Yutaka Fujinawa, Kogi Iwasaki, and Takeshi Ikeda, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a Japanese corporation

Filed Oct. 19, 1967, Ser. No. 676,527
Claims priority, application Japan, Oct. 24, 1966, 41/69,903
U.S. Cl. 264—169 5 Claims
Int. Cl. D01d *5/06*; D01f *3/10*

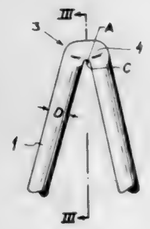


A viscose funnel spinning process wherein a liquid capable of dissolving the viscose liquid is passed through the funnel in advance of the initiation of the regular spinning, so as to avoid possible clogging of the spinneret orifices by deposition of the viscose.

3,431,337
METHOD FOR THE PRODUCTION OF SLIDE-FASTENER COUPLING ELEMENTS

Helmut Heimberger, Essen, Germany, assignor to Opti-Holding A.G., Glarus, Switzerland, a corporation of Switzerland

Filed Apr. 22 1966, Ser. No. 544,487
Claims priority, application Germany, Apr. 28, 1965, O 10,824
U.S. Cl. 264—281 3 Claims
Int. Cl. B29c *17/02*



Method of making continuous helicoidal coupling elements for slide fasteners wherein a synthetic-resin filament composed of linearly molecularly oriented polyamides or esters is turned about a mandrel so that each turn is buckled to form lateral protrusions constituting the coupling heads without further shaping. The coil is then set under heat.

3,431,338
COATED DOSAGE FORM ADAPTED TO ORAL EMETINE OR DEHYDROEMETINE THERAPY

Kurt Munzel, Riehen, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 394,061, Sept. 2, 1964. This application Feb. 29, 1968, Ser. No. 709,179
Claims priority, application Switzerland, Sept. 10, 1963, 11,155/63
U.S. Cl. 424—21 12 Claims
Int. Cl. A61k *27/00*

Pharmaceutical compositions are described comprising (1) a medicament-containing nucleus coated, sequentially, with (2) a layer of an acid-soluble coating material which is resistant both to alkalis and intestinal juices, (3) a water-soluble intermediate layer, and (4) a layer of an alkali-soluble coating material which is resistant to acid and gastric juices.

3,431,339
DENTIFRICES

Kenneth W. Gyarmathy, Old Bridge, and Alexander W. Bouchal, Westfield, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,610
U.S. Cl. 424—52 12 Claims
Int. Cl. A61k *7/16*

Dental tablet for use in place of toothpaste. The tablet contains an intimate blend of water-soluble, anticaries fluorine containing agents, such as stannous fluoride or sodium monofluorophosphate, polishing agent, such as agent including insoluble sodium metaphosphate, foaming agent, such as sodium lauryl sulfate, and releasable matrix, such as waxy polyethylene glycol.

3,431,340
MEDICINAL PREPARATION FOR THE TREATMENT OF BURNS AND OTHER TRAUMATIC WOUNDS

John Otto George, Clatskanie, Oreg. 97016

No Drawing. Continuation-in-part of application Ser. No. 388,275, Aug. 7, 1964. This application Oct. 19, 1967, Ser. No. 676,632
U.S. Cl. 424—107 4 Claims
Int. Cl. A61k *9/06, 27/00, 15/02*

A medicinal preparation for the treatment of burns and other traumatic wounds consists essentially of castor oil and fish oil.

3,431,341
BACTERIA INHIBITING COMPOSITION CONTAINING POLYMIX B AND O-CARBAMYL-D-SERINE

Robert S. Baldwin, Montezuma, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed June 9, 1967, Ser. No. 644,807
U.S. Cl. 424—177 1 Claim
Int. Cl. A61k *27/00*

A combination of O-carbamyl-D-serine and polymyxin having therapeutic value against bacteria which utilize D-alanine as a growth factor.

3,431,342
TREATMENT OF DEPRESSION WITH 5,5-DIALKYL N-ALKYLAMINOALKYL ACRIDANS

Marc Häring, Istvan Molnar, and Theodor Wagner-Jauregg, Zofingen, Switzerland, assignors to Siegfried Aktiengesellschaft, Zofingen, Switzerland, a corporation of Switzerland

No Drawing. Original application Dec. 13, 1962, Ser. No. 244,249, now Patent No. 3,284,454, dated Nov. 8, 1966. Divided and this application Nov. 8, 1966, Ser. No. 615,867
Claims priority, application Switzerland, Dec. 18, 1961, 14,646/61; Aug. 3, 1962, 9,307/62
U.S. Cl. 424—250 6 Claims
Int. Cl. A61k *27/00*

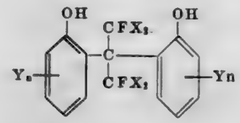
The invention is directed to a method of treating mental disturbances in humans by administering a 5,5-dialkyl N-alkylaminoalkyl acridan and salt thereof.

3,431,343
DIMETHYL FLUORIDE - SUBSTITUTED METHYLENE BISPHENOL GERMICIDES AND FUNGICIDES

Herbert C. Stecker, 1 Bridle Way, Ho-Ho-Kus, N.J. 07423

No Drawing. Continuation-in-part of application Ser. No. 602,182, Dec. 16, 1966, which is a continuation-in-part of application Ser. No. 325,142, Nov. 20, 1963. This application Dec. 12, 1967, Ser. No. 689,805
U.S. Cl. 424—347 6 Claims
Int. Cl. A01n *9/30*

A method of obtaining germicidal and fungicidal activity comprises the contacting of said micro-organisms with an effective concentration of at least one compound having the general formula:



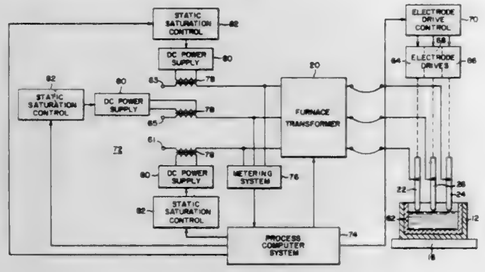
wherein:
X is a halogen atom of the class consisting of chlorine and fluorine,
Y is a member of the class consisting of hydrogen, methyl, bromine and chlorine, and
n is a numeral from 0 to 3.

ELECTRICAL

3,431,344
CONTROL SYSTEM PROVIDING SUPPLY CIRCUIT IMPEDANCE BALANCE CONTROL FOR ELECTRIC ARC FURNACES

Edwin J. Borrebach, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 15, 1965, Ser. No. 507,931
U.S. Cl. 13—12 **8 Claims**
Int. Cl. H05b *7/18;* **H02p** *13/04*

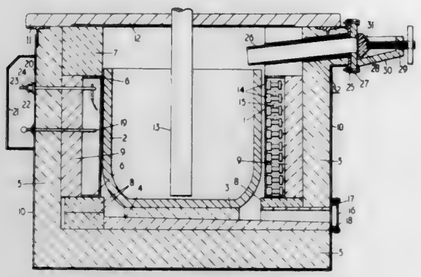


A programmed digital computer control system operates phase impedance devices to produce phase supply circuit impedance balancing as furnace operations cause circuit conditions to vary in the supply circuits to a multiphase electric arc furnace. Furnace electrodes are positioned by computer control to satisfy furnace operating requirements and to maintain arc balance as the supply circuit impedances are balanced.

3,431,345
ELECTRICAL RESISTANCE FURNACES

Kenneth Francis Faulkner and Alan Walter Plume, Ruislip, England, assignors to Heatlock Limited, Ruislip, Middlesex, England, a British company

Filed Nov. 13, 1967, Ser. No. 682,227
Claims priority, application Great Britain, Nov. 14, 1966, 50,977/66
U.S. Cl. 13—22 **5 Claims**
Int. Cl. H05b *3/66*

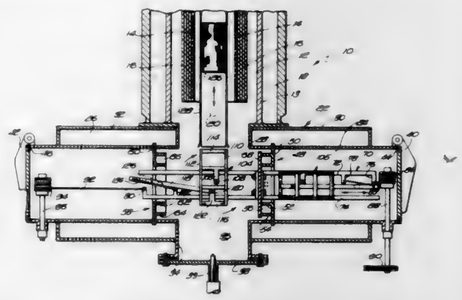


An electrical resistance furnace of the type which includes a crucible for molten metal contained within a sealed enclosure so that the molten metal may be extracted, when required for use, from the crucible under the influence of pressure or vacuum, wherein a portion of a side wall defining the sealed enclosure is provided with a removable charging tube extending downwardly and inwardly therein to a point above and in communication with the crucible, and means for closing the charging tube and allowing pressurizing of the enclosure.

3,431,346
ELECTRIC FURNACE WITH CONTINUOUSLY SEALED HEATING CHAMBER

Herbert W. Westeren, Barrington, William H. Kimball, Providence, and Vincent Scotto, Warwick, R.I., assignors to C. I. Hayes Inc., Cranston, R.I., a corporation of Rhode Island

Filed Feb. 6, 1967, Ser. No. 614,299
U.S. Cl. 13—31 **10 Claims**
Int. Cl. H05b *7/18*

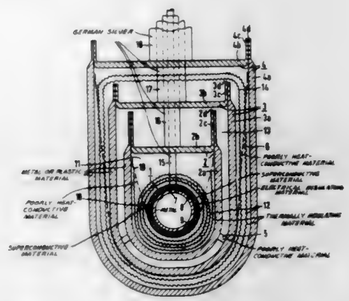


An electrically operated furnace that includes a heating chamber in which the operating conditions are continuously maintained and in which an inert atmosphere is present so as to maintain a low concentration of impurities at a partial pressure in the heating chamber that have an oxidizing influence wherein a work load being heat treated in the heating chamber is not deleteriously affected by the impurities. A work load is moved into and out of the heating chamber by way of a vestibule area that enables the heating chamber to be continuously operated at the same temperature and pressure and which insures relative purity of the atmosphere within the heating chamber even with the periodic transfer of a work load thereto and therefrom.

3,431,347
CRYOSTATS FOR LOW-TEMPERATURE CABLES

Wilhelm Kafka, Tennenlohe, and Claus-Peter Parsch, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed June 23, 1967, Ser. No. 648,476
Claims priority, application Germany, June 24, 1966, S 104,426
U.S. Cl. 174—15 **10 Claims**
Int. Cl. H01b *7/34*



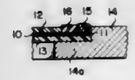
A cryostat for low-temperature cables such as superconductive or cryoconductive cables. The cryostat includes at least one elongated tubular container which houses

the cable, and this tubular container has a cable-receiving portion of U-shaped cross section and a cover portion which is connceted to the cable-receiving portion so as to close the latter.

3,431,348
ELECTROMAGNETIC SHIELD AND VIEWING LAMINATE

Stewart Nellis, Watchung, and Richard W. Lamp, Verona, N.J., assignors to Technical Wire Products, Inc., Cranford, N.J., a corporation of New Jersey

Filed May 6, 1966, Ser. No. 548,150
U.S. Cl. 174—35 **4 Claims**
Int. Cl. H05k *9/00*

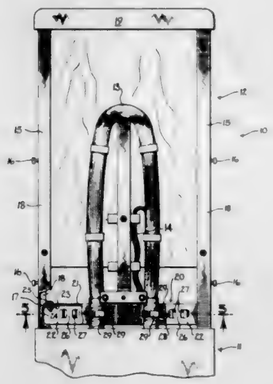


Electromagnetic shielding laminates are described herein which have transparent outer laminae and a transparent inner lamina having an imbedded metallic screen with the screen extending beyond a periphery of one of the outer laminae so that it may bend around the periphery and overlap an outer surface of the laminate, and which have outer laminae of varied size with an imbedded screen overlying an exposed peripheral shoulder of a larger outer lamina and with a resilient conductor overlying the exposed screen and shoulder and extending perpendicularly therefrom beyond the smaller outer lamina.

3,431,349
CABLE TERMINAL ENCLOSURE WITH GROUNDING CROSS BAR

Douglas L. P. Hamilton, % Utility Products Co., 3111 W. Mill Road, Milwaukee, Wis. 53209

Continuation-in-part of application Ser. No. 607,256, Jan. 4, 1967. This application Dec. 28, 1967, Ser. No. 694,265
U.S. Cl. 174—38 **8 Claims**
Int. Cl. H02g *9/00*

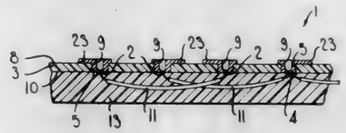


Portions of the opposite stretches of an above-ground loop of buried utility cable are clamped to necks forming an integral part of a metal cable support and grounding member secured to a grounded portion of the enclosure housing the loop. In one embodiment, this cable support and grounding member is a channel-shaped cross-bar spanning opposite walls of the enclosure; in the other, it is an angle-shaped stamping secured to one wall of the enclosure.

3,431,350
CIRCUIT BOARD

Rolf Reinhold Haberecht, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 31, 1966, Ser. No. 539,034
U.S. Cl. 174—68.5 **5 Claims**
Int. Cl. H05k *1/00, 3/00, 3/20*

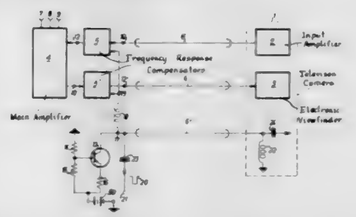


This specification discloses a circuit board amenable to multilayer fabrication and characterized by a sheet of electrical insulation having a plurality of holes therein, a circuit pattern of electrically conductive foil bonded to one face of the sheet and having integral portions cupped through at least some of the holes substantially to the other face of the sheet and closing the respectives holes, and insulated conductors having bared portions connected to the cupped integral portions of the pattern. In other embodiments an electrically insulating and bedding material is employed to cover the other face of the sheet and the conductors. The specification describes the method of preparing the circuit board also. The circuit board is particularly useful where a high density of electronic components is desired.

3,431,351
METHOD OF TRANSMITTING TELEVISION SIGNALS

Emil Sennhenn, Darmstadt-Arheilgen, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed Dec. 3, 1965, Ser. No. 511,526
U.S. Cl. 178—5.2 **4 Claims**
Int. Cl. H04n *1/46, 9/00, 1/00*



Automatic frequency characteristic correction for a video transmission path using a direct current signal in a different path in the same medium. The direct current signal is equally affected with the video signal, and is used to correct the characteristics of the video transmission path.

3,431,352
DEVICE FOR THE ANALYSIS OF PHENOMENA INVOLVING VARIATIONS IN OPTICAL PATH LENGTH

Michel Eric Charles Philbert, Paris, France, assignor to Office National d'Etudes et de Recherches Aerospatiales par abreviation (O.N.E.R.A.), Chatillon-sous-Bagneux, Hauts-de-Seine, France

Filed June 2, 1964, Ser. No. 372,042
Claims priority, application France, June 5, 1963, 937,101
U.S. Cl. 178—6 **17 Claims**
Int. Cl. G02f *1/32, 1/34*

To check for irregularities on the surface of an optical reflector (e.g. a concave mirror) or for differences in the light transmissivity of a transparent fluid, light trained

upon a test object through a rectangular entrance pupil is partly intercepted, after reflection from or transmission through the test object, by an opaque (Foucault) knife in the plane of an exit pupil constituted by the projected

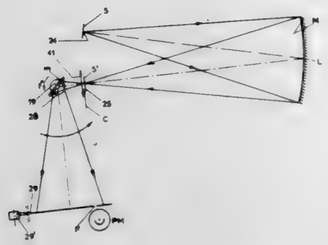
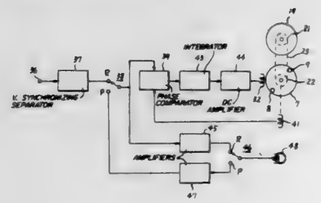


image of the entrance pupil; an unobstructed beam portion from a narrow segment of the test object, traversing the exit pupil, is evaluated electronically by a photoelectric transducer upon which this beam portion is focused.

3,431,353
SINGLE MOTOR MAGNETIC TAPE RECORDING AND/OR REPRODUCING SYSTEM
Nobutoshi Kihara, Tokyo, and Yuji Wada, Yokohama-shi, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Aug. 26, 1965, Ser. No. 482,783
Claims priority, application Japan, Aug. 28, 1964, 39/49,066
U.S. Cl. 178—6.6 **8 Claims**
Int. Cl. H04n *5/76;* **G11b** *5/00*

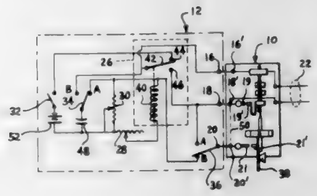


Recording and reproducing device having a rotating head, tape-drive means, and a single motor for rotating the same, control means for regulating the speed of rotation of said head comprising means for providing a reference signal, circuit means for comparing said reference signal with the speed of rotation of said head and for generating an error signal proportional to any difference between said signals, coupling means for connecting said head with said motor, brake means responsive to said error signal for selectively reducing the speed of rotation of said head, and said coupling means absorbing variations in the rate of rotation of said head due to said brake means.

3,431,354
ADAPTER FOR SEMIAUTOMATIC RADIOTELEGRAPH KEY
Lemuel M. Temple, Stratton Mountain Road, West Wardsboro, Vt. 05360
Filed Oct. 22, 1965, Ser. No. 501,381
U.S. Cl. 178—82 **4 Claims**
Int. Cl. H04l *15/08, 27/00;* **H04b** *1/04*

1. In a device for adapting a semiautomatic radiotelegraph key to enable it to be used in producing "dash" pulses automatically in a keyed circuit as well as the "dot" pulses of which it is regularly capable, the combination which comprises

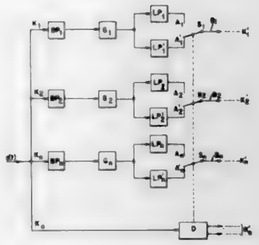
a mounting member having thereon a "dot" terminal, a "dash" terminal and a common or "ground" terminal, each of which has provision for electrical connection to corresponding terminals of the key, and "power" terminals for connection to a source of electric power;



a relay and switch means operated thereby carried by said mounting member, said switch means having a normally biased position in which it completes a first circuit between ground and one of said "power" terminals and being operable by said relay to break said first circuit and complete an alternate circuit between ground and said "dot" terminal;

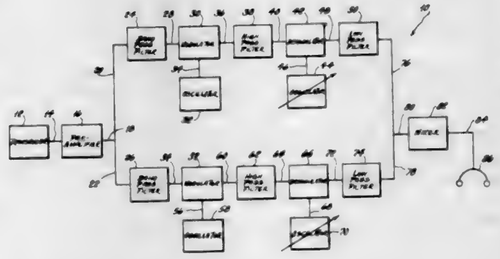
a relay-energizing circuit connected between the other of said "power" terminals and said "dash" terminal and adapted to be completed by the key in "dash" position, said energizing circuit including the operating coil of said relay, said energizing circuit also including a time-delay network to produce a momentary delay in the return of said switch means to its normal position upon interruption of the relay-energizing circuit by the key.

3,431,355
DEVICE FOR EXCITATION CONTROLLED SMOOTHING OF THE SPECTRUM-CHANNEL SIGNALS OF A VOCODER
Ernst H. Rothauser and Erwin F. Paulus, Vienna, Austria, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 5, 1965, Ser. No. 445,563
Claims priority, application Austria, Mar. 25, 1965, A 2,756/65
U.S. Cl. 179—1 **5 Claims**
Int. Cl. H04m *1/00*



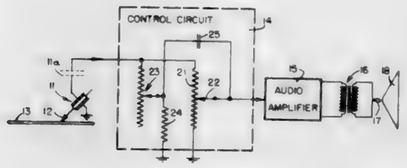
Disclosed is a method and apparatus for achieving a reduction of the noise component of the channel voltages in the operation of a channel vocoder during unvoiced speech segments without impairing the quality of voiced segments. The output of each channel is limited to a frequency which is lower for unvoiced segments than for voiced segments. This can be achieved by inserting a variable filter arrangement in each channel for smoothing the output of the same according to a lower limiting frequency for unvoiced rather than for voiced information segments. The filter arrangement may consist of a pair of low pass filters for each channel, or a variable cut-off low pass filter for each channel, or a triggered integrator for each channel operable in a higher triggering rate or lower triggering rate mode, in each case the filter arrangement being switched between its higher cut-off and lower cut-off mode by the voiced-unvoiced discriminator of the vocoder.

3,431,356
APPARATUS AND METHOD FOR RECONSTRUCTING SPEECH
Michel Copel, Huntington, N.Y., assignor to Integrated Electronics Corporation
Filed June 4, 1965, Ser. No. 461,559
U.S. Cl. 179—1 **10 Claims**
Int. Cl. H04m *1/00;* **H04b** *1/66*



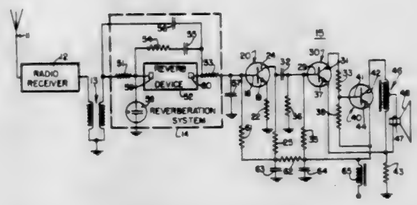
To correct the voice distortions created by speaking using a lighter-than-air gaseous atmosphere, the distorted audio signal is converted into an electrical signal which is filtered into two specific separated frequency bands, the filtered bands are shifted downwardly by different amounts and added to reconvert them to an audio output.

3,431,357
TONE CONTROL
Lester W. Borg, Arlington Heights, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 9, 1965, Ser. No. 478,166
U.S. Cl. 179—1 **3 Claims**
Int. Cl. H04m *1/00;* **H03h** *5/00*



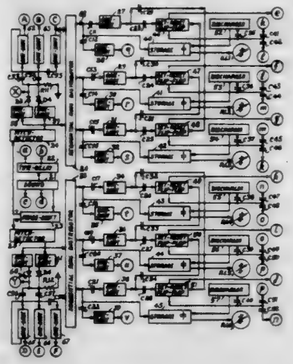
A tone control for a ceramic cartridge is provided by increasing the load on the ceramic cartridge to decrease the bass response while at the same time the impedance of a path between the ceramic cartridge and an audio amplifier for treble signals is decreased to increase the treble response. In a like manner decreasing the load on the cartridge to increase the bass response also acts to increase the impedance of the treble signal path between the ceramic cartridge and the audio amplifier.

3,431,358
SOUND REPRODUCING SYSTEM
Nikolai Goncharoff, Roselle, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 12, 1965, Ser. No. 479,218
U.S. Cl. 179—1 **6 Claims**
Int. Cl. H04m *1/00;* **H02h** *7/20, 3/28*



Sound reproducing apparatus including a reverberation device having a positive slope up to a given frequency and a lesser response above this frequency, with a filter bypassing the reverberation device and passing signals in the range of speech and above the given frequency. The signals from the reverberation device and the filter are applied to an amplifier which has characteristics such that the amplifier output is substantially flat. A neon bulb at the input to the reverberation device protects the input transducer thereof and a noise filter at the amplifier input attenuates high frequency noise superimposed on the audio signal to be reproduced.

3,431,359
AMPLITUDE EQUALIZER OF SPEECH SOUND WAVES WITH HIGH FIDELITY
Meguer V. Kalfaian, 962 Hyperion Ave., Los Angeles, Calif. 90029
Filed Sept. 17, 1965, Ser. No. 488,076
U.S. Cl. 179—1 **8 Claims**
Int. Cl. H04m *1/00;* **H03g** *3/20;* **H03f** *1/30*



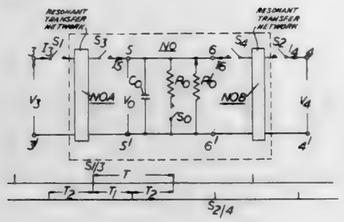
In an amplifying system for equalizing the amplitudes variations of major amplitude peaks of complex waves, in which said variations change exponentially; pulse signals are first derived from the major peaks of said waves; the said waves are first time delayed and amplified through a gain controllable amplifier; the said waves are unidirectionally detected and charged across a plurality of large capacitors by a ring distributor under control of said pulse signals; and said charges are transferred to a smaller capacitor in delayed and coincidental time periods with respect to the delayed and amplified waves, in series with respective resistors of controlled ohmic values, so that the

transferred charges across the smaller capacitor controls the gain of the said amplifier with exponential variations in opposition to the original variations, for attaining non-distorted amplitude equilization.

3,431,360
RESONANT TRANSFER FILTERS WITH IMPEDANCE COMPENSATING FILTERS FOR FILTER CUT-OFFS UNEQUAL TO ONE-HALF OF THE SAMPLING FREQUENCY

Alfred Leo Maria Fettweiss, Mol, Belgium, assignor to International Standard Electric Corporation

Filed Nov. 16, 1964, Ser. No. 411,316
Claims priority, application Netherlands, Nov. 20, 1963, 300,746
U.S. Cl. 179—15 **18 Claims**
Int. Cl. H04j *1/00*

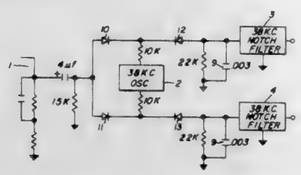


Resonant transfer circuits including filters that are designed to have pulse impedance that is substantially constant within the passband. The cut-off frequencies of filters are distinct from half the sampling frequency and the pulse impedance of at least one of the filters involved in the resonant transfer circuitry is substantial purely resistant and a constant at frequencies inside and outside the passband.

3,431,361
FM MULTIPLEX ADAPTER

Allen F. Podell, Dodoma, Tanzania, assignor to Adams-Russell Co., Inc., Waltham, Mass., a corporation of Massachusetts

Original application May 22, 1962, Ser. No. 196,727, now Patent No. 3,189,836, dated June 15, 1965. Divided and this application Apr. 28, 1965, Ser. No. 451,444
U.S. Cl. 179—15 **2 Claims**
Int. Cl. H04j *1/021*

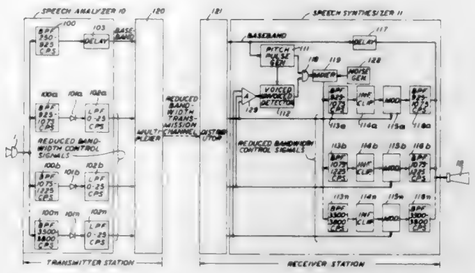


A multiplex adapter for FM tuners which have a low impedance output, such as a cathode follower, consists of only two pairs of diodes connected in opposition with a high impedance multiplex frequency oscillator connected to the junctions of the diodes and an input circuit from the low impedance output source of the FM tuner being connected to one diode of each pair. Output circuits are connected to the other two diodes of each pair and provided with a simplified, multiplex frequency filter. Because of the low impedance input to each pair of diodes the relatively higher impedance switching signal from the multiplex frequency oscillator is greatly attenuated and only a very slight amount is present in the final outputs so that very simple filtering means eliminate this small residual signal. It is not necessary to have the two pairs of switching diodes balance to ground and only two pairs are used as against the customary four pairs of diodes.

3,431,362
VOICE-EXCITED, BANDWIDTH REDUCTION SYSTEM EMPLOYING PITCH FREQUENCY PULSES GENERATED BY UNENCODED BASEBAND SIGNAL

Ralph L. Miller, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 22, 1966, Ser. No. 544,498
U.S. Cl. 179—15.55 **6 Claims**
Int. Cl. H04b *1/66;* **H04m** *1/00*

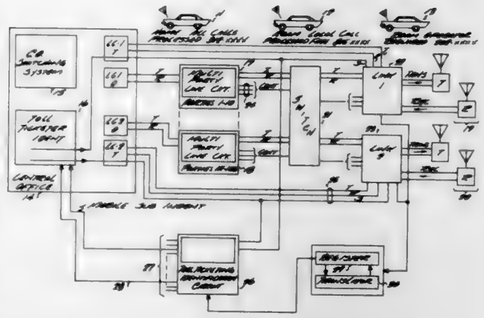


Bandwidth reduction of a speech signal is obtained by separating the signal into a relatively low frequency or baseband signal and a relatively high frequency signal. The high frequency signal is divided into contiguous subbands and a reduced bandwidth control signal is produced for each subband. The baseband signal and control signals are transmitted. At the receiver, the baseband signal is used to generate one pulse per pitch period of the original speech signal. A voiced-unvoiced detector selectively gates the pitch period pulses to a mixer where the pulses are mixed with random noise signals. The output of the mixer is combined with the received control signals to reconstruct the high frequency subbands of the original speech signal. The original speech signal is synthesized by combining the reconstructed high frequency subbands with the received baseband signal.

3,431,363
NOR LOGIC SCREENING TRANSLATOR

Thomas P. Miller, Jackson, Tenn., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed June 14, 1965, Ser. No. 463,966
U.S. Cl. 179—18 **8 Claims**
Int. Cl. H04m *3/00, 3/56, 5/00*



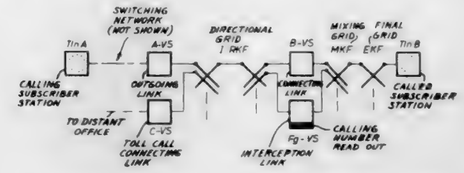
A matrix is equipped with crosspoint diodes connected in coded combinations which identify subscriber stations by groups or classes. Relay NOR logic is connected to the matrix outlets so that all relays operate except the one which identifies the class of the pertinent calling

line. In the described case, the calls from mobile subscribers are classified, according to their area code, to indicate whether the mobile stations are in home areas, in adjacent areas, or are in completely foreign areas. The translator could also be used to screen home subscribers, according to area codes, in order to indicate whether toll ticketing is or is not required.

3,431,364
ANNOYANCE CALL TRAP

Herbert Siegel, Munchingen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 9, 1965, Ser. No. 470,787
Claims priority, application Germany, July 14, 1964, St 22,400
U.S. Cl. 179—18 **8 Claims**
Int. Cl. H04m *3/00*

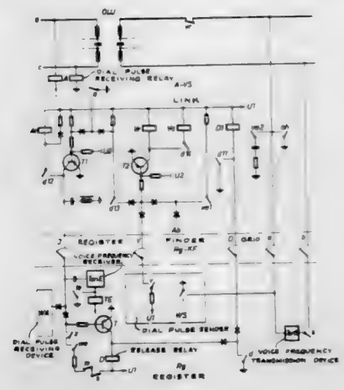


A centrally controlled telephone switching system is provided with at least one special link having equipment for identifying calling lines in order to trap annoyance calls. Called lines receiving such annoyance calls are identified by a translator associated with the common controls. When such an identification is found, the call is rerouted through the special link.

3,431,365
CIRCUIT ARRANGEMENT TO RELEASE REGISTERS IN TELECOMMUNICATION EXCHANGES

Herbert Siegel, Munchingen, and Walter Hackenberg, Hirschlanden, Germany, assignors to International Standard Electric Corporation

Filed July 19, 1965, Ser. No. 473,089
Claims priority, application Germany, July 25, 1964, St 22,458
U.S. Cl. 179—18 **5 Claims**
Int. Cl. H04m *3/00*

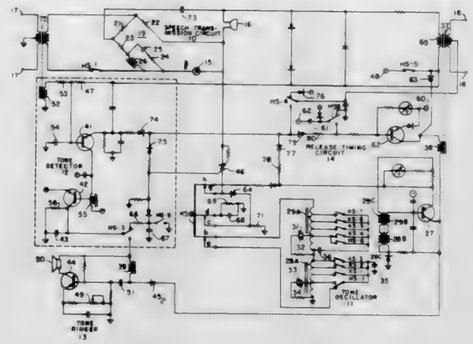


A circuit arrangement is provided to permit the quick release of registers in telephone exchanges after dial information required to establish a connection has been received and processed. The arrangement operates using dial information either in the form of pulses or multi-frequency signals.

3,431,366
TELEPHONE SUBSTATION CIRCUIT EMPLOYING A CLASS-A CLASS-C TONE DETECTOR

Victor Rodek, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Aug. 2, 1965, Ser. No. 476,766
U.S. Cl. 179—84 **6 Claims**
Int. Cl. H04m *1/00;* **H03f** *3/04;* **H04b** *1/06*

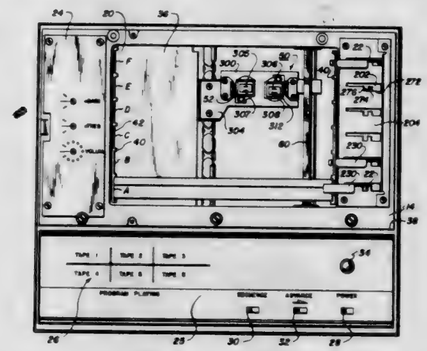


A tone detector for a telephone set which has a different sensitivity between the on-hook and off-hook condition. The detector consists of two stages, the first a tuned amplifier the output of which is connected to a converter which comprises the second stage. In the on-hook condition the converter output powers a tone-ringer. In the off-hook condition it powers a silicon switch gate to enable the microphone and inhibit the tone oscillator.

3,431,367
PLAYBACK APPARATUS FOR MULTIPLE MAGNETIC TAPE CARTRIDGES

Franklyn George Nickl, Santa Barbara, Calif., assignor to Canteen Corporation, a corporation of Delaware

Filed June 8, 1965, Ser. No. 462,287
U.S. Cl. 179—100.2 **9 Claims**
Int. Cl. G11b *5/00*



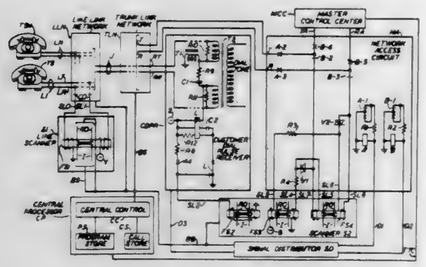
A sound reproducing tape apparatus employing a carriage having two movable head assemblies, each having two transducing heads, the four heads being offset from one another.

The carriage is mounted for linear movement relative the multiple cartridges by rotation of a single vertical lead screw. The movement of the carriage is controlled mechanically by a solenoid operated pin clutch, linkage, and gear train having conventional gears, and gear segments to raise or lower the carriage into engagement with a selected cartridge.

3,431,368
EQUIPMENT FOR TESTING SHOWERING RESISTANCE ON COMMUNICATION LINES

Leopold F. Goeller, Jr., Hazlet, N.J., and John M. Nervik, Bethesda, Md., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 15, 1965, Ser. No. 472,233
U.S. Cl. 179—175.2 13 Claims
Int. Cl. H04m 3/22

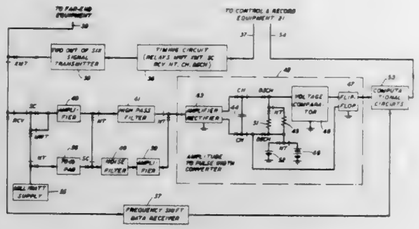


A program controlled telephone system is disclosed with switching equipment which provides for the automatic testing of a telephone line immediately after a showering condition thereon initiates a call. The equipment includes ferrod and relay circuitry for performing tests under control of a central processor to distinguish between a low line current produced by a showering line resistance and a higher line current produced by a valid call on the line.

3,431,369
ELECTRICAL TRANSMISSION TESTING SYSTEM HAVING TEST RESULTS TRANSMITTED IN PULSE WIDTH MODULATION FORM

George E. McLaughlin, Colts Neck, NJ., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 29, 1966, Ser. No. 538,350
U.S. Cl. 179—175.3 12 Claims
Int. Cl. H04b 3/46; H03k 5/20



1. A measuring system for a two-way electrical communication path interconnecting a pair of terminals wherein said system comprises

means at each of said terminals for applying a standard amplitude test tone to said path,

means at each of said terminals for producing pulses having durations related to the amplitudes of waves received at said terminals,

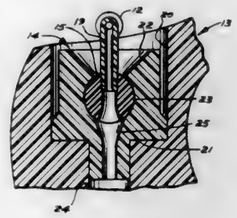
means for transmitting said pulses produced at a first of said terminals to the second terminal, and

means responsive to said first and second terminal pulses to produce outputs related to the durations of these pulses.

3,431,370
HEARING AID COUPLING

Arthur O. Crosby, Minneapolis, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware

Filed Nov. 29, 1965, Ser. No. 510,186
U.S. Cl. 179—182 6 Claims
Int. Cl. H04r 1/10, 25/00, 25/02

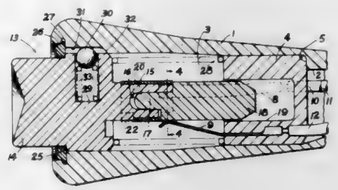


A hearing aid ear mold coupling having a relatively soft socket for removably receiving the end of a sound tube that is connected to a source of compressional wave energy. The remainder of the body of the ear mold is comprised of material exhibiting a relatively higher or lower durometer characteristic. The relatively soft and resilient socket connects with a sound duct extending through the ear mold and is provided with an enlarged chamber intermediate its ends and the end of the sound tube that is removably insertable into the soft and resilient socket is of complementary shape with respect to the enlarged chamber and is comprised of material exhibiting a relatively higher durometer characteristic with respect to the relatively soft and resilient socket.

3,431,371
MULTIPLE POSITION RECIPROCATING SWITCH CONSTRUCTION

Walter T. Stoi, Warren, Albert R. De Lorme, Detroit, and Harry F. Sketch, Hamtramck, Mich., assignors, by mesne assignments, to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Nov. 25, 1966, Ser. No. 597,154
U.S. Cl. 200—16 14 Claims
Int. Cl. H01h 3/14, 15/02, 13/64

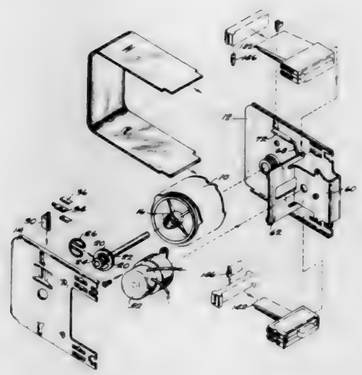


A switch having an axially reciprocable actuator movable from a normal position to and through a second position to a third position, and return, and on which is fixed a cylindrical conductor having conductive and nonconductive zones. Surrounding the actuator are three contact elements so oriented with respect to the conductive and nonconductive zones of the conductor that when the actuator is in its first position one of the three contact elements is in a nonconductive zone, when the actuator is in its second position all of the contact elements are in the conductive zone, and when the actuator is in its third position none of the contact elements are in the conductive zone.

3,431,372
TIMER SWITCH ACTUATION AND CONNECTION

George Obermann, Niles, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,371
U.S. Cl. 200—38 10 Claims
Int. Cl. H01h 7/08, 43/10

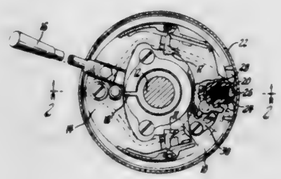


The switch blades are molded into wafers which can be stacked to provide an assembly having grouped terminals for a suitable connector cable. Selected blades can be interconnected by a variety of bussing methods. The active blade end engages a guided follower which rides on the cam and is not sensitive to direction of rotation of the cam. The passive blades abut stops in the follower guide to eliminate need for adjustment. Axial movement of the cam arbor actuates a line switch in one of the switch assemblies. A drive cam can actuate another switch which can also be actuated by the main cam. The cam arbor is mounted between end plates spaced by the motor mounting plate and the motor bearing is free of radial loading.

3,431,373
TURN SIGNAL SWITCH CONSTRUCTION

Lloyd T. Fuqua, Fortville, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 27, 1966, Ser. No. 582,286
U.S. Cl. 200—61.34 3 Claims
Int. Cl. H01h 3/02, 3/16

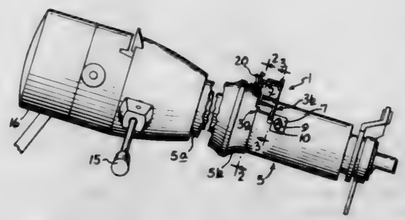


A turn signal switch construction is disclosed which includes a pair of multi-fingered rotatably mounted movable contacts adapted to selectively bridge certain ones of a plurality of stationary contacts in either of two positions. The movable contacts are carried on a pivot post rotatably mounted in a base member which supports the stationary contacts. The pivotposts are biased in opposite directions to a neutral position and are movable from the neutral position to a turn indicating position by means of an actuator which is selectively movable into engagement with either one of the pivot posts.

3,431,374
ADJUSTABLE SAFETY SWITCH

Andrew F. Raab, Morton Grove, Ill., assignor, by mesne assignments, to Littelfuse, Inc., a corporation of Texas

Filed Aug. 14, 1967, Ser. No. 660,427
U.S. Cl. 200—61.54 7 Claims
Int. Cl. H01h 9/00

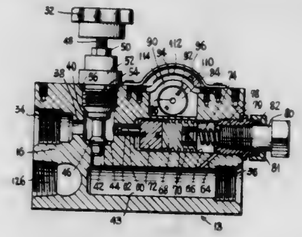


The safety switch of the invention preferably comprises a housing with a track in the housing along which a carrier assembly is guided for movement within the housing. There is mounted in the housing a pair of stationary starter circuit contact segments located on opposite sides of the track. The carrier assembly carries a pair of contact segment bridging members, preferably freely rotatable balls, which bridge the contact segments in two different positions of the carrier assembly. The carrier assembly is made in two sections each carrying one of the contact segment bridging members. One of the carrier sections referred to has a main carrier section, is coupled for movement with the transmission shift lever of the automobile in which the switch is used. The other carrier section, to be referred to as the follower carrier section, is mounted for movement upon and relative to the main carrier section and is interconnected thereto by an adjustable coupling preferably comprising interengaging flexible resilient teeth, so that the follower carrier section can be held against movement as the main carrier section continues to move, thereby adjusting the relative spacing between the contact bridging members carried thereby.

3,431,375
HYDRAULIC FLOW MONITORING DEVICE

Thomas W. Hotchkiss, Orange, Conn., assignor to Eldorado Tool & Mfg. Corp., Milford, Conn., a corporation of Connecticut

Filed Mar. 6, 1967, Ser. No. 620,903
U.S. Cl. 200—82 15 Claims
Int. Cl. H01h 35/38



An indicating and/or control device which is responsive to small pressure variations in a high pressure hydraulic system of the type used to supply coolant to cutting tools such as drills and the like. The device comprises a casing which is provided with a fluid inlet and outlet, and which has a valve for carrying the fluid flow and dropping the pressure through it. Connected across the valve is an auxiliary fluid line having an intermediate portion which acts as a cylinder. A sensitive spring-biased piston is movable in the cylinder, and assumes a position

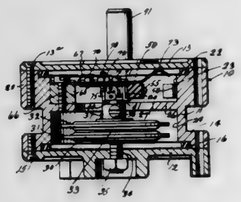
determined by the pressure differential resulting from the partially closed valve. Any small, even momentary, change in pressure, i.e. flow in the inlet or outlet line shifts the piston, and if the change persists the piston assumes a new position. The piston movement causes an observable deflection of a pointer on the casing and also a simultaneous electrical control, all without impeding the piston to any observable extent. In effecting this, a magnet carried by the piston actuates a magnetic indicator and the same magnet also actuates magnetic reed switches to provide both for visual readings and control of equipment.

3,431,376

SELF-ARMING ALTITUDE SWITCH RESPONSIVE TO AMBIENT PHYSICAL VARIABLES TO INITIATE ONE OR MORE OPERATIONS

Ernest Dennis Kenzie, Royston, England, assignor to Irvin Industries Inc., a corporation of New York

Filed Aug. 21, 1967, Ser. No. 662,178
Claims priority, application Great Britain, Sept. 2, 1966, 39,417/66
U.S. Cl. 200—83 **10 Claims**
Int. Cl. H01h *35/24*



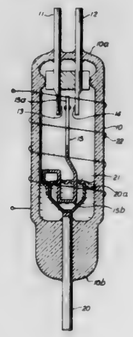
A triggering device or self-arming switch which is operable in response to change in an ambient physical variable to initiate one or more operations. The device can be used as a self-arming barometric actuated switch, arranged to trip or move a switch arm at different atmospheric pressures for the purpose of closing at predetermined different altitudes, different circuits.

3,431,377

MERCURY CONTACT SWITCH HAVING AN ALLOY CONTACT

Malcolm Barlow, Mountain View, and Peter J. Planting, Sunnyvale, Calif., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, and Berkeley Heights, N.J., a corporation of New York

Filed Mar. 3, 1967, Ser. No. 620,388
U.S. Cl. 200—166 **10 Claims**
Int. Cl. H01h *29/00, 1/08*



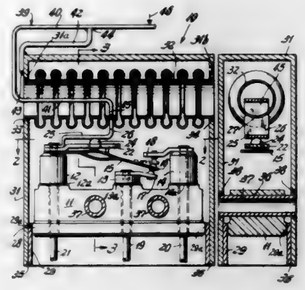
A mercury switch is disclosed in which the contact surfaces contain copper, platinum and nickel in various proportions.

3,431,378

HERMETICALLY IMPERVIOUS SWITCH

Robert R. Hellman, Bridgeport, Conn., assignor to Westport Development & Manufacturing Company, Inc., New Haven, Conn., a corporation of Connecticut

Filed Sept. 27, 1967, Ser. No. 670,950
U.S. Cl. 200—168 **8 Claims**
Int. Cl. H01h *9/02*



A snap action electric switch that is enclosed by a hermetically impervious container and is actuated by distortion of a side wall of a tube that is not sensitive or distortable by external environmental pressure.

3,431,379

METHOD FOR INDUCTION HEATING

Carl S. Yrene, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 15, 1967, Ser. No. 617,020
U.S. Cl. 219—10.41 **2 Claims**
Int. Cl. H05b *5/00*

A method of heating articles made of nonmagnetic material first providing a thin layer of magnetic material on the workpiece and thereafter employing electric induction to heat the article.

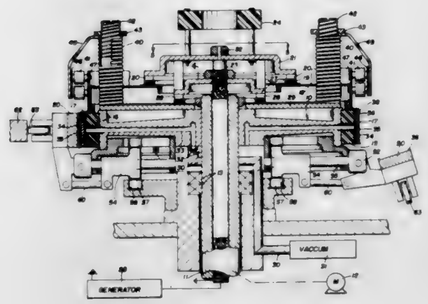
3,431,380

DIELECTRIC PACKAGE SEALER

Robert C. Sutliff, Paul A. Burgo, Ernest J. Butler, and Charles W. Pierson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 5, 1966, Ser. No. 562,799
U.S. Cl. 219—10.53 **11 Claims**
Int. Cl. B23k *13/02;* **H05b** *5/00*

A dielectric package sealer which continuously forms packages from plastic webs. The webs are positioned between opposite package-forming cup rims which comprise the two electrodes of a high frequency alternating current circuit. When the cup rims are aligned with the



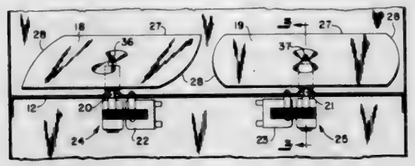
web compressed therebetween, the circuit is energized. The webs, being dielectrics, are heat sealed together forming a container.

3,431,381

DUAL STIRRER ASSEMBLY

Carl L. Anderson, Shiloh, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio

Filed Mar. 29, 1966, Ser. No. 538,326
U.S. Cl. 219—10.55 **6 Claims**
Int. Cl. H05b *9/06*



A dual stirrer arrangement for use in a microwave cooking oven consisting of a pair of blades mounted for rotation and located in the bottom liner of the oven cavity. The stirrers are spaced apart and the blades are of sufficient length and angularly mounted so as to intercept substantially all of the energy directed toward the bottom of the cavity and to variably redirect same to prevent a static condition of standing waves. The blades are rotated at different speeds either by independent direct-coupled motors or by a single motor, belt and pulley drive arrangement.

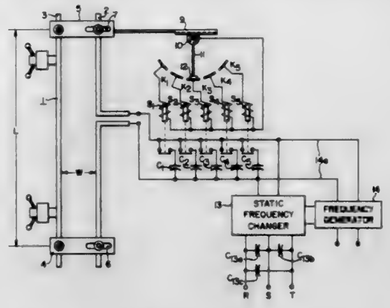
3,431,382

INDUCTION HEATING APPARATUS

Rolf Esche and Werner V. Hacht, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany

Filed May 20, 1966, Ser. No. 551,638
Claims priority, application Germany, June 25, 1965, S 97,818
U.S. Cl. 219—10.79 **3 Claims**
Int. Cl. H05b *9/02, 5/00*

Apparatus for uniformly heating workpieces of various thicknesses by an induction heating coil which is adjustable in width for close coupling with the different workpiece thicknesses. An adjustable frequency changer is adjusted automatically responsively to changes in coil width to furnish different energizing current frequencies to the heating coil for maintaining a substantially constant



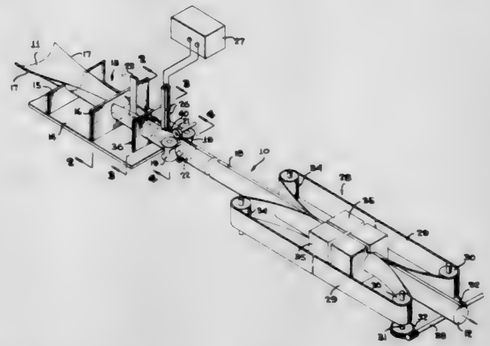
ratio of depth of current penetration to workpiece thickness throughout the range of thicknesses accommodated by the heating coil.

3,431,383

EDGE GUIDANCE OF AN UNSEAMED TUBE IN THE CONTINUOUS WELDING OF THE TUBE

Lee R. Ullery, Jr., Simsbury, Conn., and Steve F. Wronski, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed June 7, 1963, Ser. No. 286,417
U.S. Cl. 219—59 **4 Claims**
Int. Cl. B23k *31/06*



1. In a method for welding together the edge portions of strip into a seam in which the edge portions are guided in a V-pattern from separated, non-overlapping first positions to contacting and overlapping relation substantially at the weld point and the edge portions are heated prior to being brought into overlapping relation, the improvement which comprises, at a point within the V-pattern and intermediate said first positions and the weld point, holding the edge portions in a more widely spaced relation than that normally demanded by the V-pattern with the edge portions being placed in tension.

3,431,384

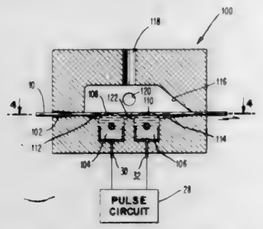
MEANS FOR CUTTING WIRE BY WIRE-MELTING ELECTRICAL PULSES

John H. Cooper, Lansdale, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 24, 1965, Ser. No. 490,041
U.S. Cl. 219—68 **3 Claims**
Int. Cl. B23p *1/00;* **B23k** *11/24, 9/10*

An apparatus for cutting wire memory elements on the order of 5 mils in diameter in which continuously

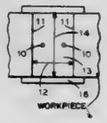
moving wire is passed through spaced mercury-reservoir contacts. At intervals, carefully controlled pulses of current are applied to the wire bridging the contacts to nondestructively melt and thus sever the wire without arcing and without creating blobs at the ends of the elements.



3,431,385
METHOD OF WELDING

Phillip D. Santilhano, Renfrew, Scotland, assignor to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain

Filed Nov. 6, 1964, Ser. No. 409,592
U.S. Cl. 219—73 **9 Claims**
Int. Cl. B23k *9/18, 25/00*

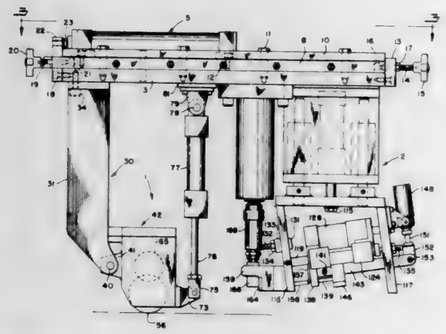


A method of welding in which weld metal is deposited into a gap having substantially parallel sides defined by a workpiece. One or more electroslag welding electrodes are provided to feed an electroslag pool in the gap, each electrode being arranged in one or more planes substantially transverse to the longitudinal length (depth) of the gap, and extending at least partially into the gap, remote from a centerline drawn through the longitudinal length of the gap.

3,431,386
METHOD AND APPARATUS FOR JOINING STRIP MATERIAL

Donald J. Wheeler, Kent, and Victor Lohrenz, Bedford, Ohio, assignors to Guild Metal Joining Equipment Company, Bedford, Ohio, a corporation of Ohio

Filed Mar. 9, 1965, Ser. No. 438,313
U.S. Cl. 219—78 **14 Claims**
Int. Cl. B23k *11/00, 11/02, 9/02*

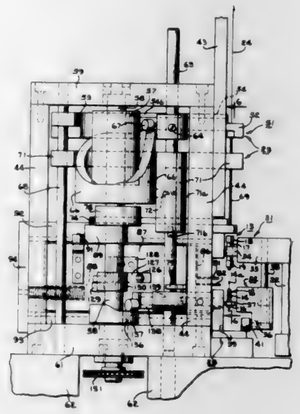


A method and apparatus for joining two metal strips by cutting a pair of grooves extending from one strip to the other and feeding wires into the grooves, which wires are welded in place by a pair of electrodes and simultaneously severed to substantially the length of the grooves.

3,431,387
ARTICLE ASSEMBLING APPARATUS

Gary G. Seaman, Omaha, and James A. Trenerry, Millard, Nebr., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 28, 1965, Ser. No. 459,791
U.S. Cl. 219—79 **8 Claims**
Int. Cl. B23k *9/12*



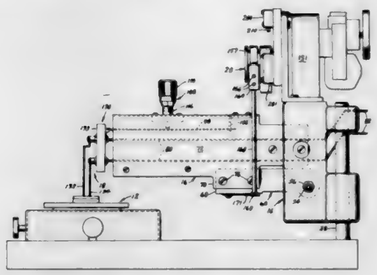
In apparatus for welding wire to an article, such as another wire, the first-mentioned wire has an end thereof withdrawn within a tubular guide member as the wire is fed by the guide member to a position adjacent the article, and while a wire exit end of the guide member and a preselected portion of the article are substantially aligned with one another. Subsequently, the end of the wire is fed out of the guide member and the wire is welded to the article. The guide member then is retracted relative to the article and the wire, and if the wire extends from a continuous supply the wire is cut between the guide member and the article to form a length of wire secured to the article and to form a new end on the wire. This new end of the wire subsequently is withdrawn within the guide member for the next cycle of operation. In the disclosed embodiment of the invention the article is assembled to a tubular second article and the wire is fed in and with the guide member through the tubular article for the welding of the wire to the first article.

3,431,388
WELDING DEVICE

James Hamilton, Columbus, Ind., assignor to General Electric Company, a corporation of New York

Filed Aug. 24, 1965, Ser. No. 482,203
U.S. Cl. 219—86 **16 Claims**
Int. Cl. B23k *9/28, 11/10*

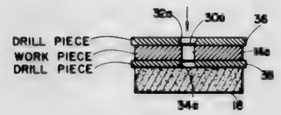
A precision electric resistance microwelding head in which movable electrodes are accurately and rapidly moved from the rest position on to the work, and which relieves forces on the work due to expansion of the work during heating, and which accurately and conveniently applies an adjustable follow-up force to the movable electrodes when the work surface becomes plastic during the welding operation. The precision welding head includes a unique micrometer type adjustment for adjusting the force with which a preload spring urges the electrodes toward the weld position. The electrodes supporting arm is pivoted by a stirrup which is operated by a motor driven eccentric.



3,431,389
METHOD FOR WORKING MATERIALS BY MEANS OF AN ENERGY BEAM

Edward C. Tudor and James A. Goff, Indianapolis, Ind., assignors to Tudor Corporation, Indianapolis, Ind.

Filed Oct. 15, 1965, Ser. No. 496,461
U.S. Cl. 219—121 **10 Claims**
Int. Cl. B23k *9/00, 9/16*

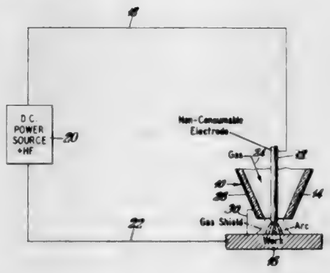


A method is disclosed for drilling holes of uniform diameter through work pieces by means of electron beams and the like. The steps include directing an energy beam onto a discrete area of material to be drilled, the beam of material-melting intensity. A body of material serving as an interstitial agent is disposed contiguously with respect to the material to be drilled in registry with the beam. The beam melts the material in the work piece, this melted material transferring to the interstitial agent by reason of capillary action.

3,431,390
WORK-IN-CIRCUIT ARC STARTING APPARATUS

August F. Manz, Union, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed May 20, 1965, Ser. No. 457,388
U.S. Cl. 219—130 **6 Claims**
Int. Cl. B23k *9/00, 9/10*

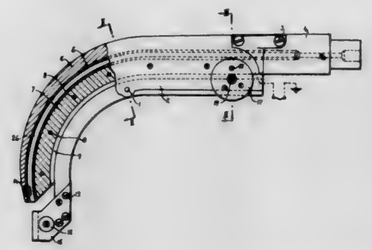


This invention provides for improving main arc starting by incorporating into the torch a substantially electrically non-conductive gas cup which is located about the electrode, the cup comprising both nonconductive and conductive material and being directly grounded to the work for inhibiting undesirable arc starting blocking potential.

3,431,391
ELECTRODE NOZZLE

Elemir Ehrenstein, Bratislava, and Ivan Slabon, Modra, Czechoslovakia, assignors to Vyskumny Ustav Zvaracsky, Bratislava, Czechoslovakia

Filed Oct. 23, 1965, Ser. No. 504,262
U.S. Cl. 219—130 **12 Claims**
Int. Cl. B23k *9/00, 9/12*

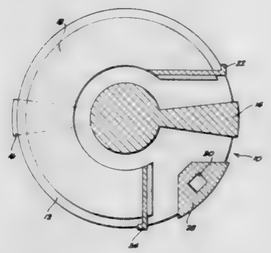


A nozzle for guiding elongated longitudinally movable electrodes in welding apparatus comprises elongated guide means in the form of a channel having a pair of spaced side walls and a transverse wall connecting the side walls. A tubular guide member is movably received in the channel and defines a passage through which the electrode passes to the actual welding station. Both the channel and the tubular guide member are arcuately curved in the direction of elongation thereof and the tubular guide member is substantially coextensive with the channel.

3,431,392
INTERNALLY HEATED CRYSTAL DEVICES

William J. Garland, Huntington Beach, Lloyd J. Hassencahl, Chatsworth, Donald D. Lenhart, Northridge, and George Wolfe, Jr., Newport Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

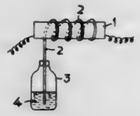
Filed Jan. 13, 1967, Ser. No. 609,033
U.S. Cl. 219—210 **15 Claims**
Int. Cl. H05b *3/06*



A crystal resonator with a heating device and a thermal sensor placed directly upon the crystal wafer, thus the temperature of the heating element is controlled by the thermal sensor through control circuitry.

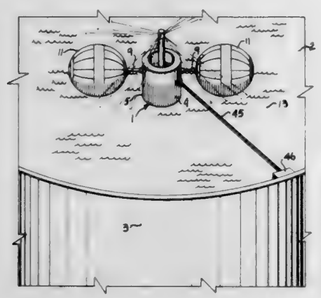
3,431,393
APPARATUS FOR VAPORIZING CHEMICALS AND PERFUMES BY HEATING
Yoshio Katsuda, Osaka, Japan, assignor to Dainihon Jochugiku Company, Limited, Osaka, Japan, a corporation of Japan
Filed Sept. 7, 1965, Ser. No. 485,509
U.S. Cl. 219—274 **3 Claims**
Int. Cl. F22b *3/00;* **B01d** *1/00*

A wick-type thermo-vaporizer includes a vented housing which covers a removable receptacle for a suitable



liquid to be vaporized and a heater for the liquid, with a wick in contact with the liquid and supported by the neck of the receptacle, preferably to press, at one end face, upon the heater. A bridge across the housing carries the support for the heater and means to couple the receptacle to the housing.

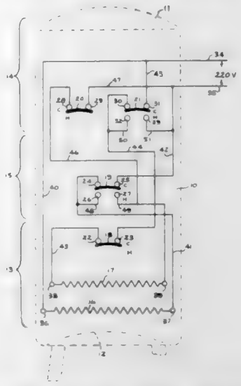
3,431,394
WATER HEATING UNIT FOR STOCK TANKS
Thomas O. Hopper, 145 N. Grant, Colby, Kans. 67701
Filed Jan. 3, 1967, Ser. No. 606,639
U.S. Cl. 219—317 **6 Claims**
Int. Cl. H05b *3/78;* **A01k** *7/00*



This disclosure describes a cup-like device adapted to float on the surface of water although the water is permitted to enter therewithin. The device includes a closed heating chamber near the bottom into which the water flows and a valve structure cooperating with the chamber for sealing same when the water boils therewithin. The boiling periodically forces heated water upwardly through a hollow stem communicating with the chamber and then through a spray nozzle directed over the water surface for maintaining the surface free of ice formation. The device is described in combination with a conventional tank valve which functions to maintain the liquid surface at a desired level in the tank.

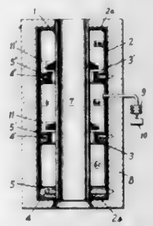
3,431,395
ELECTRIC WATER HEATER CIRCUIT
John L. McClure, Waukesha, Wis., assignor to General Electric Company, a corporation of New York
Filed Aug. 2, 1967, Ser. No. 657,855
U.S. Cl. 219—321 **3 Claims**
Int. Cl. H05b *3/78*

Electric heater circuit means for a water tank having a lower water inlet portion, an upper water outlet portion and an intermediate portion. The circuit means include a pair of electrical resistance heating elements located in the tank lower portion and four thermostatic switching devices, one responsive to water temperature in each of the tank lower and intermediate portions and two responsive to water temperature in the tank upper portion. The electric heating elements are energized through the switching



devices from a power supply which includes two lines. The arrangement is such that the switching devices function in response to water temperatures in the three tank portions to connect or disconnect the two heating elements across the power supply lines through various circuits.

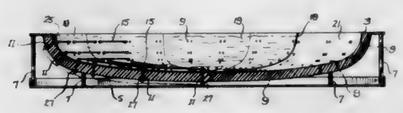
3,431,396
JACKET TYPE OF CONSTANT TEMPERATURE HEATING APPARATUS
Nobuhisa Kodaira, 851 Kamirenjaku, Mitaka-shi, Tokyo, Japan
Filed Jan. 26, 1966, Ser. No. 523,177
U.S. Cl. 219—326 **4 Claims**
Int. Cl. H05b *1/00, 11/00;* **F24h** *7/02*



Constant temperature heating apparatus has an annular sealed chamber surrounding an upright heat treating zone. Liquid thermal medium in the chamber, vaporized by a heating element at its bottom, heats said zone. To insure uniform temperature all along said zone, an upwardly opening trough having a heating element therein extends all around one of the upright chamber walls, intermediate the top and bottom thereof, to receive condensate flowing down said one wall. Condensate flowing down the other upright chamber wall is guided into the trough by a deflector thereabove on said other wall.

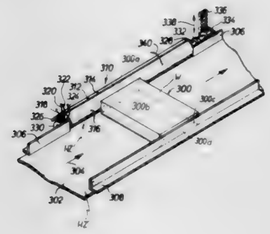
3,431,397
HEAT SHIELD OVEN
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Lloyd D. Beckerle, Los Alamitos, Calif.
Filed Jan. 20, 1966, Ser. No. 521,996
U.S. Cl. 219—347 **2 Claims**
Int. Cl. H05b *3/02, 1/00;* **F24h** *9/02*

A heating oven for uniformly distributing heat over the surface of an article of unusual or irregular configuration, said oven comprising a rigid body of laminated glass fiber sheets affixed to one another by adhesive means and conforming to the shape of the irregular article to be heated. A heat reflective metal foil covers the surface of the rigid body to be disposed proximate the irregular article and protects the fiber glass structure from radiant heat from a plurality of heat lamps affixed at spaced points to the body and adjacent the heat reflective cover-



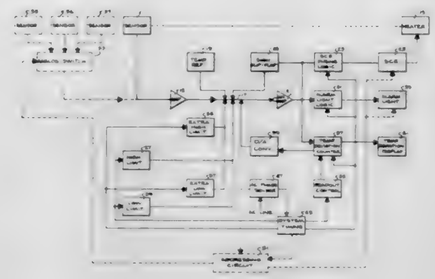
ing which is disposed between the heat source devices and the laminated body. The heat lamps are disposed to uniformly distribute heat over the surface of the article and are affixed to the fiber glass body by thermally insulating and supporting socket means which also clamp the foil material to the body at spaced points. Between the spaced points an insulating air space is formed between the metal foil and the glass fiber body to prevent heat absorption by the glass fiber body.

3,431,398
APPARATUS FOR REGULATING THE TRANSFER OF HEAT
Günter Wahle, Hamburg-Bergedorf, Germany, assignor to Hauni-Werke Korber & Co. KG, Hamburg-Bergedorf, Germany
Filed Dec. 22, 1966, Ser. No. 604,048
Claims priority, application Great Britain, Jan. 4, 1966, 299/66
U. S. Cl. 219—388 **24 Claims**
Int. Cl. F27d *11/02*



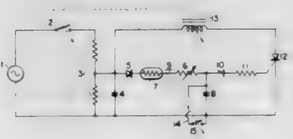
Apparatus for regulating the transfer of heat to thermoplastic wrappers applied around cigarette packs in wrapping machines which operate at several speeds. Regulates the transfer of heat from heating means to overlapping or abutting edges and/or flaps of thermoplastic wrappers in such a way that each portion of the wrapper which must be sealed in response to the application of heat receives the same amount of heat energy, irrespective of changes in the speed at which the wrapping machine processes successive packs. The heating means may comprise several heating units with different heat energy outputs each of which is movable into heat exchanging position with successive wrappers in response to changes in operating speed of the wrapping machine, one or more heating units whose temperature may be varied as a function of changes in speed of the wrapping machine, and/or a series of heating units which can be turned on individually or in groups of two or more, again as a function of changes in speed of the wrapping machine.

3,431,399
HIGH AND LOW LIMIT TEMPERATURE CONTROL SYSTEM
Selby G. Venning, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Mar. 9, 1967, Ser. No. 626,654
U.S. Cl. 219—497 **11 Claims**
Int. Cl. H05b *1/02*



This is a temperature control having a negative feedback signal applied to a summing junction, and a positive reference signal applied to the same summing junction. The one signal opposing the other signal will cause the junction to take on the polarity of the greater of the two signals, thereby controlling the application of power to a heating unit. By the addition of positive and negative signals of predetermined values to the summing junction and by timing the application of these signals, an alarm circuit can be energized when the negative feedback signal exceeds or is less than the combined signals of the reference signal and the additional positive or negative signals. This provides an alarm function when high or low limits of temperature, as provided by the addition of the negative and positive signals to the summing junction, are violated.

3,431,400
AUTOMATIC BREAD TOASTER
Takahiko Iida, Tokyo, and Akio Nobata, Minoru Harasaki, and Hirashi Kumazawa, Gunma Prefecture, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 25, 1966, Ser. No. 597,061
Claims priority, application Japan, Dec. 3, 1965, 40/38,320, 40/38,321, 40/38,322, 40/38,323; Dec. 29, 1965, 40/108,035
U.S. Cl. 219—501 **7 Claims**
Int. Cl. H05b *1/02*

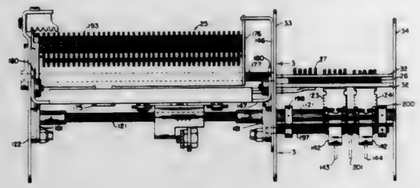


An automatic bread toaster is provided with an RC time constant controlling a toasting time. A capacitor in the RC circuit is charged from a rectified source through a heating element to a predetermined voltage to activate a triggering element at a rate determined by the time constant of the RC circuit. When the trigger element conducts a voltage is applied across the capacitor to a thyristor to trigger it to a conducting state. This causes energization of an electromagnetic coil to open a power switch to terminate the toasting operation. The time constant circuit may include a variable resistor, a negative coefficient thermistor or a fixed resistor providing a discharge time curve corresponding to the temperature reduction curve of the toaster.

3,431,401
PROGRAMABLE FUNCTION CONTROL MECHANISM FOR BUSINESS MACHINES

Louis E. Zurbuchen, Dayton, Ohio, and Freeland R. Goldammer, Williamsville, N.Y., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Feb. 27, 1967, Ser. No. 618,598
U.S. Cl. 235—6 **21 Claims**
Int. Cl. G07g *1/00*

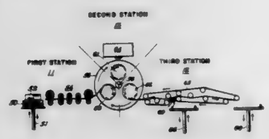


A mechanism for selectively controlling the engaging of totalizer members and the operation of printing mechanisms including a plurality of interchangeable control plates each containing a number of apertures in a predetermined position according to the functional control of the business machine desired. A mechanism for adjusting the control plates to a control position according to the control key depressed on the keyboard of the business machine. A mechanism for shifting the selected totalizer member to an operative position controlled by sensing members having sensed aligned holes in each of the adjusted control plates.

3,431,402
MULTIDRUM DOCUMENT HANDLING CHARACTER READER

George William Childs, Dallas, Tex., assignor to Recognition Equipment Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 25, 1964, Ser. No. 377,992
U.S. Cl. 235—61.11 **13 Claims**
Int. Cl. G06k *7/00, 9/00*



A plurality of drums mounted in a uniform geometrical array on a turret are indexed sequentially to a load, read and unload station with means for driving each drum while at the read station rotationally on the drum axis and translationally along the drum axis, means being provided for pneumatically gripping documents on the drums and for synchronizing the movements of the drums both as to rotational speed and direction and translational speed and direction.

3,431,403
READOUT CONTROL SYSTEM FOR PERFORATED TAPE

Kenji Seno, Koichi Nozawa, and Nobuyuki Tanaka, Kawasaki, and Hideyuki Kikuchi, Yokohama, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

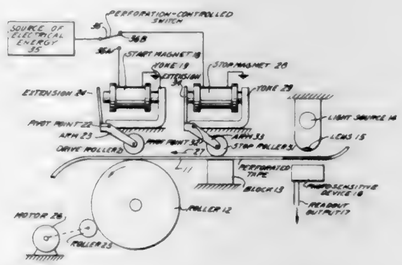
Filed July 29, 1965, Ser. No. 475,690
Claims priority, application Japan, July 31, 1964, 39/43,715
U.S. Cl. 235—61.11 **9 Claims**
Int. Cl. G06k *7/00*

1. A readout control system for a perforated tape having characters perforated therein, comprising:

a start magnet positioned in operative proximity with said perforated tape for moving said tape when an operation pulse is supplied thereto;

a stop magnet positioned in operative proximity with said perforated tape for stopping said tape when an operation pulse is supplied thereto, each of said start magnet and said stop magnet having an operation allowance time commencing when an operation pulse is supplied to said magnet and extending for a determined duration, which operation allowance time is required for complete operation of said magnet;

readout means positioned in operative proximity with said perforated tape for producing a readout operation pulse and for reading out characters perforated in said perforated tape;



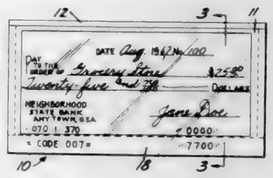
operation pulse supplying means for selectively supplying an operation pulse to one of said start and stop magnets at a time; and

control means connected to said operation pulse supplying means for controlling the supply of operation pulses to said mangets to immediately terminate an operation pulse supplied to said stop magnet and to supply an operation pulse to said start magnet and permit operation of said readout means to simultaneously read out a character in said perforated tape when a readout operation pulse is produced by said readout means during the operation allowance time of said stop magnet after an operation pulse supplied to said start magnet is terminated and an operation pulse is supplied to said stop magnet.

3,431,404
ENVELOPE

Richard E. Brink, White Bear Lake, Minn., assignor to Curtis 1000 Inc., Atlanta, Ga., a corporation of Minnesota

Filed Oct. 10, 1967, Ser. No. 674,165
U.S. Cl. 235—61.12 **5 Claims**
Int. Cl. G06c *5/00;* **B65d** *33/00*

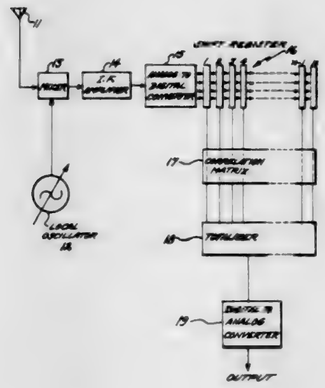


A magnetically encodable envelope-like carrier for checks which cannot otherwise be processed on automatic check-sorting equipment. The lower portion of the carrier, adapted for magnetic encoding, is three-ply, so that the carrier-check assembly is substantially the same thickness top-to-bottom.

3,431,405
SPECTRUM ANALYZER

Edward C. Dawson, Saratoga, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 16, 1965, Ser. No. 433,238
U.S. Cl. 235—150.5 **4 Claims**
Int. Cl. G06j *1/00;* **G06g** *7/12;* **G06f** *15/34*

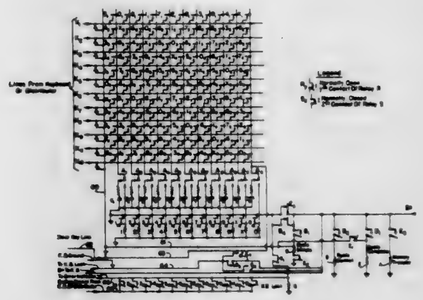


Apparatus for determining frequency of an unknown signal that mixes with an oscillator varying linearly in frequency. The mixed signal is fed to an intermediate frequency bandpass amplifier followed by an analog-to-digital converter that samples the output of the bandpass amplifier and then a digital shift register receives the output of the converter. A correlation matrix or switch array reverses the sign of negative values in the shift register and a totalizer sums the register's contents.

3,431,406
CHECK DIGIT VERIFIERS

Per L. Andersson, Berwyn, Pa., and Oliver G. Aberth, Urbana, Ill., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Original application July 3, 1958, Ser. No. 746,521, now Patent No. 3,183,482, dated May 11, 1965. Divided and this application Mar. 22, 1965, Ser. No. 441,656
U.S. Cl. 235—153 **12 Claims**
Int. Cl. G06f *11/00;* **G08b** *29/00;* **G06k** *5/00*

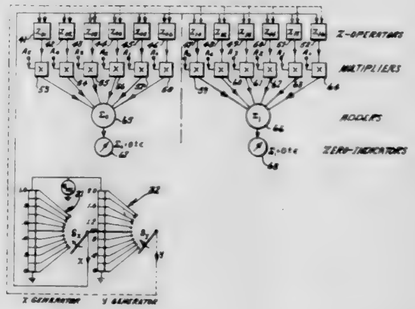


A check digit verifier is described wherein a prime number of signal input devices each representative of a different digital value are selectively interconnected through a relay matrix to a prime number of storage devices each of which when energized represents a different digital value. The relay interconnection between the signal input devices and the storage devices is automatically made so that upon actuation of a signal input device a new accumulated total is inserted in the storage devices which is equal to a fixed multiple of the previous accumulated total and the digit value being entered.

3,431,407
POLYNOMIAL ROOT FINDER

Kurt H. Haase, Watertown, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 26, 1965, Ser. No. 428,275
U.S. Cl. 235—180 **1 Claim**
Int. Cl. G06g *7/34, 7/16, 7/36*

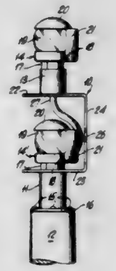


A system for finding roots of a polynomial by determining coefficients of the polynomial in factored form. A pair of derived equations are solved by simultaneously substituting values into the derived equations and noting the values when both derived equations simultaneously equal zero.

3,431,408
RUNNING LIGHTS CONSTRUCTION FOR MOUNTING ON TOP OF A MAST

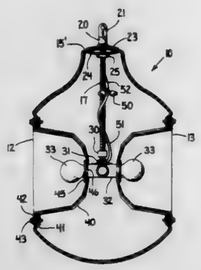
Julian K. Roosevelt, Centre Island, Oyster Bay, N.Y. 11771

Filed June 24, 1966, Ser. No. 560,305
U.S. Cl. 240—7.5 **2 Claims**
Int. Cl. B63b *45/04;* **B60q** *1/00*



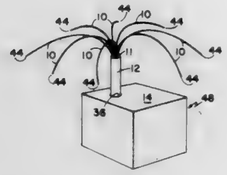
A running light for mounting on the top of a vessel having a C-shaped frame open on the front and sides. Running lights are mounted on the top and bottom parts of the frame. A light opaque member is located to the rear of the running lights to shield the light from being viewed from astern of the vessel. The light from each running light is beamed forward for an arc of 225°.

3,431,409
CHRISTMAS ORNAMENT
Charles W. Richter III and Richard H. Erlewine, Marion, Ind., assignors to General Plastics Corporation, Marion, Ind., a corporation of Indiana
Filed Sept. 6, 1966, Ser. No. 577,357
U.S. Cl. 240—10 **10 Claims**
Int. Cl. A47g *33/16*



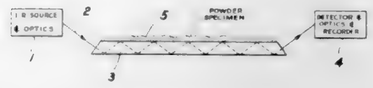
1. A Christmas ornament adapted for outdoor use comprising: a hollow body having a front surface, a rear surface, spaced side surfaces, a top and a bottom, said front, rear and side surfaces tapering inwardly adjacent the top of said body to form a foreshortened cylindrical top portion having a circular upper wall, said upper wall having an aperture centrally located therein for receiving a rod therethrough, means disposed adjacent said upper wall for retaining said rod in a fixed position, an upper portion of said rod extending upwardly from said upper wall, means for mounting said ornament coupled to said upper portion of said rod, said rod extending downwardly into said hollow body, socket means affixed to the lower end of said rod, said socket means adapted to receive a light bulb, means coupled to said socket means for electrically connecting said socket means to an electrical outlet; said front surface of said hollow body having an aperture therein for receiving a light reflecting means, said reflecting means having a centrally located aperture for receiving a base of a transparent colored light bulb, and sealing means disposed adjacent said base of said light bulb for providing a water tight seal thereabout.

3,431,410
ORNAMENTAL DISPLAY
Bernard Joseph Dolan, Stoneham, and Robert Kempton Jenner, Hamilton, Mass., assignors to Donner Electronics, Inc., Melrose, Mass., a corporation of Massachusetts
Filed July 13, 1966, Ser. No. 564,881
U.S. Cl. 240—10.1 **3 Claims**
Int. Cl. F21p *3/00*



A display having a multiplicity of fiber optic filaments held together along a length adjacent one end and transversely unrestrained at the other end. A light source is disposed opposite the first end of the fiber optic bundle and a rotatable color wheel is positioned between the light source and the fiber bundle. The filaments are flexible and have a diameter to length ratio such that the free ends fall away in random configurations to create pleasing light patterns when the filaments are caused to move.

3,431,411
INFRARED SPECTRA OF POWDERS BY MEANS OF INTERNAL REFLECTION SPECTROSCOPY
Nicolas J. Harrick, Ossining, N.Y., assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,914
U.S. Cl. 250—43.5 **2 Claims**
Int. Cl. G01h *23/12*



A method is described for obtaining the infrared optical spectra of solids in the form of powdered samples using internal reflection spectroscopy. It is unexpectedly found that the powders do not scatter the infrared light even though a comparable transmission measurement would result in a high degree of scattering.

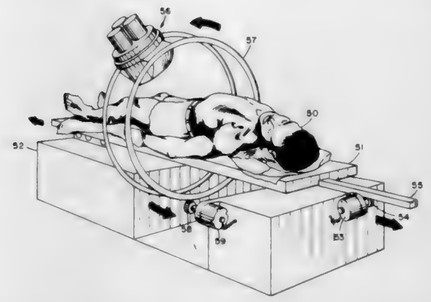
3,431,412
INFRARED COPYING PROCESS AND COPYING MATERIAL WHICH RELEASES WATER OF CRYSTALLIZATION
Kinji Okubo and Satoru Honjo, Kanagawa, Japan, and Toshihiko Nagai, deceased, late of Kanagawa, Japan, by Kenichi Nagai, legal representative, Tokyo, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Jan. 7, 1966, Ser. No. 529,901
Claims priority, application Japan, Jan. 8, 1965, 40/675
U.S. Cl. 250—65 **10 Claims**
Int. Cl. G03c *11/22;* **G01n** *23/04, 21/34*

A copying process which comprises preparing a copying element by applying a compound or a mineral, which releases water of crystallization when heated, on a support, placing the element on an original to be copied, subjecting the element and the original to transmittance printing or reflection printing by infrared rays, and then developing the printed copying element by applying developing powders thereon to give the desired copy. The image density may be increased without any increase in fog density when the exposed element is developed either with a mixture of developing powder and small particles of surfactant or with a developing powder the particles of which are at least partially coated with a surfactant.

3,431,413
ROTATIONAL TECHNIQUE FOR ASSESSING QUANTITY AND DISTRIBUTION OF BODY RADIOACTIVITY
Jesse I. Anderson and Dale G. Olsen, Idaho Falls, Idaho, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 10, 1966, Ser. No. 594,320
U.S. Cl. 250—71.5 **5 Claims**
Int. Cl. G01t *1/16;* **H01j** *39/00*

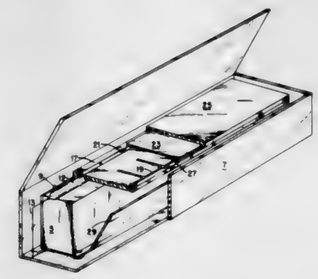
A method of whole-body radioactivity scanning and counting of a subject providing a helical scan pattern.

This is accomplished by simultaneously providing relative longitudinal and rotational movement between a radiation



detector and a subject and counting the signals emanating from the detector during the scan.

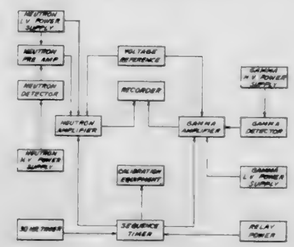
3,431,414
RADIATION DETECTOR AND RECORDER
Lamont C. Bate, Clinton, and Frank F. Dyer and Louis H. Thacker, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 11, 1967, Ser. No. 652,632
U.S. Cl. 250—71.5 **3 Claims**
Int. Cl. G01t *1/20*



A "sentinel-type" radiation detector is provided which is quite useful in detecting and recording the occurrence of pulses of radiation together with information indicating the time of the occurrence. A microcoulometer is employed in conjunction with a scintillator for indicating time of radiation occurrence. Light from the scintillator passing through the aperture of the coulometer and a scaled mask is recorded on photographic film.

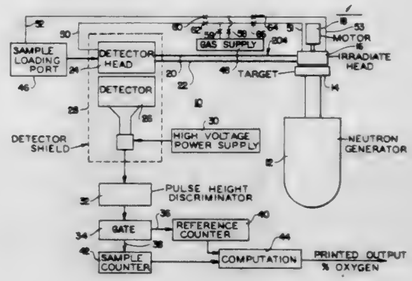
3,431,415
NUCLEAR GAGING SYSTEM FOR MOISTURE CONTENT OF IRREGULAR STREAM OF BULK MATERIAL
Leonard R. Stone, Cleveland, and Thomas E. Reim, Willowick, Ohio, Nicholas G. Muskovac, North Stamford, Conn., and James E. Cook, Philadelphia, Pa., assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Continuation of application Ser. No. 336,474, Jan. 8, 1964. This application Feb. 17, 1967, Ser. No. 616,992
U.S. Cl. 250—83.1 **10 Claims**
Int. Cl. G01t *3/00*

There is disclosed a bulk material moisture gaging system having a source of fast neutron and gamma radiation for irradiation of substantially an entire cross-sectional volume of a bulk substance moving in a confined stream of irregular and varying cross section independently of the cross-sectional geometry of the stream. Slow neutron responsive means responsive to slow neutrons from the cross-sectional volume irradiated by neutrons derive a first electrical control energy varying with the moisture content of an irradiation volume of the substance and gamma responsive means responsive to gamma radiation from the cross-sectional volume irradiated by gamma radiation derive a second electrical control energy varying with the mass of said substance in an irradiation volume thereof.



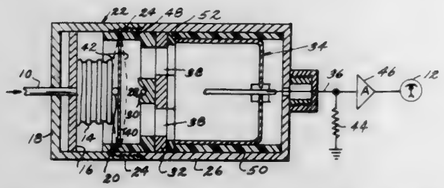
Finally, means jointly responsive to the first and second electrical control energies obtain the ratio existing between the first and second control energies and generate an output signal proportional to the weight percentage moisture content of the substance substantially independently of the geometry of the material in the stream of material being gaged. Mechanism is provided for withdrawing the radiant source holder and the detectors from gaging position to an inactive calibrating position for periodically calibrating the system in reference to mobile calibration blocks movable into and out of the gaging zone between source and detector.

3,431,416
METHOD AND APPARATUS FOR AUTOMATIC NEUTRON ACTIVATION ANALYSIS COMPRISING SIMULTANEOUS ROTATION OF A KNOWN AND AN UNKNOWN SAMPLE
Robert E. Jones, Jr., Colorado Springs, Colo., and Harold J. Price, Albuquerque, N. Mex., assignors to Kaman Corporation, a corporation of Connecticut
Filed Dec. 9, 1964, Ser. No. 417,118
U.S. Cl. 250—83.3 **19 Claims**
Int. Cl. G01t *1/16, 3/00;* **H01j** *39/32*



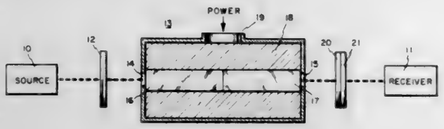
Method and apparatus for automatic neutron activation analysis which provides for the simultaneous rotation of a known and an unknown sample each about two axes wherein the two axes of rotation of each sample are of non-coplanar relation during irradiation to provide for the uniform irradiation of both the known and unknown sample.

3,431,417
ENERGY REFLECTION APPARATUS FOR MEASURING A PHYSICAL VARIABLE
Henry R. Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Continuation of application Ser. No. 283,406, May 27, 1963. This application Dec. 29, 1966, Ser. No. 606,451
U.S. Cl. 250—83.3 **26 Claims**
Int. Cl. G01t *1/16*



Disclosed herein is a system for measuring the distance between a reflector and an energy source-detector arrangement, which are relatively movable bodily so as to effect modification of the reflected energy in accordance with variations in the relative body positions of the source-detector and reflector toward and away from each other.

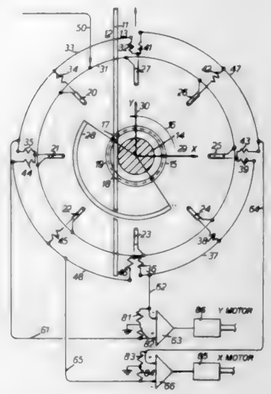
3,431,418
ELECTRO-OPTIC MODULATOR
Samuel M. Stone, Great Neck, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,532
U.S. Cl. 250—199 **8 Claims**
Int. Cl. H04b *9/00*



A standing-wave light modulator employing a plurality of crystals which exhibit the longitudinal electro-optic effect is described. The crystals are adjacently positioned and aligned to form a multicrystal structure having a common optic axis. The multicrystal structure is contained in a resonant cavity having no axial variation in electric field. The individual crystals in the structure are rotated about the common optic axis so that the *a* and *b* crystallographic axes of a crystal are rotated 90 degrees with respect to the corresponding axes of adjacent crystals to provide an increased index of modulation.

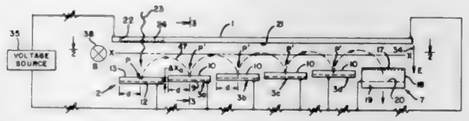
3,431,419
PHOTOELECTRIC LINE FOLLOWER EMPLOYING COORDINATE DRIVE MOTORS AND A CIRCULAR SCAN
Kenneth Victor Diprose and Arthur Stuart Forbes, Westbury-on-Trym, Bristol, England, assignors to Hancock & Co. (Engineers) Limited, Surrey, England
Filed Oct. 3, 1966, Ser. No. 583,817
Claims priority, application Great Britain, Oct. 1, 1965, 41,784/65
U.S. Cl. 250—202 **7 Claims**
Int. Cl. G05b *1/01*

A photoelectric line follower employing coordinate drive motors and circular scanning in which a generated square wave is locked to a crossing point of the scanning circle, the square wave being modified to produce two repetitive waveforms having fundamental frequencies double the speed of scanning rotation, each waveform being associated with one co-ordinate and having a mean direct voltage value varying from a maximum when the



outline is parallel to the respective co-ordinate down to zero when the outline is perpendicular thereto, each waveform being applied to an amplifier whose output drives the respective co-ordinate drive motor.

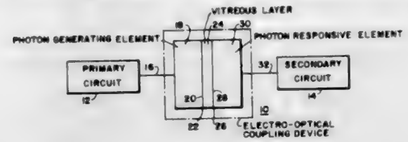
3,431,420
CROSSFIELD PHOTOELECTRON MULTIPLIER TUBE HAVING CHANNELED SECONDARY EMISSIVE DYNODES
Mahlon B. Fisher, Monte Sereno, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,160
U.S. Cl. 250—207 **10 Claims**
Int. Cl. H01j *39/12, 31/50*



Plane cathode and dynode electrodes of a crossed-field secondary emission photomultiplier are segmented to prevent transverse spreading of the electron beams and thus minimize or eliminate resultant image distortion. Each electrode has transversely spaced longitudinally extending parallel electrically conductive fins projecting from the electrode surface normal to the plane thereof. Corresponding fins on longitudinally adjacent electrodes are aligned in planes parallel to the longitudinal axis of the device and effect a distortion of the electric field to produce the desired focusing of the electron beams.

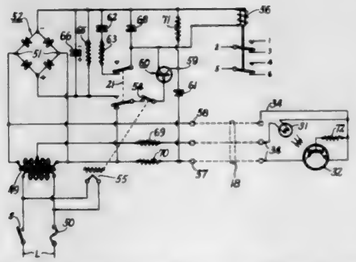
3,431,421
ELECTRO-OPTICAL DEVICE HAVING IMPROVED COUPLING
Edgar L. Irwin, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1966, Ser. No. 542,650
U.S. Cl. 250—211 **9 Claims**
Int. Cl. H01j *39/12, 5/16;* **G02b** *5/00*

A combination in which a photon-emitting semiconductor is joined to a photon-responsive semiconductor by a composition permitting efficient optical transfer. The composition consists essentially by weight of 23–37% arsenic, 24–46% thallium, 27–39% sulfur, and 0–10% selenium. The specific weight percentages of elements which make up the composition are determined so that



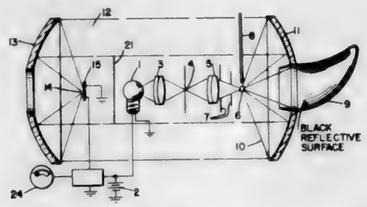
the composition has an index of refraction approximating that index which permits optimum optical coupling between the semiconductive elements.

3,431,422
WEIGHING SYSTEM INCLUDING OPTICALLY ACTUATED ADJUSTABLE SET POINT CONTROL CIRCUIT HAVING SWITCH FOR SELECTING RESET MODE
James P. Billings, Stamford, Conn., assignor to The A. H. Emery Company, New Canaan, Conn.
Filed Mar. 15, 1965, Ser. No. 439,655
U.S. Cl. 250—214 **2 Claims**
Int. Cl. H01j *39/12;* **G01d** *5/34*



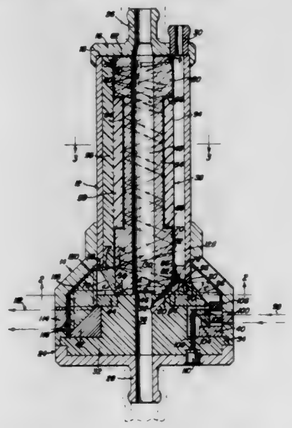
The disclosed weighing system includes a graduated scale and a weight indicating scale pointer carrying a knife edge facilitating visual weight reading and a flag adapted to interrupt illumination of a photodetector when the pointer responds to a preselected weight. The detector and illumination source are energized from an A.C. source. A controlled rectifier is connected either directly to the A.C. source or to a full wave rectifier network by a mode switch and is rendered conductive to energize a relay for actuating an external controller when the photodetector is not illuminated. Plural photodetectors may be employed to effect progressive actuation of the external controller.

3,431,423
FORWARD SCATTER PHOTOMETER
John D. Keller, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,567
U.S. Cl. 250—218 **7 Claims**
Int. Cl. G01n *21/26;* **G01j** *1/08*



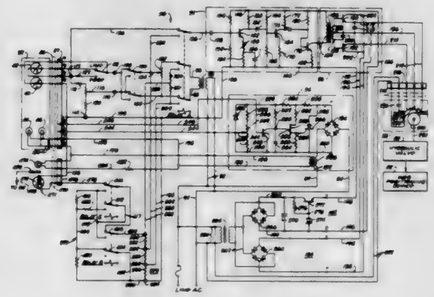
A beam of radiation is directed through a fluid containing particles and then subsequently into radiation trap. Forward scattered radiation is collected and reflected back in a direction opposite the direction of the beam. The reflected scattered radiation is focused and directed to a photosensor.

3,431,424
OPTICAL FLUID SAMPLING DEVICE
Henry W. Allen, 623 W. 5th St., Los Angeles, Calif. 90017
Filed Oct. 19, 1965, Ser. No. 497,748
U.S. Cl. 250—218 **11 Claims**
Int. Cl. G01n *21/26, 21/00;* **G01j** *3/00*



A fluid analyzing device or flow cell through which fluid is passed or within which a body of test fluid is received in intersecting relation to a relatively long radiation path as compared to the volume of fluid through which the path extends. The chamber within which the test fluid is disposed is in the form of an elongated axial passage traversed many times by reflected radiation originating from a radiation source with which the flow cell device is associated.

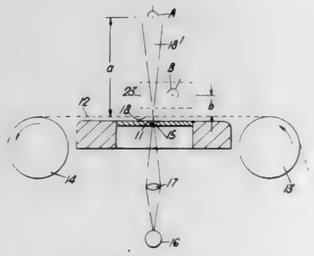
3,431,425
SYSTEM FOR PHOTOELECTRIC CONTROL OF MOVING WEBS
Jerald L. Brown, Midwest City, and John J. Shelton, Stillwater, Okla., assignors to Fife Manufacturing Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 1, 1965, Ser. No. 436,232
U.S. Cl. 250—219 **15 Claims**
Int. Cl. G01n *21/30*



Apparatus for enabling positioning surveillance of the edge or specified indicator of a moving web, the apparatus consisting of a sensing head for continually deriv-

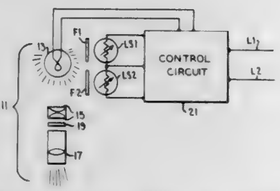
ing a position indication from said edge or indicator line and control circuitry energized in response to said continual position indication to effect correcting realignment of the web. The control circuitry consists of means for amplifying the position indication to develop an error signal for controlling a two-phase servo motor which effects energization of a hydraulic valve-controlled web positioning mechanism to realign the traveling web.

3,431,426
RADIATION SENSITIVE APPARATUS FOR READING PUNCHED TAPE
Neil Rutherford Laidlaw, Edinburgh, Scotland, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Nov. 28, 1966, Ser. No. 597,270
Claims priority, application Great Britain, Nov. 30, 1965, 50,736/65
U.S. Cl. 250—219 **5 Claims**
Int. Cl. G01n *21/30*



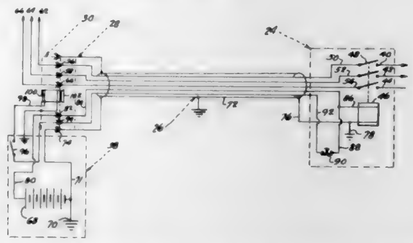
1. Apparatus for reading punched tape having a hole track including for said hole track, optical means for causing light from a source to reach the tape in a beam in the path of the holes in that track, arrangements for supporting the tape so that in operation the tape movement causes the holes in the track to cross the beam in turn, a main photo-electric transducer located so as to be irradiated by the beam when a hole is present, an auxiliary photo-electric transducer displaced from the beam and arranged to be so responsive to irradiation from the tape, as irradiated by the beam, as to produce an output which is less than that from the main transducer when a hole is present but not less than that from the main transducer when no hole is present, electrical means for deriving a response in dependence on the algebraic difference between the outputs from the two transducers, and connections from the transducer to the electrical means.

3,431,427
SOLID STATE COLOR BALANCE CONTROLLER FOR INCANDESCENT LAMPS
Henry D. Pahl, Jr., Webster Groves, Mo., (818 Olive St., St. Louis, Mo. 63101)
Filed Oct. 24, 1965, Ser. No. 504,466
U.S. Cl. 250—226 **3 Claims**
Int. Cl. H01j *39/12, 5/16*



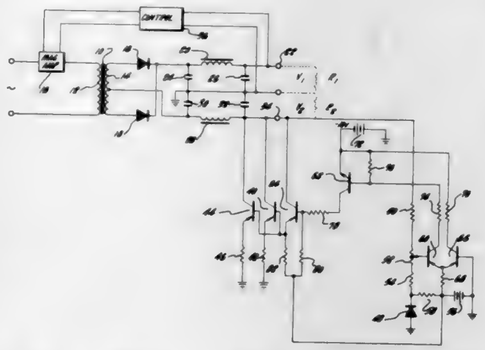
The apparatus described varies the phase angle of conduction through a triggerable semiconductor current switching device for varying the energization of an incandescent lamp to maintain a preselected color balance suitable for exposing color photographic materials such as films and paper.

3,431,428
SAFETY VEHICLE POWER DISTRIBUTION SYSTEM
Andrew F. Van Valer, P.O. Box 87, Grass Valley, Calif. 95945
Filed Apr. 19, 1967, Ser. No. 631,970
U.S. Cl. 307—10 **9 Claims**
Int. Cl. B60l *1/00;* **H01r** *13/62*



A power distribution system for furnishing power to vehicles from a fixed station including a switch at the fixed station and an electrically controllable release connector at the vehicle and an electrical circuit for physically disconnecting an electric cable from the vehicle and electrically disconnecting the cable from a source of power when the ignition of the vehicle is turned on is described.

3,431,429
DUAL VOLTAGE REGULATED POWER SUPPLY
Robert L. Phillips, Sierra Madre, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 14, 1966, Ser. No. 533,912
U.S. Cl. 307—31 **3 Claims**
Int. Cl. H02j *1/14, 3/46*

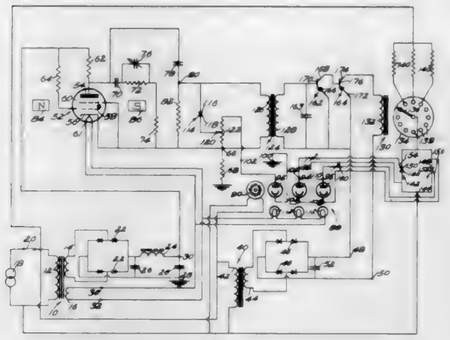


There is described a circuit incorporating a single full-wave rectifier circuit which produces a positive voltage and a negative voltage across separate loads, the output voltages being separately regulated.

3,431,430
AUTOMATIC ELECTRIC CONTROL SYSTEMS
John Tambert, Detroit, Mich. (P.O. Box 9921, Rochester, N.Y. 14623)
Filed Nov. 18, 1964, Ser. No. 412,130
U.S. Cl. 307—39 **3 Claims**
Int. Cl. H02j *3/00, 3/14;* **H04l** *9/00*

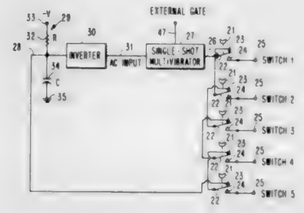
An electrical control system for energizing at random individual loads during the course of a repetitive pro-

grammed cycle. The ability of the system to make completely random and uncontrolled selections, renders it



especially adaptable for use in quality control, psychological testing, generating random numbers and simulating random events.

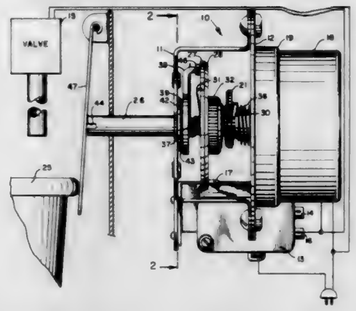
3,431,431
SWITCHING APPARATUS
Robert W. Martin, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 527,402
U.S. Cl. 307—136 **5 Claims**
Int. Cl. H02h *3/08, 7/00;* **H01h** *33/44*



A switching apparatus for selectively switching the output of a single shot to a selected output terminal after a predetermined delay. A plurality of pairs of switching contacts are employed each selectively movable from a closed to an open position. The contacts are connected in series and to the input of a delay means. A plurality of output contacts are employed, one for each of the switching contacts which are operatively connected to a signal source in response to opening of the corresponding pair of switching contacts. The delay means is responsive to the opening of one of the pairs of switching contacts to actuate the signal source providing an output signal to the corresponding output terminal a predetermined time after the opening of the corresponding switching contacts.

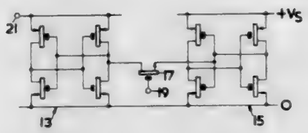
3,431,432
TIMER
Warren A. Lofstrand, Weathersfield, and Jurgen Brugmann, Waterbury, Conn., assignors to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,411
U.S. Cl. 307—141 **5 Claims**
Int. Cl. H01h *7/00, 7/08, 43/00*

A push-to-actuate timer comprising a motor, a switch, and a cam that is free to move axially under pressure into and out of actuating engagement with the switch. When moved into controlling engagement, the switch turns on the motor, which is connected to rotate the cam to a position in which a region on the cam surface permits the switch to return to its non-actuated condition, thereby turning off the motor. The time required for the



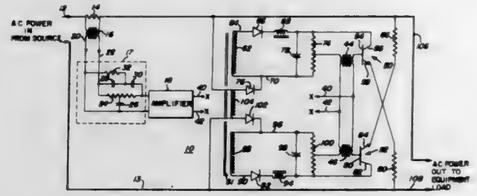
motor thus to turn itself off is the pre-set timing interval, but earlier removal of pressure on the cam also turns off the motor and terminates the timing operation.

3,431,433
DIGITAL STORAGE DEVICES USING FIELD EFFECT TRANSISTOR BISTABLE CIRCUITS
Robert George Ball, 26 Clerkenwell Crescent, Gerald Horace Perry, 56 Barnards Green Road, and John Wood, Geraldine Staff Club, Geraldine Road, all of Malvern, England
Filed May 28, 1965, Ser. No. 459,628
Claims priority, application Great Britain, May 29, 1964, 22,344/64; Oct. 26, 1964, 43,518/64
U.S. Cl. 307—221 **19 Claims**
Int. Cl. H03k *23/08, 23/22, 23/30*



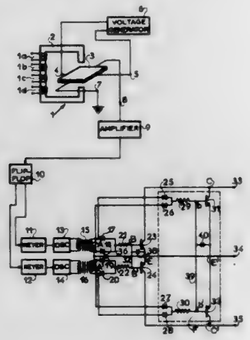
1. A digital storage device comprising
a first bistable circuit and a second bistable circuit each comprising
a first complementary pair of field effect transistors whose channels are connected in series between two terminals and whose gates are connected together,
a second complementary pair of field effect transistors whose channels are connected in series between two terminals and whose gates are connected together,
a connection between the common series connection between said channels of said first complementary pair and said gates of second complementary pair,
a connection between the common series connection between said chainnels of said second complementary pair and said gates of said first complimentary pair,
supply voltage terminals, and
a connection between said terminals and said supply voltage terminals,
means for connecting said common series connection between said channels of said second complementary pair of said first bistable circuit to said gates of said first complementary pair of said second bistable circuit, and
means for breaking one of said connections in said second bistable circuit at a time when said common series connection between said channels of said complementary pair of said first bistable circuit is connected to said gates of said first complementary pair of said second bistable circuit.

3,431,434
ACTIVE FILTER
William T. Glasspool, Goleta, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,663
U.S. Cl. 307—233 **10 Claims**
Int. Cl. H03k *5/20;* **H03b** *1/04*



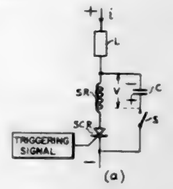
An active filter device for power lines to filter out low frequency current fluctuations, especially on AC lines, at frequencies close to the power line fundamental frequency. The unwanted power line current fluctuations are filtered from the power line by active and passive filters. The current fluctuations on the power line are sensed and used as a current fluctuation correction input to the active filter control loop. In the case of alternating-current power lines, the fundamental power-line frequency is removed from the correction signal by means of a tuned circuit with a narrow pass-band. The correction signal, then consisting only of unwanted frequency components, is used to control a transistor, vacuum tube or other active device connected in such a manner that a load current will be drawn from the power line which is opposite in polarity to the unwanted fluctuations, thus effectively cancelling them.

3,431,435
ELECTRONIC SWITCH
Pierre Bizet, Fontenay-aux-Roses, France, assignor to CIT—Compagnie Industrielle des Telecommunications, Paris, France
Filed Oct. 15, 1965, Ser. No. 496,613
Claims priority, application France, Oct. 15, 1964, 991,485
U.S. Cl. 307—247 **13 Claims**
Int. Cl. H03k *17/00, 5/00*



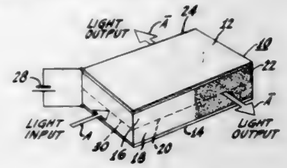
Electronic switch arrangement for selectively completing a low resistance current path between first and second terminals to the exclusion of a third terminal, or between second and third terminals to the exclusion of a first terminal, controlled by a direct current in an input circuit having no galvanic contact with said terminals, comprising a magnetic control circuit having a plate exhibiting Hall effect characteristics for selecting operation of one of two oscillators connected via a respective one of two rectifying and filtering means to a respective one of two pairs of complementary transistors.

3,431,436
CONTROL RECTIFIER CIRCUIT INCLUDING AN ARRANGEMENT FOR RENDERING A CONTROLLABLE RECTIFIER NON-CONDUCTING
Kenneth G. King, London, England, assignor to Westinghouse Brake and Signal Company, Limited, London, England
Filed Aug. 12, 1965, Ser. No. 479,264
Claims priority, application Great Britain, Sept. 28, 1964, 39,363/64
U.S. Cl. 307—252 **9 Claims**
Int. Cl. H03k *17/60*



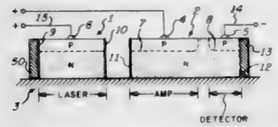
A controllable rectifier circuit including a controllable rectifier device having a forward blocking capability in a current path from a source to a load such that the device can be rendered conducting in the forward condition by a triggering signal applied thereto. The circuit further includes a commutating capacitor connectable in a given charged condition via switch means across the said path of the controllable rectifier to render the controllable rectifier non-conducting and temporarily to provide an alternate path for current flow. The circuit further includes a saturable reactor winding connected in series with the controllable rectifier device to temporarily hold back from the device a swing of voltage on the capacitor on acquiring an oppositely charged condition due to the said current flow.

3,431,437
OPTICAL SYSTEM FOR PERFORMING DIGITAL LOGIC
Walter F. Kosonocky, Iselin, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,933
U.S. Cl. 307—312 **13 Claims**
Int. Cl. H03k *19/14, 3/42, 23/12*



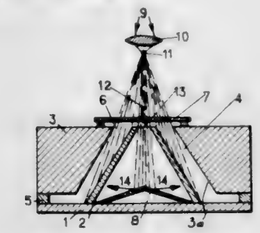
Optical computer circuits wherein signals are represented by presence and absence of light. An inverter logic element for light signals includes a semiconductor laser diode having a unitary elongated planar junction region adapted for light signal amplification in a first direction and adapted for laser oscillation in a second transverse direction. The laser oscillations occur normally to provide an output light signal from the junction region. An input light signal directed through the junction region in the first direction is amplified in the junction region to a value which quenches the laser oscillations and cuts off the output light signal. The inverter is employed also in the performance of the functions of a "nor" gate, and "nand" gate, a bistable multivibrator or flip-flop, and an oscillator.

3,431,438
OPTICAL COMPUTER COMPRISING SEMICONDUCTOR P-N JUNCTION COMPONENTS
Roger Newman, Wayland, Mass., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed July 24, 1964, Ser. No. 384,963
U.S. Cl. 307—312 **15 Claims**
Int. Cl. H03k *3/42, 19/14, 23/12*



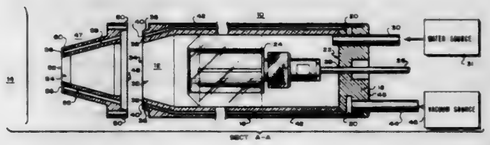
A solid-state computer component comprising a plurality of diffused coplanar p-n junction elements formed on a semiconductor substrate. One of the junction elements is made optically resonant and is forward-biased to produce laser emission which is directed along the junction plane of another element which is forward-biased below its laser threshold to amplify the laser emission. A third element is biased to detect the amplified emission either by photodetection or laser quenching action.

3,431,439
THERMIONIC ENERGY CONVERTER
Jacques Bensimon, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Nov. 17, 1965, Ser. No. 508,343
Claims priority, application France, Dec. 1, 1964, 996,939
U.S. Cl. 310—4 **18 Claims**
Int. Cl. H02n *3/00;* **H01m** *15/02*



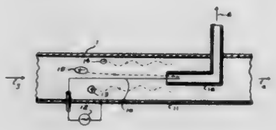
A thermoelectronic energy converter as disclosed in U.S. Patent No. 3,313,961, characterised in that a major part of the density-concentrated radiant energy is utilized for heating the emitter, and a minor part only is lost in heating the collector.

3,431,440
RETAINING APPARATUS FOR AN ULTRASONIC COUPLING MEDIUM
Richard B. Osgood, Los Altos, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 1, 1966, Ser. No. 539,505
U.S. Cl. 310—8.1 **5 Claims**
Int. Cl. H02n *7/00;* **G01n** *9/24, 29/00*



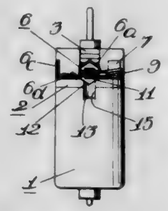
A cylindrical casing for retaining an ultrasonic coupling medium has an opening at one end for providing contact between the coupling medium and the surface of a test body to be ultrasonically scanned. An annular contact surface of the casing is positioned around this opening and provided with a circular channel. A vacuum source is connected to the circular channel for providing a continuous seal between the contact surface and the test body to retain a static column of the coupling medium within the casing during scanning. An ultrasonic scanning transducer is supported at the other end of the casing in contact with this static column of coupling medium.

3,431,441
PLASMA PURIFICATION BY MEANS OF ELECTROSTRICTION
Fredrick H. Shair, Altadena, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 5, 1965, Ser. No. 506,919
U.S. Cl. 310—11 **1 Claim**
Int. Cl. H02k *45/00;* **G21d** *7/02;* **B03c** *3/36*



The polyatomic impurities in the gas plasma of a closed loop magnetohydrodynamic generator are removed by the electrostriction forces causing the charged polyatomic molecules in a high intensity, nonuniform, alternating electric field created between a central wire and the tube containing the gas flow to be attracted toward the high intensity field near the wire where they are bled out of the system by a small tube extending external the closed system from the high intensity field region near the wire.

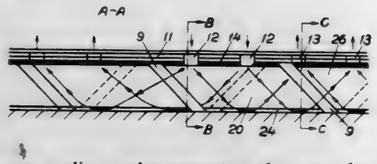
3,431,442
MINIATURE ELECTRIC MOTOR WITH DIELECTRIC COVER PLATE HAVING BRUSH HOLDERS
Takaichi Mabuchi, No. 262, Honden-machi, Katsushika-ku, Tokyo, Japan
Filed Oct. 1, 1965, Ser. No. 491,982
Claims priority, application Japan, Dec. 9, 1964, 39/68,835
U.S. Cl. 310—42 **10 Claims**
Int. Cl. H02k *15/00, 13/00;* **H01r** *39/40*



A miniature electric motor includes a casing having an open end and formed to rotatably receive an armature shaft. A dielectric cover plate fits in the open end of the casing and is formed with a bearing rotatably supporting the armature shaft with a commutator on the shaft extending axially outwardly of the cover plate. The cover plate has a pair of rectilinear guide means extending radially toward the bearing, and each slidably guiding a respective carbon brush. Each brush has electrically con-

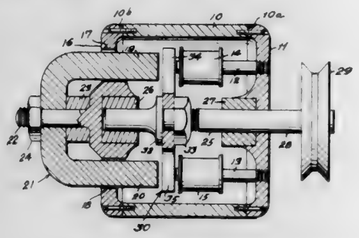
ductive plate means in extended surface engagement with a lateral surface of the brush. Respective torsion springs engage the radially outer ends of the brushes to exert a constant bias urging the brushes into engagement with the commutator.

3,431,443
TURBO-GENERATOR WITH INLETS AND OUTLETS FOR COOLING CHANNELS IN THE ROTOR SLOT OPENING INTO THE AIRGAP
Edgar Essén, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Dec. 26, 1967, Ser. No. 693,625
Claims priority, application Sweden, Dec. 27, 1966, 17,732/66
U.S. Cl. 310—65 **6 Claims**
Int. Cl. H02k *1/32, 3/24*



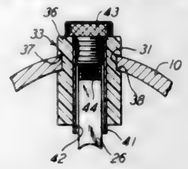
In a gas cooling turbo-generator, the rotor has cooling channels in the winding slots and slot insulation at the slot surfaces, with a bundle of conductors arranged in each slot. The stator core has radial air gaps opening into the air gap for conducting coolant. The coolant channels in the winding slots have inlet and outlet openings. Each bundle of conductors is formed of mutually insulated solid conductors glued together, the bundles being separated from the slot insulation by spacer elements arranged consecutively axially and limiting in the axial direction slot cooling channels formed between the conductor bundles and the slot insulation.

3,431,444
GENERATOR
Curtis L. Wilson, 3103 Elizabeth—Space 25, Pueblo, Colo. 81003
Filed Dec. 14, 1966, Ser. No. 601,815
U.S. Cl. 310—168 **1 Claim**
Int. Cl. H02k *17/42, 19/24*



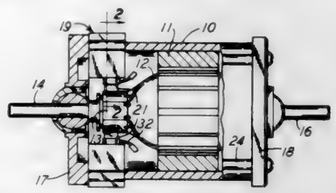
1. An electric generator comprising in combination a housing consisting of a cylindrical member, a first end cap of magnetic material provided with a central perforation affixed to one end of said cylindrical member, first bearing means affixed in said perforation, a second end cap affixed to another end of said cylindrical member having a threaded boss formed centrally thereon and extending exteriorly thereof, second bearing means supported by said second end cap within said housing and in alignment with said first bearing means, oppositely disposed arcuate slots formed in said second end cap, a U-shaped permanent magnet rotatably mounted on said threaded base with its two legs passing through said arcuate slots into interior of said housing, a first field coil in said housing affixed to said first end cap and spaced from and in alignment with one of said legs, a second field coil in said housing affixed to said first end cap and spaced from and in alignment with the other of said legs, a shaft rotationally mounted in said bearings having one end extending exteriorly of said first end cap to which driving power is applied, a metallic disc provided with radial slots mounted on said shaft for rotation between said legs and said field coils, said disc upon rotation chopping the flux linking said legs and said field coils whereby a voltage is induced in said field coils.

3,431,445
ELECTRIC MOTOR BRUSH HOLDER MOUNTING
Allen J. Petersen and Everett K. Hansen, McHenry, Ill., assignor to Rae Motor Corporation, McHenry, Ill., a corporation of Delaware
Filed Mar. 17, 1966, Ser. No. 535,088
U.S. Cl. 310—239 **4 Claims**
Int. Cl. H02k *13/00;* **H01r** *39/40, 39/38*



An electric motor brush holder mounting, wherein the motor casing is provided with end notches for slidably snugly receiving the brush holder. An end plate is positioned over the brush holders and the end of the casing to finally secure the brush holders to the casing and to provide a bearing for the motor armature.

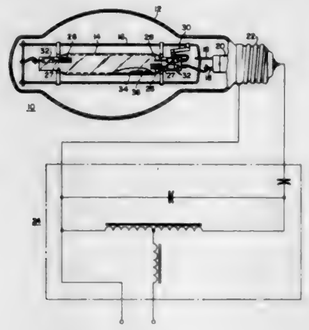
3,431,446
ELECTRIC MOTOR BRUSH HOLDER, CAP AND SPRING
Allen J. Petersen and Everett K. Hansen, McHenry, Ill., assignors to Rae Motor Corporation, McHenry, Ill., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,905
U.S. Cl. 310—247 **7 Claims**
Int. Cl. H02k *5/14;* **H01r** *39/40*



An electric motor brush holder with the motor housing having notches in the end for slidably receiving the brush holders. A cap fits on the brush holder to enclose the brush and its back-up spring. The spring has an enlarged portion in contact with a sleeve which slidably receives the brush, and the enlarged portion provides electrical contact between the brush and the sleeve.

3,431,447
HIGH-PRESSURE METALLIC VAPOR DISCHARGE LAMP INCLUDING MERCURY AND THALLIUM IODIDE
Daniel A. Larson, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1966, Ser. No. 527,676
U.S. Cl. 313—25 **10 Claims**
Int. Cl. H01j *1/02, 7/24, 61/52*

A high efficiency high-pressure, mercury-vapor discharge lamp characterized by the production of a relatively wide band of energy at about 5350 angstroms and an output in excess of 100 lumens per watt when operated with a predetermined power input and which includes as a discharge sustaining filling within said arc tube an amount of mercury of from about 5.0 to 8.0



milligrams per cubic centimeter of arc tube volume and an amount of thallium iodide in excess of 0.5 milligram per cubic centimeter of arc tube volume and preferably about 2.3 milligrams per cubic centimeter of arc tube volume.

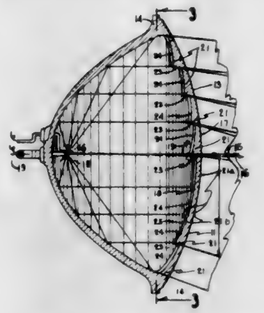
3,431,448
BROMINE REGENERATIVE CYCLE INCANDESCENT LAMPS
James F. English, Lakewood, Ohio, assignor to General Electric Company, a corporation of New York
Filed Jan. 16, 1967, Ser. No. 609,592
U.S. Cl. 313—37 **9 Claims**
Int. Cl. H01j *61/52*



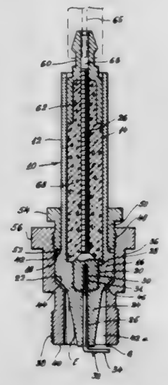
In a regenerative cycle, coiled tungsten filament incandescent lamp containing bromine, an end attack or transfer of tungsten between coil turns, with consequent etching or erosion of one or more turns at the end of the filament by bromine, is minimized by designing the connection of those end turns to the lead wires to provide a gradual, rather than a steep or abrupt, temperature gradient downward between and from said coil turns toward the lead wires. This may be accomplished in a number of ways: For example, by stretching out several of the coil turns immediately adjacent to the inner ends of conventional lead wire spuds carrying the ends of the coiled filament; by stretching out several coil turns at the ends of the filament to infinity, so to speak, and continuing the resulting essentially straightened integral end portions of the filament into the seal portions of the enclosing envelope; and by, in any one of several ways, reducing the cross section of the terminal inner end portions of the aforesaid lead wire spuds.

3,431,449
NON-GLARE SEALED BEAM HEADLIGHTS
George K. Hundley, Indianapolis, Ind., assignor to Arthur R. Brown, Indianapolis, Ind.
Filed Aug. 5, 1966, Ser. No. 576,808
U.S. Cl. 313—111 **6 Claims**
Int. Cl. H01j *5/16, 61/40;* **F21v** *7/14*

A sealed beam lamp having a lens with a plurality of horizontally disposed prisms above the centerline, a portion below the centerline having parallel interior and exterior surfaces for a distance down from the centerline and then blending into a horizontally disposed prism.



3,431,450
SPARK PLUG WITH ADJUSTABLE ELECTRODE GAP
Gus J. Errico, Jamfe Enterprises, Inc., 526 Coney Island Ave., Brooklyn, N.Y. 11218
Filed Apr. 7, 1967, Ser. No. 629,247
U.S. Cl. 313—125 **1 Claim**
Int. Cl. H01t *13/26, 13/34, 13/56*

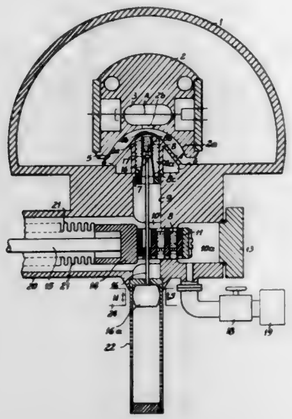


A spark plug having a central stem surrounded by cold setting cement which may be glass filled. Secured to the stem by a screw connection is an electrode having a bent tip defining a gap with a surrounding metal shell. An adjustable gland nut in the metal shell adjusts the gap between the electrode tip and metal shell.

3,431,451
MAGAZINE FEED OF SAMPLE WITH THERMAL ISOLATION OF SAMPLE FROM IONIZATION CHAMBER
Curt Brunnée, Bremen, and Günter Kappus, Bremen-Huchting, Germany, assignors to Varian mat G.m.b.H., Bremen, Germany, a limited company of Germany
Filed July 27, 1965, Ser. No. 475,068
Claims priority, application Germany, July 30, 1964, A 46,728
U.S. Cl. 313—231 **10 Claims**
Int. Cl. H01j *17/26, 61/28, 61/52*

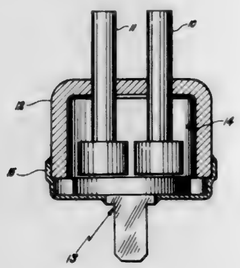
In apparatus for investigation of material by vaporisation, ionisation and ion current measurement, a vaporisation cell for the material to be investigated is arranged directly adjacent to an ionisation chamber or other chamber for utilizing the vapor of the material to be inves-

tigated. The vaporisation cell is thermally isolated from this chamber and has a window open towards the chamber. Means are provided for heating in the vaporisation



chamber a sample of the material to be analyzed, this material being in a vessel inserted into the vaporisation chamber by means including a magazine.

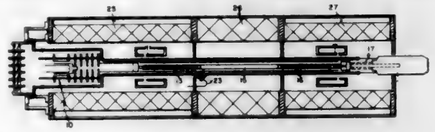
3,431,452
HIGH-POWER SURGE ARRESTER
Murray Everett Hale, Atkinson, N.H., and Robert David Wright, Canton, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed May 17, 1967, Ser. No. 640,461
U.S. Cl. 313—231 **4 Claims**
Int. Cl. H01j *17/26, 61/28*



A high-power surge arrester designed to breakdown with minimal time lapse at a predetermined voltage surge level. An avalanche type of breakdown is initiated by the drift velocity of emitted electrons issuing from gaps in the adjacent TiO_2 coating located on the inner walls of the surge arrester.

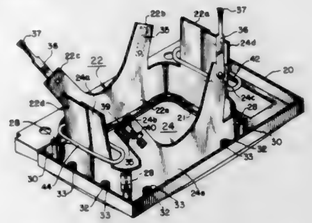
3,431,453
ELECTRON TUBE VARIABLE DELAY LINE
Kenneth R. Evans, Concord, Mass., assignor to Microwave Associates, Incorporated, Burlington, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 472,567, July 16, 1965. This application Nov. 20, 1967, Ser. No. 684,560
U.S. Cl. 315—3.6 **11 Claims**
Int. Cl. H01j *25/34*

An O-type traveling wave tube delay line in which the focusing magnetic field is different in the drift region be-



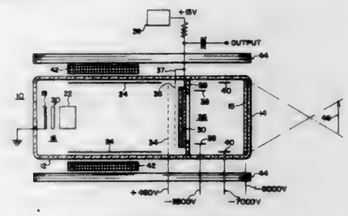
tween input and output couplers and the beam velocity is electrostatically variable in the drift region.

3,431,454
CATHODE-RAY TUBE MAGNETIC SHIELD AND TUBE MOUNT
Marshall E. Sanders, Elmhurst, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,257
U.S. Cl. 315—8 **10 Claims**
Int. Cl. H01j *29/06*



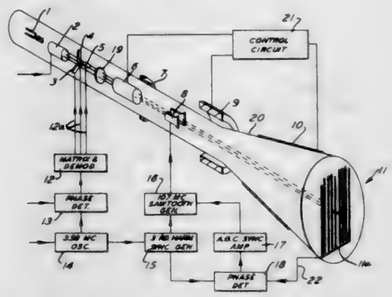
A magnetic shield and mounting arrangement for a cathode-ray tube includes a support member having an opening that conforms substantially to the contour of the display screen of the tube. A plurality of flexible pieces, formed of magnetic material and dimensioned and shaped to form a closed magnetic circuit when arranged in overlapping relation, are secured to the support to define therewith a chamber for receiving the tube with its screen exposed through the opening. A lock releasably clamps the magnetic pieces in such overlapping relation to hold the tube fixedly in position within the chamber while at the same time shielding it from interfering external magnetic fields.

3,431,455
ELECTRON IMAGE DEVICE
Rolf R. Beyer, Horseheads, and Alvin H. Boerio, Horseheads Township, Elmira, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 26, 1965, Ser. No. 428,167
U.S. Cl. 315—11 **8 Claims**
Int. Cl. H01j *31/48*



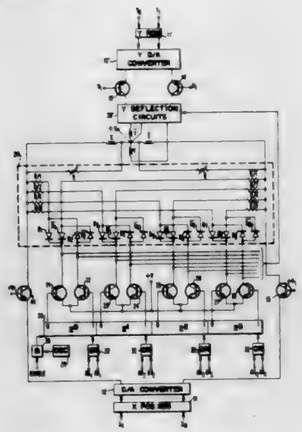
This disclosure relates to an electron image device including a target member having a electrically conductive element or plate and a layer of an insulating storage material for storing a pattern of charges, suitable means such as an electron gun for directing a beam of electrons onto the surface of said layer of insulating material, and a grid spaced from the surface of the layer of insulating material. The grid is connected to the element by a substantially zero impedance path in order to prevent a field across the layer of insulating material of a magnitude to cause the breakdown of the layer.

3,431,456
THREE BEAM COLOR TELEVISION DEFLECTION SYSTEM
Arthur Liebscher, 252 Wyncote Road, Jenkintown, Pa. 19046
Filed Aug. 3, 1966, Ser. No. 569,957
U.S. Cl. 315—13 **10 Claims**
Int. Cl. H01j *29/50, 29/70*



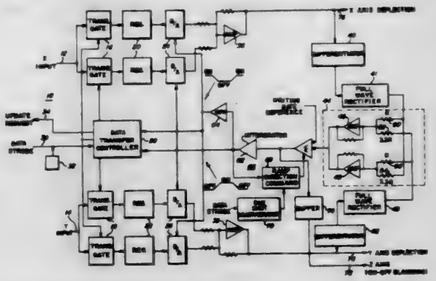
A color image producing television tube which includes a single cathode simultaneously generating a plurality of separate electron beams, step, dwell and repeat deflection means for simultaneously advancing the beams, additional deflection means also being provided for raster requirements, the advancing beams impinging on chromatic responsive means which include a plurality of phosphor areas with interposed non-luminous responsive elements. Feedback is provided from the responsive elements to provide signals for phasing control and regulation of the step frequency and dwell times of the beams simultaneously.

3,431,457
GRAPHIC DEFLECTION SYSTEM EMPLOYING VARIABLY DAMPED DEFLECTION WINDING
Donald J. Hinkein, Germantown, and Der Sheng Liu, New Paltz, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,717
U.S. Cl. 315—18 **7 Claims**
Int. Cl. H01j *29/70*



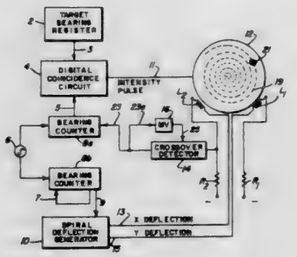
Display beam deflections of substantially constant velocity are provided upon the application a single step of current corresponding to the desired deflection. The display beam deflection control winding is damped by a plurality of weighted impedances which are connected selectively across the winding by a sequencing control to vary the damping of the winding from an overdamped to a critically damped state during the deflection.

3,431,458
VECTOR GENERATOR
Daryl J. Christopher, Framingham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 664,968
U.S. Cl. 315—18 **6 Claims**
Int. Cl. H01j *29/72*



A vector generator for generating vectors at desired writing rates comprising X and Y axis circuits for producing X and Y axis error functions and integrating means for insuring that the X and Y axis positional transfer is accomplished at the desired writing rate.

3,431,459
SPIRAL SWEEP PHASE SHIFT COMPENSATION
John C. Freeborn, West Covina, Calif., assignor, by mesne assignments, to the United States of America
Filed Mar. 31, 1967, Ser. No. 628,242
U.S. Cl. 315—24 **9 Claims**
Int. Cl. H01j *29/70*

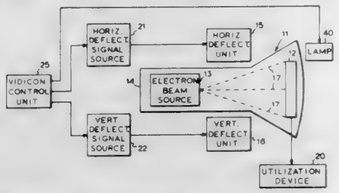


An apparatus for synchronizing sweep circuitry with beam intensifying circuitry in a cathode ray tube display system.

3,431,460
METHOD OF ERASING TARGET MATERIAL OF A VIDICON TUBE OR THE LIKE
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of James John Hawley, Cranbury, N.J.
Filed June 27, 1967, Ser. No. 649,356
U.S. Cl. 315—26 **8 Claims**
Int. Cl. H01j *29/70*

A method and means for shortening the time required to erase target material of a storage tube which retains a spatial charge density pattern for a relatively long time.

After reading a pattern on the target material, the material is exposed to a uniform light to rapidly discharge the target material and remove the original pattern. Thereafter, the beam is deflected at rates outside the system's



readout bandwidth. Consequently, the material is recharged for subsequent exposure in a relatively short time with a pattern which does not affect the tube's readout system.

3,431,461
ELECTRON CYCLOTRON RESONANCE HEATING DEVICE

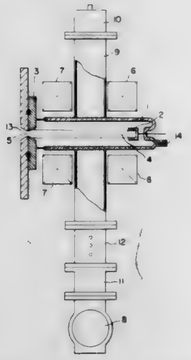
Taro Dodo, Tokyo-to, and Manabu Yamamoto, Odawara-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Marunouchi, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

Continuation-in-part of application Ser. No. 252,484, Jan. 18, 1963. This application Sept. 27, 1965, Ser. No. 490,586

Claims priority, application Japan, Jan. 22, 1962, 37/1,499

U.S. Cl. 315—39 **1 Claim**

Int. Cl. H01j *7/46, 19/80, 7/24*



An electron cyclotron resonance heating device of a type wherein a discharge plasma is generated in the magnetic field along the axial direction, into which a high frequency incident electromagnetic wave is projected perpendicularly with respect to the direction of the magnetic field, thereby causing the electrons in the plasma to absorb the energy of the incident electromagnetic wave, and the electrons in the plasma are further heated to a high temperature so as to cause a light beam of short wavelength, in the far ultraviolet region, to emanate from the plasma.

3,431,462
IMAGE CONVERSION CATHODE RAY TUBE WITH PIEZOELECTRIC FACE ELEMENT PROVIDED WITH RIGIDIFYING MEANS

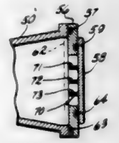
Richard A. Muenow, Glenview, and Gerald W. Plice, Morton Grove, Ill., assignors to James Electronics, Inc., Chicago, Ill.

Filed July 1, 1966, Ser. No. 562,336

U.S. Cl. 315—55 **12 Claims**

Int. Cl. H01j *31/26*

An ultrasonic testing system transmits sonic energy through an object under test to a piezoelectric element in the end of a cathod ray tube. Any discontinunity in the object under test appears as a corresponding variation in the piezoelectric potentials on the back of the element. These potentials are an output signal read out responsive to the scanning of an eletcron beam in the cathode ray tube. The signal which is so read out drives a TV monitor that displays an image of the discontinuity. This signal is improved by a material having a high loss of mechancial energy charactertistic placed at the point or points where objectionable noise may appear. To enable a use of larger piezoelectric elements without either a danger of breaking the element or a loss of sensitivity, the end of the tube has a special face plate assembly including mechancial supporting ribs which reinforce the element at the allowable limit of its motion.



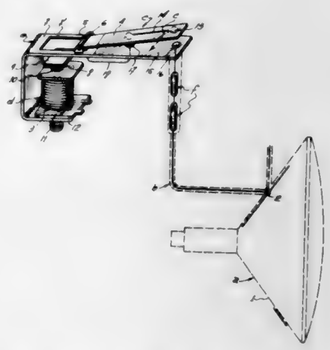
3,431,463
TELEVISION RECEIVER SETS

Jose M. Lizarralde, 67th St., No. 786, Buenos Aires, Argentina

Filed Jan. 4, 1967, Ser. No. 607,221

U.S. Cl. 315—127 **4 Claims**

Int. Cl. H05b *41/36*



A television image tube has its anode connected to ground through a controlled circuit breaker. The circuit breaker is held closed by gravity and is opened by an electromagnet actuated by the television filament supply circuit. The breaker closes when the set is turned off to thus ground the anode and prevent the electron beam from thereafter striking the screen.

3,431,464
VOLTAGE REGULATION APPARATUS WITH AN OPTICAL FEEDBACK

Franz Brischnik, Neuenhof Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

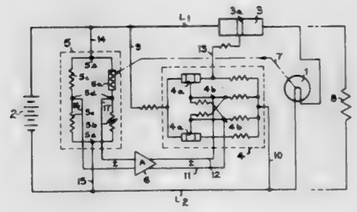
Filed Apr. 20, 1966, Ser. No. 543,949

Claims priority, application Switzerland, Apr. 26, 1965, 5,720/65

U.S. Cl. 315—158 **2 Claims**

Int. Cl. H05b *37/02, 39/04, 41/392*

A system for maintaining a constant effective voltage across a load which is supplied with power from a source such as a battery in which the voltage tends to decline with usage comprises an incandescent lamp which is at least part of the total load supplied by the battery, a bridge circuit having its input connected across the battery and including in one arm an adjustable resistance and in another arm a photo-sensitive resistance linked to the lamp to receive its radiation, the bridge circuit producing a control voltage at its output having a polarity and amplitude determined by the magnitude and sense of the difference between the voltages produced across the two



bridge resistances, a switching transistor located in the circuit between the battery and the load, and a transistorized timer controlled by the bridge output voltage which provides variably timed pulses to the control element of the switching transistor that effect such a change in the ratio of the conductive to cut-off times of the switching transistor as will tend to reduce the bridge output voltage to zero.

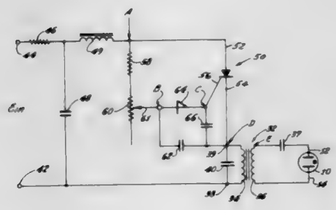
3,431,465
ILLUMINATING SYSTEM FOR SIMULATING BUBBLES

Clifford D. Skirvin, Pomona, Calif., assignor to Microdot Inc., Pasadena, Calif., a corporation of California

Continuation-in-part of application Ser. No. 482,493, Aug. 25, 1965. This application June 20, 1967, Ser. No. 655,979

U.S. Cl. 315—363 **17 Claims**

Int. Cl. H05b *39/09, 41/44*



This invention relates to a system for simulating the appearance of bubbles in a gas-filled tube. The operation of the tube can be controlled so that the shape of the simulated bubbles in the tube can be varied and so that the bubbles will appear to be moving in one direction or the other at a controlled speed. The pressure of the gas in the tube is less than that for producing arcing of the gas in the tube but greater than that for producing glow discharge of the gas in the tube. The circuitry associated with the tube has characteristics of producing a signal at a relatively high frequency with a considerable number of harmonic frequencies in the signal. The fundamental and harmonic components in this signal are operative on the gas at the reduced pressure in the tube to produce ionization of the gas at spaced positions in the tube. The ionization of the gas at the spaced positions in the tube simulates the appearance of bubbles.

3,431,466
ARC-SUPPRESSING CIRCUIT FOR SWITCHING DEVICES IN ALTERNATING CURRENT CIRCUIT

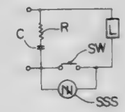
Toshio Watanabe and Shigetsugu Ukita, both of 480, Kami-Takaido, Suginami-ku, Tokyo, Japan

Filed July 20, 1966, Ser. No. 566,534

Claims priority, application Japan, July 30, 1965, 40/46,290; Aug. 18, 1965, 40/50,250

U.S. Cl. 317—11 **8 Claims**

Int. Cl. H02h *3/00, 7/00, 7/22*



An arc-suppressing circuit for an electrical switch connected in series with a load, the circuit comprising a two-terminal multilayer semiconductor element connected in parallel with the switch contacts. A number of different circuits associated with the switch and the semiconductor element, are disclosed, the circuits including resistors, capacitors, inductors, and transformers in various series and parallel combinations.

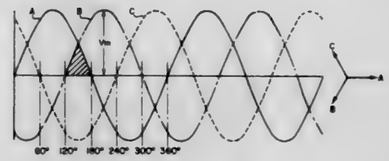
3,431,467
MINIATURE PHASE SEQUENCE SENSING CIRCUIT

Wendell Calfee, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 23, 1966, Ser. No. 596,500

U.S. Cl. 317—47 **6 Claims**

Int. Cl. H02h *3/26*



A phase sequence responsive control device in which one phase is connected to the anode and another phase to the gate of a controlled rectifier such that when the phases are in proper sequence the conducting time of the controlled rectifier will suffice to charge the capacitor connected to the cathode of the controlled rectifier to the voltage magnitude necessary to turn on a transistor switching device which is employed to actuate a mechanical relay. The aforementioned capacitor will not be charged to the required voltage magnitude when the phases are out of sequence.

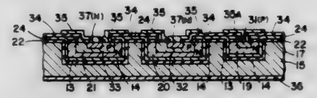
3,431,468
BURIED INTEGRATED CIRCUIT RADIATION SHIELDS

Tommie R. Huffman, Tempe, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Apr. 17, 1967, Ser. No. 631,427

U.S. Cl. 317—101 **2 Claims**

Int. Cl. H02b *1/04*



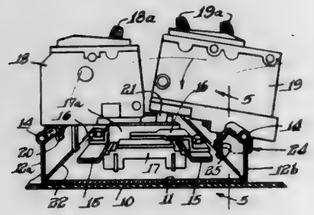
An integrated circuit having insulated regions with metallic buried layers for shielding such regions from

one another. Also, a metallic layer is disposed between the electrical insulation layer and the substrate with a collector metallic buried layer electrode formed inside the buried insulation layer. The various buried metallic layers in the insulated regions can be used to interconnect various devices of the integrated circuit structure.

3,431,469
ELECTRICAL PANELBOARD WITH CIRCUIT LIMITING MEANS

Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed July 5, 1967, Ser. No. 651,314
U.S. Cl. 317—119 **9 Claims**
Int. Cl. H02b *1/04*

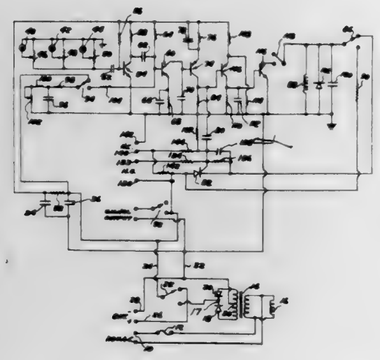


To limit the number of branch circuits that can be accommodated in a panelboard, the panelboard has a predetermined number of slots spaced along both mounting rails of a mounting pan. Each double-circuit circuit breaker has a mounting means which permits it to be mounted only at a mounting location having one of the slots. Each single-circuit circuit breaker has a mounting means which permits it to be mounted at any mounting location.

3,431,470
ELECTRONIC ALARM SYSTEM

Ariel I. Stiebel and Seymour A. Lippmann, Detroit, Mich., assignors to Federal Electronics, Inc., Wyandotte, Mich., a corporation of Michigan

Filed May 13, 1965, Ser. No. 455,573
U.S. Cl. 317—142 **2 Claims**
Int. Cl. H01h *47/18, 47/32, 47/04*

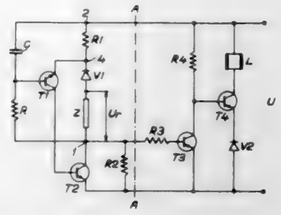


An alarm circuit providing an output signal for a predetermined length of time upon receipt of an input signal exceeding a threshold level, the input signal being supplied to an amplifier which triggers a solid state switch which in turn turns an alarm signal for a predetermined period of time.

3,431,471
STATIC TIME DELAY RELAY

Stig Aviander, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Nov. 4, 1966, Ser. No. 592,060
Claims priority, application Sweden, Nov. 5, 1965, 14,289/65
U.S. Cl. 317—142 **5 Claims**
Int. Cl. H01h *47/18*

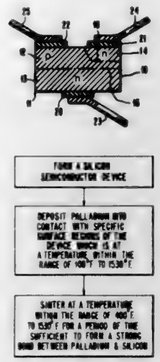


A static time delay relay having a time circuit and a level sensing circuit in which the delay is determined by the charging time of a capacitor in an RC-circuit. The time circuit consists of the RC-circuit and a voltage divider. The RC-circuit is connected in parallel with part of the voltage divider. The level sensing circuit is an elementary amplifier with two transistors, the base of the first transistor being connected to the voltage divider, and a relay coil induced in the emitter-collector circuit of the second transistor.

3,431,472
PALLADIUM OHMIC CONTACT TO SILICON SEMICONDUCTOR

Paul P. Castrucci, Poughkeepsie, and Raymond P. Pecoraro, Wappingers Falls., N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Continuation of application Ser. No. 563,418, July 7, 1966, which is a continuation-in-part of application Ser. No. 334,748, Dec. 31, 1963. This application Oct. 17, 1967, Ser. No. 675,866
U.S. Cl. 317—234 **6 Claims**
Int. Cl. H01l *3/00, 5/00*

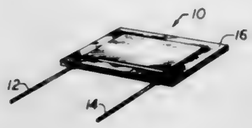


A method for forming ohmic contacts to a silicon body which includes first depositing the mineral onto the desired contact regions of a silicon body. The deposition is controlled such that the silicon body is maintained below the eutectic alloy temperature of the metal and the silicon body and in a temperature range of between 100° F. and 1530° F. The silicon body with the metal layer thereon is heated to a sintering temperature below the eutectic alloy temperature of the metal and silicon within the range of 400° F. to 1530° F. for a period of time sufficient to form a strong bond between the metal and the silicon body.

3,431,473
ENCAPSULATED CAPACITOR

George E. Cormier, Barre, Vt., and Paul H. Netherwood, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Apr. 4, 1967, Ser. No. 628,450
U.S. Cl. 317—258 **6 Claims**
Int. Cl. H01g *1/02, 1/10*

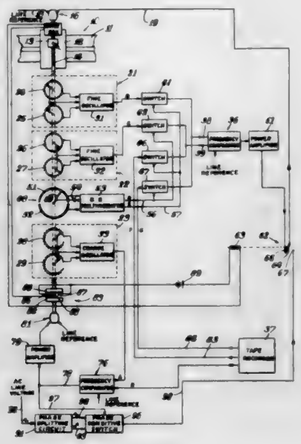


Fibrous material, impregnated with an insulative plastic, is arranged around a capacitor with opposing edges of the material bonded together by the plastic to provide a margin, and the leads of the capacitor are extended through the margin between opposing edges of the fibrous material.

3,431,474
VARIABLE FREQUENCY FINE-COARSE POSITION MOTOR CONTROL

William F. Van Ostrand, Hagerstown, Ind., assignor to Dynamic Precision Control Corporation, Hagerstown, Ind., a corporation of Indiana

Filed Sept. 3, 1964, Ser. No. 394,227
U.S. Cl. 318—18 **6 Claims**
Int. Cl. G05b *11/00*, **G01b** *11/16, 11/30*

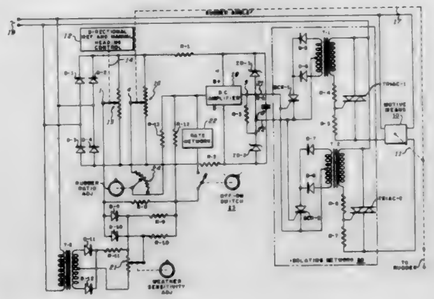


This disclosure deals with a multiple channel frequency modulated system for controlling the position of a movable structure. The system includes two fine channels which are alternately switched into controlling relation with the structure, the frequencies of the two fine channels being equal at the switching points to avoid switched transients. An override channel is also provided which is switched into controlling relation with the structure when the structure is more than a predetermined distance from a desired position.

3,431,475
SOLID STATE SERVO SYSTEM INCLUDING A UNIQUE D.C. CONTROL TRIGGERING A.C. POWER TO THE SERVOMOTOR

Charles R. Wesner, Crozet, Va., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Aug. 18, 1965, Ser. No. 480,633
U.S. Cl. 318—18 **4 Claims**
Int. Cl. G05b *11/01;* **H02p** *1/18, 1/54*

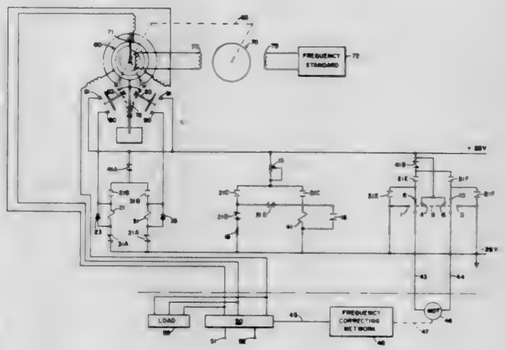


An improved position servomechanism for a ship's steering system utilizing solid state switching to electrically isolate the A.C. power circuit from the D.C. control circuit is disclosed. The system is controlled by a D.C. bridge circuit with a variable sensitivity control. The D.C. error signal from the bridge is summed into a D.C. amplifier with a variable dead zone circuit and an optional rate network. The unique feature of this invention is the manner in which the amplified D.C. control signal is used to trigger the A.C. power to the servo motor.

3,431,476
SYSTEM WITH A MOTOR CONTROLLED SYNCHRONOUS INVERTER

James B. Wright, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 23, 1966, Ser. No. 531,329
U.S. Cl. 318—18 **3 Claims**
Int. Cl. G05b *11/06, 13/02*

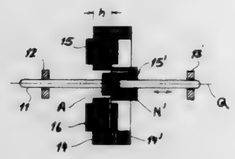


A frequency control system which is responsive to a frequency deviation from a set standard frequency and including a synchro error detector for sensing the frequency deviation which actuates an "on-off" servo motor control means for correcting the offset frequency algebraically until it is back to the set standard frequency.

3,431,477
ELECTRIC MOTOR WITH ALTERNATING LINEAR MOTION

Matei Marinescu, Bucharest, Rumania, assignor to Ministerul Industriei Constructiilor de Masini, Bucharest, Rumania

Filed Aug. 4, 1965, Ser. No. 477,209
U.S. Cl. 318—125 **6 Claims**
Int. Cl. H02p *1/38, 5/28, 7/36*

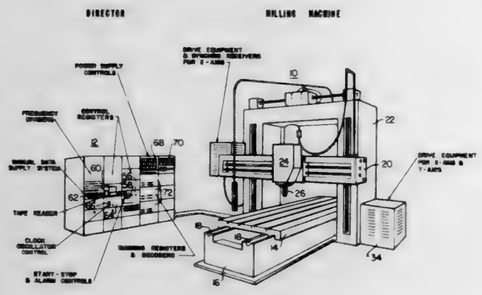


Electric motor whose stator comprises two sets of axially and peripherally staggered poles co-operating with an axially shiftable armature consisting of one or more magnetically permeable members alternately alignable with the two sets of poles in different axial positions of the armature, the two sets of poles being alternately energized via respective halfwave rectifiers in the course of a single cycle of an A-C power source.

3,431,478
MACHINE TOOL NUMERICAL CONTROL SYSTEM

Jay W. Forrester, Concord, William M. Pease, Weston, and James O. McDonough and Alfred K. Susskind, Concord, Mass., assignors, by mesne assignments, to John T. Parsons, Danville, Ill.

Application Dec. 14, 1962, Ser. No. 244,801, now Patent No. 3,226,677, dated Dec. 28, 1965, which is a division of application Ser. No. 304,294, Aug. 14, 1952, now Patent No. 3,069,608, dated Dec. 18, 1962. Divided and this application Nov. 26, 1965, Ser. No. 509,959
U.S. Cl. 318—162 **7 Claims**
Int. Cl. H02p *7/18, 7/52*

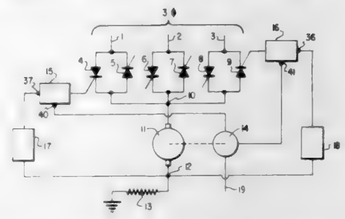


1. In a control system for a machine having a part whose movement varies the relative position of the work and a member acting on the work, means for feeding machine instruction data into the system including records each having a plurality of spaced points thereon representing in numerical form a desired movement of the part, means for sensing said points on the records and for establishing electrical representations corresponding thereto, means controlled by said electrical representations for moving the part in accordance with said machine instruction data, means responsive to malfunctioning of the control system for producing a control signal, and means responsive to said control signal for causing relative movement between said member and the work in such direction that said member is retracted from the work.

3,431,479
PHASE CONTROLLED POWER AMPLIFIER LOCKOUT CIRCUIT

John A. Joslyn, Dalton, Mass., assignor to General Electric Company, a corporation of New York

Filed Oct. 7, 1965, Ser. No. 493,634
U.S. Cl. 318—257 **3 Claims**
Int. Cl. G05b *5/01;* **H02k** *27/20;* **H02p** *7/06*

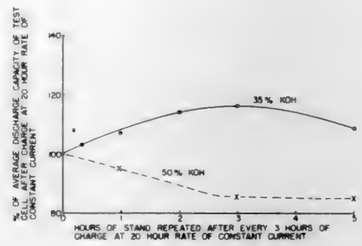


A lockout circuit is provided for a bidirectional rectification system supplying bidirectional power to a D-C motor which senses the direction of current flowing in the D-C motor and then inhibits or locks out the SCR's poled in a direction opposite the direction sensed. A resistor senses current in a desired direction and supplies a signal to a modified Schmitt trigger circuit which puts a low potential on a capacitor in the firing circuit for SCR's poled in an undesired direction so that no triggering pulses are supplied thereto. The lockout circuit also provides regenerative feedback from the rectification system output to input within the motor deadband region so as to reduce or eliminate the deadband.

3,431,480
METHOD FOR INCREASING THE DISCHARGE CAPACITY OF SILVER ELECTRODE STORAGE BATTERIES

Charles P. Wales, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 14, 1966, Ser. No. 558,212
U.S. Cl. 320—21 **8 Claims**
Int. Cl. H02j *7/00;* **H01m** *45/04*



An improvement in methods for increasing the discharge capacity of silver electrodes whereby the charge current is periodically interrupted.

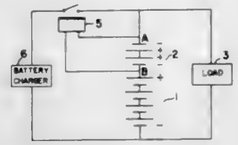
3,431,481
COULOMETER

Henry Lyall Ross Smyth, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada

Filed May 31, 1966, Ser. No. 553,736
Claims priority, application Canada, Nov. 19, 1965, 945,766
U.S. Cl. 320—48 **5 Claims**
Int. Cl. H02j *7/04, 7/16;* **G01r** *27/22*

A coulometer device comprising two batteries connected in series but with reversed polarity with the overall assembly connected in series with the battery or

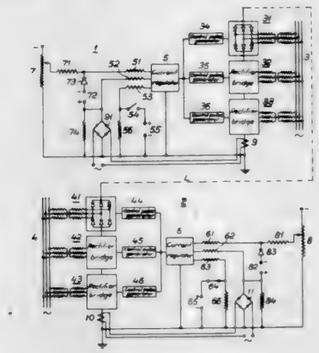
other electric supply whose amphere-hour input or output is to be measured. The voltage across the assembly which is normally near zero and changes relatively quickly to a positive or negative value when a predetermined amount of electric current has passed through the assembly in the same direction, is used for control or switching purposes, e.g., the connecting into the circuit of a battery charger.



3,431,482
POWER TRANSMISSION FOR HIGH VOLTAGE DIRECT CURRENT

Erich Uhlmann, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Jan. 20, 1967, Ser. No. 610,569
Claims priority, application Sweden, Jan. 21, 1966, 765/66
U.S. Cl. 321—2 **1 Claim**
Int. Cl. H02m *3/32*



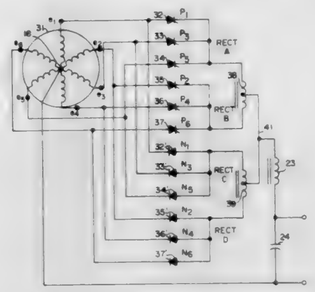
An HVDC-transmission system includes a rectifier station and an inverter station connected together with a DC transmission line. Each station is provided with a current regulator provided with a setting circuit for presetting a desired current value of the proper station and the current setting of the rectifier station exceeds that of the inverter station by a certain value, the so-called current margin. Furthermore, each current regulator is provided with a maximum current limiting circuit composed of a fixed voltage source and a variable voltage source counteracting each other. The fixed voltage source exceeds a value corresponding to a desired maximum transmission current, while the variable voltage source is proportional to the real transmission current.

3,431,483
CYCLOCONVERTER POWER CIRCUITS

David L. Lafuze, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Dec. 30, 1966, Ser. No. 606,365
U.S. Cl. 321—7 **23 Claims**
Int. Cl. H02m *5/16*

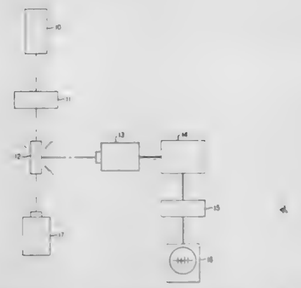
New, static cycloconverter power circuits are described which use interphase reactor windings to interconnect the outputs of selected numbers of phase controlled silicon controlled rectifiers into appropriate groupings within positive and negative banks of such rectifiers. By gating on the phase controlled SCR's in a proper sequence, high ripple frequencies are obtained in the output together with extended conduction intervals for the phase controlled SCR's. In this manner, highly efficient, large power rated cycloconverters can be constructed with a minimum weight of filter components and transmission line interconnections for a given output power rating.



3,431,484
SECOND HARMONIC GENERATOR

Yoh-Han Pao, Chatham, and Peter M. Rentzepis, Bernardsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 22, 1965, Ser. No. 489,402
U.S. Cl. 321—69 **5 Claims**
Int. Cl. H02m *5/16*



1. A second harmonic generator comprising, in combination, a laser source of coherent light radiation at a fixed fundamental frequency, and an organic molecular crystal which does not possess a center of inversion and which exhibits an absorption of at least 10 percent at the frequency of the second harmonic of the laser radiation, means for directing the output radiation of the laser onto the organic molecular crystal and output means for utilizing the second harmonic frequency.

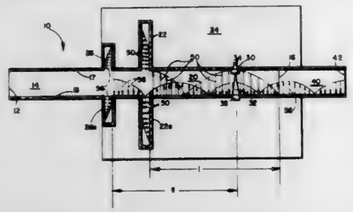
3,431,485
MICROWAVE HARMONIC GENERATOR INCLUDING A WAVEGUIDE HAVING OPPOSITELY EXTENDING CHANNELS DEFINING A RESONANT REGION THEREIN

James N. Lind, Costa Mesa, and Jerry C. Aukland, Fullerton, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,237
U.S. Cl. 321—69 **10 Claims**
Int. Cl. H03b *19/00;* **H03f** *7/00*

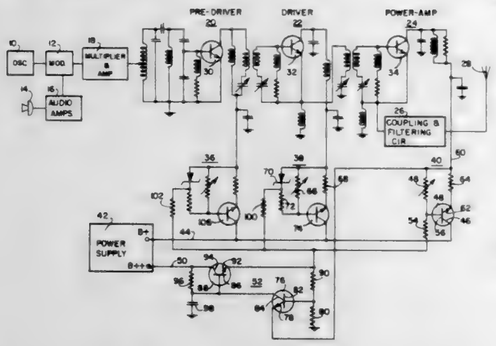
A microwave harmonic generator for producing an output at a frequency nf_n ($n=3, 4, 5 \ldots$) harmonically related to an input signal at frequency f_o. The device

comprises a rectangular waveguide capable of supporting the input signal in the lowest order transverse mode and terminating in a second waveguide beyond cutoff. A pair of channels extending oppositely from the top and bottom of the waveguide to a depth of one-quarter guide wavelength at $(n-1)f_o$ define a waveguide pseudocavity region resonant at $(n-1)f_o$. Interaction of the input signal with a varactor diode gives rise to energy within



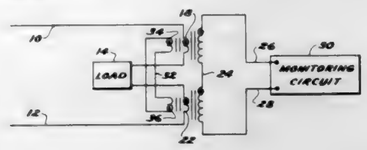
the psuedocavity region at harmonically related frequencies; this energy predominantly is at $(n-1)f_o$. Parametric interaction occurs between the confined energy (at $(n-1)f_o$) and the signal (at f_o) to produce an output at nf_o which may be extracted via the second waveguide. A second pair of grooves oppositely extending from the top and bottom of the waveguide function as a trap to prevent energy at the output frequency from propagating back down the input waveguide.

3,431,486
PROTECTION CIRCUIT INCLUDING POWER DISSIPATION LIMITING MEANS
Gene R. Fruehling and Jerome A. Johnson, Lombard, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 28, 1966, Ser. No. 590,351
U.S. Cl. 323—9 **8 Claims**
Int. Cl. H02h *7/20*



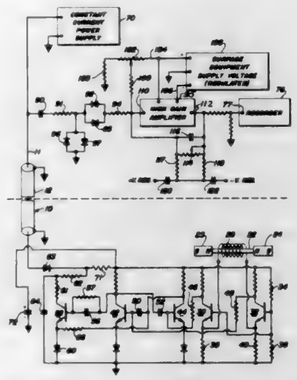
1. A control circuit for a transistorized regulating circuit having a transistor with first, second and third electrodes, direct current potential supply means coupled to the first electrode, a load circuit having a varying impedance coupled to the second electrode, a first bias circuit coupled to said third electrode to bias the transistor and cause an operating potential for the load circuit to appear at the second electrode so that an operating current flows through the load circuit and through the regulating transistor with the first bias circuit providing a bias of a value to cause the operating potential to decrease when the impedance of the load circuit decreases below a predetermined value, such control circuit including in combination, a control transistor having input, output and control electrodes, direct current means coupling the second electrode of the regulating transistor to said input electrode, means coupling said output electrode to the third electrode of the regulating transistor, and a second bias circuit connected to said control electrode to cause said control transistor to respond to a decrease in the operating potential to reduce the bias on the regulating transistor so that the operating current therethrough decreases in proportion to the value of the operating potential, whereby the power in the regulating transistor cannot exceed a predetermined safe value.

3,431,487
CURRENT PROBE WITH AUXILIARY WINDING FOR UNWANTED SIGNAL REJECTION
John W. Savage, Bethesda, Md., assignor to The Susquehanna Corporation, a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,818
U.S. Cl. 323—50 **7 Claims**
Int. Cl. H02m *5/12*



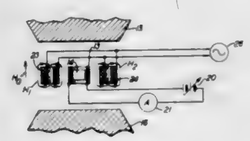
A specific example of the current probe is a transformer device which uses two ferrite torroidal cores, wound with a common secondary. Each core aperture is designed to be threaded by one wire of a conductor pair, and each wire serves as the transformer primary at its core. Common-mode currents through the two leads generate canceling EMF's in the secondary while differential currents generate adding EMF's. To overcome, in practice, the fact that measurable currents are derived at the secondary during the presence of common-mode currents, the two cores are looped by an additional wire. During the presence of common-mode currents, this wire carries a circulating current causing each primary to see essentially a zero impedance. As a result, essentially no voltage is developed across the secondary.

3,431,488
STABILIZED HIGH TEMPERATURE CASING COLLAR LOGGING SYSTEM UTILIZING THE ON-OFF RATIO OF A SQUARE WAVE AS A SIGNAL TRANSMITTING MEANS
Homer M. Wilson and Leroy C. De La Torre, Houston, Tex., assignors, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 448,948
U.S. Cl. 324—34 **16 Claims**
Int. Cl. G01r *33/00;* **G01v** *3/00, 1/40*



The casing collar logging system is provided with single collar locator coil which is connected between the differential inputs of a transistor differential amplifier in the subsurface unit and a free-running multivibrator is conductively connected to the differential outputs of the differential amplifier and develops a pair of square wave output signals which are supplied to an output switching transistor which connects an auxiliary load circuit across the bottom end of the cable. A constant current power supply at the earth's surface is employed to produce corresponding voltage impulses at the surface end of the cable corresponding to periods when the switching transistor is conducting. This voltage signal is selectively amplified in a high gain feedback amplifier and provision is made for preventing overload of the amplifier when the equipment is turned on.

3,431,489
NULL COIL PENDULUM MAGNETOMETER WITH MEANS FOR ESTABLISHING AN ALTERNATING MAGNETIC FLUX GRADIENT THROUGH THE NULL COIL
Thomas J. Bridges, Bernardsville, and Charles F. Hempstead, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 14, 1966, Ser. No. 534,207
U.S. Cl. 324—34 **7 Claims**
Int. Cl. G01r *33/00;* **G01n** *27/00*

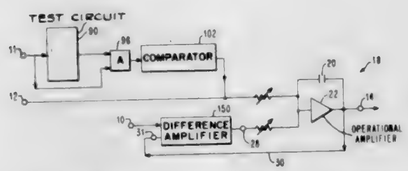


1. In a null coil magnetometer of the type comprising a mechanical resonant structure having two ends one end connected to a detecting device and having a null coil at the other end for containing a material sample, the magnetic moment of which is to be ascertained, said null coil being connected to a source of current, the improvement comprising:

first magnetic means for establishing a substantially uniform magnetic field through the null coil thereby imparting a magnetic moment to the sample;

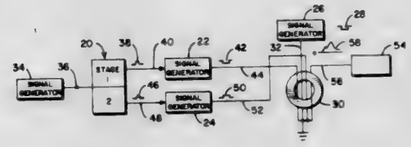
and second magnet means for establishing an alternating magnetic flux gradient through the null coil to exert a force on the sample.

3,431,490
APPARATUS FOR INDICATING RESPONSE OF A TEST CIRCUIT TO AN APPLIED PULSE
Theodore W. Kwap, Brewster, and Carl E. Ruoff, Apalachin, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 14, 1966, Ser. No. 520,617
U.S. Cl. 324—57 **19 Claims**
Int. Cl. G01r *27/00, 11/00*



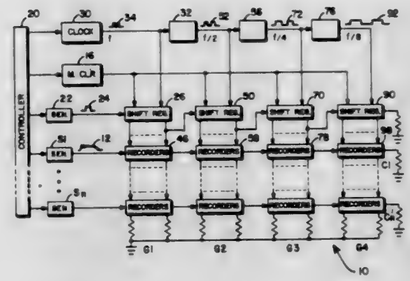
A circuit for providing an output voltage proportional to the area of input pulses. The circuit will provide an indication of the time delays of a test circuit, when input pulses are applied thereto. A pulse train is applied to one input of a two-input integrator, whose output voltage is an indication of the area of the input pulses. This output is fed back as one input to a single shot multi-vibrator another input being clock pulses which are related to said input pulses. The feedback signal controls the output from the single shot multi-vibrator, which output is the second input to said integrator. The multi-vibrator could be replaced by a differential amplifier, the clock pulses being replaced by voltage ramps.

3,431,491
MEMORY APPARATUS AND METHOD
Lanny L. Harklau, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1964, Ser. No. 412,706
U.S. Cl. 324—68 **8 Claims**
Int. Cl. G01r *33/02*



A detector for the determination of the time separation between successive pulses of an electrical signal. The time difference between successive pulses establishes a corresponding partially-switched stable-state in an inductively associated magnetizable memory element. Upon readout of the memory element the partially-switched stable-state provides a corresponding output signal that is a function of the time separation between the successive pulses.

3,431,492
TRANSIENT SIGNAL RECORDING SYSTEM UTILIZING DIFFERENT FREQUENCY RECORDING DRIVERS INCLUDING MEANS FOR SAMPLING DIFFERENT PORTIONS OF THE TRANSIENT SIGNAL AT DIFFERENT FREQUENCIES
Raymond H. James, Bloomington, Vincent J. Korkowski, Minneapolis, and Philip J. Nistler, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,404
U.S. Cl. 324—102 **10 Claims**
Int. Cl. G01r *27/28, 23/16;* **G01d** *9/04*



7. A recording system for the sampling of different portions of an electrical analog signal at different frequencies, comprising:

a plurality of groups of recording devices serially coupled for recording in each group a different portion of said analog signal;

a recording channel including:

sensor means for serially coupling said electrical analog signal to each of said groups of recording devices;

a plurality of strobe signal driver means each generating sampling pulse signals for sampling an associated portion of said analog signal, a separate one of said strobe signal driver means coupled to an associated separate group of said plurality of groups of recording devices;

first and second clock signal means of different frequencies;

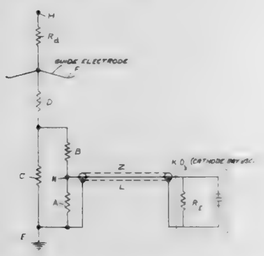
said first clock signal means coupled to said second clock signal means;

said first and second clock signal means coupled to associated ones of said strobe signal driver means for controlling the sampling frequency thereof and operable to cause an associated portion of said analog signal to be recorded in the associated group of recording devices at a plurality of samples at the frequency of said first and second clock signal means.

3,431,493
REFLECTION-FREE VOLTAGE DIVIDER FOR HIGH SURGE VOLTAGES

Walter Knoth, Oberengstringen, and Werner Lüscher, Zurich, Switzerland, assignors to Micafil A.G., Zurich, Switzerland, a joint-stock company

Filed Aug. 9, 1966, Ser. No. 571,284
Claims priority, application Austria, Sept. 17, 1965, A 8,513/65
U.S. Cl. 324—126 **1 Claim**
Int. Cl. G01r *1/00, 3/00, 13/20*



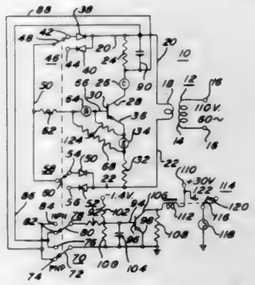
A two-stage reflection-free voltage divider of the ohmic type is provided for use in the measurement of high impulse voltage by means of a cathode ray oscillograph. The voltage divider includes a first string of resistances arranged in series and connected between the high voltage source and ground, a guide electrode on this resistance string, and a second string of resistances likewise arranged in series and connected between a medium voltage point on the first string of resistances and ground. A co-axial line leads to the oscillograph from the voltage divider, the inner conductor of the line being connected to a tap between resistances in the second resistance group and the outer conductor of the line being grounded.

3,431,494
IN-CIRCUIT TRANSISTOR TESTING APPARATUS

Thomas J. Ryan, Buckingham, Pa., assignor to American Electronic Laboratories, Inc., Colmar, Pa., a corporation of Pennsylvania

Filed Dec. 24, 1964, Ser. No. 420,913
U.S. Cl. 324—158 **9 Claims**
Int. Cl. G01r *31/00, 31/02, 31/22*

An in-circuit transistor testing apparatus comprising first, second and third connecting means for respectively electrically engaging the first base lead, the second and third leads of the transistor to be tested, energizing means having first and second terminals for delivering an alternating voltage, first and second impedance means respectively connecting the second and third connecting means with the first and second terminals of said energizing means, first and second unidirectional conducting means joining the first connecting means respectively with first and second terminals of said energizing means, a third

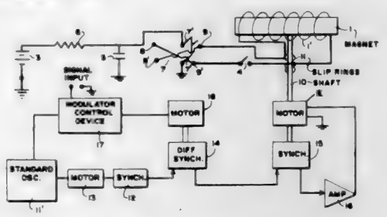


shunt impedance means connecting the first and second connecting means, and means for detecting directional current flow through said transistor and providing a predetermined signal for determining the operativeness of the in-circuit transistor being tested.

3,431,495
COMMUNICATION BETWEEN SUBMARINE AND AIRCRAFT

Melvin Kolbert, 24 Hollywood Drive, Plainview, N.Y. 11803

Filed June 16, 1965, Ser. No. 464,422
U.S. Cl. 325—28 **9 Claims**
Int. Cl. H04b *13/02*

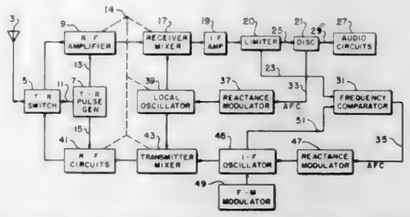


The system outlined is a communication system transmitter and receiver that employs a rotating dipole as a means of generating a modulated magnetic field capable of communication through salt water and/or air such as between an aircraft and submarine.

3,431,496
JAMMING TRANSCEIVER WITH AUTOMATIC FREQUENCY TRACKING OF JAMMED SIGNAL

Richard V. O'Donnell, Freehold, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed May 27, 1966, Ser. No. 554,296
U.S. Cl. 325—132 **8 Claims**
Int. Cl. H04k *3/00*



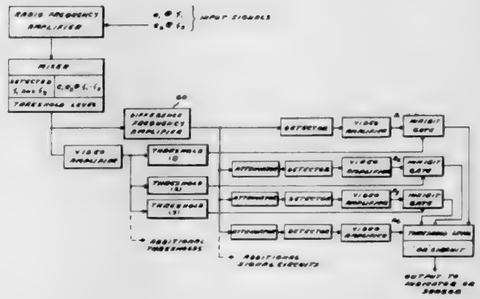
In a jamming transceiver the receiver and transmitter are alternately enabled whereby the receiver monitors the

signal of the enemy station and said signal is used to automatically adjust the transmitter frequency to track that of the received signal.

3,431,497
DISCONTINUOUS FORWARD AUTOMATIC GAIN CONTROL

Harold J. Manley, Sudbury, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 10, 1964, Ser. No. 395,624
U.S. Cl. 325—326 **9 Claims**
Int. Cl. H04b *1/16;* **H03k** *5/20*

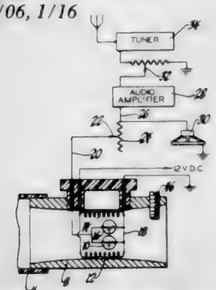


1. The improvement in a multifrequency pulse receiver having a signal proportional to the product of the individual signal levels of a received signal pair during the time of signal coincidence, and another signal proportional to the sum of the individual signal levels of said signal pair during the time of coincidence, said improvement comprising: means for variably amplifying the product signal; means responsive to the sum signal cooperating with the variable amplifying means for varying the amplification of the said product signal in inverse proportion to the level of the said sum signal; threshold means responsive to the amplified product signal providing an output when said amplified product signal exceeds a predetermined value of signal threshold.

3,431,498
RADIO VOLUME CONTROL PROPORTIONAL TO SPEED

John H. Varterasian, Livonia, and C. Harold Ek, Troy, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,407
U.S. Cl. 325—406 **7 Claims**
Int. Cl. H04b *1/06, 1/16*

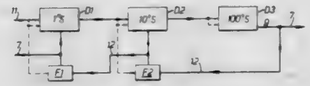


This invention relates to a control system for automatically adjusting the volume of an automobile radio receiver in proportion to the speed of the vehicle upon which it is mounted through the use of temperature sensitive resistance means connected in circuit with the loudspeaker and mounted in position to have air flow thereover proportional to car speed.

3,431,499
FREQUENCY DIVIDERS

Alan Godfrey, Hambledon, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Aug. 25, 1965, Ser. No. 482,552
Claims priority, application Great Britain, Sept. 4, 1964, 36,439/64
U.S. Cl. 328—48 **4 Claims**
Int. Cl. H03k *21/32*

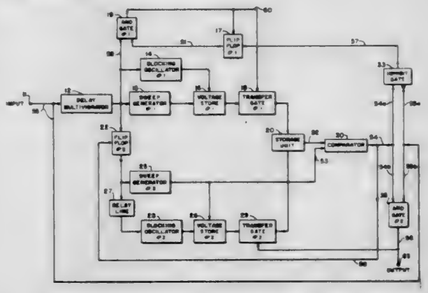


A frequency divider for affording a continuously variable division ratio under the control of switching means, in which control means is provided for changing the division ratio of the frequency divider by a predetermined amount from that set into it without further adjustment of said switching means.

3,431,500
INTERLACED PULSE TRAIN ANALYZER

Harold T. Freedman, Oakhurst, and Henry Schlussler, Lincroft, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 9, 1965, Ser. No. 512,834
U.S. Cl. 328—110 **11 Claims**
Int. Cl. H03k *5/20*



1. A device for sorting input pulses of a pulse train having a desired pulse repetition frequency from a series of input pulses comprising first generating means for generating a sequence of ramp voltages each of which are analogs of the time interval between a corresponding pair of adjacent input pulses, means for storing such voltage analog, voltage comparison means, transfer means for transferring said voltage analog to said comparison means, second generating means for producing a sequence of sweep voltages having the same sweep rate as said ramp voltages and initiated during the presence of certain of said input pulses, said comparison means providing a control pulse when the magnitude of the transferred voltage analog is equal to the magnitude of said sweep voltage, and control means responsive to concurrence of an input pulse and said control pulse for producing output pulses indicative of the presence of an input pulse from the desired pulse train.

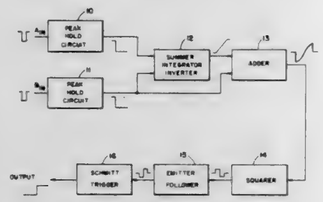
3,431,501
SOLID STATE INTERPOLATOR

Charles E. David and Hollis W. O'Mary, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

Filed Jan. 3, 1966, Ser. No. 518,491
U.S. Cl. 328—161 **8 Claims**
Int. Cl. G06g *7/16*

1. An interpolator circuit means for producing an output pulse in response to first and second input pulses, said

interpolator circuit means comprising: a first peak hold circuit having a first input terminal and a first output terminal; a second peak hold circuit having a second input terminal and a second output terminal, said first input terminal being adapted to receive said first input pulse, said second input terminal being adaped to receive said second input pulse; summing-integrating means having third and fourth input terminals connected respectively to said first and second output terminals, said summing-integrating means having a third output terminal, said summing-integrating means summing and integrating said outputs from said first and second peak hold circuits at said first and second output terminal and providing a positive ramp voltage at said third output terminal; adder means having fifth and sixth input terminals and a fourth output terminal, with said fifth and sixth input terminals connected respectively to said third and second output ter-

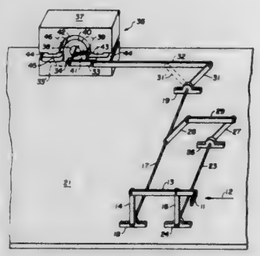


minals, said adder means adding said outputs from said third and second output terminals and providing a generally rising sawtooth voltage at its said fourth output terminal; squaring means having a seventh input terminal and a fifth output terminal, with said seventh input terminal connected to said fourth output terminal, said squaring means receiving said sawtooth voltage at its said seventh input terminal and producing a square wave at its said fifth output terminal; coupling means having an eighth input terminal connected to said fifth output terminal and with a sixth output terminal; and trigger means having a ninth input terminal and a seventh output terminal, with said ninth input terminal connected to said sixth output terminal, said trigger means providing an output pulse at said seventh output terminal when the input voltage at said ninth input terminal exceeds a predetermined level.

3,431,502
TARGET POSITIONER FOR ACCELERATOR EXTERNAL BEAM

Kenneth F. Stone and Leslie T. Jackson, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 10, 1968, Ser. No. 720,265
U.S. Cl. 328—235 **5 Claims**
Int. Cl. H05h *7/00;* **H02k** *33/12*

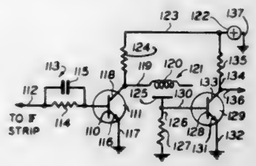


A target positioning apparatus of the flip-coil type for use in extracted beams from a charged particle accelerator, having a high speed coil drive which is independent of the accelerator magnetic field. A unique crank arm linkage from a drive motor to the target mount provides automatic damping of the target motion at the rest positions thereby preventing damage to a fragile target.

3,431,503
DETECTORS FOR FREQUENCY MODULATED (FM) SIGNAL RECEIVERS HAVING PULSE GENERATING CIRCUITRY

Harro K. Heinz, Flushing, and Karl Frei, New York, N.Y., assignors to Fisher Radio Corporation, Long Island City, N.Y., a corporation of New York

Filed Jan. 3, 1966, Ser. No. 518,459
U.S. Cl. 329—103 **5 Claims**
Int. Cl. H03d *1/18, 3/04;* **H03k** *3/00*

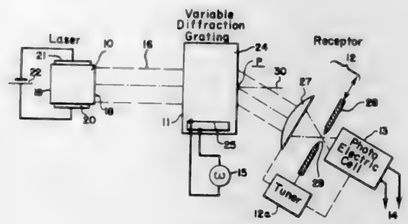


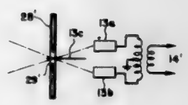
An FM demodulator, adapted to be connected to the intermediate frequency amplifier of an FM receiver, includes: a first pulse generator responsive to the FM signal for producing pulses having the same repetition rate as the frequency of the FM signal; a second pulse generator connected to the first pulse generator by an open-circuited delay line to stretch the width of the pulses produced by the second pulse generator; and connected to the output of the second pulse generator, and integrating circuit for recovering the information carried by the FM signal.

3,431,504
ACOUSTICAL LIGHT SIGNAL-TRANSLATING APPARATUS

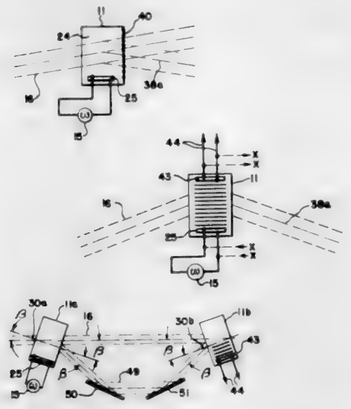
Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 333,549, Dec. 26, 1963. This application Aug. 10, 1964, Ser. No. 388,589

U.S. Cl. 329—129 **13 Claims**
Int. Cl. H03k *3/10*





Acoustic waves are propagated across a light beam to diffract a portion of the light. With modulated carrier signals creating the acoustic waves, a receptor of a diffracted order of the light demodulates the carrier modulation. Adjustment of the receptor permits selection from among a plurality of different modulated carriers. A dual-

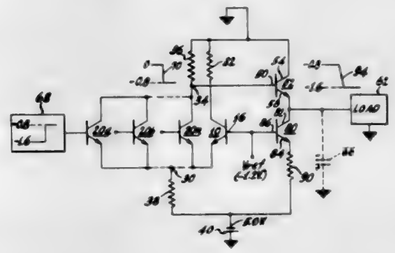


receptor arrangement enables FM discrimination. Modifications permit the adaptation of homodyning techniques and the generation of acoustic signals.

3,431,505
EMITTER FOLLOWER CIRCUIT HAVING SUBSTANTIALLY CONSTANT CURRENT EMITTER SUPPLY

Michael V. D'Agostino, Flemington, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,376
U.S. Cl. 330—14 **3 Claims**
Int. Cl. H03f *3/04, 3/68, 1/00*



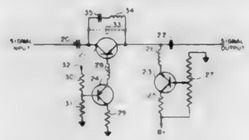
Disclosed herein is a current steering circuit having an emitter follower output. A substantially constant current source is connected in the emitter circuit of the emitter follower transistor to provide linear charge (or discharge) of the load capacitance upon switching.

3,431,506
ELECTRONICALLY VARIABLE RADIO FREQUENCY ATTENUATOR

Edward Hirshfield, San Jose, Edward Mizuno, Oakland, and Robert L. Trouard, Santa Clara, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 23, 1965, Ser. No. 466,488
U.S. Cl. 330—22 **17 Claims**
Int. Cl. H03f *3/04;* **H03g** *3/30*

An RF attenuator which includes a first transistor having the collector and emitter electrodes connected to the signal path. The control transistor has an input terminal connected thereto for connection to an RF signal level detector such as a typical automatic gain control circuit. Voltages applied to this input channel from the RF level

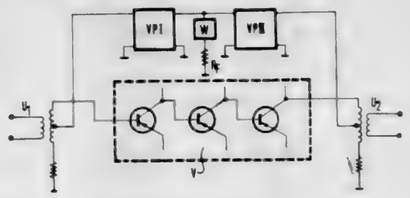


detector varies the bias on the first transistor such that the impedance presented to the RF signal path by the first transistor will vary inversely with the level of the input RF signal.

3,431,507
AMPLIFIER WITH TEMPERATURE COMPENSATION LYING IN THE FEEDBACK PATH

Johann Gerhard Zirwas, Unterpfaffenhofen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Sept. 24, 1965, Ser. No. 490,138
Claims priority, application Germany, Sept. 28, 1964, S 93,385
U.S. Cl. 330—23 **1 Claim**
Int. Cl. H03f *1/32, 3/04, 1/38*

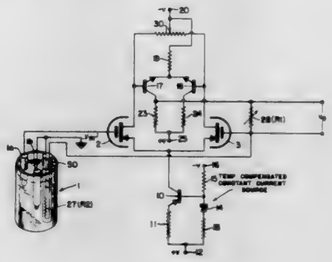


A magnetic-field-dependent resistor mounted in the feedback path of a line amplifier, the n-doping of the resistor being so selected that its temperature characteristic as well as the adjusting range achievable through it in a predetermined range satisfies the respective regulating function for the amplifier.

3,431,508
pH DETECTING DEVICE USING TEMPERATURE COMPENSATED FIELD-EFFECT TRANSISTOR DIFFERENTIAL AMPLIFIER

Daniel J. Soltz, Elkins Park, and Homer L. Greer, Bryn Athyn, Pa., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,834
U.S. Cl. 330—30 **6 Claims**
Int. Cl. H03f *3/14, 3/68*

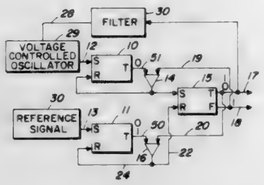


There is provided a solid state electronic pH detector.

3,431,509
PHASE LOCKED LOOP WITH DIGITALIZED FREQUENCY AND PHASE DISCRIMINATOR

John J. Andrea, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Jan. 8, 1968, Ser. No. 696,205
U.S. Cl. 331—25 7 Claims
Int. Cl. H03b *3/04*; H03k *9/06*; H03d *13/00*

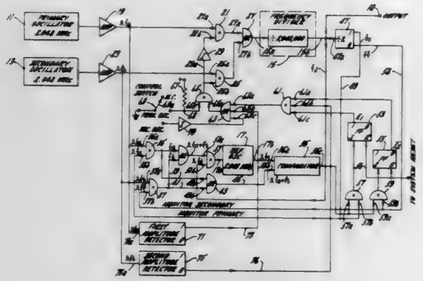


In a phase locked loop a digitalized frequency and phase detector employing first and second flip-flops which are caused to assume first states by a VCO signal of frequency f_{vco} and a reference signal of frequency f_r, respectively. First and second logic means are responsive to the two outputs of said first and second flip-flop means and to a said third flip-flop means to cause said third flip-flop means to act as a frequency discriminator by remaining substantially continuously in a first state when $f_{vco}>f_r$, and substantially continuously in its second state when $f_{vco}<f_r$, and to act as a phase detector by alternating states when $f_{vco}=f_r$.

3,431,510
OSCILLATOR SYSTEM WITH MALFUNCTION DETECTING MEANS AND AUTOMATIC SWITCHOVER CIRCUIT

John Crittenton Reis, Elmhurst, Bernard Irving Sommer, Glenview, and Thomas E. Ennis, Niles, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware

Filed Oct. 13, 1967, Ser. No. 675,111
U.S. Cl. 331—49 8 Claims

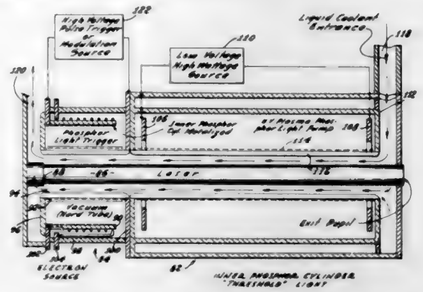


A high reliability oscillator system including a primary oscillator, a secondary oscillator, and a reference oscillator. The output frequencies of the primary and secondary oscillators are alternately compared with the output frequency of the reference oscillator and their amplitudes are also continuously monitored. Switch-over from the output of the primary oscillator to the output of the secondary oscillator occurs if there is an indication of frequency drift in the output of the primary oscillator but only if the output frequency and amplitude of the standby oscillator are indicated to be satisfactory.

3,431,511
OPTICAL MASER APPARATUS WITH PUMP TRIGGER

Norman F. Fyler, Menlo Park, Calif., assignor to Litton Precision Products, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 127,983, July 31, 1961. This application Jan. 8, 1962, Ser. No. 164,953
U.S. Cl. 331—94.5 3 Claims
Int. Cl. H01s *3/18*; H01j *1/62, 63/04*

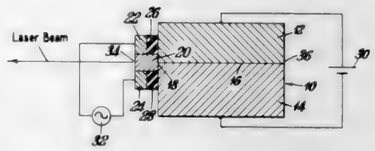


1. In combination: laser material responsive to radiation of a predetermined spectral distribution for excitation to an elevated energy state and for the discharge of coherent radiation as the material returns to lower energy states; first excitation means for supplying radiation of said predetermined spectral distribution to said laser material to excite said laser material to a threshold level just below the level for the discharge of coherent radiation; and second excitation means to supply radiation in said predetermined spectral distribution to said laser material in an amount sufficient to further excite said laser material from said threshold level to above said threshold level; said first excitation means including a gas plasma discharge means for creating a plasma discharge, phosphor material substantially surrounding a portion of said laser material, said phosphor material responsive to said gas plasma discharge for generating radiant energy, and means permitting coupling of said radiant energy to said laser material; said second excitation means including a cathode ray generator for emitting electrons, a phosphor material substantially surrounding a portion of said laser material responsive to bombardment by said electrons for generating radiant energy, and means permitting coupling of said radiant energy to said laser material.

3,431,512
JUNCTION LASER WITH CONTROLLED OUTPUT

David Redfield, Tarrytown, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed June 29, 1964, Ser. No. 378,584
U.S. Cl. 331—94.5 2 Claims
Int. Cl. H01s *3/10*

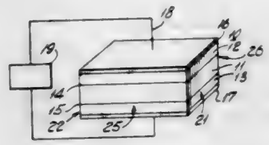


A junction laser is described in which a transparent insulating region of the same semiconductor material which comprises the body of the junction laser is disposed in direct contact with and aligned with the junction at the output end of the junction laser, together with means for applying an electrical control signal across the transparent insulating region to modulate the intensity of the emitted laser beam.

3,431,513
TWIN SEMICONDUCTOR LASER

Yasuo Nannichi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Sept. 27, 1965, Ser. No. 490,521
Claims priority, applications Japan, Sept. 28, 1964, 39/55,439, 39/55,440
U.S. Cl. 331—94.5 1 Claim
Int. Cl. H01s *3/16*; H03k *19/14, 23/12*

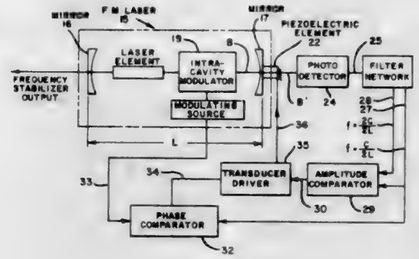


1. A twin semiconductor laser comprising
a crystal of a compound semiconductor material capable of laser action and having at least three conductivity regions therein,
said regions forming two P-N junction planes parallel to each other and spaced from each other at a distance ranging from 10 microns to 1 millimeter,
said crystal being provided with at least one pair of confronting smooth plane faces constituting a part of the surfaces thereof which faces are optically parallel to each other and perpendicular to each of said P-N junction planes,
and a pair of electrodes provided on at least a part of the surfaces other than said faces of said crystal for applying current through said material in a direction substantially perpendicular to each of said P-N junction planes.

3,431,514
LASER FREQUENCY STABILIZATION

Malin Kenneth Oshman, Sunnyvale, and Stephen E. Harris, Palo Alto, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 460,438, June 1, 1965. This application Dec. 29, 1967, Ser. No. 621,088
U.S. Cl. 331—94.5 8 Claims
Int. Cl. H01s *3/00*

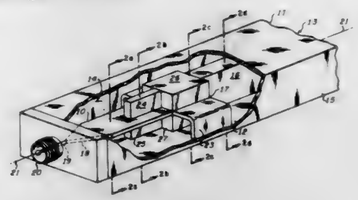


Laser stabilization apparatus and technique utilizing the fundamental and second harmonic of the average intermode spacing of an FM laser to provide an error discriminant. The fundamental frequency is compared with the second harmonic and the variation in beat amplitudes, which is proportional to deviation of the oscillation modes from the center of the atomic gain profile, is applied to a transducer to change the cavity size and stabilize the frequency. The phase of the fundamental frequency is detected and used to sense the direction of frequency deviation.

3,431,515
MICROWAVE TRANSITION APPARATUS

James L. Brediger, Clearwater, William B. Day, Dunedin, Louis J. Lavedan, Jr., Clearwater, and Joe K. Parks, Dunedin, Fla., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,411
U.S. Cl. 333—21 11 Claims
Int. Cl. H01p *1/16, 1/00*



Microwave transition apparatus for coupling a transmission line having a center conductor to a dielectrically loaded wave-guide, the apparatus including dielectric means shaped and dimensioned to match the impedances of the line and waveguide and provide an asymmetrical load therebetween for transforming a TEM mode propagating in the line to a dominant TE mode for propagation in the waveguide and conversely.

3,431,516
ELECTROMECHANICAL REVERBERATION DELAY DEVICE

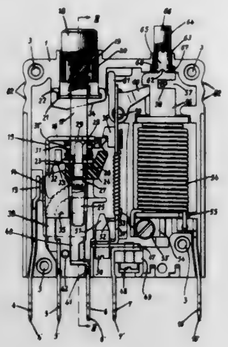
Hugo W. Schafft, Des Plaines, and Nikolai Goncharoff, Roselle, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 12, 1965, Ser. No. 479,219
U.S. Cl. 333—30 2 Claims
Int Cl. G10h *1/02*; H03h *7/30*



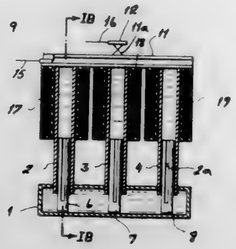
Reverberation device for producing delayed decaying electrical signals including a pair of vibration transmitting heilcal springs each having one end connected to an electro-mechanical transducer and the other end connected to a reflective suspension. Three links are provided interconnecting the springs, which are spaced at intervals between the middle of the springs and the ends connected to the reflective suspensions for holding the springs in spaced relation and for coupling vibrations between the strings to provide discontinuous paths between the transducers. The links prevent physical engagement of the springs when subjected to severe external vibration and shock.

3,431,517
TERMINAL BOARD WITH PLUG-IN TYPE PUSH-BUTTON-CONTROLLED CIRCUIT BREAKERS
Jakob Ellenberger, Altdorf, near Nuremberg, Germany, assignor to Firma Ellenberger & Poensgen G.m.b.H., Altdorf, near Nuremberg, Germany
Continuation of application Ser. No. 390,322, Aug. 18, 1964. This application Dec. 2, 1966, Ser. No. 598,878
Claims priority, application Germany, Nov 27, 1963, E 25,922
U.S. Cl. 335—35 8 Claims
Int. Cl. H01h *71/16, 73/30, 77/02*



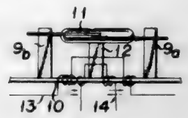
A terminal board with pushbutton controlled circuit breakers mounted thereon. The circuit breaker has prongs extending from one end of the breaker and the pushbutton extending from the opposite end of the breaker. The prongs of the circuit breaker are so arranged that the breaker may be plugged into the terminal board in either one of two orientations, which are reversed by 180°, without any effect on the circuit connections.

3,431,518
ELECTROMAGNETICAL PROTECTIVE RELAY FOR THREE-PHASE RECEIVERS
Egon Hoppe, 2 Str. Stirbei Voda, Bucharest, Rumania
Filed Feb. 2, 1967, Ser. No. 613,653
Claims priority, application Rumania, Feb. 3, 1966, 50,912
U.S. Cl. 335—102 4 Claims
Int. Cl. H01h *51/00, 51/30*



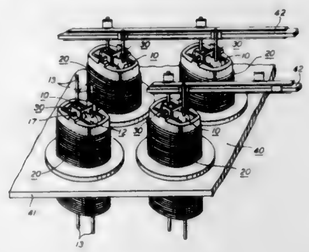
An electromagnetic relay for three-phase systems having three electromagnetic coils connected in series with the respective sides of a three-phase line and the respective sides of a three-phase load, each of the coils surrounding a respective tube containing a viscous fluid and co-operating with a magnetically permeable cone shiftable in the respective tube against the viscous drag of the fluid. The tubes lies in a common vertical plane and terminate at a movable armature carrying one contact of a pair of spring-biased switch contacts operable to de-energize the load or operate a warning system.

3,431,519
ELECTROMAGNET SWITCHING DEVICE IN COORDINATE ARRAYS
Giichi Ito, Masao Takamura, Katsuhiro Kato, and Hisaei Kikuchi, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, a corporation of Japan
Filed May 2, 1967, Ser. No. 635,567
Claims priority, application Japan, Sept. 29, 1966, 41/63,753
U.S. Cl. 335—112 1 Claim
Int. Cl. H01h *67/14, 1/66*



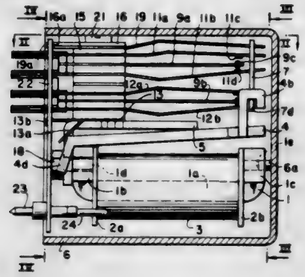
A plurality of sets of multiple straps constituting either lines or columns of a matrix consist of electroconductive magnetic straps, and act as magnetic cores. A plurality of reed switches are disposed in parallel with said electroconductive magnetic straps at cross points of lines and columns. One terminal of each of the reed switches is connected electrically and magnetically to said electroconductive magnetic straps and the other only magnetically connected thereto through a pair of magnetic yokes projecting from said electroconductive magnetic straps. A magnetic shunt is interposed between the air gap of each reed switch and an electroconductive magnetic strap to form a magnetic straps flux path at each cross point.

3,431,520
REED SWITCHES FUSED BY THEIR WALLS TO EACH OTHER AND A METAL SUPPORT MEMBER
William A. Lindenberger, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,897
U.S. Cl. 335—112 7 Claims
Int. Cl. H01h *67/14*



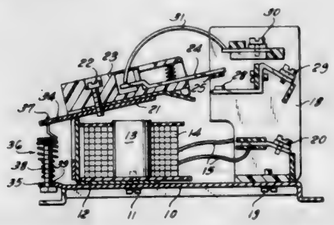
A switching device in which several separately encapsulated reed switches are fused to each other by their walls and to a π-shaped metal support member.

3,431,521
ELECTROMAGNETIC RELAY OF SMALL SIZE AND SIMPLE STRUCTURE WITH UNITARY CORE AND YOKE MEMBER
Masayuki Kusano, Susaka-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Feb. 20, 1967, Ser. No. 617,208
Claims priority, application Japan, Feb. 24, 1966, 41/11,179
U.S. Cl. 335—124 3 Claims
Int. Cl. H01f *3/00, 7/08*



A relay with an electromagnet having a unitary integral core and yoke member of U-shaped magnetic material having a linearly extending core portion. The core portion has an axis. A pair of spaced parallel identical yoke portions each extends from a corresponding axial end of the core portion perpendicularly with the axis. Each of the yoke portions has a width greater than the width of the core portion and an axial cross-sectional area greater than the axial cross-sectional area of the core portion.

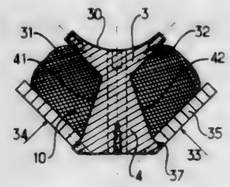
3,431,522
ADJUSTABLE SPRING TENSION MEANS
Alfred J. Kryspin, East Hanover, N.J., assignor to Automatic Switch Co., a corporation of New York
Filed Apr. 14, 1967, Ser. No. 630,978
U.S. Cl. 335—194 4 Claims
Int. Cl. H01h *3/22*



Two relatively movable parts, e.g., the core and armature of an electrical relay, are held in a predetermined relationship by a coil tension spring. One end of the spring is non-rotatably joined to one of the parts. The other end terminates in coils of smaller diameter than the remainder of the spring coils, and is threadably engaged by a screw carried by the other part. By turning the screw, the spring can be stretched or relaxed to vary its tension.

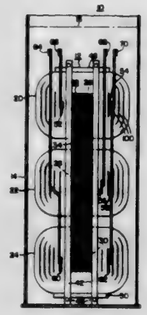
3,431,523
SUPERCONDUCTIVE QUADRIPOLE WITH MAGNETIC FOCUSING
Lucien J. Donadieu, Sevres, France, assignor to Compagnie Generale d'Electricite, Paris, France
Filed Apr. 18, 1967, Ser. No. 631,739
Claims priority, application France, Apr. 21, 1966, 58,399
U.S. Cl. 335—210 16 Claims
Int. Cl. H01f *7/22*

Quadripole with magnetic focusing including four superconducting coils in which each coil has a core having a metallic element of prismatic form, with a section



substantially in the form of two isosceles trapeziums having their small base in common, the equal sides of one of the trapeziums including an angle of between 30 and 50°.

3,431,524
POLYPHASE ELECTRICAL TRANSFORMER CONSTRUCTION HAVING VERTICALLY SUPERPOSED WINDING STRUCTURES WITH COOLING DUCTS
Alvin Y. Broverman, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 8, 1966, Ser. No. 556,207
U.S. Cl. 336—60 9 Claims
Int. Cl. H01f *27/08*

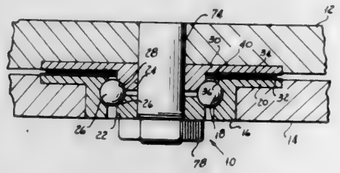


A fluid cooled, polyphase electrical transformer of the core-form type, having a plurality of vertically spaced, superposed winding assemblies disposed on a magnetic core. The winding assemblies have cooling ducts therein which extend horizontally between the ends of each of the winding assemblies, with the cooling ducts being arranged to provide a diagonally upward flow of the cooling fluid between the ends of the winding assemblies.

3,431,525
READILY ASSEMBLED RESOLVER HAVING MULTIPLE POLE PAIRS
Henry C. Buntschuh, New Hyde Park, N.Y., and Jean A. Duvoisin, Westport, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Original application May 4, 1962, Ser. No. 192,509, now Patent No. 3,332,144, dated July 25, 1967. Divided and this application Nov. 21, 1966, Ser. No. 606,490
U.S. Cl. 336—123 4 Claims
Int. Cl. H01f *21/04*

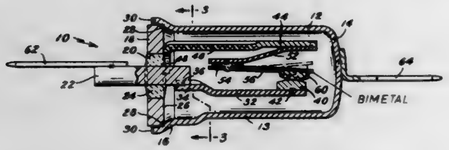
An air gap device in which the members carrying inductively cooperating planar conductive patterns are inte-

gral with or are connected directly to race forming members between which rolling elements are disposed to pro-



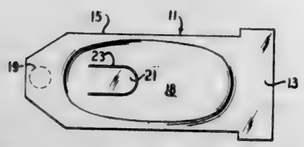
vide a compact assembly. The members all are formed of the same material.

3,431,526
MINIATURE ELECTRICAL SWITCH
Walter B. Ambler, Norwood, and Robert G. Mawney, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,672
U.S. Cl. 337—89 **11 Claims**
Int. Cl. H01h *61/02*



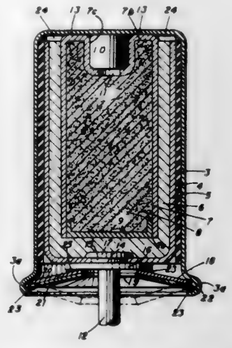
A miniature hermetically sealed thermally responsive electrical switch especially useful for placing directly on the windings of a fractional horsepower motor to serve as a protector therefor. The hermetic seal of the switch is protected from deleterious effects of arcs created on the making and breaking of the switch contacts by positioning the contacts relatively remotely from the seal and arranging the component parts such that the current path causes the arc to be blown away from the sealed end of the switch. A heater is provided which provides anticipatory heat and acts as a heat sink to extend the off (contacts-open) time of the switch. A simple header is provided having a sharp peripheral edge which acts as the weld projection for welding to a cooperating flared can. A stop member is provided in one embodiment to limit the travel of the thermally responsive snap acting disc and to adjust the contacts gap. The can is provided with a flattened area to facilitate attachment to the motor windings. Various terminal connectors are disclosed including a swaged terminal connector.

3,431,527
THERMOSTATIC SNAP-ACTING SWITCH
Henry David Epstein, Cambridge, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,243
U.S. Cl. 337—347 **3 Claims**
Int. Cl. H01h *37/12, 37/74*



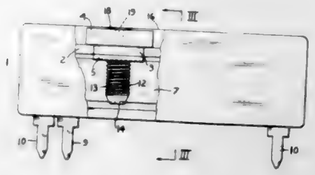
A dished, bimetal plate is mounted as a cantilever beam, being fixedly connected on one side of its dished portion to a base and carrying a movable contact on its free end on the opposite side of said dished portion. The movable contact is engageable and disengageable with a fixed contact on the base. A resilient tongue is struck out from the dished portion intermediate the fixed end of the plate and said contact. An adjustable fixed means engages the tongue to cause the latter to force the plate toward engagement of its movable contact with the fixed contact. The fixed contact and the metal of high coefficient of expansion are on the concave side of the dished portion of the plate so that upon heating thereof by flow of current therethrough or in response to change in ambient temperature, the plate will snap to an open position wherein said contacts are separated.

3,431,528
ALL-METAL SEAL AND THERMAL SWITCH
Eugene D. Richard, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed June 4, 1954, Ser. No. 434,686
U.S. Cl. 337—414 **5 Claims**
Int. Cl. H01h *37/76*



1. In a thermal battery, a hermetic seal-switch having contact means, an actuating member for engaging said contact means to maintain the battery hermetically sealed and in short circuit condition, said actuating member comprising a dished flexible snap disc provided with a perforation centrally thereof, said disc being initially flexed inwardly but adapted to flex outwardly to remove said short circuit from the battery, and supporting means for said dish-shaped member.

3,431,529
LINEAR MOTION POTENTIOMETER WITH PROTECTED SLIDE
Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1967, Ser. No. 674,969
U.S. Cl. 338—183 **2 Claims**
Int. Cl. H01c *5/02, 5/06*

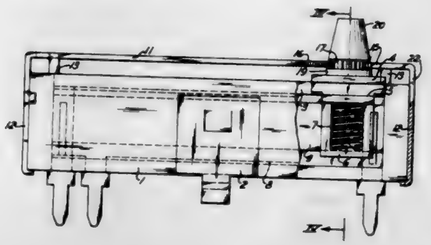


The elongated case of a linear motion potentiometer is provided in one of its side walls with a longitudinal slot containing a slide that is movable lengthwise of the

case for sliding a bridging contact along a collector and a resistance element in the case. The slotted wall of the case is provided along its opposite side edges with parallel flanges beside the slide that extend away from that wall at least as far as the slide extends in order to protect the slide from accidental actuation.

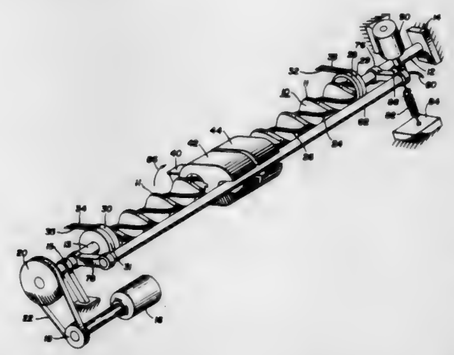
---

3 431,530
GEAR AND RACK POTENTIOMETER ACTUATOR
Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed July 9, 1968, Ser. No. 743,444
U.S. Cl. 338—183 **9 Claims**
Int. Cl. H01c *5/02*



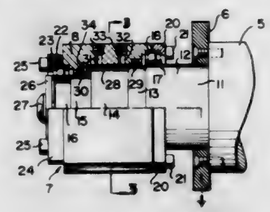
An elongated potentiometer housing has a longitudinal slot in its front, in which is disposed a slide that carries a bridging contact engaging resistance and collector elements inside the housing. A clip is secured to the outside of the housing and provided with a longitudinal slot in front of the housing slot. A side wall of the clip slot is provided with a row of rack teeth, with which registers a gear that is rotatably connected with the slide. There is provision for turning the gear to cause it to travel along the row of rack teeth and thereby move the slide along the housing slot.

3,431,531
POTENTIOMETER DRIVE UNIT
Otto H. Sahmel, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Aug. 16, 1967, Ser. No. 661,015
U.S. Cl. 338—196 **11 Claims**
Int. Cl. H01c *5/00*



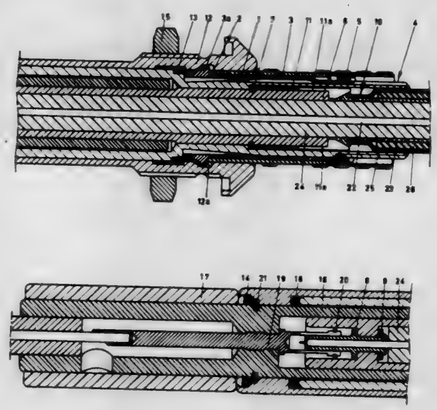
A servo driven indicator is movably mounted on an elongated shaft having a helical drive track. A potentiometer is mounted on the drive shaft comprising at least one elongated resistance element disposed along the helical track. A contact on the indicator provides a sliding connection with the resistive element.

3,431,532
ROTARY CONDUCTOR
John T. Cary, Markham, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 5, 1966, Ser. No. 570,580
U.S. Cl. 339—8 **8 Claims**
Int. Cl. H01r *35/00*



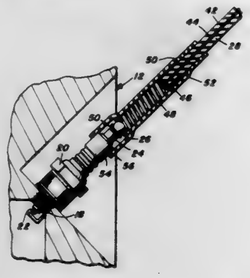
This disclosure relates to a rotary conductor for transferring electrical energy involving high levels of current wherein a liquid metal is utilized to accomplish an electrical connection between two relatively large moving conductors. The disclosure particularly relates to the solution of the problem of reducing the results of an electromagnetic force on the liquid metal due to the offsetting of the conductors axially of a shaft of the conductor and the elimination of the amalgamation of the liquid metal and the metal of the rotary conductor.

3,431,533
ELECTRICAL CONNECTING DEVICE FOR HIGH TENSION WIRE
Leon Mouttet, Rte. de Lausanne, 1110 Morges, Switzerland
Filed Jan. 30, 1967, Ser. No. 612,588
Claims priority, application Switzerland, Feb. 2, 1966, 1,448/66
U.S. Cl. 339—14 **3 Claims**
Int. Cl. H01r *3/06, 13/52, 17/18*



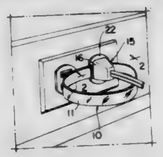
Electrical connecting device for high tension wire wherein the outer conductive parts and the insulating parts and one of the members of the device extend beyond the inner conductive parts of the same section of the device and the external conductive and insulating parts of each section of the device have about the same length so that when the male and female parts are united, contact is established between the outer conductive parts while the inner conductive parts are still spaced one from the other, the distance at this moment between the inner conductive parts being determined in proportion to the nominal voltage of the central conductor to be linked.

3,431,534
SECONDARY IGNITION WIRE END ASSEMBLY
Charles D. Schrader, 119 E. Monroe St., Alexandria, Ind. 46001, and Max A. Schrader, Sr., Chesterton, Ind. (339 W. Olive St., Monrovia, Calif. 91016)
Filed Sept. 6, 1966, Ser. No. 577,467
U.S. Cl. 339—26 **2 Claims**
Int. Cl. H01r *13/24, 13/44*



A secondary ignition wire end assembly defined by a conductive, stiff and resilient coil spring tightly threaded onto the dielectric resilient covering of one end of a secondary ignition wire with several convolutions of the coil spring passing over a backturned exposed end of the conductive core of the ignition wire and at least the endmost convolution of the spring threadedly engaged with the ignition wire inwardly deflected and tightly frictionally engaged with the resilient outer covering of the ignition wire so as to prevent axial as well as rotational shifting of the coil spring relative to the ignition wire covering. The coil spring includes a free end projecting outwardly beyond the ignition wire for telescopic engagement over a spark plug terminal and the endmost convolution of the free end of the spring is inwardly deflected for tight frictional engagement with and biting into a diametrically reduced portion of the spark plug terminal with which the free end of the coil spring is engaged.

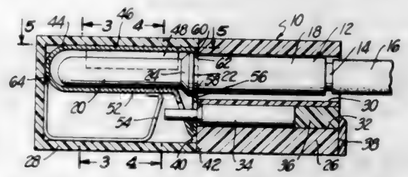
3,431,535
ELECTRIC-PLUG PULLER AND INSULATOR
Alfred R. Munyon, 14 W. 2nd Ave., Mantua, N.J. 08051
Filed May 18, 1967, Ser. No. 639,562
U.S. Cl. 339—45 **6 Claims**
Int. Cl. H01r *13/62, 13/00*



The instant invention is concerned essentially with a loop device for extension about an electric plug between the plug body and a socket, and to a location remote from the socket for insulating the plug from the socket and affording convenient plug-withdrawal means.

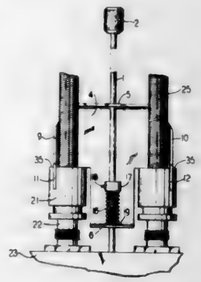
3,431,536
WIRE TERMINATION ELECTRICAL JUNCTION AND CONTACT RETENTION SYSTEM
Byron W. Olson, 518 Santa Barbara, Fullerton, Calif. 92632
Filed July 5, 1967, Ser. No. 651,196
U.S. Cl. 339—74 **12 Claims**
Int. Cl. H01r *13/62*

A wire termination has a termination body which includes a cylindrical nose and a retention flange. The rear of the body is crimped upon the wire in conventional manner. The termination body is inserted into a contact body. The contact body is inserted into a contact body. The contact body has contact blades which mechanically and electrically engage the cylindrical nose. At least one of the blades is resilient to maintain contact pressure.



This resilient blade engages on the outer side of the retention flange on the termination body to retain the termination body in place. A release pin, accessable from the exterior is arranged to move the resilient blade so that it can disengage from the retention flange so that the termination body can be withdrawn.

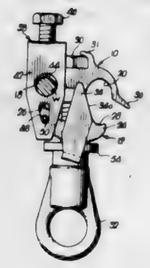
3,431,537
CLAMPING MEANS FOR RETAINING ELECTRIC PLUG AND SOCKET CONNECTORS
Alfred S. Klingenberg, Whippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 23, 1966, Ser. No. 604,365
U.S. Cl. 339—75 **3 Claims**
Int. Cl. H01r *13/54, 33/12*



A clamping device for firmly holding a pair of plugs mounted in receptacles on a panel. The device comprises a rod having a pin at its lower end adapted to be received and held within a socket located between the receptacles on the panel. The rod carries a coiled spring which has its upper end held by an enlargement on the rod while its lower end is adapted to be pressed against a bracket which is slidably mounted on the rod. The upper portion of the bracket is formed with two cross-portions extending outwardly from its center and provided with flanges having downwardly extending locking portions. The insertion of the rod into its socket compresses the spring thereby forcing the crosspieces and their flanges firmly against the tops of each of the plugs. The two locking portions of the flanges engage side portions of the plugs so as to prevent the bracket from tilting and slipping off the tops of the plugs.

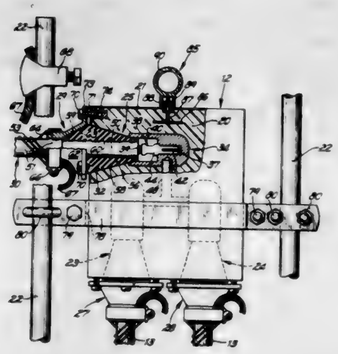
3,431,538
TAP CLAMP
David C. Hubbard and David B. Zumsteg, Centralia, Mo., assignors to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed Feb. 16, 1967, Ser. No. 616,507
U.S. Cl. 339—95 **8 Claims**
Int. Cl. H01r *7/24, 7/18, 13/00*

A tap clamp comprises a pair of opposed clamping elements which present two pairs of opposed jaws adapted to receive a line conductor and a tap wire respectively. The contact face of each jaw is elongated and longitudinally serrated, and all of the jaw faces extend in parallelism to thereby grip and hold the conductor and the wire in parallel relationship. The elements are made of a resilient material such as aluminum to compensate for temperature variations and creepage, and to cause the serrations to scrub away nonconductive surface coatings on the conductor and the wire as the elements are drawn together.



The tap wire is initially seated and positively held on the face of one of the wire-receiving jaws during installation of the clamp by a stirrup which partially embraces the jaw, the stirrup having apertured legs through which the tap wire is inserted. When the clamp is later removed from the conductor, the stirrup serves to hold the tap wire securely to the clamp to maintain the wire under control at all times.

3,431,539
CABLE JUNCTION
John V. Majewski, Hales Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,499
U.S. Cl. 339—103 **8 Claims**
Int. Cl. H01r *13/58, 13/46, 9/22*



A transformer housed below ground has, supported adjacent thereto, a cable junction comprising a block of insulation coated with conductive paint and having shielding pin socket contacts embedded therein and integrally joined together. Cable end terminals are inserted in the contacts, and are secured by a gland which is compressed about each cable end. A plug having the general dimensions of a gland seals an unused socket contact opening.

3,431,540
LAMP BASE
Bernard Kopelman, Salem, and Robert M. Shimer, South Hamilton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 701,625
U.S. Cl. 339—112 **4 Claims**
Int. Cl. H01r *13/46;* **H01j** *7/24*



A heat sink arrangement for a lamp having a press-seal at one end. The arrangement includes an outer metal cannister within which angled fins of a saddlelike heat sink contact the inner corners of the cannister. The main straight legs of the heat sink saddle lies adjacent the press-seal portion of the lamp where excessive heat generated in the seal area is dissipated through the fins to the outer metal cannister.

3,431,541
COMBINATION MOUNTING PIN AND SOLDER WELL TERMINAL
Charles P. De Vito, Park Ridge, Ill., assignor to Alcon Metal Products, Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,927
U.S. Cl. 339—128 **10 Claims**
Int. Cl. H02b *1/02;* **H01r** *9/08, 5/04*

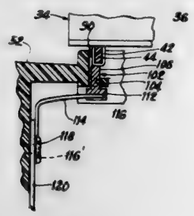


For retaining a component carrying member and assembly on an apertured panel a hollow pin has a base fixed to the member by shoulder structure which serves as a stop against the face of the panel with a portion of the pin extending through the aperture and having locking lugs struck out therefrom with locking edges engaging the opposite face of the panel from the shoulder structure.

3,431,542
FLASHCUBE SOCKETS
George Irwin, Highland Park, Ill., assignor to Imperial Camera Corp., Chicago, Ill., a corporation of Delaware
Filed June 23, 1967, Ser. No. 648,281
U.S. Cl. 339—247 **14 Claims**
Int. Cl. H01r *3/00, 13/24*

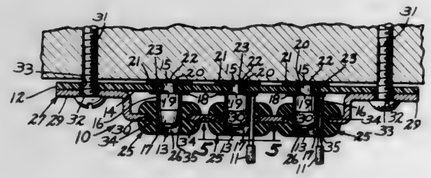
A flashcube socket having contact blocks for engaging the terminal wires on a flashcube, said contact blocks being made of sintered metal and being slidable in guide openings formed in a supporting member adjacent the

rotary turret which supports the flashcube, flexible resilient wire spring arms being provided to bias the contact blocks outwardly, each contact block having an outer portion with a contact surface and ramps leading up to



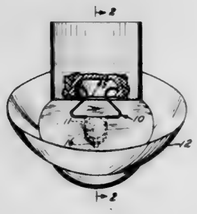
the contact surface, and an inner portion with flange means for limiting the outward movement of the block, and a recess for receiving and retaining the corresponding spring.

3,431,543
QUICK CONNECT ELECTRICAL CONNECTOR
Kermit W. Pietenpol and Wayne E. Schober, Minneapolis, Minn., assignors to Viking of Minneapolis, Div. of The Telex Corporation, South Minneapolis, Minn., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,454
U.S. Cl. 339—254 **2 Claims**
Int. Cl. H01r *13/24, 13/62*



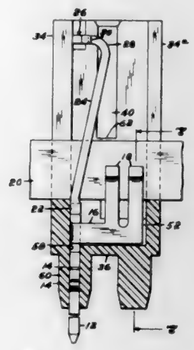
A plurality of post type electrical terminals secured in spaced relationship on an insulated base and provided with bracket means mounting an annular resilient member in concentric relation to each of the terminals to permit electrical connection of lead wires of an electrical device.

3,431,544
ANODE CONNECTOR
Louis J. Valle, Ardsley, and Otto Hoegrel, Westchester, N.Y., assignors to National Tel-Tronics Corporation, Yonkers, N.Y., a corporation of New York
Filed Aug. 25, 1967, Ser. No. 663,261
U.S. Cl. 339—256 **5 Claims**
Int. Cl. H01r *13/24, 5/10, 15/12*



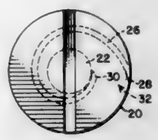
An anode connector clip suitable for use in connecting the anode terminal of cathode ray tubes, said clip being formed of flat spring steel strip material in an annealed state, and including means for engaging the insulation of a conductor comprising a pair of elongated ribs, the configuration of which tends to maintain said conductor in engaged condition, as well as separate resilient means for engaging the anode terminal.

3,431,545
CONNECTOR WITH BUS BAR
Edward Kirby, Los Angeles, Calif., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed May 18, 1967, Ser. No. 639,333
U.S. Cl. 339—258 **5 Claims**
Int. Cl. H01r *13/24*



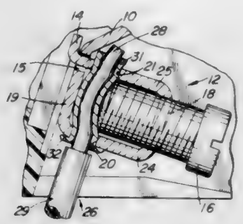
A printed circuit connector comprising a slotted body of insulation which holds a contact having spring fingers for engaging the printed circuit board; and having flexible arms to engage a commoning strip which extends through the body slot, for connection to other such contacts. The contact has a lead-wrapping tail which extends through a panel-mounting bushing portion of the body.

3,431,546
WIRE COILING AND CLAMPING FASTENER
William D. Averill, Cincinnati, Ohio, assignor of forty-five percent to Richard Clifton, Cincinnati, Ohio and forty-five percent to John H. Doepke, Cincinnati, Ohio
Filed Mar. 1, 1967, Ser. No. 619,762
U.S. Cl. 339—269 **38 Claims**
Int. Cl. H01r *7/16;* **F16b** *39/22*



The fastener has a clamping surface to cooperate with a terminal member or support, for clamping therebetween an end of a wire, or an electric conductor, to effect a mechanical or an electrical connection. Means is provided in the form of a spiral guide, to guide an inserted end of the wire automatically into a favorable position for effective clamping, both prior to and during manipulation of the fastener to tighten the connection. The fastener may be formed as a screw, a nut, a washer or the like, or possibly a fastener which is frictionally anchorable by pressing it to a home position.

3,431,547
ELECTRICAL JOINT STRUCTURE INCLUDING ALUMINUM WIRE AND COPPER CONNECTOR
Charles F. Latter, Brampton, Ontario, Canada, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Nov. 21, 1966, Ser. No. 595,973
Claims priority, application Canada, May 2, 1966 959,316
U.S. Cl. 339—272 **1 Claim**
Int. Cl. H01r *7/14*



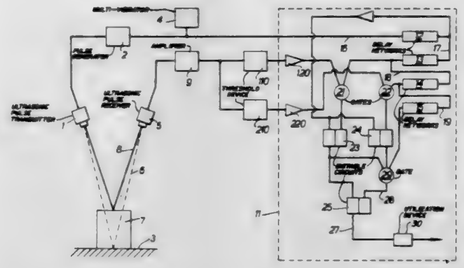
The connector is hollow and generally rectangular with wall portions on four sides. A screw threaded through an opening in one wall portion clamps an aluminum wire against an opposite wall portion. The other two wall portions are provided with aligned openings for receiving the wire, which is enclosed by a copper tube having a flange engaging the outer surface of one of the other two wall portions to limit the extent of insertion of the wire into the aligned openings.

3,431,548
COVERING FOR A CONNECTING MEMBER
Willard Le Roy Busler, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Feb. 27, 1964, Ser. No. 347,907, now Patent No. 3,332,053. Divided and this application June 12, 1967, Ser. No. 645,310
U.S. Cl. 339—278 **2 Claims**
Int. Cl. H01r *3/00;* **B65d** *21/02, 83/00*



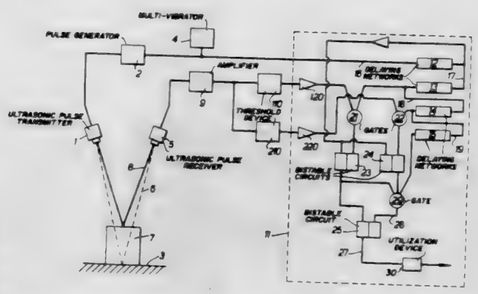
A carrier strip for carrying elements thereon to an operating station of a machine comprises an elongated strip of flexible material with the elements being spaced therealong at substantially equal intervals. Slots and holes are disposed in the strip at substantially equal intervals with a hole between adjacent slots. One of the holes and slots is engageable by a feeding means of the machine to feed the elements successively to the operating stations, and one of the slots and holes is engageable by a holding means adjacent the operating station to hold the element on which an operation is to be performed in place thereat. Means are provided on the strip at each end thereof for connecting the strip to like strips thereby forming a continuous line of strips.

3,431,549
ULTRASONIC PRESENCE DETECTORS
Luigi de Tullio, Ian Leighton Spence, and Rodney Mostyn, Essex, England, assignors to The Marconi Company, Limited, London, England, a British company
Filed June 21, 1967, Ser. No. 647,828
Claims priority, application Great Britain, June 21, 1966, 27,712/66
U.S. Cl. 340—1 **8 Claims**
Int. Cl. G01s *9/66*



Known vehicle detectors indicate that a vehicle is present by observing pulses received during a predetermined time interval during which pulses reflected from the top of a vehicle may be expected to be received. With such vehicle detectors for commercial vehicles, carrying absorbent loads, the cessation of pulses falsely indicates the vehicle leaving the zone of observation when it has not. In the invention vehicles set up a responded condition which is only terminated upon receipt of road echo. The vehicle echoes and road echoes may be submitted to different levels of threshold limiting to take into account the alternation of road echo in snow.

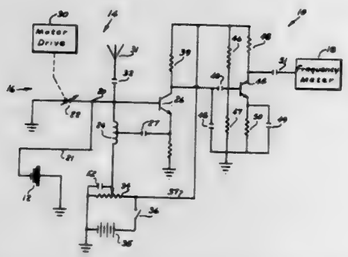
3,431,550
ULTRASONIC PRESENCE DETECTORS
Ian Leighton Spence, Sunnyhill, Derbyshire, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 17, 1967, Ser. No. 661,330
Claims priority, application Great Britain, Aug. 23, 1966, 37,838/66
U.S. Cl. 340—1 **2 Claims**
Int. Cl. G01s *9/66*



Ultrasonic presence detectors use the difference in transit time between a pulse transmitted to and reflected from a reference surface and a pulse similarly transmitted when a body is present to detect the body. The body produces a responded condition which is only changed on receipt of a reflected echo. In these arrangements the reflected pulses are branched into two paths in one of which is a normally open gate which is closed at times in which pulses reflected from the reference

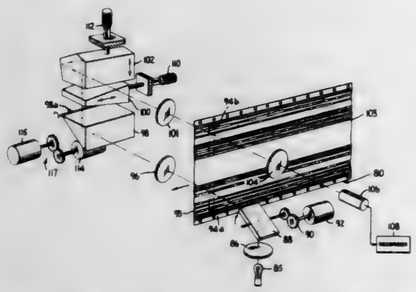
surface would be received and in the other is a normally closed gate which is open at those times. The invention uses a threshold responsive device in one path which passes only signals exceeding a certain minimum amplitude.

3,431,551
DEPTH MEASURING ULTRASONIC TRANSCEIVER
William L. Rollwitz and Harvey S. Benson, San Antonio, Tex., assignors to Southwest Research Institute, a trust estate of Texas
Filed Oct. 2, 1967, Ser. No. 672,092
U.S. Cl. 340—1 **5 Claims**
Int. Cl. G01s *9/66*



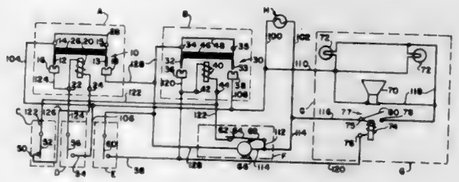
An ultrasonic frequency modulated echo system which utilizes a single transducer for both transmitting and receiving. The simplified circuitry includes a single transistor with a tank circuit which functions as a transmitter-oscillator as well as a mixer and amplifier for the echo signals. The frequency of the oscillator is linearly modulated by a motor driven capacitor, and the beat frequency signals representative of range are indicated on a frequency meter and also sent to a remote location by radio waves.

3,431,552
METHOD AND APPARATUS FOR ANALYZING LOGGING INFORMATION
Richard F. Weeks, Bristol, and Gyula L. Samodai, Danbury, Conn., assignors to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 15, 1967, Ser. No. 616,360
U.S. Cl. 340—15.5 **20 Claims**
Int. Cl. G01v *1/00*



Method and apparatus for analyzing logging information recorded in first and second successions of mutually displaced transverse lines across at least one elongate, continuously moving film, in which each succession represents a logging record and is simultaneously scanned with a transversely sweeping light beam to develop an electrical signal representing a comparison between the optical transmissivities of segments of the corresponding recorded lines of each succession. A line scan tube or rotating mirror forms a transversely moving image of the small segments of a line in the first record and the image is projected onto the corresponding line of the second record, in the same relative position, the final image intensity being modulated by the information contained on both records and converted into an electrical signal by a photodetector. The amplitude of the electrical signal represents an instantaneous value of a desired logging parameter.

3,431,553
SIGNAL, ESPECIALLY FOR TRAFFIC AND VEHICLE CONTROL
George Osmond, 25287 Delmar Ave., Hayward, Calif. 94542
Filed Oct. 22, 1965, Ser. No. 501,201
U.S. Cl. 340—31 **5 Claims**
Int. Cl. G08g *1/00*; **G08b** *23/00*



A signal which is responsive to movement of an object, e.g., an automobile in one direction, e.g., when entering a ramp for an express highway from the wrong direction, but not in the reverse direction, e.g., when leaving a ramp in the right direction, and a timing means for restoring the parts to the initial condition after a predetermined time following operation of the signal. The signal may include visible and/or audible means such as lights and a horn. The movement responsive means includes, in the case of a roadway signal, three roadway switches spaced a suitable distance apart and relays that connect the signal to the source of power when the switches are actuated by an automobile moving over the switches in the wrong direction for a predetermined time under control of the timing means, whereupon the circuit is broken to restore the parts to the initial condition ready for operation in the same way by another automobile moving over the switches in the wrong direction. Movement of the automobiles in the right direction does not connect the signal to the power source.

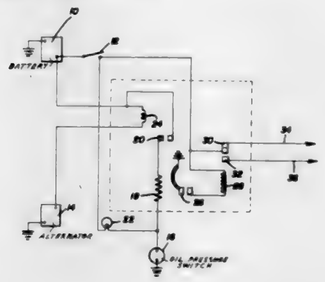
3,431,554
TRAFFIC SAFETY SIGNALLING SYSTEM
Helen C. Barbie and John N. Barbie, both of 8 St. Mark Drive, St. Peters, Mo. 63376
Continuation-in-part of application Ser. No. 417,048, Dec. 9, 1964. This application Aug. 8, 1967, Ser. No. 659,140
U.S. Cl. 340—32 **9 Claims**
Int. Cl. G08g *1/02, 1/04*



A traffic signalling system establishing no-passing zones on either side of the hillcrest signal lamp assembly for warning motorists approaching the hillcrest of the unseen approach of vehicles in the other direction. The zones are established by roadway embedded components

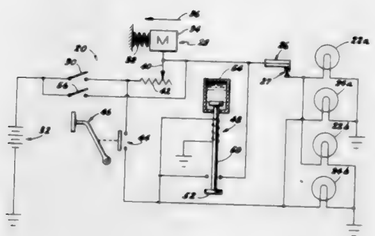
cooperating with an electrical control circuit at the lamp assembly protectively enclosed by a roof that also mounts a horizontal reflector of the optical type to augment the warning provided by the signal lamps at night.

3,431,555
OIL PRESSURE GUARDIAN
Anthony J. Leone, 21 Sunnie Terrace, West Caldwell, N.J. 07006
Filed June 1, 1966, Ser. No. 554,444
U.S. Cl. 340—60 **1 Claim**
Int. Cl. G08b *23/00, 21/00*



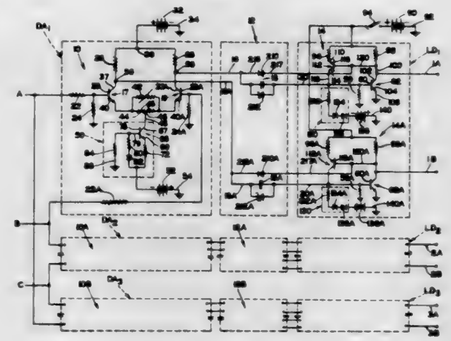
A low oil pressure warning system which automatically warns a person when oil is low in pressure and which automatically shuts down an engine at the same time, the system including an electric circuit that contains a normally open switch controlled by a relay, and wherein there is a heater device which after a time delay activates a thermal switch.

3,431,556
DECELERATION WARNING SIGNAL SYSTEM
Marvin D. Johnson, 5507 23rd Ave. S., Minneapolis, Minn. 55417
Filed Mar. 15, 1966, Ser. No. 534,372
U.S. Cl. 340—72 **10 Claims**
Int. Cl. B60q *1/44*



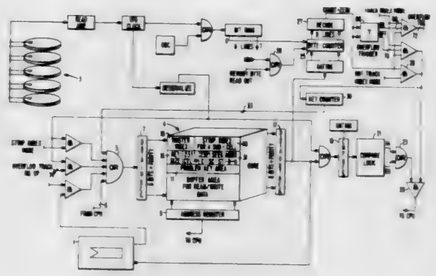
A deceleration warning signal system for indicating the deceleration of a vehicle, the vehicle having a source of electrical energy, the system comprising a signal lamp, a flasher switch, and a variable resistance means connected in series with the energy source, the flasher switch being of the current responsive type in which the rate of flashing is dependent on the magnitude of the current flowing therethrough, the variable resistance means being responsive to the deceleration of the vehicle to reduce the resistance in proportions to the rate of deceleration of the vehicle. In this system, the current through the flasher switch and the signal lamp increases with increasing deceleration, with a corresponding increase in flashing rate and the observed light intensity.

3,431,557
MONITORING SYSTEM FOR REDUNDANT SYSTEMS
Frank J. Thomas, West Paterson, and Robert L. Worthington, Wayne, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,426
U.S. Cl. 340—147 **10 Claims**
Int. Cl. H04q *1/20, 1/22*; **G08b** *21/00*



A monitoring system for redundant systems whereby the presence of a failure in the redundant system causes an indicator lamp to light and to remain lit even though the switching over to the back-up redundant system has removed the presence of the failure signal. The failure indicating lamp would remain lit until maintenance technicians have manually turned off the failure indicating lamp.

3,431,558
DATA STORAGE SYSTEM EMPLOYING AN IMPROVED INDEXING TECHNIQUE THEREFOR
Anthony J. Capozzi, Binghamton, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 4, 1966, Ser. No. 570,364
U.S. Cl. 340—172.5 **11 Claims**
Int. Cl. G11b *13/00*

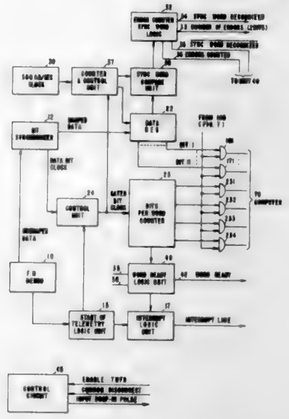


This indexing system for a large capacity storage device is key oriented. Each data record in the system is identified by a key number. The key numbers are also stored in a second storage system in the same order and format as they occur in the first, large capacity, system. The second storage system is searched for the desired key number. As the search narrows to the key, the address of the record is developed. The position of the record in

the first storage system corresponds to the position of the key in the second storage system. Means are provided to determine and keep track of the address being searched. When the key is located, this means contains the address corresponding to the location of the record in the first storage means. Since the high order bits of the address are determined first, it is possible to initiate movement of the access mechanism for the large capacity storage system before the complete address is derived.

3,431,559
TELEMETRY WORD FORMING UNIT
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention by Hoyt Holmes Nelson, Palo Alto, Calif.
Filed May 17, 1967, Ser. No. 640,785
U.S. Cl. 340—172.5 **10 Claims**
Int. Cl. G11b *13/00*

A unit for use with and between a telemetry demodulator and a computer, receiving telemetry data, to form the data into discrete multibit words. The unit includes a counter resettable at any count up to 11, a register and SYNC-word-detecting circuit, each of 11 bits which equal the bit length of each telemetered data word. Data bits from the demodulator are transferred bit by bit to the register in the unit and transferred to the computer as groups of 11 bits when the count in the counter reaches 11 or when the 11 bits in the register—in conjunction with the SYNC word-detecting circuit—are indicative of the SYNC word assumed to be telemetered. The computer

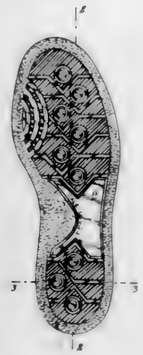


uses the count in the counter when a SYNC word is recognized to redistribute, previously received bits into discrete 11-bit data words.

DESIGNS

MARCH 4, 1969

213,414
SOLE FOR FOOTWEAR
Frank L. Dittmar, Jr., Aberdeen, Md., assignor to Bata Shoe Company, Inc., a corporation of New York
Filed Feb. 8, 1968, Ser. No. 10,510
Term of patent 14 years
U.S. Cl. D2—320
Int. Cl. D2—*04*



213,415
SOLE FOR FOOTWEAR
Damon G. Meadows, Bel Air, Md., assignor to Bata Shoe Company, Inc., a corporation of New York
Filed Feb. 8, 1968, Ser. No. 10,511
Term of patent 14 years
U.S. Cl. D2—320
Int. Cl. D2—*04*



213,416
SOLE FOR FOOTWEAR
Frank L. Dittmar, Jr., Aberdeen, and Charles Rutherford, Belcamp, Md., assignors to Bata Shoe Company, Inc., a corporation of New York
Filed Feb. 8, 1968, Ser. No. 10,512
Term of patent 14 years
U.S. Cl. D2—320
Int. Cl. D2—*04*



213,417
SOLE FOR FOOTWEAR
Frank L. Dittmar, Jr., Aberdeen, Md., assignor to Bata Shoe Company, Inc., a corporation of New York
Filed Feb. 8, 1968, Ser. No. 10,513
Term of patent 14 years
U.S. Cl. D2—320
Int. Cl. D2—*04*



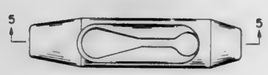
213,418
FASTENER FOR ATTACHING A BUTTON
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Feb. 19, 1968, Ser. No. 10,622
Term of patent 14 years
U.S. Cl. D2—423
Int. Cl. D2—*08*



213,419
BUCKLE
Etienne Aigner, New York, N.Y., assignor to The Villager, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 8,749
Term of patent 14 years
U.S. Cl. D2—432
Int. Cl. D2—*08*



213,420
DIAPER FASTENER
Robert L. Fleming, 260 E. 262nd St., Euclid, Ohio 44132
Filed Feb. 9, 1968, Ser. No. 10,520
Term of patent 14 years
U.S. Cl. D2—448
Int. Cl. D2—*08*



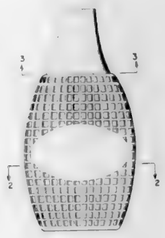
213,421
JAR
Donald J. Leary, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Mar. 4, 1968, Ser. No. 10,834
Term of patent 14 years
U.S. Cl. D9—101
Int. Cl. D9—*01*



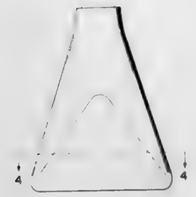
213,422
BOTTLE
William C. Sizer, P.O. Box 832, Minneapolis, Minn. 55440
Filed Mar. 8, 1968, Ser. No. 10,903
Term of patent 3½ years
U.S. Cl. D9—118
Int. Cl. D9—*01*



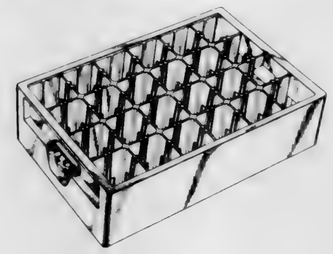
213,423
BOTTLE
James L. Linn, Jr., Maumee, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Feb. 13, 1968, Ser. No. 10,561
Term of patent 14 years
U.S. Cl. D9—137
Int. Cl. D9—*01*



213,424
BOTTLE
Richard L. Weckman, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Mar. 4, 1968, Ser. No. 10,848
Term of patent 14 years
U.S. Cl. D9—149
Int. Cl. D9—*01*



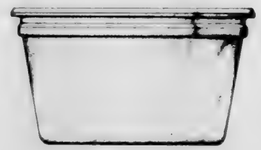
213,425
CASE FOR BEVERAGE BOTTLES OR THE LIKE
Kashichi Hirota, 691 Sanda Higashi-cho, Hachioji-shi, Tokyo, Japan
Filed May 8, 1967, Ser. No. 7,006
Claims priority, application Japan Nov. 11, 1966
Term of Patent 14 years
U.S. Cl. D9—177
Int. Cl. D9—*04*



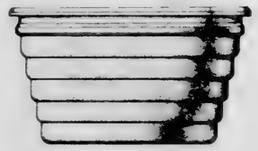
213,426
STAND-UP DISPENSING TUBE
Donald Howard Goff, Mountainside, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 1, 1967, Ser. No. 8,476
Term of patent 14 years
U.S. Cl. D9—194
Int. Cl. D9—*04*



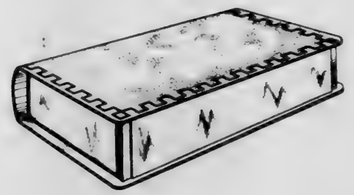
213,427
PACKAGING TUB
Danny J. Batdorf, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Feb. 23, 1968, Ser. No. 10,700
Term of patent 14 years
U.S. Cl. D9—219
Int. Cl. D9—*04*



213,428
PACKAGING TUB
Danny J. Batdorf, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Feb. 23, 1968, Ser. No. 10,685
Term of patent 14 years
U.S. Cl. D9—220
Int. Cl. D9—*02*



213,429
MATCH BOX
Harry Epstein, P.O. Box 27, Willowdale, Ontario, Canada
Filed Dec. 18, 1967, Ser. No. 9,843
Term of patent 14 years
U.S. Cl. D9—223
Int. Cl. D9—*04*



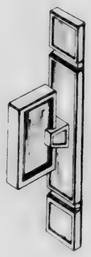
213,430
BOTTLE CLOSURE
Stephen J. Kneapler, Miami, Fla., assignor to Richford Corporation, Farmingdale, N.Y., a corporation of New York
Filed Nov. 17, 1967, Ser. No. 9,459
Term of patent 14 years
U.S. Cl. D9—285
Int. Cl. D9—*99*



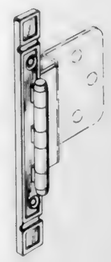
213,431
KNOB
Leland George Stone, Mundelein, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Mar. 25, 1968, Ser. No. 11,338
Term of patent 14 years
U.S. Cl. D8—144
Int. Cl. D8—*03*



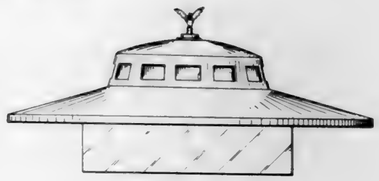
213,432
COMBINED PULL AND BACKING PLATE
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed June 6, 1968, Ser. No. 12,240
Term of patent 14 years
U.S. Cl. D8—138
Int. Cl. D8—*03*



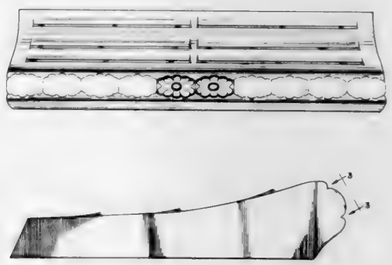
213,433
HINGE
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed June 6, 1968, Ser. No. 12,238
Term of patent 14 years
U.S. Cl. D8—195
Int. Cl. D8—*03*



213,434
FOOD SERVICE BUILDING
Leonard N. Bassin, 6843 Cathedral, Birmingham, Mich. 48010
Filed Mar. 22, 1968, Ser. No. 11,100
Term of patent 14 years
U.S. Cl. D13—1
Int. Cl. D25—*04*



213,435
COPING FOR A SWIMMING POOL WALL
Leslie N. Jefferson, Rte. 3, Box 357, Canby, Oreg. 97013
Filed May 3, 1968, Ser. No. 11,768
Term of patent 14 years
U.S. Cl. D13—1
Int. Cl. D25—*01*



213,436
PLASTIC MOULDING
Daniel Geltner, Fox Chapel, Pa., assignor to Parkins Products Corp., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1967, Ser. No. 9,374
Term of patent 14 years
U.S. Cl. D13—6
Int. Cl. D25—*03*



213,437
EXCAVATING MACHINE
Leo Barnes, Cudahy, Nolan K. Rhoades, Beloit, and Robert E. Talley, Racine, Wis., assignors to Bucyrus-Erie Company, Milwaukee, Wis., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 9,613
Term of patent 14 years
U.S. Cl. D14—3
Int. Cl. D12—*13*



213,438
CHAIR
George Alfred Koch, Cobourg, Ontario, Canada, assignor to Curtis Products Limited, Cobourg, Ontario, Canada
Filed July 24, 1967, Ser. No. 7,959
Term of patent 14 years
U.S. Cl. D15—1
Int. Cl. D6—*01*



213,439
ARM CHAIR
George Alfred Koch, Cobourg, Ontario, Canada, assignor to Curtis Products Limited, Cobourg, Ontario, Canada
Filed July 24, 1967, Ser. No. 7,960
Term of patent 14 years
U.S. Cl. D15—1
Int. Cl. D6—*01*



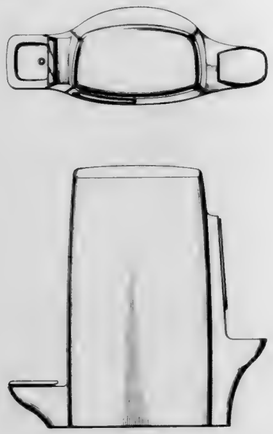
213,440
SOLVENT DISPENSER FOR A WATER SOFTENING SYSTEM OR THE LIKE
Leo F. Wildgen, Hennepin County, Minn., assignor, by mesne assignments, to Union Tank Car Company, a corporation of Delaware
Filed July 18, 1966, Ser. No. 3,108
Term of patent 14 years
U.S. Cl. D23—3
Int. Cl. D23—*01*



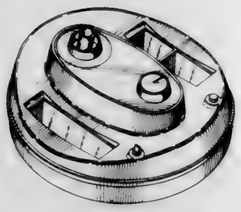
213,441
FAUCET HANDLE OR THE LIKE
John L. Frankel, Los Angeles, and Steve Kelsey, Granada Hills, Calif., assignors to Harvey Aluminum Incorporated
Filed June 30, 1967, Ser. No. 7,659
Term of patent 14 years
U.S. Cl. D23—28
Int. Cl. D23—*01*



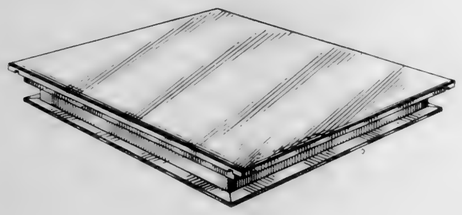
213,442
MODULAR BATHROOM UNIT
Myron J. Ament, Bethel Park, Pa., assignor to The Wallace-Murray Corporation, a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 9,183
Term of patent 14 years
U.S. Cl. D23—49
Int. Cl. D23—*02*



213,443
FACIAL VAPORIZER
Douglas W. Anderson, Palatine, Ill., assignor to Hankscraft Company, Reedsburg, Wis., a corporation of Wisconsin
Filed Apr. 8, 1968, Ser. No. 11,356
Term of patent 14 years
U.S. Cl. D23—148
Int. Cl. D23—*04*



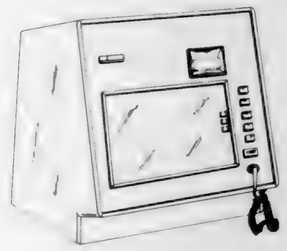
213,444
SKYLIGHT
Dennis E. Helma, 8117 Ozanam, Niles, Ill. 60648
Filed Sept. 29, 1967, Ser. No. 8,795
Term of patent 14 years
U.S. Cl. D23—153
Int. Cl. D23—*04*



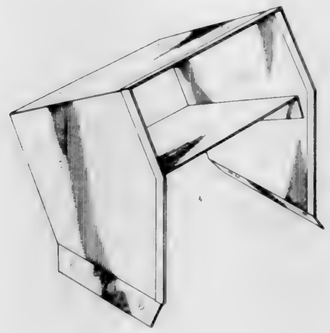
213,445
MAGNETIC TAPE TRANSPORT
Leon C. Sanderson, Culver City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 23, 1967, Ser. No. 9,121
Term of patent 14 years
U.S. Cl. D26—5
Int. Cl. D14—*02*



213,446
OPTICAL INPUT UNIT
Edward J. Sabella, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 15, 1968, Ser. No. 11,470
Term of patent 14 years
U.S. Cl. D26—5
Int. Cl. D16—*08*



213,447
HOUSING FOR AN AUTO STEREO UNIT
Randall C. Small, 7650 Balboa Blvd., Van Nuys, Calif. 91406
Filed Dec. 7. 1967, Ser. No. 9,697
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D6—*01*



213,448
HEARING AID
Ronald R. Giller, Danbury, Conn., assignor to Distograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,209
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D24—*04*



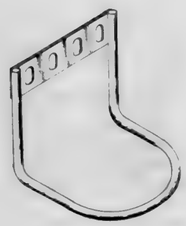
213,449
RELIGIOUS CROSS
Carl J. Schuette, 1816 Chestnut Road, Cleveland, Ohio 44131
Filed Jan. 9, 1968, Ser. No. 10,100
Term of patent 14 years
U.S. Cl. D29—23
Int. Cl. D11—*03*



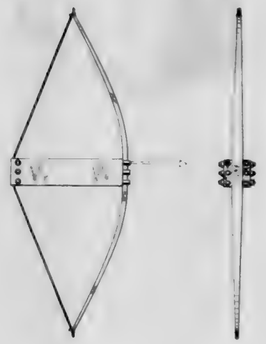
213,450
URN
Henry Black, Manilla Road Industrial Estate, Southend-on-Sea, Essex, England
Filed Aug. 22, 1967, Ser. No. 8,350
Claims priority, application Great Britain Feb. 27, 1967
Term of patent 3½ years
U.S. Cl. D29—28
Int. Cl. D11—*02*



213,451
PORTABLE HAMMER HOLDER
Byron R. White, R.D. 2, Box 144A, Kinsman, Ohio
Filed Feb. 15, 1968, Ser. No. 10,587
Term of patent 14 years
U.S. Cl. D33—17
Int. Cl. D8—*02, 99;* D6—*01*



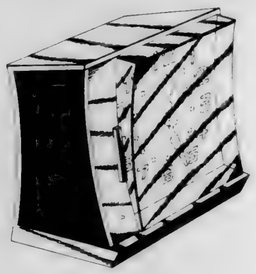
213,452
MULTIPLE PROJECTILE SHOOTING TOY
Joseph Mack, 37 Kanes Lane, Huntington Bay, N.Y.
Filed Aug. 30, 1967, Ser. No. 8,429
Term of patent 14 years
U.S. Cl. D34—15
Int. Cl. D21—*02*



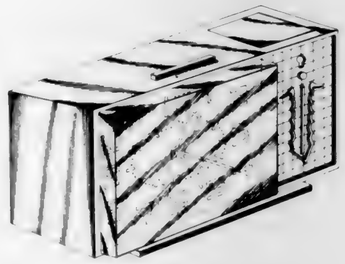
213,453
COMBINED HALL CLOCK AND SHELF UNIT
Benjamin G. Edelman, Flushing, N.Y., assignor to United Metal Goods Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed May 17, 1967, Ser. No. 7,245
Term of patent 14 years
U.S. Cl. D42—7
Int. Cl. D10—*01*



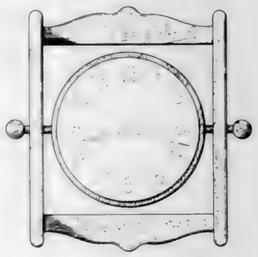
213,454
CLOCK CASING
David W. Miley, Peru, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 26, 1968, Ser. No. 10,717
Term of patent 14 years
U.S. Cl. D42—7
Int. Cl. D10—*01*



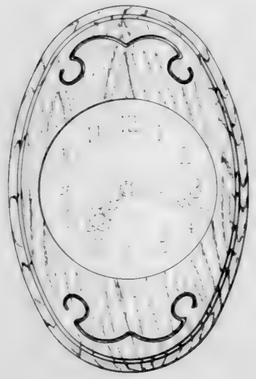
213,455
MEDICATION REMINDER CLOCK CASING
Roman J. Szalek, La Salle, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 26, 1968, Ser. No. 10,723
Term of patent 14 years
U.S. Cl. D42—7
Int. Cl. D10—*04*



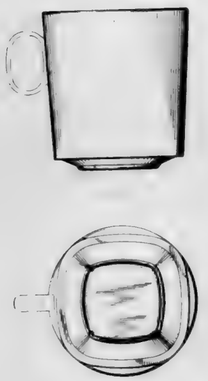
213,456
CLOCK CASING
Monte L. Levin, New York, N.Y., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 11,227
Term of patent 14 years
U.S. Cl. D42—7
Int. Cl. D10—*06*



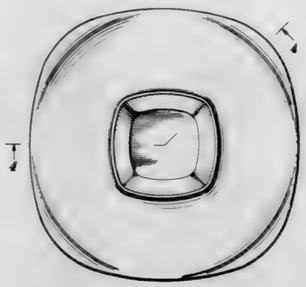
213,457
CLOCK CASING
Milton F. Klein, Glens Falls, N.Y., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed May 7, 1968, Ser. No. 11,824
Term of patent 14 years
U.S. Cl. D42—7
Int. Cl. D10—*01*



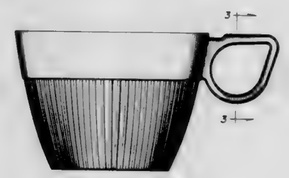
213,458
CUP
Gerald Gulotta, New York, N.Y., assignor to Block China Company, New York, N.Y., a partnership
Filed Feb. 28, 1968, Ser. No. 10,757
Term of patent 14 years
U.S. Cl. D44—9
Int. Cl. D7—*01*



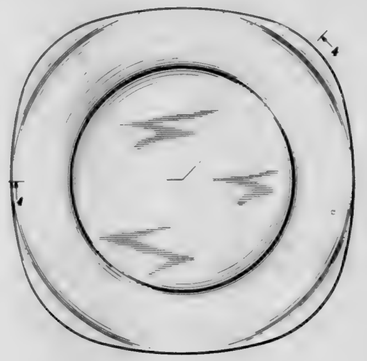
213,459
SAUCER
Gerald Gulotta, New York, N.Y., assignor to Block China Company, New York, N.Y., a partnership
Filed Feb. 28, 1968, Ser. No. 10,772
Term of patent 14 years
U.S. Cl. 44—9
Int. Cl. D7—*01*



213,460
CUP
Charles F. Beckman, Chicago, and Robert W. Schier, Glenview, Ill., assignors to Nibot Corporation, Chicago, Ill., a corporation of Illinois
Filed May 14, 1968, Ser. No. 11,910
Term of patent 14 years
U.S. Cl. D44—9
Int. Cl. D7—*01*



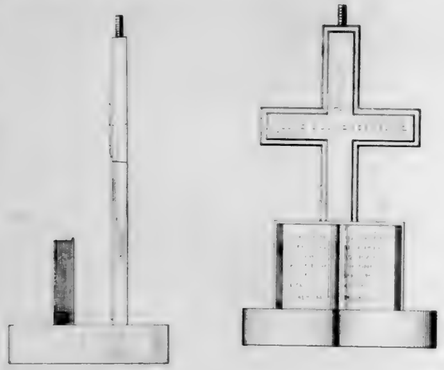
213,461
PLATE
Gerald Gulotta, New York, N.Y., assignor to Block China Company, New York, N.Y., a partnership
Filed Feb. 28, 1968, Ser. No. 10,770
Term of patent 14 years
U.S. Cl. D44—15
Int. Cl. D7—*01*



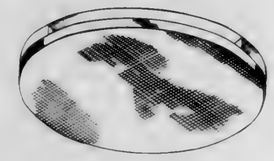
213,462
EXPANDABLE WATCHBAND
Pierre Luigi Casorati, Milan, Italy, assignor to Le Phare S.A., La Chaux-de-Fonds, Switzerland
Filed June 3, 1968, Ser. No. 12,175
Claims priority, application Switzerland Feb. 12, 1968
Term of patent 14 years
U.S. Cl. D45—4
Int. Cl. D11—*01*



213,463
LAMP BASE
Eugene R. Davis, 139 Denver Blvd., San Antonio, Tex. 78210
Filed Feb. 27, 1968, Ser. No. 10,741
Term of patent 14 years
U.S. Cl. D48—20
Int. Cl. D26—*02*



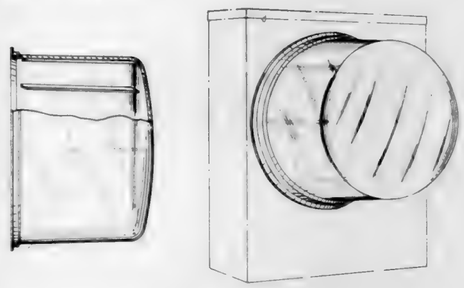
213,464
LIGHTING FIXTURE
Carl X. Meyer, 8933 Raleigh Drive, St. Louis, Mo. 63123
Filed May 7, 1968, Ser. No. 11,831
Term of patent 14 years
U.S. Cl. D48—23
Int. Cl. D26—*02*



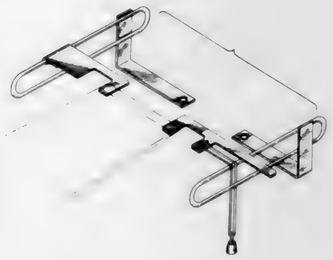
213,465
POWDER MEASURE STAND
Donald R. Tucker, Oroville, Calif., assignor to RCBS Inc., Oroville, Calif., a corporation of California
Filed Nov. 7, 1967, Ser. No. 9,307
Term of patent 14 years
U.S. Cl. D52—2
Int. Cl. D10—*99*



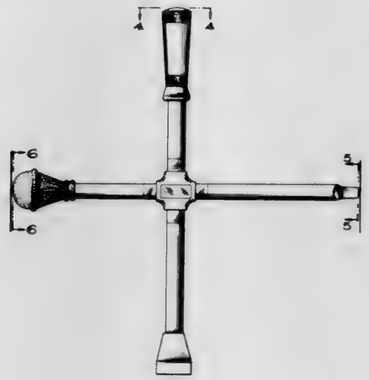
213,466
PROTECTIVE HOUSING FOR SERVICE METERS
Jack Moran, P.O. Box 283, Sherman, Tex. 75090; William A. Reynolds, 1210 Kermac Bldg., Oklahoma City, Okla. 73102; and Boyd Steveson, P.O. Box 100, Fort Gibson, Okla. 74434
Filed July 18, 1967, Ser. No. 7,862
Term of patent 14 years
U.S. Cl. D52—6
Int. Cl. D10—*99*



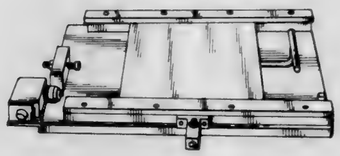
213,467
CUFF ALIGNER
Charles Glenn Puckett, Harris Road, South Fulton, Tenn. 42041
Filed Oct. 12, 1967, Ser. No. 8,965
Term of patent 7 years
U.S. Cl. D52—6
Int. Cl. D8—*03*



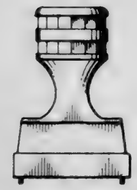
213,468
COMPOUND LUG WRENCH TOOL
Robert V. Broughton, R.D. 2, Crane Road, Horseheads, N.Y. 14845
Filed Jan. 5, 1968, Ser. No. 10,065
Term of patent 14 years
U.S. Cl. D54—13
Int. Cl. D8—*02*



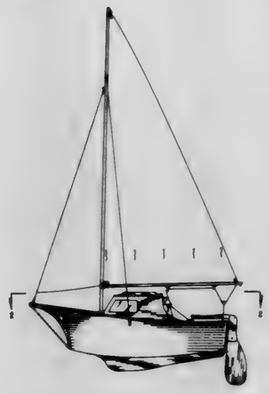
213,469
PNEUMATIC POSITIONING WORK SUPPORT
Walter F. Kuhlman, Norwalk, Ohio, assignor to Kuhlman Machine Company, Norwalk, Ohio, a corporation of Ohio
Filed Mar. 11, 1968, Ser. No. 10,911
Term of patent 14 years
U.S. Cl. D54—13



213,470
HAND STAMP
Frank R. Anderson, Montebello, and Albert J. Castro, Cudahy, Calif., assignors to Westates Space-Era Products Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 30, 1967, Ser. No. 9,202
Term of patent 14 years
U.S. Cl. D64—10
Int. Cl. D18—*99*



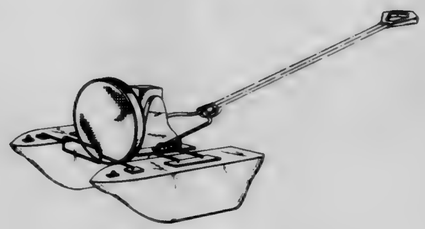
213,471
SAILBOAT
John Coulter, 5909 Adderley Drive, Long Beach, Calif. 90808
Filed Feb. 20, 1968, Ser. No. 10,640
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D12—*06*



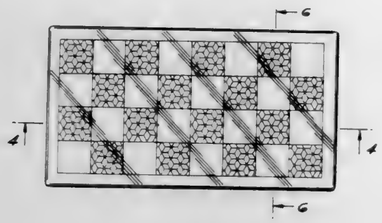
213,472
BOAT PADDLE
Thomas F. Castloo, Mineola, Tex. 75773
Filed Mar. 25, 1968, Ser. No. 11,119
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D21—*14*



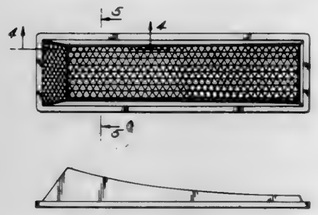
213,473
WATER SKIING VEHICLE
Edwin L. Fellerman, 40 48th St., Weehawken, N.J. 07087
Filed May 13, 1968, Ser. No. 11,893
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D12—*06*



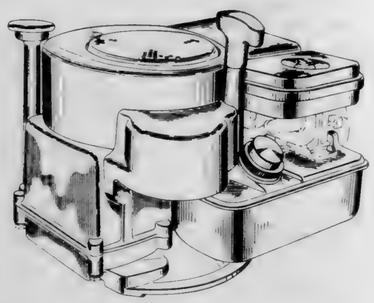
213,474
COMBINED REFLECTOR AND LENS
George E. Howell, Windsor, Ontario, Canada, assignor to Reflex Corporation of Canada Limited, Amherstburg, Ontario, Canada, a corporation of Ontario, Canada
Filed Mar. 4, 1968, Ser. No. 10,815
Term of patent 14 years
U.S. Cl. D72—1
Int. Cl. D16—*08;* D26—*99*



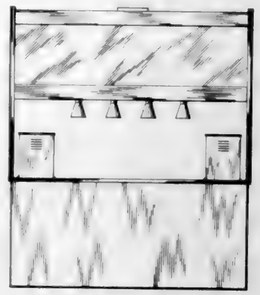
213,475
REFLECTOR FOR AUTOMOBILES
George E. Howell, Windsor, Ontario, Canada, assignor to Reflex Corporation of Canada Limited, Amherstburg, Ontario, Canada, a corporation of Ontario, Canada
Filed Mar. 15, 1968, Ser. No. 10,994
Term of patent 14 years
U.S. Cl. D72—1
Int. Cl. D16—*08*



213,476
PORTABLE INTERNAL COMBUSTION ENGINE
Leo J. Lechtenberg,, Elm Grove, and Joseph R. Harkness, Germantown, Wis., assignors to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 7, 1968, Ser. No. 10,488
Term of patent 14 years
U.S. Cl. D77—1
Int. Cl. D15—*01*



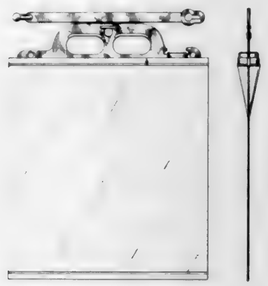
213,477
COMBINED COOKING, DISPLAY, REFRIGERATION AND STORAGE UNIT
Richard L. Lewis, Independence, Mo., assignor, by mesne assignments, to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 29, 1968, Ser. No. 11,671
Term of patent 14 years
U.S. Cl. D81—10
Int. Cl. D15—*12*



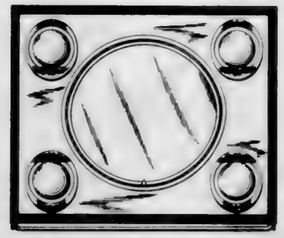
213,478
CERVICAL TRACTION HALTER
Frank J. Nightingale, 3169 Lincoln, San Diego, Calif. 92104
Filed July 21, 1967, Ser. No. 7,925
Term of patent 14 years
U.S. Cl. D83—1
Int. Cl. D24—*05*



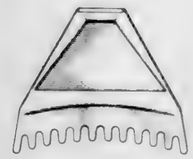
213,479
URINE COLLECTION BAG
Cole C. Williams, Burbank, Calif., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Apr. 15, 1968, Ser. No. 11,462
Term of patent 14 years
U.S. Cl. D83—1
Int. Cl. D24—*05*



213,480
ILLUMINABLE MIRROR
Ira Marder, 121 Beech Road, Englewood, N.J. 07631
Filed Oct. 16, 1967, Ser. No. 9,019
Term of patent 14 years
U.S. Cl. D86—10
Int. Cl. D6—*06*



213,481
APPLICATOR FOR HAIR SETTING PREPARATION OR SIMILAR ARTICLE
Robert F. Hubbell, Los Angeles, Calif., assignor to Dep Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 18, 1968, Ser. No. 10,209
Term of patent 14 years
U.S. Cl. D86—10
Int. Cl. D28—*03*



213,482
Etienne Aigner, New York, N.Y., assignor to The Villager, Inc., Philadelphia, Pa., a corporation of Delaware
HANDBAG CLOSURE CLASP
Filed Sept. 20, 1967, Ser. No. 8,667
Term of patent 14 years
U.S. Cl. D89—2
Int. Cl. D8—*03*



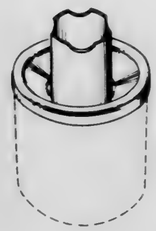
213,483
HANDBAG CLOSURE CLASP
Etienne Aigner, New York, N.Y., assignor to The Villager, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 8,761
Term of patent 14 years
U.S. Cl. D87—2
Int. Cl. D8—*03;* D3—*99, 02*



213,484
HANDBAG CLOSURE CLASP
Etienne Aigner, New York, N.Y., assignor to The Villager, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 8,806
Term of patent 14 years
U.S. Cl. D87—2
Int. Cl. D8—*03;* D3—*99, 02*



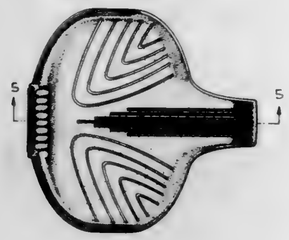
213,485
CITRUS JUICE EXTRACTOR
Wilma M. Schiller, 1031 W. Lake Cannon Drive, Winter Haven, Fla. 33880
Filed Sept. 19, 1967, Ser. No. 8,651
Term of patent 14 years
U.S. Cl. D89—1
Int. Cl. D7—*05*



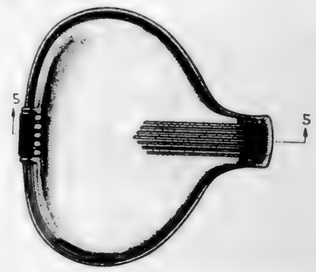
213,486
FRUIT SEGMENTER
Christopher H. Clarke, 1575 Homewood Drive, Altadena, Calif. 91001
Filed Dec. 20, 1967, Ser. No. 9,858
Term of patent 14 years
U.S. Cl. D89—1
Int. Cl. D7—*03*



213,487
VELOCIPEDE SADDLE
Harry Golden, New York, N.Y., assignor to Ideas for Auto and Bike Specialties, Inc., New York, N.Y. a corporation of New York
Filed Mar. 11, 1968, Ser. No. 10,920
Term of patent 14 years
U.S. Cl. D90—16
Int. Cl. D12—*14, 11, 99*



213,488
VELOCIPEDE SADDLE
Harry Golden, New York, N.Y., assignor to Ideas for Auto and Bike Specialties, Inc., New York, N.Y. a corporation of New York
Filed Mar. 12, 1968, Ser. No. 10,936
Term of patent 14 years
U.S. Cl. D90—16
Int. Cl. D12—*14, 11, 99*



213,489
SODA SYPHON
Jack S. Foxell, Shepperton, Middlesex, England, assignor to The British Oxygen Company Limited, a British company
Filed Nov. 13, 1967, Ser. No. 9,362
Term of patent 14 years
U.S. Cl. D94—3
Int. Cl. D7—*01*



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF MARCH, 1969

NOTE.--Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Anocut Engineering Co.: *See*—
Bender, Joseph L., and Williams. Re. 26,531.
Bender, Joseph L., and L. A. Williams, to Anocut Engineering Co. Electrolytic cavity sinking apparatus. Re. 26,531, 3–4–69, Cl. 204—224.
Cl. 204—224.
Bott, John A. Luggage rack. Re. 26,538, 3–4–69, Cl. 224—42.1.
Bott, John A. Luggage rack. Re. 26,539, 3–4–69, Cl. 224—42.1.
Cookerly, Jack C., and G. R. Hall. Tone generation system. Re. 26,533, 3–4–69, Cl. 84—1.16.
Curtis 1000, Inc.: *See*—
Mudd, Frank X., Jr. Re. 26,532.
Dawson, Orlie W. Golf cart. Re. 26,536, 3–4–69, Cl. 280—41.
General Motors Corp.: *See*—
Wentworth, Joseph T. Re. 26,530.
Hall, George R.: *See*—
Cookerly, Jack C., and Hall. Re. 26,533.
Lewis, Karl R. Revolver type firearm with cylinder crane. Re. 26,534, 3–4–69, Cl. 42—62.
Lichtenberger, Horst W., and P. E. Loveday, to Union Carbide Corp. Method and apparatus for dispensing vaporizable liquids. Re. 26,529, 3–4–69, Cl. 141—5.
Loveday, Paul E.: *See*—
Lichtenberger, Horst W., and Loveday. Re. 26,529.
Mellott, Hayes R.: *See*—
Mellott, John S. and H. R. Re. 26,535.
Mellott, John S. and H. R. Live deck and loader assembly. Re. 26,535, 3–4–69, Cl. 214—91.
Mudd, Frank X., Jr., to Curtis 1000, Inc. Mailing envelopes. Re. 26,532, 3–4–69, Cl. 282—25.
Schlumberger Technology Corp.: *See*—
Tompkins, David R. Re. 26,537.
Tompkins, David R., to Schlumberger Technology Corp. Mobile inspection device for testing metallic members for longitudinal and transverse discontinuities. Re. 26,537, 3–4–69, Cl. 324—37.
Union Carbide Corp.: *See*—
Lichtenberger, Horst W., and Loveday. Re. 26,529.
Wentworth, Joseph T., to General Motors Corp. Vapor recovery system. Re. 26,530, 3–4–69, Cl. 123—136.
Williams, Lynn A.: *See*—
Bender, Joseph L., and Williams. Re. 26,531.

LIST OF DESIGN PATENTEES

Aigner, Etienne, to The Villager, Inc. Buckle. 213,419, 3–4–69, Cl. D2—432.
Aigner, Etienne, to The Villager, Inc. Handbag closure clasp. 213,482, 3–4–69, Cl. D87—2.
Aigner, Etienne, to The Villager, Inc. Handbag closure clasp. 213,483, 3–4–69, Cl. D87—2.
Aigner, Etienne, to The Villager, Inc. Handbag closure clasp. 213,484, 3–4–69, Cl. D87—2.
Ament, Myron J., to The Wallace-Murray Corp. Modular bathroom unit. 213,442, 3–4–69, Cl. D23—49.
American Can Co.: *See*—
Goff, Donald H. 213,426.
American Hospital Supply Corp.: *See*—
Williams, Cole C. 213,479.
Amerock Corp.: *See*—
Stone, Leland G. 213,431.
Clayton, La Verne E. 213,432.
Clayton, La Verne E. 213,433.
Ampex Corp.: *See*—
Sanderson, Leon C. 213,445.
Anderson, Douglas W., to Hankscraft Co. Facial vaporizer. 213,443, 3–4–69, Cl. D23—148.
Anderson, Frank R., and A. J. Castro, to Westates Space-Era Products, Inc. Hand stamp. 213,470, 3–4–69, Cl. D64—10.
Barnes, Leo, N. K. Rhoades, and R. E. Talley, to Bucyrus-Erie Co. Excavating machine. 213,437, 3–4–69, Cl. D14—3.
Bassin, Leonard N. Food service building. 213,434, 3–4–69, Cl. D13—1.
Bata Shoe Co., Inc.: *See*—
Dittmar, Frank L., Jr. 213,414.
Meadows, Damon G. 213,415.
Dittmar, Frank L., Jr., and Rutherford. 213,416.
Dittmar, Frank L., Jr. 213,417.
Batdorf, Danny J., to Owens-Illinois, Inc. Packaging tub. 213,427, 3–4–69, Cl. D9—219.
Batdorf, Danny J., to Owens-Illinois, Inc. Packaging tub. 213,428, 3–4–69, Cl. D9—220.
Beckman, Charles F., and R. W. Schier, to Nibot Corp. Cup. 213,460, 3–4–69, Cl. D44—9.
Black, Henry. Urn. 213,450, 3–4–69, Cl. D29—28.
Block China Co.: *See*—
Gulotta, Gerald. 213,458.
Gulotta, Gerald. 213,459.
Gulotta, Gerald. 213,461.
Briggs & Stratton Corp.: *See*—
Lechtenberg, Leo J., and Harkness. 213,476.
British Oxygen Co., The: *See*—
Foxell, Jack S. 213,489.
Broughton, Robert V. Compound lug wrench tool. 213,468, 3–4–69, Cl. D54—13.
Bucyrus-Erie Co.: *See*—
Barnes, Leo, Rhoades, and Talley. 213,437.
Casoratl, Pierre L., to Le Phare S.A. Expandable watchband. 213,462, 3–4–69, Cl. D45—4.
Castloo, Thomas F. Boat paddle. 213,472, 3–4–69, Cl. D71—1.
Castro, Albert J.: *See*—
Anderson, Frank R., and Castro. 213,470.
Clarke, Christopher H. Fruit segmenter. 213,486, 3–4–69, Cl. D89—1.
Clayton, La Verne E., to Amerock Corp. Combined pull and backing plate. 213,432, 3–4–69, Cl. D10—8.
Clayton, La Verne E., to Amerock Corp. Hinge. 213,433, 3–4–69, Cl. D10—9.
Coulter, John. Sailboat. 213,471, 3–4–69, Cl. D71—1.
Curtis Products Ltd.: *See*—
Koch, George A. 213,438.
Koch, George A. 213,439.
Davis, Eugene R. Lamp base. 213,463, 3–4–69, Cl. D48—20.
Dennison Mfg. Co.: *See*—
Merser, Francis G. 213,418.
Dep Corp.: *See*—
Hubbell, Robert F. 213,481.
Distograph Products, Inc.: *See*—
Giller, Ronald R. 213,448.
Dittmar, Frank L., Jr., to Bata Shoe Co., Inc. Sole for footwear. 213,414, 3–4–69, Cl. D2—320.
Dittmar, Frank L., Jr., to Bata Shoe Co., Inc. Sole for footwear. 213,417, 3–4–69, Cl. D2—320.
Dittmar, Frank L., Jr., and C. Rutherford, to Bata Shoe Co., Inc. Sole for footwear. 213,416, 3–4–69, Cl. D2—320.
Edelman, Benjamin G., to United Metal Goods Mfg. Co., Inc. Combined hall clock and shelf unit. 213,453, 3–4–69, Cl. D42—7.
Epstein, Harry. Match box. 213,429, 3–4–69, Cl. D9—223.
Fellerman, Edwin L. Water skiing vehicle. 213,473, 3–4–69, Cl. D71—1.
Fleming, Robert L. Diaper fastener. 213,420, 3–4–69, Cl. D2—448.
Foxell, Jack S., to The British Oxygen Co. Soda syphon. 213,489, 3–4–69, Cl. D94—3.
Frankel, John L., and S. Kelsey, to Harvey Aluminum (Inc.). Faucet handle or the like. 213,441, 3–4–69, Cl. D23—28.
Geltner, Daniel, to Parkins Products Corp. Plastic moulding. 213,436, 3–4–69, Cl. D13—6.
General Time Corp.: *See*—
Klein, Milton F. 213,457.
Levin, Monte L. 213,456.
Miley, David W. 213,454.
Szalek, Roman J. 213,455.
Giller, Ronald R., to Distograph Products, Inc. Hearing aid. 213,448, 3–4–69, Cl. D26—14.
Goff, Donald H., to American Can Co. Stand-up dispensing tube. 213,426, 3–4–69, Cl. D9—194.
Golden, Harry, to Ideas for Auto and Bike Specialties, Inc. Velocipede saddle. 213,487, 3–4–69, Cl. D90—16.
Golden, Harry, to Ideas for Auto and Bike Specialties, Inc. Velocipede saddle. 213,488, 3–4–69, Cl. D90—16.
Gulotta, Gerald, to Block China Co. Cup. 213,458, 3–4–69, Cl. D44—9.
Gulotta, Gerald, to Block China Co. Saucer. 213,459, 3–4–69, Cl. D44—9.
Gulotta, Gerald, to Block China Co. Plate. 213,461, 3–4–69, Cl. D44—15.
Hankscraft Co.: *See*—
Anderson, Douglas W. 213,443.
Harkness, Joseph R.: *See*—
Lechtenberg, Leo J., and Harkness. 213,476.
Harvey Aluminum (Incorporated): *See*—
Frankel, John L., and Kelsey. 213,441.
Helma, Dennis E. Skylight. 213,444, 3–4–69, Cl. D23—153.
Hirota, Kashichi. Case for beverage bottles or the like. 213,425, 3–4–69, Cl. D9—177.
Howell, George E., to Reflex Corp. of Canada Ltd. Combined reflector and lens. 213,474, 3–4–69, Cl. D72—1.
Howell, George E., to Reflex Corp. of Canada Ltd. Reflector for automobiles. 213,475, 3–4–69, Cl. D72—1.
Hubbell, Robert F., to Dep Corp. Applicator for hair setting preparation or similar article. 213,481, 3–4–69, Cl. D86—10.

Ideas for Auto and Bike Specialties, Inc.: *See*—
Golden, Harry. 213,487.
Golden, Harry. 213,488.
International Business Machines Corp.: *See*—
Sabella, Edward J. 213,446.
Jefferson, Leslie N. Coping for a swimming pool wall. 213,435, 3–4–69, Cl. D13—1.
Kelsey, Steve: *See*—
Frankel, John L., and Kelsey. 213,441.
Klein, Milton F., to General Time Corp. Clock casing. 213,457, 3–4–69, Cl. D42—7.
Kneapler, Stephen J., to Richford Corp. Bottle closure. 213,430, 3–4–69, Cl. D9—285.
Koch, George A., to Curtis Products Ltd. Chair. 213,438, 3–4–69, Cl. D15—1.
Koch, George A., to Curtis Products Ltd. Arm chair. 213,439, 3–4–69, Cl. D15—1.
Kuhlman, Walter F., to Kulman Machine Co. Pneumatic positioning work support. 213,469, 3–4–69, Cl. D54—13.
Kulman Machine Co.: *See*—
Kuhlman, Walter F. 213,469.
Leary, Donald J., to Owens-Illinois, Inc. Jar. 213,421, 3–4–69, Cl. D9—101.
Lechtenberg, Leo J., and J. R. Harkness, to Briggs & Stratton Corp. Portable internal combustion engine. 213,476, 3–4–69, Cl. D77—1.
Le Phare S.A.: *See*—
Casorati, Pierre L. 213,462.
Levin, Monte L., to General Time Corp. Clock casing. 213,456, 3–4–69, Cl. D42—7.
Lewis, Richard L., to Ralston Purina Co. Combined cooking, display, refrigeration and storage unit. 213,477, 3–4–69, Cl. D81—10.
Linn, James L., Jr., to Owens-Illinois, Inc. Bottle. 213,423, 3–4–69, Cl. D9—137.
Mack, Joseph. Multiple projectile shooting toy. 213,452, 3–4–69, Cl. D34—15.
Marder, Ira. Illuminable mirror. 213,480, 3–4–69, Cl. D86—10.
Meadows, Damon G., to Bata Shoe Co., Inc. Sole for footwear. 213,415, 3–4–69, Cl. D2—320.
Merser, Francis G., to Dennison Mfg. Co. Fastener for attaching a button. 213,418, 3–4–69, Cl. D2—423.
Meyer, Carl X. Lighting fixture. 213,464, 3–4–69, Cl. D48—23.
Miley, David W., to General Time Corp. Clock casing. 213,454, 3–4–69, Cl. D42—7.
Moran, Jack, W. A. Reynolds, and B. Steveson. Protective housing for service meters. 213,466, 3–4–69, Cl. D52—6.
Nibot Corp.: *See*—
Beckman, Charles F., and Schier. 213,460.
Nightingale, Frank J. Cervical traction halter. 213,478, 3–4–69, Cl. D83—1.
Owens-Illinois, Inc.: *See*—
Batdorf, Danny J. 213,427.
Batdorf, Danny J. 213,428.
Leary, Donald J. 213,421.
Linn, James L., Jr. 213,423.
Weckman, Richard L. 213,424.
Parkins Products Corp.: *See*—
Geltner, Daniel. 213,436.
Puckett, Charles G. Cuff aligner. 213,467, 3–4–69, Cl. D52—6.
RCBS, Inc.: *See*—
Tucker, Donald R. 213,465.
Ralston Purina Co.: *See*—
Lewis, Richard L. 213,477.
Reflex Corp. of Canada Ltd.: *See*—
Howell, George E. 213,474.
Howell, George E. 213,475.
Reynolds, William A.: *See*—
Moran, Jack, Reynolds, and Steveson. 213,466.
Rhoades, Nolan K.: *See*—
Barnes, Leo, Rhoades, and Talley. 213,437.
Richford Corp.: *See*—
Kneapler, Stephen J. 213,430.
Rutherford, Charles: *See*—
Dittmar, Frank L., Jr., and Rutherford. 213,416.
Sabella, Edward J., to International Business Machines Corp. Optical input unit. 213,446, 3–4–69, Cl. D26—5.
Sanderson, Leon C., to Ampex Corp. Magnetic tape transport. 213,445, 3–4–69, Cl. D26—5.
Schuette, Carl J. Religious cross. 213,449, 3–4–69, Cl. D29—23.
Schier, Robert W.: *See*—
Beckman, Charles F., and Schier. 213,460.
Schiller, Wilma M. Citrus juice extractor. 213,485, 3–4–69, Cl. D89—1.
Sizer, William C. Bottle. 213,422, 3–4–69, Cl. D9—118.
Small, Randall C. Housing for an auto stereo unit. 213,447, 3–4–69, Cl. D26—14.
Stone, Leland G., to Amerock Corp. Knob. 213,431, 3–4–69, Cl. D10—8.
Szalek, Roman J., to General Time Corp. Medication reminder clock casing. 213,455, 3–4–69, Cl. D42—7.
Tucker, Donald R., to RCBS, Inc. Powder measure stand. 213,465, 3–4–69, Cl. D52—2.
Union Tank Car Co.: *See*—
Wildgen, Leo F. 213,440.
United Metal Goods Mfg. Co., Inc.: *See*—
Edelman, Benjamin G. 213,453.
Villager, Inc., The: *See*—
Aigner, Etienne. 213,419.
Aigner, Etienne. 213,482.
Aigner, Etienne. 213,483.
Aigner, Etienne. 213,484.
Wallace-Murray Corp., The: *See*—
Ament, Myron J. 213,442.
Weckman, Richard L., to Owens-Illinois, Inc. Bottle. 213,424, 3–4–69, Cl. D9—149.
Westates Space-Era Products, Inc.: *See*—
Anderson, Frank R., and Castro. 213,470.
White, Byron R. Portable hammer holder. 213,451, 3–4–69, Cl. 33—17.
Wildgen, Leo F., to Union Tank Car Co. Solvent dispenser for a water softening system or the like. 213,440, 3–4–69, Cl. 23—3.
Williams, Cole C., to American Hospital Supply Corp. Urine collection bag. 213,479, 3–4–69, Cl. D83—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AAI Corp.: *See*—
Barr, Irwin R. 3,430,570.
Barr, Irwin R. 3,430,571.
A.B. Broderna Hedlung: *See*—
Lindmark, Bo M. 3,430,475.
A.B.C. Popcorn Co., Inc.: *See*—
Lambeth, Ralph M. 3,430,671.
AGA Aktiebolag: *See*—
Granqvist, Carl-Erik. 3,430,500.
AMP Inc.: *See*—
Busler, Willard L. R. 3,431,548.
AVM Corp.: *See*—
Moldovan, Michael T., and Drew. 3,430,559.
Abelson Motors Ltd.: *See*—
Chapman, Victor A. 3,430,793.
Aberg, Martin B. Door closure. 3,430,676, 3–4–69, Cl. 160—202.
Aberth, Oliver G.: *See*—
Andersson, Per L., and Aberth. 3,431,406.
Abramson, Daniel J. Surgeon's drain. 3,430,631, 3–4–69, Cl. 128—350.
Abreu, Julio O. Holder for dentist's instruments. 3,430,345, 3–4–69, Cl. 32—46.
Abt, Ronald C., to The Cincinnati Milling Machine Co. Automatic centrifuge apparatus. 3,430,851, 3–4–69, Cl. 233—19.
Acme-Hamilton Mfg. Corp.: *See*—
Bauman, Joseph F., and Rette. 3,430,292.
Adams, J. D., Co.: *See*—
Adams, James D. 3,430,943.
Adams, James D., to J. D. Adams Co. Apparatus for turning truss jig. 3,430,943, 3–4–69, Cl. 269—20.
Adams, John L. Engine for converting energy by thermal expansion of solids. 3,430,441, 3–4–69, Cl. 60—23.
Adams-Russell Co., Inc.: *See*—
Podell, Allen F. 3,431,361.
Addressograph-Multigraph Corp.: *See*—
Bialczak, Edward C., and Murphy. 3,431,109.
Adelman, Joseph K., to Webster Electric Co., Inc. Plural rotary hydraulic apparatus. 3,430,574, 3–4–69, Cl. 103—136.
Adler, Robert, to Zenith Radio Corp. Acoustical light signal-translating apparatus. 3,431,504, 3–4–69, Cl. 329—129.
Advanced Kinetics, Inc.: *See*—
Furth, Harold P. 3,430,472.
Advance Machine Co.: *See*—
Arones, Daniel A. 3,430,280.
Aero-Commerce G.m.b.H.: *See*—
Groeger, Eugen. 3,430,573.
Aerofall Mills Ltd.: *See*—
Weston, David. 3,430,870.
Agfa-Gevaert Aktiengesellschaft: *See*—
Jacknau, Alex. 3,431,052.
Wick, Richard. 3,430,545.
Wick, Richard, Kwiatkowski, and Schausberger. 3,430,945.
Wick, Richard, Waschk, and Orthmann. 3,431,053.
Agren, Sven B., to Aktiebolaget Hagglund & Soner. Device for compensating recoil torques in tank turrets. 3,430,534, 3–4–69, Cl. 89—42.
Aichinger, Gerd, S. Schutz, and F. Hoffmeister, to Farbenfabriken Bayer Aktiengesellschaft. Basically substituted derivatives of 5,6-dihydrodibenzo-[b,e]-azepine-6,11-dione-11-oxime. 3,431,257, 3–4–69, Cl. 260—239.3.
Aikawa, Michinosuke, M. Kojima, and C. Takahashi, to Toho Aen Kabushiki Kaisha. Apparatus for preparing high purity fine powder of low-melting metals. 3,430,289, 3–4–69, Cl. 18—2.5.
Air Reduction Co., Inc.: *See*—
Benner, Charles E. 3,430,261.
Air Vehicle Corp.: *See*—
Strand, Torstein, Levinsky, and Timin. 3,430,894.
Aisin Seiki Kabushiki Kaisha: *See*—
Fujita, Saburo, and Kobashi. 3,430,743.
Oguri, Katsuhiko. 3,430,744.
Akagi, Saburo: *See*—
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Murayama, Keisuke, Morimura, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,233.
Aktiebolaget Hagglund & Soner: *See*—
Agren, Sven B. 3,430,534.
Aktiebolaget Landsverk: *See*—
Mundt-Petersen, Just H., and Eriksson. 3,431,016.
Aktiebolaget Siefvert & Fornander: *See*—
Hedborg, Lennart. 3,430,785.
Aktiengesellschaft Brown, Boveri & Cie: *See*—
Brischnik, Franz. 3,431,464.
Albemarle Paper Co.: *See*—
Williams, Robert C., and Haigh. 3,431,334.
Alder, Robert O., R. J. F. Baudet, C. P. Baudier, and M. M. Gasset, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Thermal protection arrangement and element therefor. 3,430,405, 3–4–69, Cl. 52—573.
Alcon Metal Products, Inc.: *See*—
De Vito, Charles P. 3,431,541.
Alfa-Laval AB: *See*—
Sciaux, Jean. 3,430,690.
Allen, George E. and G. E., to Allied Chemical Corp. Beneficiation of fluorspar ores. 3,430,765, 3–4–69, Cl. 209—11.
Allen, Glenn E.: *See*—
Allen, George E. and G. E. 3,430,765.
Allen, Henry W. Optical fluid sampling device. 3,431,424, 3–4–69, Cl. 250—218.
Allendorf, Marcel, to Precismeca S.A. Fastening device for troughing roll and conveyor belts having said fastening device. 3,430,755, 3–4–69, Cl. 198—192.
Allendorf, Marcel, to Precismeca S.A. Structure for connecting the ends of a troughing roll assembly. 3,430,756, 3–4–69, Cl. 198—192.
Allied Chemical Corp.: *See*—
Allen, George E. and G. E. 3,430,765.
Allied Research Products Inc.: *See*—
Weisenberger, Lavern M. 3,431,120.
Allis-Chalmers Mfg. Co.: *See*—
Rockwell, Harvey W., and Hawk. 3,430,367.
Allison, William E. Wire connection cover. 3,430,800, 3–4–69, Cl. 220—3.94.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Avinder, Stig. 3,431,471.
Glandin, Constan. 3,431,171.
Essen, Edgar. 3,431,443.
Larsson, Paul. 3,430,471.
Uhlmann, Eric. 3,431,482.
Wennerlund, Eric, and Lundback. 3,430,351.
Alosi, Michael. Combination yard and garden tool. 3,430,704, 3–4–69, Cl. 172—372.
Alpha Press Co.: *See*—
Weiss, Adolf. 3,430,538.
Altman, Gerald. Episcopic projection photographic element. 3,430,375, 3–4–69, Cl. 40—158.
Amano Seiyaku Kabushiki Kaisha: *See*—
Arima, Kei, Tamura, Narasaki, Nakamura, and Saiki. 3,431,175.
Ambler, Walter B., and R. G. Mawney, to Texas Instruments Inc. Miniature electrical switch. 3,431,526, 3–4–69, Cl. 337—89.
American Air Filter Co., Inc.: *See*—
Morton, John P. 3,430,453.
American Can Co.: *See*—
La Croce, Leonard T., and Batchelar. 3,430,802.
American Chain & Cable Co., Inc.: *See*—
Peterson, Vincent C. J. 3,430,897.
American Cyanamid Co.: *See*—
Beachem, Michael T. 3,431,140.
Carvalho, Dorothy A., Hauser, Schriffert, and Sprague. 3,431,151.
DeLapp, Darwin F., and Deichert. 3,431,321.
Duda, William J. 3,430,476.
Forgione, Peter S. 3,431,278.
Gillham, Helen C., and Sherr. 3,431,324.
Hauser, Martin, and Sprague. 3,431,152.
McCormick, Jerry R. D., Joachim, Jensen, and Sjolander. 3,431,303.
Sheehan, Desmond, and Clarke. 3,431,264.
Van Loo, William J., Jr. 3,431,271.
Wecher, Richard Parke. 3,431,267.
Zingerman, Joel Ronald, and Elowe. 3,431,138.
American Electronic Laboratories, Inc.: *See*—
Ryan, Thomas J. 3,431,494.
American Home Products Corp.: *See*—
Archibald, John L. 3,431,268.
Lefebvre, Yvon, and Ferland. 3,431,258.
Wendt, Gerhard R., and Ledig. 3,431,262.
American Instrument Co., Inc.: *See*—
Miller, C. David, Soodak, and Priarone. 3,430,864.
American Metal Climax, Inc.: *See*—
Hood, Harold W., Jr. 3,430,683.
American Standard, Inc.: *See*—
Parkison, Richard Grant, and Duggan. 3,430,686.
Vanegas, Cuillermo J. 3,430,270.
American Zinc Co.: *See*—
Mason, Gilbert E., and Armbruster. 3,431,106.
Ametek, Inc.: *See*—
Vogelsberg, Walter H. 3,430,915.
Amir, Emanuel M., to Esso Research and Engineering Co. Polymerization of propylene. 3,431,317, 3–4–69, Cl. 260—683.15.
Amster, Stanley A., to Federal Laboratories, Inc. Delay actuator. 3,430,568, 3–4–69, Cl. 102—82.
Anchor Brush Co.: *See*—
Baumgartner, John G. 3,430,281.
Anderson, Carl L., to The Tappan Co. Dual stirrer assembly. 3,431,381, 3–4–69, Cl. 219—10.55.
Anderson, Jesse I., and D. G. Olson, to United States of America, Atomic Energy Commission. Rotational technique for assessing quantity and distribution of body radioactivity. 3,431,413, 3–4–69, Cl. 250—71.5.

Anderson, Paul G., 33⅓% to F. A. Parsons, and 33⅓% to F. H. Wells. Seat for a bench. 3,431,023, 3–4–69, Cl. 297—452.

Andersson, Per L., and O. G. Aberth, to Sperry Rand Corp. Check digit verifiers. 3,431,406, 3–4–69, Cl. 235—153.

Andis, Ernest R. Lockable golf club head adjustment. 3,430,957, 3–4–69, Cl. 273—80.1.

Andrault, Francois P., to Societe Anonyme Financiere & Auxiliaire du Textile. Machine for aligning stripes of fabrics woven on circular looms. 3,430,589, 3–4–69, Cl. 112—2.

Andrea, John J., to Collins Radio Co. Phase locked loop with digitalized frequency and phase discriminator. 3,431,509, 3–4–69, Cl. 331—25.

Andrea, Karl H., to Jeffrey Galion Mfg. Co. Continuous muller. 3,430,874, 3–4–69, Cl. 241—98.

Andreades, Sam, to E. I. du Pont de Nemours and Co. Electrochemical cyanation of selected aromatic compounds. 3,431,184, 3–4–69, Cl. 204—59.

Andrian, Leo G. Hat structure. 3,430,266, 3–4–69, Cl. 2—193.

Andrussow, Konstantin: *See*—
Nonnenmacher, Helmut, Appl, Haug, and Andrussow. 3,431,284.

Anner, Georg, C. Meystre, J. Kalvoda, and H. Ueberwasser to Ciba Corp. Process for producing 5,10-seco-steroids. 3,431,191, 3–4–69, Cl. 204—158.

Anstalt fur Montage-Technik: *See*—
Mathes, Gunther. 3,430,903.

Anstalt fur Patentdienst: *See*—
Fleissner, Heinz, and G. 3,430,356.

Ansteth, John J. Rocker arm stud girdle. 3,430,612, 3–4–69, Cl. 123—90.

Appelt, Weldon F., and W. H. Mason. Railway supporting box beam building construction. 3,430,582, 3–4–69, Cl. 104—124.

Appl, Max: *See*—
Nonnenmacher, Helmut, Appl, Haug, and Andrussow. 3,431,284.

Applied Research and Engineering Ltd.: *See*—
Starmer, Roy. 3,431,179.

Aqua-Chem, Inc.: *See*—
Clark, George B., and Kavanagh. 3,430,360.

Arc-Co. Inc.: *See*—
Pepe, Frank W. 3,430,905.

Archibald, John L., to American Home Products Corp. 2,5-bis(pyridylethyl)pyrroles. 3,431,268, 3–4–69, Cl. 260—293.

Argauer, Robert J., to Mobil Oil Corp. Crystalline gallosilicates. 3,431,219, 3–4–69, Cl. 252—455.

Arima, Kei, G. Tamura, T. Narasaki, Y. Nakamura, and T. Saiki, to Amano Seiyaku Kabushiki Kaisha. Method for the preparation of a lipoprotein lipase by cultivating organisms. 3,431,175, 3–4–69, Cl. 195—62.

Arlin, Max: *See*—
Conrad, Tom J., Dayton, and Arlin. 3,431,046.

Armelin, Edouard R.: *See*—
Breacker, Edward A., and Armelin. 3,430,880.

Armbruster, Howard L.: *See*—
Mason, Gilbert E., and Armbruster. 3,431,106.

Armstrong Cork Co.: *See*—
Ehrhart, Wendell A. 3,431,279.

Arndt, Friedrich: *See*—
Freund, Heinz-Eberhard, and Arndt. 3,431,289.

Arnold, Ray E., to Brawley Steel Co. Apparatus for bending an elongated element. 3,430,478, 3–4–69, Cl. 72—298.

Arones, Daniel A., to Advance Machine Co. Device for generating foam for a carpet and floor scrubbing machine. 3,430,280, 3–4–69, Cl. 15—50.

Arvin Industries, Inc.: *See*—
Conley, Dwain D., and Bender. 3,430,587.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Asami, Atsumi, Ikee, Nakashima, and Takata. 3,430,428.
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Murayama, Keisuke, Morimura, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,233.
Isobe, Akihiro, Fujinawa, Iwasaki, and Ikeda. 3,431,336.
Saotome, Kazuo, and Sato. 3,431,298.

Asami, Atsumi, E. Ikee, E. Nakashima, and H. Takata, to Asahi Kasei Kogyo Kabushiki Kaisha. Apparatus for cutting a running yarn in a centrifugal type spinning machine. 3,430,428, 3–4–69, Cl. 57—34.

Ashland Oil & Refining Co.: *See*—
Leas, Arnold M. 3,431,094.
Otto, Wolfgang K. F. 3,431,205.

Ashley, Paul E., and C. G. Sutter, to Sperry Rand Corp. Torsion bar suspension for rate gyroscopes. 3,430,276, 3–4–69, Cl. 74—5.

Associated Cargo Gear AB: *See*—
Nordh, Ulf S. I. 3,430,675.

Atarashi, Sueo: *See*—
Hattori, Kiyoshi, and Atarashi. 3,431,259.

Aukland, Jerry C.: *See*—
Lind, James N., and Aukland. 3,431,485.

Auriol, Jean, to Regie Nationale des Usines Renault. Differential-action change-speed mechanisms. 3,430,518, 3–4–69, Cl. 74—705.

Ausnit, Steven. Method of forming fastener assembly. 3,430,329, 3–4–69, Cl. 29—408.

Australian Railway Equipment Supply Co. Proprietary Ltd.: *See*—
Yard, William J. 3,430,579.

Automatic Switch Co.: *See*—
Kryspin, Alfred J. 3,431,522.
Otto, Noel A. 3,430,991.

Automobiles M. Berliet: *See*—
Vautier, Jean. 3,430,976.

Auville, Calvin: *See*—
Porter, Stephen L., Auville, and Winch. 3,430,465.

Avco Corp.: *See*—
Hebert, John R., and Waite. 3,430,572.
Junker, Arnold E. 3,430,967.
Vagedes, Lawrence J., and Bing. 3,430,818.

Averill, William D., 45% each to R. Clifton and J. H. Doepke. Wire coiling and clamping fastener. 3,431,546, 3–4–69, Cl. 339—269.

Avinder, Stig, to Allmanna Svenska Elektriska Aktiebolaget. Static time delay relay. 3,431,471, 3–4–69, Cl. 317—142.

Avisun Corp.: *See*—
Bohrer, Byron B., and Kurtz. 3,431,249.

Azoplate Corp.: *See*—
Stroszynski, Joachim. 3,431,139.

Babel, Louis, and P. Peytavin, to Societe Civile d'Etudes de Centrifugation. Continuously rotating vertical casting machine. 3,430,684, 3–4–69, Cl. 164—282.

Babcock & Wilcox Co., The: *See*—
Greenberg, Myron L., and Porath. 3,430,318.

Babcock & Wilcox, Ltd.: *See*—
Santilhano, Phillip D. 3,431,385.

Bacon, Osborne C., and S. B. Cupp, to E. I. du Pont de Nemours and Co. Process of hot water aging of wool treated with an anti-felting agent. 3,431,132, 3–4–69, Cl. 117—7.

Bader, Otto, H.-P. Guhne, K. Sommerfeld, and J. Chilla, to Daimler-Benz Aktiengesellschaft. Engine valve brake for an internal combustion engine provided with an exhaust gas turbo-supercharger. 3,430,436, 3–4–69, Cl. 60—13.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Kastning, Ernst-Guenther, and Naarmann. 3,431,227.
Nonnenmacher, Helmut, Appl, Haug, and Andrussow. 3,431,284.

Baetsle, Leon H., and D. J. Huys, to Studiecentrum Voor Kernenergie S.C.K. Process for preparing mineral ion exchangers and exchangers so obtained. 3,431,086, 3–4–69, Cl. 23—315.

Baetzel, Robert J., and H. Majewski, to Union Carbide Corp. Process of improving the anti-blocking characteristics of regenerated cellulose tubing and the product resulting from said process. 3,431,127, 3–4–69, Cl. 106—168.

Bailey, George A., to Schering Corp. Denture spray. 3,431,208, 3–4–69, Cl. 252—106.

Baldwin, Robert S., to Commercial Solvents Corp. Bacteria inhibiting composition containing polymix B and O-carbamyl-D-serine. 3,431,341, 3–4–69, Cl. 424—177.

Balej, Jan, I. Paseka, J. Vondrak, and A. Regner, to Ceskoslovenska Akademie Ved. Electrolyzer for a simultaneous production of chlorine and alkaline carbonates. 3,431,193, 3–4–69, Cl. 204—266.

Ball, Robert G., G. H. Perry, and J. Wood. Digital storage devices using field-effect transistor bistable circuits. 3,431,433, 3–4–69, Cl. 307—221.

Baller, Albert H., and L. A. Willette. Dispenser with supply hold-back means. 3,430,810, 3–4–69, Cl. 221—205.

Bancroft, Joseph, & Sons Co.: *See*—
Harris, Billy S. 3,430,311.

Bang, Mogens W., to Stackpole Carbon Co. Linear motion potentiometer with protected slide. 3,431,529, 3–4–69, Cl. 338—183.

Bangs, Mogens W., to Stackpole Carbon Co. Gear and rack potentiometer actuator. 3,431,530, 3–4–69, Cl. 338—183.

Banks, Robert L. Phillips Petroleum Co. Conversion of olefins. 3,431,316, 3–4–69, Cl. 260—683.

Barber, Ronald B., to Neptune Meter Co. Oscillating piston meter. 3,430,537, 3–4–69, Cl. 91—56.

Barbie, Helen C. and J. N. Traffic safety signalling system. 3,431,554, 3–4–69, Cl. 340—32.

Barbie, John N.: *See*—
Barbie, Helen C. and J. N. 3,431,554.

Barlow, Malcolm, and P. J. Planting, to Bell Telephone Laboratories, Inc. Mercury contact switch having an alloy contact. 3,431,377, 3–4–69, Cl. 200—166.

Barnes, Harold N.: *See*—
Steck, Robert S., and Barnes. 3,430,678.

Barnes, William I., to Standard Screw Co. Chrome plated metering valve. 3,430,613, 3–4–69, Cl. 123—90.

Barr, Irwin R., to AAI Corp. Sabot with internal radial slots. 3,430,570, 3–4–69, Cl. 102—93.

Barr, Irwin R., to AAI Corp. Sabot. 3,430,571, 3–4–69, Cl. 102—93.

Barteit Engineering Co., Inc.: *See*—
Ludwig, Wilbur G., and Zimmer. 3,430,414.

Bartok, William, and R. H. Shabaker, to Esso Research and Engineering Co. Process for lowering the pour point of a middle distillate. 3,431,194, 3–4–69, Cl. 208—89.

Barton, Stanley: *See*—
Megison, Donald R., and Barton. 3,430,630.

Batchelar, Raymond L.: *See*—
La Croce, Leonard T., and Batchelar. 3,430,802.

Batchelor, Robert B.: *See*—
Terry, Sydney L., and Batchelor. 3,430,979.

Bate, Lamont C., F. F. Dyer, and L. H. Thacker, to United States of America, Atomic Energy Commission. Radiation detector and recorder. 3,431,414, 3–4–69, Cl. 250—71.5.

Bates, Leon H. Automatic tile forming machine. 3,430,309, 3–4–69, Cl. 25—43.

Bateson, Robert N., to General Mills Inc. Variable speed feeder control. 3,430,751, 3–4–69, Cl. 198—37.

Battista, Orlando A., and F. J. Karasinski, to FMC Corp. Low melting metallic articles reinforced with modified chrysotile. 3,431,090, 3–4–69, Cl. 29—182.5.

Batzold, John S., to Esso Research and Engineering Co. Particulate metal catalysts obtained by support removal and a base activation treatment. 3,431,220, 3–4–69, Cl. 252—472.

Baudet, Roger J. F.: *See*—
Alder, Robert O., Baudet, Baudier, and Gasset. 3,430,405.

Baudier, Claude P.: *See*—
Alder, Robert O., Baudet, Baudier, and Gasset. 3,430,405.

Bauer, Albert W., and R. A. Gorski, to E. I. du Pont de Nemours and Co. Azeotropic compositions. 3,431,211, 3–4–69, Cl. 252—172.

Baum, Melvin E., to Koppers Co., Inc. Foamed polystyrene articles coated with an unsaturated polyester resin having monovinyl ether monomer. 3,431,319, 3–4–69, Cl. 260—861.

Baum, Melvin E., F. Fekete, and J. A. Hatton, to Koppers Co., Inc. Polyester resin composition having a thickening agent therein. 3,431,320, 3–4–69, Cl. 260—865.

Bauman, Joseph F., and S. P. Rette, to Acme-Hamilton Mfg. Corp. Apparatus for the continuous formation of tubular articles. 3,430,292, 3–4–69, Cl. 18—19.

Baumgartner, John G., to Anchor Brush Co. Staple guide for securing bristles of a brush to a brush handle. 3,430,281, 3–4–69, Cl. 15—195.

Bausch & Lomb Inc.: *See*—
Doonan, Douglas D., and Maxwell. 3,431,054.
Keller, John D. 3,431,423.
Letter, Eugene C. 3,431,326.
Rahmel, Otto H. 3,431,531.

Baxter, Bernie M., and D. L. Cheney. Key ejector. 3,430,469, 3–4–69, Cl. 70—388.

Baxter Laboratories, Inc.: *See*—
Regan, Bernard M. 3,431,313.

Beachem, Michael T., to American Cyanamid Co. Oil and water repellent textiles. 3,431,140, 3–4–69, Cl. 117—121.

Beagles, John A.: *See*—
Bunton, William J., Beagles, and Good. 3,430,349.

Beason, Elmer C.: *See*—
Eddy, William R., Phillips, and Beason. 3,430,528.

Beattie, Walter R.: *See*—
Charman, Walter M., Jr., and Beattie. 3,430,682.

Beckerle, Lloyd D.: *See*—
Webb, James E. 3,431,397.

Beckett Mfg. Co.: *See*—
Spencer, Kenneth H. 3,430,922.

Beckman Instruments, Inc.: *See*—
Lenkey, Andrew, and Graeser. 3,430,852.

Bell, Marion S., A. A. Montrose, and B. H. Spoon, to Phelps Dodge Refining Corp. Apparatus for simultaneously pressing a plurality of cathode sheets. 3,430,479, 3–4–69, Cl. 72—400.

Bell Telephone Laboratories, Inc.: *See*—
Barlow, Malcolm, and Planting. 3,431,377.
Bridges, Thomas J., and Hempstead. 3,431,489.
Goeller, Leopold F., Jr., and Nervik. 3,431,368.
Hartwell, Walter T., and Young. 3,430,855.
Klingenberg, Alfred S. 3,431,537.
Lindenberger, William A. 3,431,520.
McLaughlin, George E. 3,431,369.
Miller, Ralph L. 3,431,362.
Pao, Yoh-han, and Rentzepis. 3,431,484.

Beloit Corp.: *See*—
Skaugen, Borg. 3,430,319.
Stoeng, Gunnar. 3,430,556.

Belter, Jerome G., to Dana Corp. Cylinder head gasket assembly with fluid cooled combustion sealing rings. 3,430,611, 3–4–69, Cl. 123—41.82.

Beltrami, Osmano. Excavator. 3,430,790, 3–4–69, Cl. 214—138.

Bender, Philip E.: *See*—
Conley, Dwain D., and Bender. 3,430,587.

Bendix Corp., The: *See*—
Thomas, Frank J., and Worthington. 3,431,557.
Vick, Ralph L. 3,430,646.

Benjamin, John G., to Minnesota Mining and Mfg. Co. Feeding apparatus for sheet material. 3,430,952, 3–4–69, Cl. 271—74.

Benner, Charles E., to Air Reduction Co., Inc. Sound attenuator attachment for protective helmet. 3,430,261, 3–4–69, Cl. 2—3.

Bennett, Clarence E.: *See*—
Bennett, John E. and C. E. 3,430,609.

Bennett, John E. and C. E. System for detecting an abnormal operating condition. 3,430,609, 3–4–69, Cl. 122—448.

Bennett, William N., to Fitchburg Paper Co. High frequency drying of separate pieces. 3,430,350, 3–4–69, Cl. 34—1.

Bensimon, Jacques, to CSF-Compagnie Generale de Telegraphie Sans Fil. Thermionic energy converter. 3,431,439, 3–4–69, Cl. 310—4.

Benson, Carl F., to The Torrington Co. Retainer lug construction. 3,431,037, 3–4–69, Cl. 308—217.

Benson, Harvey S.: *See*—
Rollwitz, William L., and Benson. 3,431,551.

Berg, Robert C. Safety bottle cap. 3,430,796, 3–4–69, Cl. 215—9.

Berger, Bernard A., to Northern Electric Co. Ltd. Resistor wrapping machine. 3,430,324, 3–4–69, Cl. 29—203.

Berger, Stephen C. Torch tip. 3,430,868, 3–4–69, Cl. 239—590.3.

Bergman, Erick H. Self-triggered veterinary attachment. 3,430,626, 3–4–69, Cl. 128—218.

Bergmann, Horst S. M.: *See*—
Tolscher, Karl E. L., and Bergmann. 3,431,312.

Bergstrand, Sten-Ake, to Perstorp Aktiebolag. Tubular catalytic reactor including heating and cooling means within the reactor. 3,431,083, 3–4–69, Cl. 23—288.

Berks, Colin J., to Expandite Ltd. Devices for sealing expansion joints in bridge decking. 3,430,544, 3–4–69, Cl. 94—18.

Berlenbach, Bernard E. Ski binding. 3,430,971, 3–4–69, Cl. 280—11.35.

Berlet, Edward. Towel holder. 3,430,677, 3–4–69, Cl. 242—55.2.

Berliner, Martin. Humidifier device. 3,431,038, 3–4–69, Cl. 312—31.

Bernas, Bedrich. Decomposition vessel. 3,430,804, 3–4–69, Cl. 220—63.

Bernat Fontlladosa, Enrique. Display container. 3,431,041, 3–4–69, Cl. 312—284.

Bernz-O-Matic Corp.: *See*—
Webster, Milo E., and Locke. 3,430,622.

Berry, Ferdinand W. Spacer members for use in reinforced structures. 3,430,407, 3–4–69, Cl. 52—689.

Berry Metal Co.: *See*—
Berry, Walter V. 3,430,939.

Berry, Walter V., to Berry Metal Co. Oxygen injection nozzle with externally projecting conduits. 3,430,939, 3–4–69, Cl. 266—34.

Bessett, Clifford H., to Packaging Corp. of America. Carton construction. 3,430,838, 3–4–69, Cl. 229—2.5.

Bethlehem Steel Corp.: *See*—
Humphries, Darral V., and Lester. 3,430,293.
Neubaum, Victor A. 3,431,180.

Betoski, Daniel J.: *See*—
Reinecke, Paul W., Van Sipe, Dowd, Liske, and Betoski. 3,430,419.

Bettoni, Eugene C.: *See*—
Saussele, Charles W., and Bettoni. 3,430,437.

Beukenkamp, Cornelius, Jr. Collar having a tube-like construction. 3,430,264, 3–4–69, Cl. 2—141.

Beven-Herron, Inc.: *See*—
Martin, John L., MacKey, and Bower. 3,431,011.

Bevis Industries Inc.: *See*—
Richbourg, James M. 3,430,310.

Beyer, Rolf R., and A. H. Boerio, to Westinghouse Electric Corp. Electron image device. 3,431,455, 3–4–69, Cl. 315—11.

Bialczak, Edward C., and W. S. Murphy, to Addressograph-Multigraph Corp. Heat sensitive diazotype materials. 3,431,109, 3–4–69, Cl. 96—49.

Biasi, Edward T., and J. G. Skiblak, to Pennsalt Chemicals Corp. Process for making bakers cheese. 3,431,115, 3–4–69, Cl. 99—116.

Bielskis, Edward C.: *See*—
Leo, Albert J., and Bielskis. 3,430,812.

Bigge Drayage Co.: *See*—
Whitmire, William A., and Webber. 3,430,987.

Billings, James P., to A. H. Emery Co. Weighing system including optically actuated adjustable set point control circuit having switch for selecting reset mode. 3,431,422, 3–4–69, Cl. 250—214.

Bindernagel, Alf, to Friedrich Kocks Kommanditgesellschaft. Spiral weld tube and pipe mills. 3,430,836, 3–4–69, Cl. 228—15.

Bing, John H.: *See*—
Vagedes, Lawrence J., and Bing. 3,430,818.

Biro, Alexander J., to Season-All Industries, Inc. Unitary prehung door and frame. 3,430,385, 3–4–69, Cl. 49—380.

Bizet, Pierre, to CIT-Compagnie Industrielle des Telecommunications. Electronic switch. 3,431,435, 3–4–69, Cl. 307—247.

Black and Decker Mfg. Co., The: *See*—
Miller, Daniel A. 3,430,708.
Miller, Daniel A. 3,430,709.

Black Clawson Co., The: *See*—
Dain, John E., and Milne. 3,430,738.

Blackburn, Marvin J., to Vernon Tool Co., Ltd. Simplified automatic pipe cutting machine. 3,430,938, 3–4–69, Cl. 266—23.

Blashfield, Floyd A.: *See*—
Renner, George B., and Blashfield. 3,430,552.

Blech- und Metallwarenfabrik, Robert Fischbach: *See*—
Gross, Johann. 3,430,846.

Bliss, E. W., Co.: *See*—
Shinbaum, Marvin S., and Strance. 3,430,481.

Blondal, Harold: *See*—
Levi, Irving, and Blondal. 3,431,299.

Bloom, Stanley M., to Polaroid Corp. Novel keto-hydroxy-peri-naphthoxazines. 3,431,260, 3–4–69, Cl. 260—244.

Blundy, Peter D.: *See*—
Simpson, Malcolm P., Hardwick, Blundy, and Morris. 3,431,071.

Boerio, Alvin H.: *See*—
Beyer, Rolf R., and Boerio. 3,431,455.

Bogner, Gunther, and G. Klipping, to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., and Siemens Aktiengesellschaft. Apparatus for replenishing liquid helium in a cryostat from a storage vessel. 3,430,450, 3–4–69, Cl. 62—45.

Bohlsen, Donald C.: *See*—
Swanberg, Stacy C., and Bohlsen. 3,430,496.

Bohrer, Byron B., and S. S. Kurtz, Jr., to Avisun Corp. Recovery of alpha-olefin polymers from solution. 3,431,249, 3–4–69, Cl. 260—93.7.

Bolen, Richard K., to The Northwestern Corp. Merchandise vending machine with combination rotary coin mechanism and slug rejector. 3,430,746, 3–4–69, Cl. 194—63.

Bolta, Christian C.: *See*—
Silver, Bernard, and Bolta. 3,430,619.

Boniface, Mary E. Eavestrough connector. 3,430,447, 3–4–69, Cl. 61—15.

Borg, Lester W., to Motorola, Inc. Tone control. 3,431,357, 3–4–69, Cl. 179—1.

Borgeas, Alexander T. Foot and leg exerciser. 3,430,956, 3–4–69, Cl. 272—83.

Borish, Irvin M., to Indiana Contact Lens, Inc. Apparatus for altering the power of a corneal contact lens. 3,430,391, 3–4–69, Cl. 51—105.

Borman, William, to General Electric Co. Oxidation of halophenols. 3,431,238, 3–4–69, Cl. 260—47.

Borrebach, Edwin J., to Westinghouse Electric Corp. Control system providing supply circuit impedance balance control for electric arc furnaces. 3,431,344, 3–4–69, Cl. 13—12.

Bosch, Robert GmbH: *See*—
Glockler, Otto, and Reichardt. 3,430,616.

Boss, Charles R. Screen for garment press. 3,430,369. 3–4–69, Cl. 38—66.

Bosse, Robert W., to Groov-Pin Corp. Self-tapping insert. 3,430,531, 3–4–69, Cl. 85—47.

Botden, Theodoor P. J.: *See*—
Daniels, Henricus P. C., and Botden. 3,430,331.

Botkin, Lawrence A., to Fruehauf Corp. Vent check valve. 3,430,648, 3–4–69, Cl. 137—493.

Bouchal, Alexander W.: *See*—
Gyarmathy, Kenneth W., and Bouchal. 3,431,339.

Boueil, Raymond, and G. Gardeux, to Regie Nationale des Usines Renault. Power-assisted hydrostatic braking systems for tractor vehicles and their trailers. 3,431,029, 3–4–69, Cl. 303—7.

Boueil, Raymond, and G. Gardeux, to Regie Nationale des Usines Renault. Hydrodynamic braking devices with hydrostatic safety feature for tractor vehicles with or without trailers. 3,431,030, 3–4–69, Cl. 303—7.

Bouniot, Albert, to Melle-Bezons (Societe Anonyme). Method of separating methanol from low boiling aliphatic esters and water by azeotropic distillation with a hydrocarbon.

Bowden, George F., and R. T. Dagiel, to Symons Mfg. Co. Stringer-releasing shore assembly for a concrete slab form installation. 3,430,910, 3–4–69, Cl. 248—354.

Bowditch, Hoel L., to The Foxboro Co. Linkage arrangement for instrumentation apparatus. 3,430,511, 3–4–69, Cl. 74—469.

Bower, Warren H.: *See*—
Martin, John L., MacKey, and Bower. 3,431,011.

Bownes, Victor J. Handheld paint brush wringer. 3,430,286, 3–4–69, Cl. 15—257.

Boxal Beaurepaire S.A.: *See*—
Dolveck, Gilbert. 3,430,594.

Boyer, George W., to Leach Corp. Apparatus for transporting elongated material. 3,430,879, 3–4–69, Cl. 242—55.12.

Boylan, Carol C., to Walbro Corp. Blade adapter. 3,430,461, 3–4–69, Cl. 64—28.

Braatz, Douglas R., to Peebles Foods, Inc. Process of treating cheese whey. 3,431,113, 3–4–69, Cl. 99—57.

Brackney, Harry S.: *See*—
Hill, Richard N., and Brackney. 3,431,096.

Bradley, William R.: *See*—
Olinger, Eugene C., Bradley, and Smith. 3,431,314.

Bradshaw, Thomas T., to Sani-Jon of America, Inc. Portable toilet. 3,430,269, 3–4–69, Cl. 4—144.

Brandon, Thomas A., Jr., to Chrysler Corp. Regulating device. 3,430,439, 3–4–69, Cl. 60—54.5.

Braude, George L., and E. W. Lard, to W. R. Grace & Co. Fabric coated with binder and pulverulent molecular sieve and process of making same. 3,431,133, 3–4–69, Cl. 117—24.

Braun, Ernst, and G. Braun, to Halbach & Braun, Maschinenfabrik. Coal-cutting tool. 3,431,024, 3–4–69, Cl. 299—34.

Braun, Gert: *See*—
Braun, Ernest and Gert. 3,431,024.

Brawley Steel Co.: *See*—
Arnold, Ray E. 3,430,478.

Breacker, Edward A., and E. R. Armelin, to Societe d' Etudes de Machines Speciales. Automatic tote rewind. 3,430,880, 3–4–69, Cl. 242—56.

Brealey, Graham J., to Courtaulds Ltd. Production of polyacrylonitrile fibres. 3,431,244, 3–4–69, Cl. 260—78.5.

Brebner, James: *See*—
Gabbitus, Derek, Stephens, Brebner, and Lee. 3,430,427.

Brediger, James L., W. B. Day, L. J. Lavedan, Jr., and J. K. Parks, to Sperry Rand Corp. Microwave transition apparatus. 3,431,515, 3–4–69, Cl. 333—21.

Breen, Henry D., and R. M. Loomis, to Unarco Industries, Inc. Lading supporting and separating means. 3,431,015, 3–4–69, Cl. 296—24.

Brenner, Al. Awning window. 3,430,383, 3–4–69, Cl. 49—80.

Breyer, Norman N., to La Salle Steel Co. Method and means for surface finishing of steel. 3,430,477, 3–4–69, Cl. 72—275.

Bridges, Thomas J., and C. F. Hempstead., to Bell Telephone Laboratories, Inc. Null coil pendulum magnetometer with means for establishing an alternating magnetic flux gradient through the null coil. 3,431,489, 3–4–69, Cl. 324—34.

Brieger, Emmet F., to Schlumberger Technology Corp. Formation-sampling apparatus. 3,430,714, 3–4–69, Cl. 175—78.

Brimhall, Ray S. Hydraulic valve and system. 3,430,653, 3–4–69, Cl. 137—625.23.

Brink, Richard E., to Curtis 1000 Inc. Envelope. 3,431,404, 3–4–69, Cl. 235—61.12.

Brischnik, Farnz, to Aktiengesellschaft Brown, Boveri & Cie. Voltage regulation apparatus with an optical feedback. 3,431,464, 3–4–69, Cl. 315—158.

Bristol Siddeley Engines Ltd.: *See*—
Richardson, Leslie F., and Parnell. 3,430,443.

Britax (London) Ltd.: *See*—
Burleigh, David W. 3,430,891.

British Petroleum Co. Ltd., The: *See*—
Forbes, George. 3,431,084.
Hopkins. Kenneth W. 3,430,670.

Brockhaus, Rudolf, to Chemische Werke Huls A.G. Preparation of acetic acid by catalytic gas-phase oxidation of butenes. 3,431,297, 3–4–69, Cl. 260—533.

Broderick, Jahn P., and F. T. Wishnie, to Eutectic Welding Alloys Corp. Protective shield for a flame spraying torch. 3,430,862, 3–4–69, Cl. 239—280.

Brollo, Giuseppe. Machine with self-centering rotating basket for washing dishes and utensils. 3,430,638, 3–4–69, Cl. 134—112.

Brooker, Leslie G. S., and E. J. Van Lare, to Eastman Kodak Co. Cyanine dyes. 3,431,111, 3–4–69, Cl. 96—106.

Broverman, Alvin Y., to Westinghouse Electric Corp. Polyphase electrical transformer construction having vertically superposed winding structures with cooling ducts. 3,431,524, 3–4–69, Cl. 336—60.

Brown, Arthur R.: *See*—
Hundley, George K. 3,431,449.

Brown, Carter N., to Eli Lilly and Co. Cinnamic acid derivatives. 3,431,302, 3–4–69, Cl. 260—559.

Brown, David J. E., to Winget Ltd. Load lifting. 3,430,778, 3–4–69, Cl. 212—144.

Brown, Francis X., and S. W. Wismer, Jr., to Westinghouse Electric Corp. Welding method. 3,430,323, 3–4–69, Cl. 29—157.3.

Brown, Jerald L., and J. J. Shelton, to Fife Mfg. Co. System for photoelectric control of moving webs. 3,431,425, 3–4–69. Cl. 250—219.

Brugmann, Jurgen: *See*—
Lofstrand, Warren A., and Brugmann. 3,431,432.

Bruhn, Richard A. ,and F. E. Newland, to Chrysler Corp. Tilting support apparatus. 3,430,907, 3–4–69, Cl. 248—140.

Brunnée, Curt, and G. Kappus, to Varian mat G.m.b.H. Magazine feed of sample with thermal isolation of sample from ionization chamber. 3,431,451, 3–4–69, Cl. 313—231.

Bryan, Morris M., Jr., and M. W. Roberts. Monitoring device for spinning frame. 3,430,426, 3–4–69, Cl. 57—34.

Buchanan, Bobby L.: *See*—
Dolan, Russell P., Jr., Buchanan, and Roosild. 3,431,150.

Buchner, Norbert, and R. Kohnlein, to Fr. Hesser, Maschinenfabrik, A.G. Container, particularly for liquids. 3,430,805, 3–4–69, Cl. 220—66.

Buckley, William J., Jr.: *See*—
Canavan, John J., Gawrylowicz, Buckley, and Johns. 3,430,863.

Buckner, Thomas E.: *See*—
Thompson, Benjamin, and Buckner. 3,431,305.

Budzich, Tadeusz. Apparatus to synchronize fluid drives with mechanical drives. 3,430,722, 3–4–69, Cl. 180—44.

Budzinski, Sylvester M. Golf practice device. 3,430,964, 3–4–69, Cl. 273—195.

Buhler, Gebruder: *See*—
Drugowitsch, Heilmut. 3,430,685.

Buhner, Willy. Apparatus for continuous dispersion of predominantly viscous substances. 3,430,925, 3–4–69, Cl. 259—8.

Bullard, E. D., Co.: *See*—
Raschke, Herbert A. 3,430,262.

Bunton, William J., J. A. Beagles, and D. E. Good. Underwater tripod and plumbing gimbal. 3,430,349, 3–4–69, Cl. 33—180.

Buntschuh, Henry C., and J. A. Duvoisin, to United Aircraft Corp. Readily assembled resolver having multiple pole pairs. 3,431,525, 3–4–69, Cl. 338—123.

Burge, Helmut W., to International Business Machines Corp. Liquid sample supply apparatus. 3,430,495, 3–4–69, Cl. 73—423.

Burgo, Paul A.: *See*—
Sutliff, Robert C., Burgo, Butler, and Pierson. 3,431,380.

Burk, George A., to The Dow Chemical Co. Method of preparing alkali metal halides. 3,431,068, 3–4–69, Cl. 23—89.

Burke, William J., to Roll-O-Sheets, Inc. Apparatus with heat conductive belt. 3,430,359, 3–4–69, Cl. 34—225.

Burleigh, David W., to Britax (London) Ltd. Automatic locking mechanism for a safety belt or harness. 3,430,891, 3–4–69, Cl. 242—107.4.

Burn, La Nell M. Game apparatus comprising a board representing an imaginary planet. 3,430,961, 3–4–69, Cl. 273—134.

Burnham, Claude W. Safety hoist hook. 3,430,307, 3–4–69, Cl. 24—241.

Burroughs Corp.: *See*—
Davis, Daniel H., Jr. 3,430,947.
Phillips, Robert L. 3,431,429.
Rayfield, Harry F. 3,430,878.

Burton, Jean A., R. J. Geppert, J. L. Farmer, and J. J. Mathis, to Geo. A. Hormel & Co. Transfer device for a frank-o-matic system. 3,430,831, 3–4–69, Cl. 226—105.

Bushmeyer, Richard W., to J. I. Case Co. Rotary compressor-type hay pelleter. 3,430,584, 3–4–69, Cl. 107—8.

Busler, Willard L., to AMP Inc. Covering for a connecting member. 3,431,548, 3–4–69, Cl. 339—278.

Butler, Ernest J.: *See*—
Sutliff, Robert C., Burgo, Butler, and Pierson. 3,431,380.

Butler, Harold B.: *See*—
Macy, Christian D. and L. G., and Butler. 3,431,118.

Butler, Lee D., to Sperry Rand Corp. Bale wagon. 3,430,783, 3–4–69, Cl. 214—6.

Buxton, Winslow H., Jr., to Western Kraft Corp. Process for chemical recovery and odor abatement of kraft liquor. 3,431,165, 3–4–69, Cl. 162—30.

Byers, John R., to United States of America, Army. Depthometer. 3,430,490, 3–4–69, Cl. 73—300.

CIT-Compagnie Industrielle des Telecommunications: *See*—
Bizet, Pierre. 3,431,435.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Bensimon, Jacques. 3,431,439.

Cabot Corp.: *See*—
Jordan, Merrill E. 3,431,074.

Cain, Gilbert E., to Hercules Inc. Relief valve. 3,430,650, 3–4–69, Cl. 137—535.

Caldwell, John R.: *See*—
Jackson, Winston J., Jr., and Caldwell. 3,431,230.

Caldwell, John R., and D. G. Hedberg, Jr., to Eastman Kodak Co. Dyeable polyolefin compositions and products therefrom. 3,431,322, 3–4–69, Cl. 260—873.

Calfee, Wendell, to Westinghouse Electric Corp. Miniature phase sequence sensing circuit. 3,431,467, 3–4–69, Cl. 317—47.

Callahan, James L., R. K. Grasselli, and W. R. Knipple, to The Standard Oil Co. Olefinic nitriles by ammoxidation of olefins with promoted antimony oxide-uranium oxide catalyst. 3,431,292, 3–4–69, Cl. 260—465.3.

Campagnuolo, Carl J., to United States of America, Army. Aircraft control system. 3,430,895, 3–4–69, Cl. 244—78.

Campbell, Jean K., to USM Corp. Means for making pellets, particularly explosive pellets. 3,430,532, 3–4–69, Cl. 86—1.

Canada Iron Foundries Ltd.: *See*—
Stewart, John K. 3,430,578.

Canada, James R., to Mobil Oil Corp. Treating inhomogeneous subterranean formations. 3,430,701, 3–4–69, Cl. 166—269.

Canadian Industries Ltd.: *See*—
Kelly, Cornelius J. N., and Knott. 3,431,154.

Canadian International Paper Co.: *See*—
Murphy, James A. 3,430,629.

Canadian Patents and Development Ltd.: *See*—
Smyth, Henry L. R. 3,431,481.

Canavan, John J., H. Gawrylowicz, W. J. Buckley, Jr., and W. Johns, to United States of America, Army. Fuel-oxidizer injection. 3,430,863, 3–4–69, Cl. 239—412.

Canteen Corp.: *See*—
Nicki, Franklyn G. 3,431,367.

Capozzi, Anthony J., to International Business Machines Corp. Data storage system employing an improved indexing technique therefor. 3,431,558, 3–4–69, Cl. 340—172.5.

Caprile, Carlo: *See*—
Giavotto, Vittorio, and Caprile. 3,430,923.

Cardell, Olof. Plate structure for heat exchangers. 3,430,694, 3–4–69, Cl. 165—166.

Caron, Georges, to Regie Nationale des Usines Renault. Convertible seats for automotive vehicles. 3,431,018, 3–4–69, Cl. 297—66.

Carter, Clarence F. and R. E., to Carter Engineering Co. Methods and apparatus for weighing material in a vacuum environment. 3,430,720, 3–4–69, Cl. 177—1.

Carter Engineering Co.: *See*—
Carter, Clarence F. and R. E. 3,430,720.

Carter, Robert E.: *See*—
Carter, Clarence F. and R. E. 3,430,720.

Carvalho, Dorothy A., M. Hauser, E. J. Schriffert, and G. S. Sprague, to American Cyanamid Co. Polyester resins. 3,431,151, 3–4–69, Cl. 149—19.

Cary, John T., to Continental Can Co., Inc. Rotary conductor. 3,431,532, 3–4–69, Cl. 339—8.

Case, J. I., Co.: *See*—
Bushmeyer, Richard W. 3,430,584.

Case, Forrest N., T. S. Mackey, and C. E. McFarland, to United States of America, Atomic Energy Commission. Method of making a strontium-90 radiation source. 3,431,328, 3–4–69, Cl. 264—.5.

Case Foundation Co.: *See*—
Gauntt, Grover C., Jr., Isaacs, Martin, and Walton. 3,430,448.

Cass, Richard: *See*—
Herbenar, Edward J., Cass, and Kutcher. 3,430,995.

Cassano, James R., to Xerox Corp. Sheet counting system in a reproduction machine. 3,430,558, 3–4–69, Cl. 101—132.

Cassidy, Patrick J., and M. L. Quammen, to United States of America, Army. Binocular interpupillary hinge assembly with frictional O-rings. 3,431,043, 3–4–69, Cl. 350—75.

Castrucci, Paul P., and R. P. Pecoraro, to International Business Machines Corp. Palladium ohmic contact to silicon semiconductor. 3,431,472, 3–4–69, Cl. 317—234.

Caterpillar Tractor Co.: *See*—
Hurst, Paul L., and Oswald. 3,430,507.
Junck, John A., and Rice. 3,430,657.

Cauvin, Andre. Mounting device for the engine block of a vehicle. 3,430,901, 3–4–69, Cl. 248—8.

Caves, Robert B.: *See*—
Rodgers, James L., and Caves. 3,430,867.

Cecil, Owen S., Jr.: *See*—
Senn, Charles M., and Cecil. 3,430,786.

Celanese Corp.: *See*—
Hancock, James L. 3,430,773.
Porter, Stephen L., Auville, and Winch. 3,430,465.

Ceskoslovenska Akademie Ved: *See*—
Balej, Jan, Paseka, Vondrak, and Regner. 3,431,193.

Challis, Kenneth E.: *See*—
Turner, Stanley B., and Challis. 3,430,848.

Chance, A. B., Co.: *See*—
Hubbard, David C., and Zumsteg. 3,431,538.

Chandler Evans, Inc.: *See*—
Oelrich, John A. 3,430,536.

Chapman, Charles C., to Phillips Petroleum Co. Alkylation. 3,431,079. 3–4–69, Cl. 23—260.

Chapman, Victor A., to Abelson Motors Ltd. Stillages or like load-carrying appliances and vehicles for transporting same. 3,430,793, 3–4–69, Cl. 214—515.

Charman, Walter M., Jr., and W. R. Beattie, to Oslebay Norton Co. Apparatus for lining a hot top. 3,430,682, 3–4–69, Cl. 164—159.

Charneski, Charles S., and R. E. Elliott, to Frank W. Egan & Co. Expansible mandrel. 3,430,883, 3–4–69, Cl. 242—72.1.

Chase Bag Co.: *See*—
Daniels, Allen. 3,430,844.

Chase, Charles A.: *See*—
Turner, Darrell J., Chase, and Gardiner. 3,430,900.

Chase, Richard R., and J. C. McKee, to Union Bag-Camp Paper Corp. Preserving method for outdoor storage of wood used in paper manufacture. 3,431,061, 3–4–69, Cl. 21—60.5.

Chaumont, Henri J., to Compagnie de Saint-Gobain. Method for the surface treatment of glass. 3,430,399, 3–4–69, Cl. 51—283.

Chavis, Leon A., to Mallory Electric Corp. Electronic speed control device for an engine. 3,430,615, 3–4–69, Cl. 123—102.

Chemetron Corp.: *See*—
Ratti, Gino A., Jr. 3,431,130.
Smith, Robert L. 3,430,928.

Chemical Construction Corp.: *See*—
Mehta, Dinshaw D., and Christensen. 3,430,451.

Chemische Werke Albert: *See*—
Zimmermann, Rolf, and Dathe. 3,431,308.

Chemische Werke Nuls A.G.: *See*—
Brockhaus, Rudolf. 3,431,297.
Strauss, Günther, and Thomas. 3,431,255.

Cheney, Donald L.: *See*—
Baxter, Bernie M., and Cheney. 3,430,469.

Chenot, Charles F., to Sylvania Electric Products Inc. Europium activated strontium fluoroborate phosphor. 3,431,215, 3–4–69, Cl. 252—301.4.

Chenot, Charles F., to Sylvania Electric Products Inc. Europium activated strontium haloborate phosphor. 3,431,216, 3–4–69, Cl. 252—301.4.

Chevron Research Co.: *See*—
Fox, Richard C. 3,431,062.
Fox, Richard C. 3,431,063.
Fox, Richard C. 3,431,064.
Jones, Thornton K. 3,431,128.

Childs, George W., to Recognition Equipment Inc. Multidrum document handling character reader. 3,431,402, 3–4–69, Cl. 235—61.11.

Chilla, Johannes: *See*—
Bader, Otto, Guhne, Sommerfeld, and Chilla. 3,430,436.

Choate, William M. Disposable multi-bladed safety razor. 3,430,341, 3–4–69, Cl. 30—40.

Choiniere, Paul H. Door latch. 3,431,000, 3–4–69, Cl. 292—95.

Chope, Henry R., to Industrial Nucleonics Corp. Energy reflection apparatus for mensuring a physical variable. 3,431,417, 3–4–69, Cl. 250—83.3.

Chow, Ho, to International Patent Research Corp. Travelling sprinkler. 3,430,859, 3–4–69, Cl. 239—183.

Chow, Ho, to International Patent Research Corp. Oscillating sprinkler. 3,430,860, 3–4–69, Cl. 239—242.

Christensen, Axel: *See*—
Mehta, Dinshaw D., and Christensen. 3,430,451.

Christenson, Roger M.: *See*—
Dowbenko, Rostyslaw, and Christenson. 3,431,294.

Christopher, Daryl J., to Raytheon Co. Vector generator. 3,431,458, 3–4–69, Cl. 315—18.

Chrysler Corp.: *See*—
Brandon, Thomas A., Jr. 3,430,439.
Bruhn, Richard A., and Newland. 3,430,907.
Pike, Kenneth R., Wilcox, and Cooper. 3,430,604.
Terry, Sydney L., and Batchelor. 3,430,979.

Ciba Corp.: *See*—
Anner, Georg, Meystre, Kalvoda, and Ueberwasser. 3,431,191.

Cimerol, Joseph J., W. M. Clarke, and W. I. Denton, to Olin Mathieson Chemical Corp. Hydrogenation apparatus provided with internal filter for separating reaction product. 3,431,085, 3–4–69, Cl. 23—288.

Cincinnati Milling Machine Co., The: *See*—
Abt, Ronald C. 3,430,851.
Edwards, Bobbie L. 3,430,473.

Cities Service Athabasca, Inc.: *See*—
Cymbalisty, Lubomyr M. O. 3,430,814.

Clapham, Fred R. Draught excluders. 3,430,387, 3–4–69, Cl. 49—491.

Clark Equipment Co.: *See*—
Rogers, Cyril B. 3,430,780.
Schenkelberger, Frank J. 3,430,974.

Clark, Frank E., C. C. Pugh, and R. H. Von Konsky, to Container Corp. of America. Case packer adapter. 3,430,416, 3–4–69, Cl. 53—159.

Clark, George B., and J. A. Kavanagh, to Aqua-Chem, Inc. Osmotic pressure demonstration kit and method of making the same. 3,430,360, 3–4–69, Cl. 35—18.

Clark, George B., and S. Manjikian, to Universal Water Corp. Reverse osmosis apparatus. 3,430,770, 3–4–69, Cl. 210—321.

Clark, Norman R.: *See*—
Geisler, William, and Clark. 3,430,326.

Clark, Robert L.: *See*—
Rogers, Edward F., and Clark. 3,431,300.

Clark, William T. III. Diminutive mechanical method of changing color and color saturation. 3,431,044, 3–4–69, Cl. 350—158.

Clarke, Rose A.: *See*—
Sheehan, Desmond, and Clarke. 3,431,264.

Clarke, William M.: *See*—
Cimerol, Joseph J., Clarke, and Denton. 3,431,085.

Clary, Harry E., to TRW Inc. Piston with ring groove reinforcement. 3,430,969, 3–4–69, Cl. 277—189.5.

Clasen, Richard D., and F. B. Nichols, to Superior Concrete Accessories, Inc. Tie rod assembly for a concrete wall form and with novel spacer members for the form sides. 3,430,914, 3–4–69, Cl. 249—217.

Clawson, Lawrence C., and M. B. Ziering, to United States of America, Atomic Energy Commission. Determination of vapor quality. 3,430,483, 3–4–69, Cl. 73—29.

Clendenin, Wilbur H., to International Harvester Co. Combination elevator. 3,430,757, 3–4–69, Cl. 198—213.

Cleveland, Clark C., to United States of America, Navy. Platform style ampule breaker. 3,431,147, 3–4–69, Cl. 136—90.

Clevite Corp.: *See*—
Hufferd, George H. 3,431,058.

Clifton, Richard: *See*—
Averill, William D. 3,431,546.

Clinton, Raymond O., to Sterling Drug Inc. 2-Isonitroso-3-oxo steroids. 3,431,286, 3–4–69, Cl. 260—397.4.

Cluett, Peabody & Co., Inc.: *See*—
Pandell, Nestor W., and Knebel. 3,430,480.
Coates, Joseph F.: *See*—
Wakeman, Reginald L., and Coates. 3,431,265.
Coblitz, Sanford E. Cutting element for a pipe-cutting chain. 3,430,830, 3–4–69, Cl. 225—143.
Coleman Co., Inc., The: *See*—
Hershey, Gerald L., and Johnson. 3,430,549.
Cole-Parmer Instrument and Equipment Co.: *See*—
Gilmont, Roger. 3,430,813.
Colgate-Palmolive Co.: *See*—
Gyarmathy, Kenneth W., and Bouchal. 3,431,339.
Pickin, John H. 3,431,060.
Collins Radio Co.: *See*—
Andrea, John J. 3,431,509.
Collins, Oliver D., to Snilloc Corp. Mechanism for locking the brake assembly for railroad cars. 3,430,735, 3–4–69, Cl. 188—67.
Combustion Engineering, Inc.: *See*—
Kochey, Edward L., Jr. 3,431,027.
Stalph, Gunter J. 3,430,645.
Compère, Alphonse. Hair curler. 3,430,636, 3–4–69, Cl. 132—34.
Commercial Solvents Corp.: *See*—
Baldwin, Robert S. 3,431,341.
Commissariat a l'Energie Atomique: *See*—
Rostaing, Michel. 3,431,080.
Compagnie de Saint-Gobain: *See*—
Chaumont, Henri J. 3,430,399.
Compagnie Generale d'Electricite: *See*—
Donadieu, Lucien J. 3,431,523.
Conley, Dwain D., and P. E. Bender, to Arvin Industries, Inc. Ironing table top. 3,430,587, 3–4–69, Cl. 108—78.
Conley, Kurt H., and A. J. Tenner, to Entoleter, Inc. Centrifugal impacting apparatus. 3,430,872, 3–4–69, Cl. 241—55.
Conner, Charles J., and G. S. Danna, to United States of America, Agriculture. Zirchrome mineral dyeing process for producing cellulosic materials with a plurality of degradation resistance factors. 3,431,059, 3–4–69, Cl. 8—52.
Conners, John P., and S. B. Davis, to The Corrugated Container Co. Liquid container with dispensing valve. 3,430,824, 3–4–69, Cl. 222—523.
Conrad, Tom J., G. O. Dayton, Jr., and M. Arlin, to Studies, Inc. Flexible polyethylene corneal contact lens. 3,431,046, 3–4–69, Cl. 351—160.
Consolidated Electrodynamics Corp.: *See*—
Lancor, Joseph H., Jr. 3,431,047.
Lofstrand, Warren A., and Brugmann. 3,431,432.
Consolidated Packaging Machinery Corp.: *See*—
Riesenberg, James H. 3,430,668.
Container Corp. of America: *See*—
Clark, Frank E., Pugh, and Von Konsky. 3,430,416.
Continental Can Co., Inc.: *See*—
Cary, John T. 3,431,532.
Ullery, Lee R., Jr., and Wronski. 3,431,383.
Continental Oil Co.: *See*—
Olinger, Eugene C., Bradley, and Smith. 3,431,314.
Controls Co. of America: *See*—
Obermann, George. 3,431,372.
Cook, James E.: *See*—
Stone, Leonard R., Reim, Muskovac, and Cook. 3,431,415.
Cooper, Allen E.: *See*—
Pike, Kenneth R., Wilcox, and Cooper. 3430,604.
Cooper, John H., to Sperry Rand Corp. Means for cutting wire by wire-melting electrical pulses. 3,431,384, 3–4–69, Cl. 219—68.
Cooper, Leslie E., and K. G. Pickup, to The Distillers Co. Ltd. Production of alkanols. 3,431,311, 3–4–69, Cl. 260—638.
Coors Porcelain Co.: *See*—
Landes, Benjamin D., and Paricio. 3,430,393.
Copel, Michel, to Integrated Electronics Corp. Apparatus and method for reconstructing speech. 3,431,356, 3–4–69, Cl. 179—1.
Copen, Daniel B., to Peerless Plastics, Inc. Adjustable strap construction. 3,430,299, 3–4–69, Cl. 24—73.
Cormier, George E., and P. H. Netherwood, to Sprague Electric Co. Encapsulated capacitor. 3,431,473, 3–4–69, Cl. 317—258.
Cornell Aeronautical Laboratory, Inc.: *See*—
Weatherston, Roger C. 3,430,847.
Cornell, John A., to Sartomer Resins, Inc. Method of molding decorative, veined, translucent, rigid plate. 3,431,330, 3–4–69, Cl. 264—17.
Corning Glass Works: *See*—
Ludovici, Bruno F., and Megla. 3,431,048.
Wardale, David J. S. 3,430,687.
Corrugated Container Co., The: *See*—
Conners, John P., and Davis. 3,430,824.
Coss, Ronald G., to Standard Pneumatic Motor Co. Control mechanism for power hand tools or instruments. 3,430,710, 3–4–69, Cl. 173—169.
Cotton Silk and Man-Made Fibres Research Association, The: *See*—
Head, Frank S. H., and Lund. 3,431,306.
Couris, Alexander. Drive assembly. 3,430,509, 3–4–69, Cl. 74—413.
Courtaulds Ltd.: *See*—
Brealey, Graham J. 3,431,244.
Sayers, Leslie W. 3,430,314.
Strang, Alastair. 3,430,753.
Courtois, Peter D., and G. J. Eriksson, to Superior Concrete Accessories, Inc. Anchor insert and pickup unit for a concrete slab. 3,431,012, 3–4–69, Cl. 294—86.
Cowan Pressroom Products, Inc.: *See*—
Nettleman, John B. 3,430,560.
Craig, Robert J. G., to Teledyne Systems, Inc. Free rotating gyro alignment apparatus. 3,430,499, 3–4–69, Cl. 74—5.1.
Crane, Everett D., and B. Werbel, to United States of America, Army. Smoke cartridge. 3,430,569, 3–4–69, Cl. 102—90.
Cree, Robert F., to General Electric Co. Gas sample enrichment device. 3,430,417, 3–4–69, Cl. 55—16.
Criss, George H., to Dresser Industries, Inc. Refractory coated composite oxygen lance. 3,430,940, 3–4–69, Cl. 266—35.
Crocker, Jeremy F., to Webb Associates, Inc. Liquid cooled garment. 3,430,688, 3–4–69, Cl. 165—46.
Crofts, Duane E.: *See*—
Webb, James E. 3,431,149.
Crompton & Knowles Corp.: *See*—
Harmon, Allen, and Gause. 3,430,721.
Crosby, Arthur O., to The Telex Corp. Hearing aid coupling. 3,431,370, 3–4–69, Cl. 179—182.
Crown Zellerbach Corp.: *See*—
McColl, Michael J. 3,430,839.
Cummings, Howard B., to Interspace Corp. Ceramic casting techniques. 3,431,332, 3–4–69, Cl. 264—86.
Cummings, Walter W., to Mobil Oil Corp. Shut-off control for an in-situ combustion production well. 3,430,696, 3–4–69, Cl. 166—53.
Cunningham, McCleery B., to Sonoco Products Co. Method of making a wound multi-ply paper tube. 3,430,543, 3–4–69, Cl. 93—94.
Cupp, Samuel B.: *See*—
Bacon, Osborne C., and Cupp. 3,431,132.
Currie, Grover C., Jr., to Weyerhaeuser Co. Packing machine. 3,430,412, 3–4–69, Cl. 53—48.
Curtis 1000 Inc.: *See*—
Brink, Richard E. 3,431,404.
Cymbalisty, Lubomyr M. O. 30% to Cities Service Athabasca, Inc., 30% to Imperial Oil Ltd., 30% to Atlantic Richfield Corp. and 10% to Royalite Oil Co., Ltd. Solid interphase indicator controller. 3,430,814, 3–4–69, Cl. 222—64.
Cziska, Johann: *See*—
Querengasser, Hugo, Krause, Frank, and Cziska. 3,431,-103.
Dagiel, Richard T.: *See*—
Bowden, George F., and Dagiel. 3,430,910.
D'Agostino, Michael V., to Radio Corp. of America. Emitter follower circuit having substantially constant current emitter supply. 3,431,505, 3–4–69, Cl. 330—14.
Daco, Inc.: *See*—
Rickett, Edward. 3,430,285.
Daikin Kogyo Kabushiki Kaisha: *See*—
Kato, Kaoru, and Ogawa. 3,431,067.
Daimler-Benz Aktiengesellschaft: *See*—
Bader, Otto, Guhne, Sommerfeld, and Chilla. 3,430,436.
Dain, John E., and W. S. Milne, to The Black Clawson Co. Drum brake assembly. 3,430,738, 3–4–69, Cl. 188—75.
Dainihon Jochugiku Co., Ltd.: *See*—
Katsuda, Yoshio. 3,431,393.
Dalton, Gerald J. Grass catcher. 3,430,422, 3–4–69, Cl. 56—202.
Dana Corp.: *See*—
Belter, Jerome G. 3,430,611.
Danforth, Joseph D. Analytical apparatus. 3,431,077, 3–4–69, Cl. 23—253.
Dangauthier, Marcel, to Societe Industrielle et Commerciale des Automobiles Peugeot. Elastically yieldable element for a bearing and a bearing including said element. 3,431,033, 3–4–69, Cl. 308—26.
Dangauthier, Marcel, to Societe Industrielle et Commerciale des Automobiles Peugeot. Flexible bearing in particular for an automobile vehicle suspension. 3,431,035, 3–4–69, Cl. 308—184.
Daniels, Allen, to Chase Bag Co. Valved bag end construction. 3,430,844, 3–4–69, Cl. 229—62.5.
Daniels, Henricus P. C., and T. P. J. Botden, to North American Philips Co., Inc. Apparatus and process for ultrasonically welding a wire to the surface of an object. 3,430,331, 3–4–69, Cl. 29—470.3.
Danna, Gary S.: *See*—
Conner, Charles J., and Danna. 3,431,059.
Danz, Ellsworth R., and C. J. Goodwin, to General Time Corp. Two-way instrument mount. 3,430,906, 3–4–69, Cl. 248—126.
Darcy, Jules, and J. R. Dunn, to Polymer Corp. Ltd. Silica and silica-containing vulcanizates. 3,431,231, 3–4–69, Cl. 260—41.5.
Data Laboratories Ltd.: *See*—
Warman, Stephen I. 3,430,960.
Dathe, Wolfgang: *See*—
Zimmermann, Rolf, and Dathe. 3,431,308.
Daubert Chemical Co.: *See*—
Nadherny, Russell J., and Moyer. 3,430,816.
Davenport, Buell E., J. H. Flynn, IV, and A. Jacobs, to E. I. du Pont de Nemours and Co. Method of adding an antioxidant to a continuous polymerization process. 3,431,236, 3–4–69, Cl. 260—45.75.
Davenport, Thomas G. Cubical game piece container having different game board patterns on its faces. 3,430,962, 3–4–69, Cl. 273—136.
David, Charles E., and H. W. O'Mary, to United States of America, Army. Solid state interpolator. 3,431,501, 3–4–69, Cl. 328—161.
Davidson, Daniel F.: *See*—
Hackney, Stanley, and Davidson. 3,431,167.
Davis, Bernard J., and L. B. Rosetti, to Reichhold Chemicals, Inc. Polyalkyl cycloalkyl phenol polymers. 3,431,310, 3–4–69, Cl. 260—619.
Davis, Daniel H., Jr., to Burroughs Corp. Record card handling and registering apparatus. 3,430,947, 3–4–69, Cl. 271—53.
Davis, Dhu A. J. Missile launching toy. 3,430,620, 3–4–69, Cl. 124—27.
Davis, Noah S., and O. J. Foust, to North American Rockwell Corp. Flocculation of suspensions. 3,431,200, 3–4–69, Cl. 210—10.

Davis, Samuel B.: *See*—
Conners, John P., and Davis. 3,430,824.
Davis, William R., and A. J. Macchi, to The Stanley Works. Strap tie-down system and hook. 3,430,912, 3–4–69, Cl. 248—361.
Dawson, Edward C., to United States of America, Air Force. Spectrum analyzer. 3,431,405, 3–4–69, Cl. 235—150.5.
Day, Ronald L.: *See*—
Paulsen, Roy, and Day. 3,431,007.
Day, William B.: *See*—
Brediger, James L., Day, Lavedan, and Parks. 3,431,515.
Dayton, Glenn O., Jr.: *See*—
Conrad, Tom J., Dayton, and Arlin. 3,431,046.
Dean, Hollie T. Anchor bolt shield. 3,430,408, 3–4–69, Cl. 52—699.
De Bruhl, Thurman R. Unloading table for bulk cured tobacco. 3,430,555, 3–4–69, Cl. 100—34.
De Bruin, Calvin N.: *See*—
Healing, Donald M., and De Bruin. 3,430,968.
Deckers, Gunther: *See*—
Nolte, Helmuth, Deckers, and Rostock. 3,430,565.
De Courcy, John E. Spinning and twisting appliance. 3,430,-429, 3–4–69, Cl. 57—66.
De Cuir, Perry J. Anchorable and releasable well tool. 3,430,-699, 3–4–69, Cl. 166—217.
Dedricks, Alvin N., and L. A. Mueller, to The Manitowoc Co., Inc. Ice cube making apparatus. 3,430,452, 3–4–69, Cl. 62—138.
Dee, John F., Jr. Low cut sports shoe. 3,430,365, 3–4–69, Cl. 36—2.5.
De Flines, Jan: *See*—
Van der Waard, Willem F., and de Flines. 3,431,173.
De Haes, Maria L.: *See*—
Willems, Josef F., van Veelen, and De Haes. 3,431,108.
Deichert, William G.: *See*—
De Lapp, Darwin F., and Deichert. 3,431,321.
De Lapp, Durwin F., and W. G. Deichert, to American Cyanamid Co. Weather-resistant unsaturated polyester resin composition. 3,431,321, 3–4–69, Cl. 260—872.
D'Elia, Anthony N., and E. M. Stolarz, to Presto Lock Co., Inc. Handle assembly for luggage or the like. 3,430,742, 3–4–69, Cl. 190—58.
De La Torre, Leroy C.: *See*—
Wilson, Homer M., and De La Torre. 3,431,488.
Della Gala, Maria. Device for teaching arithmetic and particularly the decimal number system. 3,430,363, 3–4–69, Cl. 35—31.
De Lorme, Albert R.: *See*—
Stol, Walter T., De Lorme, and Sketch. 3,431,371.
De Marco, Richard E.: *See*—
Gibbons, Ambrose J., Jr., and De Marco. 3,431,288.
Denker, Stanley D., to Doughboy Industries, Inc. Shrink tunnel with conveyer and air directing means. 3,430,358, 3–4–69, Cl. 34—222.
Dennison Mfg. Co.: *See*—
Tosti, William P. 3,431,051.
Denton, William I.: *See*—
Cimerol, Joseph J., Clarke, and Denton. 3,431,085.
Derouen, Earl R., to Olin Mathieson Chemical Corp. Method of growing oysters by using a particulate gypsum oyster bed covering. 3,430,607, 3–4–69, Cl. 119—4.
Derry, William T.: *See*—
Lewis, Robert B., and Derry. 3,430,888.
Desire, Pierre: *See*—
Roxie, Maurice, and Desire. 3,431,072.
Desko, Albert G. Mortar mixing machine. 3,430,931, 3–4–69, Cl. 259—178.
Despain, Alvin A., and A. MacBeinap. Self propelled harvesting vehicle. 3,430,982, 3–4–69, Cl. 280—255.
Despatch Oven Co.: *See*—
Melgaard, Hans L. 3,431,002.
De Tullio, Luigi, I. L. Spence, and R. Mostyn, to The Marconi Co. Ltd. Ultrasonic presence detectors. 3,431,549, 3–4–69, Cl. 340—1.
Deutsch, Ernest M. Kit construction. 3,430,361, 3–4–69, Cl. 35—19.
De Vito, Charles P., to Alcon Metal Products, Inc. Combination mounting pin and solder well terminal. 3,431,541, 3–4–69, Cl. 339—128.
Dewey, Robert B. Fluid impeller apparatus. 3,430,921, 3–4–69, Cl. 253—45.
De Winter, Max S., to Organon Inc. Process for the preparation of 2-hydroxy-methylene-19-nor-steroids. 3,431,287, 3–4–69, Cl. 260—397.4.
Dickenbrock, Frank, to General Motors Corp. Transmission. 3,430,504, 3–4–69, Cl. 74—200.
Dietrich, Anton, to Optische Werke G. Rodenstock. Eyeglasses with adjustable nose pads. 3,431,045, 3–4–69, Cl. 351—137.
Dimensional Products, Inc.: *See*—
Falkenberg, Gustave F. 3,430,817.
Dinwoodie, Andrew H., G. Fort, and J. B. Parker, to Imperial Chemical Industries Ltd. Difluoramino compounds. 3,431,-261, 3–4–69, Cl. 260—249.6.
Di Pietro, Carmelo V. Deep fat fryer. 3,430,553, 3–4–69, Cl. 99—336.
Diprose, Kenneth V., and A. S. Forbes, to Hancock & Co. (Engineers) Ltd. Photoelectric line follower employing coordinate drive motors and a circular scan. 3,431,419, 3–4–69, Cl. 250—202.
Distillers Co. Ltd., The: *See*—
Cooper, Leslie E., and Pickup. 3,431,311.
Dixon, Olaf G. Process of opening tow. 3,430,295, 3–4–69, Cl. 19—65.
Doan, Mildred. Fastener for medical tubes and the like. 3,430,300, 3–4–69, Cl. 24—73.
Dobbs, Jack: *See*—
Kirschbaum, Harry, and Dobbs. 3,430,364.
Dobres, Amalie B.: *See*—
Dobres, Robert M., and Warthen. 3,431,196.
Dobres, Robert M., deceased (by A. B. Dobres, executrix), and J. L. Warthen, to W. R. Grace & Co. Hydrocracking catalyst and process. 3,431,196, 3–4–69, Cl. 208—111.
Dockery, Denzel J. Pneumatic clamp. 3,430,494, 3–4–69, Cl. 73—420.
Dodo, Taro, and M. Yamamoto, to Kabushiki Kaisha Hitachi Seisakusho. Electron cyclotron resonance heating device. 3,431,461, 3–4–69, Cl. 315—39.
Doepke, John H.: *See*—
Averill, William D. 3,431,546.
Dolan, Bernard J., and R. K. Jenner, to Dolan Electronics, Inc. Ornamental display. 3,431,410, 3–4–69, Cl. 240—10.1.
Dolan Electronics, Inc.: *See*—
Dolan, Bernard J., and Jenner. 3,431,410.
Dolan, Russell P., Jr., B. L. Buchanan, and S. A. Roosild, to United States of America, Air Force. Process for implanting grids in semiconductor devices. 3,431,150, 3–4–69, Cl. 148—1.5.
Dole Valve Co., The: *See*—
Kolze, Lawrence A. 3,430,918.
Dolveck, Gilbert, to Boxal Beaurepaire S.A. Process for reducing the end of a tubular metallic body and device for carrying out this process. 3,430,594, 3–4–69, Cl. 113—1.
Donadieu, Lucien J., to Compagnie Generale d'Electricite. Superconductive quadripole with magnetic focusing. 3,431,-523, 3–4–69, Cl. 335—210.
Doonan, Douglas D., and G. B. Maxwell, to Bausch & Lomb Inc. Monochromator device. 3,431,054, 3–4–69, Cl. 356—100.
Doty, Leete P. Portable cooking grill. 3,430,621, 3–4–69, Cl. 126—25.
Doughboy Industries, Inc.: *See*—
Denker, Stanley D. 3,430,358.
Douta, Kikuo, H. Matumaru, and T. Nishimura, to Hitachi, Ltd. Method of manufacturing integrated circuits. 3,430,-334, 3–4–69, Cl. 29—577.
Dow Chemical Co., The: *See*—
Burk, George A. 3,431,068.
Harry, Lawrence D. 3,431,237.
Kuhn, Stephen J. 3,431,087.
Miles, Wallace J., Lapham, and Hahn. 3,431,228.
Dowbenko, Rostyslaw, and R. M. Christenson, to PPG Industries, Inc. Unsaturated beta-hydroxalkyl carboxylate preparation. 3,431,294, 3–4–69, Cl. 260—486.
Dowd, Walter W.: *See*—
Reinecke, Paul W., Van Sipe, Dowd, Liske, and Betoski. 3,430,419.
Dowden, Fred, Jr. Readout device for taxicab meters. 3,430,854, 3–4–69, Cl. 235—30.
Dravnieks, Andrew, and M. J. Salkowski, to United States of America, Army and/or Federal Aviation Administration. Automatic bomb detector. 3,430,482, 3–4–69, Cl. 73—23.1.
Dreher, Elmer. Filter assembly. 3,430,771, 3–4–69, Cl. 210—323.
Dresser Industries, Inc.: *See*—
Criss, George H. 3,430,940.
Wilson, Homer M., and De La Torre. 3,431,488.
Zrimsek, Arthur H., and Vingas. 3,431,123.
Drew, Edward de B.: *See*—
Moldovan, Michael T., and Drew. 3,430,559.
Drew, Eugene H.: *See*—
Moldovan, Michael T., and Drew. 3,430,559.
Dritz, Arthur, to Scovill Mfg. Co. Sewing gauge. 3,430,346, 3–4–69, Cl. 33—2.
Drugowitsch, Hellmut, to G. Buhler. Cold chamber pressure casting machine with sieve-like barrier for piston pump. 3,430,685, 3–4–69, Cl. 164—314.
Drummond, Warren W. Fiber winding machine. 3,430,312, 3–4–69, Cl. 28—1.
Drybread, John S., Sr., and D. C. Fritz. License plate holder. 3,430,376, 3–4–69, Cl. 40—209.
Duda, William J., to American Cyanamid Co. Corrugating machine. 3,430,476, 3–4–69, Cl. 72—190.
Dudzik, Chester J., and G. E. Perkins, to Leesona Corp. Glass yarn having controlled torsional forces. 3,430,432, 3–4–69, Cl. 57—140.
Duggan, Robert B.: *See*—
Parkison, Richard G., and Duggan. 3,430,686.
Dumont, Marcel, to Virola S.A. Collet. 3,430,435, 3–4–69, Cl. 58—115.
Dumont, Pierre: *See*—
Trimbach, Honore, and Dumont. 3,431,098.
Duncan, Norman D., to General Motors Corp. Molding compositions comprising isotactic polypropylene blend, filler and metallic soap. 3,431,225, 3–4–69, Cl. 260—23.
Dunglinson, Colin, and W. M. Lyerly, to E. I. du Pont de Nemours and Co. Water-bearing explosive containing nitrogen-base salt and method of preparing same. 3,431,155, 3–4–69, Cl. 149—47.
Dunigan, Thomas E.: *See*—
Seals, William O., Dunigan, and Picard. 3,431,153.
Dunlop Co. Ltd., The: *See*—
Warson, Henry, and Reed. 3,431,226.
Dunn, John R.: *See*—
Darcy, Jules, and Dunn. 3,431,231.
Dunning, William S. Loudspeaker assembly with loudspeaker supported by vibratory diaphragm. 3,430,728, 3–4–69, Cl. 181—31.

Du Pont de Nemours, E. I., and Co.: *See*—
Andreades, Sam. 3,431,184.
Bacon, Osborne C., and Cupp. 3,431,132.
Bauer, Albert W., and Gorski. 3,431,211.
Davenport, Buell E., Flynn, and Jacobs. 3,431,236.
Dunglinson, Colin, and Lyerly. 3,431,155.
Engelhardt, Vaughn A. 3,431,089.
Keane, John J., and Lough. 3,431,135.
Kottenhahn, Alfred P. 3,431,307.
Lewis, Robert B., and Derry. 3,430,888.
Reinhardt, Heinz F. 3,431,280.
Seney, John S. 3,430,488.
Stilmar, Frederic B. 3,431,136.
Trofimenko, Swiatoslaw. 3,431,275.
Duria-Werk Karl Kempf GmbH: *See*—
Heck, Friedrich. 3,431,105.
Durst, Jack R., to The Pillsbury Co. Food bar and method for making. 3,431,112, 3–4–69, Cl. 99—1.
Duvoisin, Jean A.: *See*—
Buntschuh, Henry C., and Duvoisin. 3,431,525.
Dyer, Frank F.: *See*—
Bate, Lamont C., Dyer, and Thacker. 3,431,414.
Dynamic Precision Control Corp.: *See*—
Van Ostrand, William F. 3,431,474.
Dynamit Nobel AG.: *See*—
Ismail, Roshdy M. 3,431,129.
Karp, Johann, and Krebsbach. 3,430,988.
Eastman Kodak Co.: *See*—
Brooker, Leslie G. S., and Van Lare. 3,431,111.
Caldwell, John R., and Hedberg. 3,431,322.
Jackson, Winston J., Jr., and Caldwell. 3,431,230.
Sutliff, Robert C., Burgo, Butler, and Pierson. 3,431,380.
Thompson, Benjamin, and Buckner. 3,431,305.
Weyerts, Walter J. 3,431,107.
Eaton Yale & Towne Inc.: *See*—
Gee, Thomas A. 3,430,457.
Meacham, George B. K. 3,430,614.
Roper, Daniel W. 3,430,519.
Ebneter, Markus, to Ferd. Ruesch, Maschinenfabrik. Automatic apparatus for continuously winding strip material. 3,430,881, 3–4–69, Cl. 242—56.
Eddy, William R., L. D. Phillips, and E. C. Beason, to Phillips Petroleum Co. Bag notching apparatus. 3,430,528, 3–4–69, Cl. 83—169.
Edens, Hendrik J. Vehicle and switch therefor. 3,430,580, 3–4–69, Cl. 104—28.
Edming, John W. Silage distributor. 3,430,788, 3–40–69, Cl. 214—17.
Edwards, Bobbie L., to The Cincinnati Milling Machine Co. Mounting construction for diaphragm in forming press. 3,430,473, 3–4–69, Cl. 72—63.
Edwards, Harry, and C. F. Kenyon, to Imperial Chemical Industries Ltd. Apparatus for metering and mixing polyurethane components. 3,431,081, 3–4–69, Cl. 23—285.
Edwlstahlwerk Witten Aktiengesellschaft: *See*—
Pecnik, Franc. 3,431,100.
Egan, Frank W., & Co.: *See*—
Charneski, Charles S., and Elliott. 3,430,883.
Egenvall, Gustaf C., to Johnson Construction Co. AB. Heat exchange element with condensate collector. 3,430,693, 3–4–69, Cl. 165—166.
Eggers, Gerhard, and W. Seibold, to Vereinigte Flugtechnische Werke G.m.b.H. Jet power plant. 3,430,858, 3–4–69, Cl. 239—127.3.
Eggers, Robert G.: *See*—
Grant, Arthur F., and Eggers. 3,430,585.
Ehrenstein, Elemir, and I. Slabon, to Vyskumny Ustav Zvaracsky. Electrode nozzle. 3,431,391, 3–4–69, Cl. 219—130.
Ehrhart, Wendell A., to Armstrong Cork Co. Cyclic esters of o-phthalic acid and a glycol ether. 3,431,279, 3–4–69, Cl. 260—340.2.
Ek, C. Harold: *See*—
Varterasian, John H., and Ek. 3,431,498.
Elberson, John L. Apparatus for scavenging exhaust gases. 3,430,617, 3–4–69, Cl. 123—148.
Eldon Industries: *See*—
Truesdell, Warren L., and McQuary. 3,430,581.
Eldorado Tool & Mfg., Corp.: *See*—
Hotchkiss, Thomas W. 3,431,375.
Electrovert Mfg. Co. Ltd.: *See*—
Roczey-Koller. 3,430,332.
Ellenberger, Jakob, to Firma Ellenberger & Poensgen G.m.b.H. Terminal board with plug-in type pushbutton-controlled circuit breakers. 3,431,517, 3–4–69, Cl. 335—35.
Ellington, John P., to United Kingdom Atomic Energy Authority. Nuclear reactor fuel elements. 3,431,169, 3–4–69, Cl. 176—68.
Elliott Bros. (London) Ltd.: *See*—
Wood, Francis H. 3,430,605.
Elliott, Ronald E.: *See*—
Charneski, Charles S., and Elliott. 3,430,883.
Ellis, Geoffrey H. S.: *See*—
Pope, Joseph A., Lowe, and Ellis. 3,430,508.
Ellis, James P. Two-way wall brace. 3,430,397, 3–4–69, Cl. 52—227.
Ellison, Joseph E., to Standard Screw Co. Bezel cap. 3,430,377, 3–4–69, Cl. 40—332.
Elowe, Louis N.: *See*—
Zingerman, Joel R., and Elowe. 3,431,138.
Elsner, Bertram F., and F. Elsner, Jr., to Elsner Engineering Works, Inc. Cone head assembly for winding machines. 3,430,887, 3–4–69, Cl. 242—68.2.
Elsner Engineering Works, Inc.: *See*—
Elsner, Bertram F., and F. Elsner, Jr. 3,430,887.
Elsner, Frank, Jr.: *See*—
Elsner, Bertram F., and F. Elsner, Jr. 3,430,887.
Embree, Earl P. Portable elevating apparatus. 3,430,734, 3–4–69, Cl. 187—10.
Emerson, William D., to The Scholl Mfg. Co., Inc. Bowling shoe cleaner. 3,430,396, 3–4–69, Cl. 51—205.
Emergy, A. H., Co.: *See*—
Billings, James P. 3,431,422.
Engel, Edward F., and H. S. Scherzer, to The Schlegel Mfg. Co. Polishing buff. 3,430,283, 3–4–69, Cl. 15—230.12.
Engelhard, William E., to Pyro-Serv Instruments, Inc. Heat control apparatus. 3,430,856, 3–4–69, Cl. 236—15.
Engelhardt, Vaughn A., to E. I. du Pont de Nemours and Co. Reaction products and processes. 3,431,089, 3–4–69, Cl. 23—358.
Engins Matra: *See*—
Sautier, Pierre J. 3,430,562.
English, James F., to General Electric Co. Bromine regenerative cycle incandescent lamps. 3,431,448, 3–4–69, Cl. 313—37.
Ennis, Thomas E.: *See*—
Reis, John C., Sommer, and Ennis. 3,431,510.
Entoleter, Inc.: *See*—
Conley, Kurt H., and Tenner. 3,430,872.
Kuechler, William L. 3,430,932.
Eorgan, James E., to Kawecki Chemical Co. High temperature oxidation resistant articles. 3,431,141, 3–4–69, Cl. 117—135.1.
Epstein, Henry D., to Texas Instruments Inc. Thermostatic snap-acting switch. 3,431,527, 3–4–69, Cl. 337—347.
Eriksson, George J.: *See*—
Courtois, Peter D., and Eriksson. 3,431,012.
Eriksson, Karl A.: *See*—
Mundt-Petersen, Just H., and Eriksson. 3,431,016.
Erlewine, Richard H.: *See*—
Richter, Charles W., III., and Erlewine. 3,431,409.
Errico, Gus J. Spark plug with adjustable electrode gap. 3,431,450, 3–4–69, Cl. 313—125.
Esche, Rolf, and W. V. Hacht, to Siemens Aktiengesellschaft. Induction heating apparatus. 3,431,382, 3–4–69, Cl. 219—10.79.
Esposito, Vincent J., Jr. Pilferproof cap with integral pressure actuated sealing means. 3,430,777, 3–4–69, Cl. 215—52.
Essen, Edgar, to Allmanna Svenska Elektriska Aktiebolaget. Turbo-generator with inlets and outlets for cooling channels in the rotor slot opening into the airgap. 3,431,443, 3–4–69, Cl. 310—65.
Essex Wire Corp.: *See*—
Stoi, Walter T., De Lorme, and Sketch. 3,431,371.
Esso Research and Engineering Co.: *See*—
Amir, Emanuel M. 3,431,317.
Bartok, William, and Shabaker. 3,431,194.
Batzold, John S. 3,431,220.
Jahnig, Charles E., and Schnepf. 3,431,197.
Pfrehm, Raymond H. 3,430,489.
Etablissements J. Danois & Fils: *See*—
Malenfant, Yve P. M. J. 3,430,384.
Ethyl Corp.: *See*—
Gorsich, Richard D. 3,431,212.
Gorsich, Richard D. 3,431,213.
Robinson, Gene C. 3,431,185.
Eugene Ltd.: *See*—
Selinger, Cyril S. 3,430,353.
Eutectic Welding Alloys Corp.: *See*—
Broderick, John P., and Wishnie. 3,430,862.
Evans, Kenneth R., to Microwave Associates, Inc. Electron tube variable delay line. 3,431,453, 3–4–69, Cl. 315—3.6.
Excel Corp.: *See*—
Hodgen, Loran M. 3,430,333.
Expandite Ltd.: *See*—
Berks, Colin J. 3,430,544.
FMC Corp.: *See*—
Battista, Orlando A., and Karasinski. 3,431,090.
Ginnette, Lewis F., and Scalf. 3,430,454.
Kreinik, Jerry M. 3,431,093.
Fabrique d'Horlogerie Lemauia, Lugrin S.A., l'Orient: *See*—
Piguet, Albert. 3,430,434.
Fabris, Wilhelm V., to Siemens Aktiengesellschaft. Magnetic tape device for high tape speeds. 3,430,833, 3–4–69, Cl. 226—195.
Fadner, Thomas A., to Oxford Paper Co. Electric field polymerization. 3,431,137, 3–4–69, Cl. 117—93.1.
Falkenberg, Gustave F., to Dimensional Products, Inc. Dispenser for bottled liquids. 3,430,817, 3–4–69, Cl. 222—173.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
Aichinger, Gerd, Schutz, and Hoffmeister. 3,431,257.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Horner, Leopold, Neumann, and Geiger. 3,431,186.
Farmer, James L.: *See*—
Burton, Jean A., Geppert, Farmer, and Mathis. 3,430,831.
Farrel Corp.: *See*—
Parrella, Alfred T., and Gagliardi. 3,430,400.
Faulkner, Kenneth F., and A. W. Plume, to Heatlock Ltd. Electrical resistance furnaces. 3,431,345, 3–4–69, Cl. 13—22.
Federal Aviation Administration: *See*—
Dravnicks, Andrew, and Salkowski. 3,430,482.
Federal Electronics, Inc.: *See*—
Stiebel, Ariel I., and Lippmann. 3,431,470.
Federal Laboratories, Inc.: *See*—
Amster, Stanley A. 3,430,568.
Fein, Marvin M., J. Green, and E. L. O'Brien, to Thiokol Chemical Corp. Thermally stable polymeric products. 3,431,234, 3–4–69, Cl. 260—46.5.
Fekete, Frank: *See*—
Baum, Melvin E., Fekete, and Hatton. 3,431,320.

Ferd. Ruesch, Maschinenfabrik: *See*—
Ebneter, Markus. 3,430,881.
Ferland, Jean M.: *See*—
Lefebvre, Yvon. and Ferland. 3,431,258.
Fernseh G.m.b.H.: *See*—
Sennhenn, Emil. 3,431,351.
Ferranti, Ltd.: *See*—
Laidlaw, Neil R. 3,431,426.
Ferrari, Arthur M. Lumber strip off-bearer and loader. 3,430,749, 3–4–69, Cl. 198—24.
Ferro Mfg. Corp.: *See*—
Pickles, Joseph. 3,430,516.
Fesco, John J., to Studley Paper Co., Inc. Disposable filter bag. 3,430,843, 3–4–69, Cl. 229—62.5.
Fettweis, Alfred L. M., to International Standard Electric Corp. Resonant transfer filters with impedance compensating filters for filter cut-offs unequal to one-half of the sampling frequency. 3,431,360, 3–4–69, Cl. 179—15.
Feuge, Reuben O., N. V. Lovegren, and B. B. Gajee, to United States of America, Agriculture. Process for the production of confectionery fats. 3,431,116, 3–4–69, Cl. 99—118.
Fibreboard Corp.: *See*—
Geisler, William, and Clark. 3,430,326.
Fichtel & Sachs A.G.: *See*—
Wossner, Felix. 3,430,512.
Ficken, Geoffrey E., D. J. Fry, and E. F. W. Thurston, to Ilford Ltd. Super-sensitized photographic silver halide light-sensitive materials. 3,431,110, 3–4–69, Cl. 96—104.
Fiedler, Armin. Combined stepladder-cart. 3,430,972, 3–4–69, Cl. 280—30.
Fields, Roger Q., to Schlumberger Technology Corp. Formation-sampling apparatus. 3,430,715, 3–4–69, Cl. 175—78.
Fife Mfg. Co.: *See*—
Brown, Jerald L., and Shelton. 3,431,425.
Filatov, Eduard Y., and V. E. Pavlovsky. Mechanism converting torsional vibration into linear one. 3,430,502, 3–4–69, Cl. 74—89.
Filippi, Frank J.: *See*—
Wolcott, Charles E., and Filippi. 3,430,390.
Fink, Walter, to Monsanto Co. High temperature resistant polymeric cyclosilazanes. 3,431,222, 3–4–69, Cl. 260—2.
Fiornascente, Nicola. Method for making mechanically grooved phonograph records. 3,431,333, 3–4–69, Cl. 264—107.
Firma Ellenberger & Poensgen GmbH: *See*—
Ellenberger, Jakob. 3,431,517.
Fisher, Mahlon B., to Sylvania Electric Products, Inc. Crossfield photoelectron multiplier tube having channeled secondary emissive dynodes. 3,431,420, 3–4–69, Cl. 250—207.
Fisher Radio Corp.: *See*—
Heinz, Harro K., and Frei. 3,431,503.
Fisons Fertilizers Ltd.: *See*—
Hall, Raymond F., and Sherwin. 3,431,076.
Fitchburg Paper Co.: *See*—
Bennett, William N. 3,430,350.
500 Inc.: *See*—
Stuart, Robert W., and Hogan. 3,430,455.
Flaherty, James H., to General Motors Corp. Making a welded circuit assembly. 3,430,338, 3–4–69, Cl. 29—626.
Flanagan, William J., and D. Q. Lee, to United Aircraft Corp. Delay time computer for heart pump system. 3,430,624, 3–4–69, Cl. 128—1.
Flaxman, Nathan: *See*—
Schweitzer, William P., and Flaxman. 3,430,634.
Fleischman, Howard A., to Fleischman Industries, Inc. Security hanger device. 3,430,775, 3–4–69, Cl. 211—123.
Fleischman Industries, Inc.: *See*—
Fleischman, Howard A. 3,430,75.
Fleissner, Gerold: *See*—
Fleissner, Heinz, and G. 3,430,355.
Fleissner, Heinz, and G. 3,430,356.
Fleissner, Hans, to Vepa AG. Method and apparatus for the heat-treatment of materials which can be stressed in a longitudinal direction. 3,430,352, 3–4–69, Cl. 34—15.
Fleissner, Heinz, and G. Fleissner, to Vepa AG. Apparatus for the heat-treatment of textile materials. 3,430,355, 3–4–69, Cl. 34—122.
Fleissner, Heinz, and G. Fleissner, to Anstalt fur Patentdienst. Sieve drum gas-solid contact apparatus. 3,430,356, 3–4–69, Cl. 34—132.
Flintkote Co., The: *See*—
Metzger, Grant W. 3,430,936.
Florczak, Richard A., to The Singer Co. Blade mounting for impact cutters. 3,430,592, 3–4–69, Cl. 112—252.
Florida National Bank: *See*—
Garrett, Leo L. 3,430,935.
Flynn, John Henry IV: *See*—
Davenport, Buell E., Flynn, and Jacobs. 3,431,236.
Focella, Antonino, H. Gurien, and A. I. Rachlin, to Hoffmann-La Roche Inc. Process for producing methylhydrazine derivatives. 3,431,301, 3–4–69, Cl. 260—558.
Folz, John M., to Phillips Petroleum Co. Butene-1 purification. 3,431,315, 3–4–69, Cl. 260—677.
Forbes, Arthur S.: *See*—
Diprose, Kenneth V., and Forbes. 3,431,419.
Forbes, George, to The British Petroleum Co. Ltd. Fixed-bed catalytic operations. 3,431,084, 3–4–69, Cl. 23—288.
Forbush, Lothrop M., to General Motors Corp. Slotted retainer for bolt head. 3,430,674, 3–4–69, Cl. 151—41.7.
Ford Motor Co.: *See*—
McLaughlin, Harry A. 3,430,503.
Forgione, Peter S., to American Cyanamid Co. Phenyl vinylene oxalates. 3,431,278, 3–4–69, Cl. 260—340.2.
Forney Engineering Co.: *See*—
Forney, Ross H. 3,430,655.
Forney, Ross H., to Forney Engineering Co. Monoblock valve. 3,430,655, 3–4–69, Cl. 137—625.47.
Forrester, Jay W., W. M. Pease, J. O. McDonough, and A. K. Susskind, to John T. Parsons, Machine tool numerical control system. 3,431,478, 3–4–69, Cl. 318—162.
Fort, Godfrey: *See*—
Dinwoodie, Andrew H., Fort, and Parker. 3,431,261.
Fortier, Paul H. Stabilizing device for a vehicle. 3,430,978, 3–4–69, Cl. 280—124.
Foust, Oren J.: *See*—
Davis, Noah S., and Foust. 3,431,200.
Fox, Richard C., to Chevron Research Co. Antievaporant process and composition. 3,431,062, 3–4–69, Cl. 21—60.5.
Fox, Richard C., to Chevron Research Co. Process and composition for retarding water evaporation. 3,431,063, 3–4–69, Cl. 21—60.5.
Fox, Richard C., to Chevron Research Co. Antievaporant process and composition. 3,431,064, 3–4–69, Cl. 21—60.5.
Foxboro Co., The: *See*—
Bowditch, Hoel L. 3,430,511.
France Bed Co., Ltd.: *See*—
Ikeda, Minoru. 3,430,274.
Frangeco, Societe Anonyme Francaise, Puteaux: *See*—
Joseph, Jean-Jacques. 3,431,017.
Frank, Klaus: *See*—
Querengasser, Hugo, Krause, Frank, and Cziska. 3,431,-103.
Frant, Martin S., to Orion Research, Inc. Fluoride sensitive electrode and method of using same. 3,431,182, 3–4–69, Cl. 204—1.
Frazier, Bruce J., to Halliburton Co. Hydraulically balanced plug valve. 3,430,919, 3–4–69, Cl. 251—283.
Frederick, Arthur I.: *See*—
Pandjiris, Anthony K., and Frederick. 3,430,944.
Freeborn, John C., to United States of America. Spiral sweep phase shift compensation. 3,431,459, 3–4–69, Cl. 315—24.
Freedman, David, and V. A. Liobis, to New Brunswick Scientific Co., Inc. Counterweight system for shaker apparatus. 3,430,926, 3–4–69, Cl. 259—54.
Freedman, Harold T., and H. Schlussler, to United States of America, Army. Interlaced pulse train analyzer. 3,431,-500, 3–4–69, Cl. 328—110.
Freedman, Hyman. Filling means for dental spray bottles. 3,430,669, 3–4–69, Cl. 141—353.
Freeman, Richard B., to Scovill Mfg. Co. Pneumatic tool. 3,430,539, 3–4–69, Cl. 91—411.
Frei, Karl: *See*—
Heinz, Harro K., and Frei. 3,431,503.
Freihofer, Alexis, to Ruti Machinery Works Ltd. Arrangement for transferring yarn on a weaving loom. 3,430,666, 3–4–69, Cl. 139—125.
Freund, Heinz-Eberhard, and F. Arndt, to Schering A.G. Herbicidal, halogenated urea derivative. 3,431,289, 3–4–69, Cl. 260—453.
Friedr. Krupp Huttenwerke Aktiengesellschaft: *See*—
Sickbert, Adolf. 3,430,663.
Fritsch & Co., oHG: *See*—
Fritsch, Erich. 3,431,014.
Fritsch, Erich, to Fritsch & Co., oHG. Headwind deflector. 3,431,014, 3–4–69, Cl. 296—1.
Fritz, Dale C.: *See*—
Drybread, John S., Sr., and Fritz. 3,430,376.
Frosst, Charles E., & Co.: *See*—
Levi, Irving, and Biondal. 3,431,299.
Fruehauf Corp.: *See*—
Botkin, Lawrence A. 3,430,648.
Fruehling, Gene R., and J. A. Johnson, to Motorola, Inc. Protection circuit including power dissipation limiting means. 3,431,486, 3–4–69, Cl. 323—9.
Fry, Douglas J.: *See*—
Ficken, Geoffrey E., Fry, and Thurston. 3,431,110.
Fryer, Rodney I., E. Reeder, and L. H. Sternbach, to Hoffmann La Roche Inc. 2 Aminoalkylamino-benzophenone-oximes and imines and the salts thereof. 3,431,304, 3–4–69, Cl. 260—570.
Fuerst, Milton J., to Kimberly-Clark Corp. Attachment means for wipe sheet material. 3,430,284, 3–4–69, Cl. 15—231.
Fuji Shashin Film Kabushiki Kaisha: *See*—
Okubo, Kinji, Honjo, and Nagai, deceased, by Kenichi, Nagai, legal representative. 3,431,412.
Fujii, Hiroshi: *See*—
Oda, Ryohei, Fujii, and Moriga. 3,431,282.
Fujinawa, Yutaka: *See*—
Isobe, Akihiro, Fujinawa, Iwasaki, and Ikeda. 3,431,336.
Fujisawa Pharmaceutical Co., Ltd.: *See*—
Hattori, Kiyoshi, and Atarashi. 3,431,259.
Fujita, Saburo, and U. Kobashi, to Aisin Seiki Kabushiki Kaisha. Viscous oil flow hydraulic coupling. 3,430,743, 3–4–69, Cl. 192—58.
Fujitsu Ltd.: *See*—
Kusano, Masayuki. 3,431,521.
Seno, Kenji, Nozawa, Tanaka, and Kikuchi. 3,431,403.
Fujiwara, Shinobu: *See*—
Hayashi, Shigekazu, Kobayashi, and Fujiwara. 3,431,124.
Fukui, Hiroshi, to NGK Insulators, Ltd. Method for prodcuing porcelain suitable for insulator. 3,431,126, 3–4–69, Cl. 106—46.
Fukumoto, Juichiro, and T. Yamamoto, to Toyo Boseki Kabushiki Kaisha. Preparation of uricase. 3,431,176, 3–4–69, Cl. 195—66.
Fuqua, Lloyd T., to General Motors Corp. Turn signal switch construction. 3,431,373, 3–4–69, Cl. 200—61.34.
Furth, Harold P., to Advanced Kinetics, Inc. Magnetic device for forming sheet metal. 3,430,472, 3–4–69, Cl. 72—56.
Fyler, Norman F., to Litton Precision Products, Inc. Optical maser apparatus with pump trigger. 3,431,511, 3–4–69, Cl. 331—94.5.
G.E.Y.-Patenter Aktiebolag: *See*—
Holmberg, Göte E. Y. 3,430,885.

Gabbitus, Derek, A. Stephens, J. Brebner, and A. M. Lee, to Imperial Chemical Industries, Ltd. Apparatus and method for forming cohesive filamentary tows. 3,430,427, 3–4–69, Cl. 57—34.

Gabrielli, Gilberta. Automatic or semi-automatic multi-spindle grinder for diesel engine fuel nozzles. 3,430,388, 3–4–69, Cl. 51—3.

Gaiser, Kurt. Floor with baseboard. 3,430,402, 3–4–69, Cl. 52—287.

Gagliardi, Gene R.: *See*—
Parrella, Alfred T., and Gagliardi. 3,430,400.

Gannon, Raymond J., Jr. Multitomr chuck. 3,430,970, 3–4–69, Cl. 279—112.

Gantzer, Charles J., to Sundstrand Corp. Spur differential unit. 3,430,520, 3–4–69, Cl. 74—714.

Gardeux, Gerard: *See*—
Bouell, Raymond, and Gardeux. 3,431,029.
Bouell, Raymond, and Gardeux. 3,431,030.

Gardiner, Michael C. S.: *See*—
Turner, Darrell J., Chase, and Gardiner. 3,430,900.

Garland, William J., L. J. Hassencahl, D. D. Lenhart, and G. Wolfe, Jr., to Hughes Aircraft Co. Internally heated crystal devices. 3,431,392, 3–4–69, Cl. 219—210.

Garner, Oscar G., to General Cable Corp. Method of making aluminum sheathed coaxial cable. 3,430,330, 3–4–69, Cl. 29—429.

Garrett, Leo L., deceased; Florida National Bank, administrator. Trickling bar assembly for blow-out towers. 3,430,-935, 3–4–69, Cl. 261—109.

Gasset, Michelle M.: *See*—
Alder, Robert O., Baudet, Baudier, and Gasset. 3,430,405.

Gauntt, Grover C., Jr., R. G. Isaacs, R. L. Martin, and J. P. Walton, to Case Foundation Co. Apparatus and method for removing cuttings. 3,430,448, 3–4–69, Cl. 61—40.

Gause, Benjamin: *See*—
Harmon, Allen, and Gause. 3,430,721.

Gauss Electrophysics, Inc.: *See*—
Grogg, David P. 3,430,966.

Gawrylowicz, Henry: *See*—
Canavan, John J., Gawrylowicz, Buckley, and Johns. 3,430,863.

Gazzard, Edward G., and J. N. Greenshields, to Imperial Chemical Industries Ltd. Polymerisable bis-amides. 3,431,-283, 3–4–69, Cl. 260—345.7.

Gebhard Satzinger Metallwarenfabrik: *See*—
Satzinger, Gebhard. 3,430,731.

Gee, Allen, to Hughes Aircraft Co. Method of treating semiconductor devices or components. 3,430,335, 3–4–69, Cl. 29—588.

Gee, Thomas A., to Eaton Yale & Towne Inc. Universal joint having unique boot means. 3,430,457, 3–4–69, Cl. 64—15.

Geffner, Ted. Releasable connectors. 3,430,305, 3–4–69, Cl. 24—211.

Geiger, Paul B.: *See*—
Geiger, Russell C., and P. B., and Meeker. 3,430,861.

Geiger, Rolf: *See*—
Horner, Leopold, Neumann, and Geiger. 3,431,186.

Geiger, Russell C., and P. B., and D. A. Meeker, to The Hobart Mfg. Co. Liquid distributing system for dishwashing machine. 3,430,861, 3–4–69, Cl. 239—251.

Geigy, J. R., A.G.: *See*—
Schwandre, Hans R., Zenhausern, and Hindermann. 3,431,285.

Geisler, William, and N. R. Clark, to Fibreboard Corp. Apparatus for applying bundling clips. 3,430,326, 3–4–69, Cl. 29—211.

Gejee, Betty B.: *See*—
Feuge, Reuben O., Lovegren, and Gajee. 3,431,116.

Geppert, Robert J.: *See*—
Burton, Jean A., Geppert, Farmer, and Mathis. 3,430,831.

Gem Marketing Corp.: *See*—
Vartanian, Andrew, and H. 3,430,973.

General Cable Corp.: *See*—
Garner, Oscar G. 3,430,330.

General Dnyamics Corp.: *See*—
Key, Rupert E. 3,431,102.

General Electric Co.: *See*—
Borman, Willem. 3,431,238.
Cree, Robert F. 3,430,417.
English, James F. 3,431,448.
Goldblum, Kenneth B. 3,431,224.
Hamilton, James. 3,431,388.
Hill, Charles W. 3,430,980.
Johnston, George F. 3,430,394.
Joslyn, John A. 3,431,479.
Kjemtrup, Jens E. 3,431,168.
Lafuze, David L. 3,431,483.
Lass, James L., and Venier. 3,431,170.
Lennard, Dean J. 3,430,640.
McClure, John L. 3,431,395.
Sandin, Raymond C., and Schmitt. 3,430,386.
Ulatowski, Vincent J. 3,430,996.
Venning, Selby G. 3,431,399.

General Foods Corp.: *See*—
Lorant, George J. 3,431,117.

General Mills Inc.: *See*—
Bateson, Robert N. 3,430,751.
Odden, La Verne M. 3,430,869.

General Motors Corp.: *See*—
Dickenbrock, Frank. 3,430,504.
Duncan, Norman D. 3,431,225.
Flaherty, James H. 3,430,338.
Forbush, Lothrop M. 3,430,674.
Fuqua, Lloyd T. 3,431,373.
Hawkins, Cyril M., and Richardson. 3,430,522.
Hughes, Walton. 3,430,667.
Leshinsky, Leonard J. 3,430,993.
Riddel, John W. 3,430,336.
Riehl, Wilhelm. 3,430,977.
Mack, Kenneth J. 3,431,157.
Varterasian, John H., and Ek. 3,431,498.

General Plastics Corp.: *See*—
Richter, Charles W., III, and Erlewine. 3,431,409.

General Telephone and Electronics Labs., Inc.: *See*—
Stone, Samuel M. 3,431,418.

General Time Corp.: *See*—
Danz, Ellworth R., and Goodwin. 3,430,906.
Goodwin, Clarence J. 3,430,498.
Reis, John C., Sommer, and Ennis. 3,431,510.

George, John O. Medicinal preparation for the treatment of burns and other traumatic wounds. 3,431,340, 3–4–69, Cl. 424—107.

Gerhards, Erich: *See*—
Priewe, Hans, Gutsche, Langecker, Gibian, Gerhards, and Harwart. 3,431,263.

Gerling Ltd.: *See*—
Meredith, Norman A. 3,430,741.

Gerritsen, Hans G.: *See*—
Gülpen, Nicolaas J. H., and Gerritsen. 3,431,247.

Gerwalt, Ulrich, to The New Britain Machine Co. Machine for injection-molding of plastics and the like. 3,430,294, 3–4–69, Cl. 18—30.

Gevaert-Agfa N.V.: *See*—
Willems, Jozef F., van Veelen, and De Haes. 3,431,108.

Giammaria, John J., to Mobil Oil Corp. Grease compositions. 3,431,204, 3–4–69, Cl. 252—28.

Giavotto, Vittorio, and C. Caprile, ½ to S.I.N.A. Societa Iniziative Nazionali Autostradali S.p.A. Guard rail. 3,430,923, 3–4–69, Cl. 256—13.1.

Gibbons, Ambrose J., Jr., and R. E. De Marco, to SCM Corp. Triorganostannoxy zirconium alcoholate derivatives of dialkanolamine. 3,431,288, 3–4–69, Cl. 260—429.3.

Gibian, Heinz: *See*—
Priewe, Hans, Gutsche, Langecker, Gibian, Gerhards, and Harwart. 3,431,263.

Gibson, Ronald F., C. E. Nunley, and D. A. Waters, to United States of America, Atomic Energy Commission. Liquid centrifuge for large-scale virus separation. 3,430,849, 3–4–69, Cl. 233—1.

Gigmilliat, Leigh R., III. Disposable clinical thermometer. 3,430,491, 3–4–69, Cl. 73—358.

Gilbert International Corp.: *See*—
Radel, Philip H., and Miller. 3 430,759.

Gilbert, John H., to Monsanto Chemicals Ltd. Foamed aliphatic resin products having elongated cells at right angles to a surface skin and their manufacture. 3,431,163, 3–4–69, Cl. 161—161.

Gilbert, John H., to Monsanto Chemicals Ltd. Foamed polyvinylaromatic resin products having elongated cells at right angles to a surface skin and their manufacture. 3,431,164, 3–4–69, Cl. 161—161.

Gillham, Helen C., and A. E. Sherr, to American Cyanamid Co. Flame-retardant agents for thermoplastic products. 3,431,324, 3–4–69, Cl. 260—893.

Gilmont, Roger, to Cole-Parmer Instrument and Equipment Co. Micrometric dispenser. 3,430,813, 3–4–69, Cl. 222—43.

Gilreath, Lafayette E., to Perfection Engineering Co., Inc. Centrifugal separator. 3,430,850, 3–4–69, Cl. 233—7.

Ginnette, Lewis F., and W. R. Scalf, to FMC Corp. Apparatus for introducing substance into vacuum chamber. 3,430,454, 3–4–69, Cl. 62—353.

Glamann, Paul W. Vehicle transmissions. 3,430,517, 3–4–69, Cl. 74—674.

Glandin, Constan, to Allmanna Svenska Elektriska Aktiebolaget. Fuel assembly for nuclear reactors with fuel rods positioned by springs carried by a grid. 3,431,171, 3–4–69, Cl. 176—78.

Glanemann, Rudolf, to Vacu-Lift Maschinenbau-Gesellschaft mit beschrankter Haftung. Vacuum lifting device, preferably for flat objects. 3,431,010, 3–4–69, Cl. 294—64.

Glasspool, William T., to Raytheon Co. Active filter. 3,431,434, 3–4–69, Cl. 307—233.

Globe-Union Inc.: *See*—
Jones, Kenneth R. 3,431,148.

Glockler, Otto, and W. Reichardt, to Robert Bosch G.m.b.H. Fuel injection control system. 3,430,616, 3–4–69, Cl. 123—119.

Goddard Industries, Inc.: *See*—
Nelson, Donald R. 3,430,990.

Godfrey, Alan, to The Plessey Co. Ltd. Frequency dividers. 3,431,499, 3–4–69, Cl. 328—48.

Goeller, Leopold F., Jr., and J. M. Nervik, to Bell Telephone Laboratories, Inc. Equipment for testing showering resistance on communication lines. 3,431,368, 3–4–69, Cl. 179—175.2.

Goff, James A.: *See*—
Tudor, Edward C., and Goff. 3,431,389.

Goins, Robert R., to Phillips Petroleum Co. Oriented thermoplastic container closures. 3,430,797, 3–4–69, Cl. 215—41.

Goldblum, Kenneth B., to General Electric Co. Polycarbonate resin mixtures. 3,431,224, 3–4–69, Cl. 260—113.

Goldammer, Freeland R.: *See*—
Zurbuchen, Louis E., and Goldammer. 3,431,401.

Goncharoff, Nikolai, to Motorola, Inc. Sound reproducing system. 3,431,358, 3–4–69, Cl. 179—1.

Goncharoff, Nikolai: *See*—
Schafft, Hugo W., and Goncharoff. 3,431,516.

Good, Dale E.: *See*—
Bunton, William J., Beagles, and Good. 3,430,349.

Goodwin, Clarence J., to General Time Corp. Instrument case construction. 3,430,498, 3–4–69, Cl. 73—431.

Goodwin, Clarence J.: *See*—
Danz, Ellworth R., and Goodwin. 3,430,906.

Goodwin, Robert F.: *See*—
Johnson, John R., and Goodwin. 3,430,893.

Goodyear Aerospace Corp.: *See*—
Kifor, Harry T., Sprick, Musser, and Levesque. 3,430,533.

Gordon, David, and H. W. Hall. Manufacture of mouldings from acrylonitrile copolymers. 3,431,159, 3–4–69, Cl. 156—180.

Gordy, John. Synthetic gemstones. 3,431,125, 3–4–69, Cl. 106—42.

Gorsich, Richard D., to Ethyl Corp. Vinylic Grignard reagent composition. 3,431,212, 3–4–69, Cl. 252—182.

Gorsich, Richard D., to Ethyl Corp. Aryl Grignard reagent composition. 3,431,213, 3–4–69, Cl. 252—182.

Gorski, Robert A.: *See*—
Bauer, Albert W., and Gorski. 3,431,211.

Goyet, Daniel, and J. Gratiot, to Societe Anonyme dite. Bottle stopper. 3,430,798, 3–4–69, Cl. 215—41.

Grable, Ronald C., and H. E. Patzer, to Westinghouse Electric Corp. Wire bonding apparatus for microelectronic components. 3,430,835, 3–4–69, Cl. 228—3.

Grace, W. R., & Co.: *See*—
Braude, George L., and Lard. 3,431,133.
Dobres, Robert M. and A. B., and Warthen. 3,431,196.
Hill, Richard N., and Brackney. 3,431,096.
Hwa, Chih M. 3,431,217.
MacCragh, Adolfo, Sanchez, and Smith. 3,431,097.
O'Brien, John J., and Irbrahim. 3,430,054.
O'Brien, John J., and Irbrahim. 3,430,679.
Waters, Paul F., and Muraro. 3,431,242.

Graeser, James B., Jr.: *See*—
Lenkey, Andrew, and Graeser. 3,430,852.

Granqvist, Carl-Erik, to AGA Aktiebolag. Rotation-responsive voltage source. 3,430,500, 3–4–69, Cl. 74—5.4.

Grant, Arthur F., and R. G. Eggers, to Towmotor Corp. Material handling pallet. 3,430,585, 3–4–69, Cl. 108—51.

Grapp, Hans: *See*—
Nimtz, Klaus, Grapp, and Martens. 3,430,431.

Grasselli, Robert K.: *See*—
Callahan, James L., Grasselli, and Knipple. 3,431,292.

Gratiot, Jacques: *See*—
Goyet, Daniel, and Gratiot. 3,430,798.

Green, Joseph: *See*—
Fein, Marvin M., Green, and O'Brien. 3,431,234.

Green, Raymond E., to Hoff, Trygve & Associates. Modular building construction. 3,430,398, 3–4–69, Cl. 52—236.

Greenbaum, Sheldon B., to Hooker Chemical Corp. Unsaturated carbamyl or acyloxy containing phosphorothioates and phosphorodithioates. 3,431,325, 3–4–69, Cl. 260—938.

Greenberg, Myron L., and G. H. Porath, to The Babcock & Wilcox Co. Machine tools and instruments. 3,430,318, 3–4–69, Cl. 29—27.

Greenshields, James N.: *See*—
Gazzard, Edward G., and Greenshields. 3,431,283.

Greer, Homer L.: *See*—
Soltz, Daniel J., and Greer. 3,431,508.

Gregg, David P., to Gauss Electrophysics, Inc. Transparent recording disc. 3,430,966, 3–4–69, Cl. 274—42.

Gregson, Melvin R. Gun sling. 3,430,828, 3–4–69, Cl. 224—1.

Greiner, Leonard, to United Aircraft Corp. Underwater propulsion systems employing N_2O. 3,430,602, 3–4–69, Cl. 115—6.1.

Griffon, Henri. Process for the dehydration of substances of animal or vegetable origin. 3,431,119, 3–4–69, Cl. 99—204.

Grimoldi, Ranoldo H., and J. E. Powers, to Kaiser Steel Corp. Combined apparatus for positioning, holding and operating on a workpiece. 3,430,317, 3–4–69, Cl. 29—26.

Grindinger, Gerard R., to Warwick Electronics, Inc. Music system. 3,430,530, 3–4–69, Cl. 84—471.

Grob & Co. Aktiengesellschaft: *See*—
Koch, Bernhard R. 3,430,313.

Groeger, Eugen, to Aero-Commerce G.m.b.H. Rotary piston apparatus. 3,430,573, 3–4–69, Cl. 103—129.

Gross, Johann, to Blech- und Metallwarenfabrik, Robert Fischbach. Blower with electric drive. 3,430,846, 3–4–69, Cl. 230—117.

Gross, William E. Gas sorption unit. 3,430,420, 3–4–69, Cl. 55—387.

Grosshans, Georges F.: *See*—
Ollier, Jacques H. G., Grosshans, and Masson. 3,430,411.

Grossman, Walter B.: *See*—
Rabe, George B., and Grossman. 3,430,442.

Groov-Pin Corp.: *See*—
Bosse, Robert W. 3,430,531.

Grove, Dwight L. and J. L., and R. W. Sutter, to Grove Mfg. Co. Vehicle with tilting bed. 3,430,792, 3–4–69, Cl. 214—505.

Grove, John L.: *See*—
Grove, Dwight L. and J. L., and Sutter. 3,430,792.

Grove Mfg. Co.: *See*—
Grove, Dwight L. and J. L., and Sutter. 3,430,792.

Grundmann, Horst: *See*—
Ratzsch, Manfred, Grundmann, Kilian, and Reinhardt. 3,431,250.

Grunewald, Helmut, and O. Steijner, to Mo och Domsjo Aktiebolag. Apparatus for sulphonating and/or sulphating organic compounds controlling the rate of feed of the reactant by measurement of the viscosity of the reaction mixture. 3,431,082, 3–4–69, Cl. 23—285.

Guarnaschelli, Stephen. Flexible segmented tube. 3,430,662, 3–4–69, Cl. 138—120.

Guertler, Rudolf W., to International Harvester Co. Fuel injection nozzle. 3,430,866, 3–4–69, Cl. 239—533.

Guhne, Hans-Peter: *See*—
Bader, Otto, Guhne, Sommerfeld, and Chilla. 3,430,436.

Guild Metal Joining Equipment Co.: *See*—
Wheeler, Donald J., and Lohrenz. 3,431,386.

Gülpen, Nicolaas J. H., and H. G. Gerritsen, to Koninklijke Industrieele Maatschappij Noury and van der Lande N.V. Chemical process and products. 3,431,247, 3–4–69, Cl. 260—88.2.

Gunnell, Thomas J., to Phillips Petroleum Co. Production of carbon black. 3,431,075, 3–4–69, Cl. 23—209.4.

Gurien, Harvey: *See*—
Focella, Antonino, Gurien, and Rachlin. 3,431,301.

Gutsche, Klaus: *See*—
Priewe, Hans, Gutsche, Langecker, Gibian, Gerhards, and Harwart. 3,431,263.

Gyarmathy, Kenneth W., and A. W. Bouchal, to Colgate-Palmolive Co. Dentifrices. 3,431,339, 3–4–69, Cl. 424—52.

Haas, Herbert: *See*—
Munk, Edmund, Haas, and Weinberg. 3,430,806.

Haase, Kurt H., to United States of America, Air Force. Polynomial root finder. 3,431,407, 3–4–69, Cl. 235—180.

Haberecht, Rolf R., to Texas Instruments Inc. Circuit board. 3,431,350, 3–4–69, Cl. 174—68.5.

Hacht, Werner V.: *See*—
Esche, Rolf, and Hacht. 3,431,382.

Hackenberg, Walter: *See*—
Siegel, Herbert, and Hackenberg. 3,431,365.

Hackney, Stanley, and D. F. Davidson, to United Kingdom Atomic Energy Authority. Apparatus for testing for nuclear fuel element sheathing failure. 3,431,167, 3–4–69, Cl. 176—19.

Haentjens, Walter D. Annular split bearing housing. 3,431,032, 3–4–69, Cl. 308—15.

Haggstorm, Walter R. G., to Independent Lock Co. Key cutter. 3,430,535, 3–4–69, Cl. 90—13.

Hahn, Harold G.: *See*—
Miles, Wallace J., Lapham, and Hahn. 3,431,228.

Haigh, John M.: *See*—
Williams, Robert C., and Haigh. 3,431,334.

Halbach & Braun, Maschinenfabrik: *See*—
Braun, Ernst and G. 3,431,024.

Hale, Murray E., and R. D. Wright, to United States of America, Air Force. High-power surge arrester. 3,431,452 3–4–69, Cl. 313—231.

Hall Harding Ltd.: *See*—
Lyons, Stanley L. 3,430,321.

Hall, Henry W.: *See*—
Gordon, David, and Hall. 3,431,159.

Hall, Kenneth J., to Western Machinery Corp. Apparatus for stacking and sorting panels. 3,430,784, 3–4–69, Cl. 214—6.

Hall, Mitchell A. Shim deflecting means for coin chute. 3,430,-747, 3–4–69, Cl. 194—92.

Hall, Raymond F., and K. A. Sherwin, to Fisons Fertilizers Ltd. Method and apparatus for the determination of free sulphate ion in slurries. 3,431,076, 3–4–69, Cl. 23—230.

Hall, Thomas N., to United States of America, Navy. Preparation of carbonate esters. 3,431,290, 3–4–69, Cl. 260—463.

Halliburton Co.: *See*—
Roth, Morris. 3,430,575.
Frazier, Bruce J. 3,430,919.
Homrig, Horace J. 3,430,801.

Halliwell, Walter, and F. Pitts, to Magnesium Elektron Ltd. Steam raising boilers and process for improving thermal efficiencies of such boilers. 3,430,610, 3–4–69, Cl. 122—479.

Hallman, Newt M.: *See*—
Storch, Dana H., and Hallman. 3,431,195.

Hamby, J. W., and F. D. Mills. Tractor mounted rod weeder. 3,430,702, 3–4–69, Cl. 172—44.

Hamel, William J.: *See*—
Winters, Gary G., Hamel, and Spencer. 3,430,820.
Winters, Gary G., Hamel, and Spencer. 3,430,821.

Hamilton, Douglas L. P. Cable terminal enclosure with grounding cross bar. 3,431,349, 3–4–69, Cl. 174—38.

Hamilton, James, to General Electric Co. Welding device. 3,431,388, 3–4–69 Cl. 219—86.

Hammer-Lit G.m.b.H.: *See*—
Meseke, Curt Th. and Winkler. 3,430,754.

Hancock & Co. (Engineers) Ltd.: *See*—
Diprose, Kenneth V., and Forbes. 3,431,419.

Hancock, James L., to Celanese Corp. Locking device for beams. 3,430,773, 3–4–69, Cl. 211—13.

Hanes Corp.: *See*—
Nebel, Max B. and E. M. 3,430,462.
Nebel, Max B. and E. M. 3,430,463.

Hankinson, Thomas W. E., to United States of America, National Aeronautics and Space Administration. Fatigue-resistant shear pin. 3,430,460, 3–4–69, Cl. 64—28.

Hansen, Everett K.: *See*—
Petersen, Allen J., and Hansen. 3,431,445.
Petersen, Allen J., and Hansen. 3,431,446.

Hara, Yoichiro: *See*—
Ito, Shoichi, Kawamoto, and Hara. 3,431,188.

Harasaki, Minoru: *See*—
Iida, Takahiko, Nobata, Harasaki, and Kumazawa. 3,431,-400.

Hardwick, William H.: *See*—
Simpson, Malcolm P., Hardwick, Blundy, and Morris. 3,431,071.

Häring, Marc, I. Molnar, and T. Wagner-Jauregg, to Siegfried Aktiengesellschaft. Treatment of depression with 5,5-dialkyl N-alkylaminoalkyl acridans. 3,431,342, 3–4–69, Cl. 424—250.

Harklau, Lanny L., to Sperry Rand Corp. Memory apparatus and method. 3,431,491, 3–4–69, Cl. 324—68.

Harmon, Allen, and B. Gause, to Crompton & Knowles Corp. Weight recorders. 3,430,721, 3–4–69, Cl. 177—2.

Harrick, Nicolas J., to North American Philips Co., Inc. Infrared spectra of powders by means of internal reflection spectroscopy. 3,431,411, 3–4–69, Cl. 250—43.5.

Harris, Billy S., to Joseph Bancroft & Sons Co. Low tension delivery for stuffer crimper. 3,430,311, 3–4–69, Cl. 28—1.

Harris-Intertype Corp.: *See*—
Sarka, Albert J. 3,430,542.

Harris, Stephen E.: *See*—
Oshman, Malin K., and Harris. 3,431,514.

Harry, Lawrence D., to The Dow Chemical Co. Method of curing epoxy resins. 3,431,237, 3–4–69, Cl. 260—47.
Hartman, Robert B., to Remington Arms Co., Inc. Method of producing images. 3,431,131, 3–4–69, Cl. 117—.5.
Hartmann, Werner, D. Schleede, and F. Schülde, to G. M. Pfaff A.G., and Farbwerke Hoechst A.G. Friction bearing of thermoplastic material and process of making same. 3,431,203, 3–4–69, Cl. 252—12.2.
Hartwell, Walter T., and F. C. Young, to Bell Telephone Laboratories, Inc. Coordinate axis converter employing a function generator. 3,430,855, 3–4–69, Cl. 235—197.
Hartwart, Alois : *See*—
Priewe, Hans, Gutsche, Langecker, Gibian, Gerhards, and Harwart. 3,431,263.
Hartwick, Donald J. : *See*—
Kemp, Charles L. and I. L., D. J. and G. J. Hartwick. 3,430,635.
Hartwick, Gloria J. : *See*—
Kemp, Charles L. and I. L., and D. J. and G. J. Hartwick. 3,430,635.
Hasenbank, Kenneth N., to Toro Mfg. Corp. Edge trimmer. 3,430,424, 3–4–69, Cl. 56—255.
Hassencahl, Lloyd J. : *See*—
Garland, William J., Hassencahl, Lenhart, and Wolfe. 3,431,392.
Hatton, John A. : *See*—
Baum, Melvin E., Kekete, and Hatton. 3,431,320.
Hattori, Kiyoshi, and S. Atarashi, to Fujisawa Pharmaceutical Co., Ltd. 7-phenylacetamidocephalosporanic acid derivatives. 3,431,259, 3–4–69, Cl. 260—243.
Haug, Juergen : *See*—
Nonnenmacher, Helmut, Appl, Haug, and Andrussow. 3,431,284.
Hauni-Werke Korber & Co., KG. : *See*—
Wahle, Gunter. 3,431,398.
Hauser, Martin : *See*—
Carvalho, Dorothy A., Hauser, Schriffert, and Sprague. 3,431,151.
Hauser, Martin, to United States of America, Navy. Triazole triazines and method of preparation. 3,431,251, 3–4–69, Cl. 260—140.
Hauser, Martin, and G. S. Sprague, to American Cyanamid Co. Compositions containing aromatic sulfonyl aziridine as curing agents. 3,431,152, 3–4–69, Cl. 149—19.
Hauville, Jean. Portable micro-hood. 3,430,551, 3–4–69, Cl. 98—115.
Hawk, Dale W. : *See*—
Rockwell, Harvey W., and Hawk. 3,430,367.
Hawk, George W., to Moog Inc. Positive centering servovalve having movable nozzle block. 3,430,656, 3–4–69, Cl. 137—625.61.
Hawkins, Cyril M., and T. R. Richardson, to General Motors Corp. Reduction gear. 3,430,522, 3–4–69, Cl. 74—801.
Hawley, James J. : *See*—
Webb, James E. 3,431,460.
Hayashi, Shigekazu, S. Kobayashi, and S. Fujiwara, to TDK Electronics Co., Ltd. Ceramic dielectric. 3,431,124, 3–4–69, Cl. 106—39.
Hayes, C. I., Inc. : *See*—
Westeren, Herbert W., Kimball, and Scotto. 3,431,346.
Head, Frank S. H., and G. Lund, to The Cotton, Silk and Man-Made Fibres Research Association. Hydroxybenzophenones containing beta-chloro- or sulphatoethylsulphonyl groups. 3,431,306, 3–4–69, Cl. 260—591.
Heatlock Ltd. : *See*—
Faulkner, Kenneth F., and Plume. 3,431,345.
Hebert, John R., and W. A. Waite, to Avco Corp. Disintegrating sabot. 3,430,572, 3–4–69, Cl. 102—93.
Heck, Friedrich, to Duria-Werk Karl Kempf GmbH. Process for manufacturing parts provided with a sintered surface layer. 3,431,105, 3–4–69, Cl. 75—208.
Hedberg, David G., Jr. : *See*—
Caldwell, John R., and Hedberg. 3,431,322.
Hedborg, Lennart, to Aktiebolaget Siefvert & Fornander. Transport and piling device. 3,430,785, 3–4–69, Cl. 214—6.
Heiland, Wolfgang K., to United States of America, Agriculture. Self-cleaning venting orifice. 3,430,643, 3–4–69, Cl. 137—244.
Heimberger, Helmut, to Opti-Holding A.G. Method for the production of slide-fastener coupling elements. 3,431,337, 3–4–69, Cl. 264—281.
Hein, Ronald L. Anti-stick automatic welding tip. 3,430,837, 3–4–69, Cl. 228—53.
Heinz, Harro K., and K. Frei, to Fisher Radio Corp. Detectors for frequency modulated (FM) signal receivers having pulse generating circuitry. 3,431,503, 3–4–69, Cl. 329—103.
Heisler, Raymond A. Method for making eared tapered containers. 3,430,410, 3–4–69, Cl. 53—26.
Hellman, Robert R., to Westport Development & Mfg. Co., Inc. Hermetically impervious switch. 3,431,378, 3–4–69, Cl. 200—168.
Hempstead, Charles F. : *See*—
Bridges, Thomas J., and Hempstead. 3,431,489.
Henderson, Homer I. Pulsation suppressor. 3,430,659, 3–4–69, Cl. 138—26.
Henderson, John F. : *See*—
Scherf, Gerhard W. H., and Henderson. 3,431,245.
Hendrickson, Otto. Angle head extension for wrenches. 3,430,510, 3–4–69, Cl. 74—425.
Henkel, Edward J. Article transfer apparatus. 3,430,782, 3–4–69, Cl. 214—1.
Henle, Rudolf, and R. Scheufler, to Karl Schmidt GmbH. Method of forming a bearing. 3,430,322, 3–4–69, Cl. 29—149.5.
Henning, Dan C., to G. S. Staunton & Co., Inc. Method and apparatus for making filters. 3,431,335, 3–4–69, Cl. 264—138.
Henry, Edwin B., Jr., D. G. Schindler, and W. L. Zemberry, to United States Steel Corp. Apparatus for monitoring the operation of a pressure-testing machine and recording the results. 3,430,485, 3–4–69, Cl. 73—49.6.
Hensley, Sidney G., to Moody Dunbar, Inc. Flotation separator for pepper cores and meats. 3,430,764, 3–4–69, Cl. 209—10.
Henson-Kickernick, Inc. : *See*—
James, Emily, and Henson. 3,430,632.
Henson, Robert W. : *See*—
James, Emily, and Henson. 3,430,632.
Herbenar, Edward J., to TRW Inc. Swedging tool. 3,430,327, 3–4–69, Cl. 29—243.52.
Herbenar, Edward J., R. Cass, and E. R. Kutcher, to TRW Inc. Boot seal retainers. 3,430,995, 3–4–69, Cl. 287—87.
Herbert, Ronald M. : *See*—
Weimer, Ralph E., and Herbert. 3,430,815.
Hercules Inc. : *See*—
Cain, Gilbert E. 3,430,650.
Klug, Eugene D. 3,431,254.
Herdeg, Donald F., and P. E. Morgan, to USM Corp. Fabric handling machines. 3,430,949, 3–4–69, Cl. 271—63.
Hershey, Gerald L., and D. A. Johnson, to The Coleman Co., Inc. Through-the-roof flue and air intake assembly. 3,430,549, 3–4–69, Cl. 98—62.
Hesling, Donald M., and C. N. De Bruin, to Sealed Power Corp. Piston ring assembly. 3,430,968, 3–4–69, Cl. 277—139.
Hesser, Fr., Maschinenfabrik, A.G. : *See*—
Buchner, Norbert, and Kohnlein. 3,430,805.
Heumann, Frederick G., to Owens-Corning Fiberglas Corp. Creel adapter for filamentary material processing apparatus. 3,430,892, 3–4–69, Cl. 242—129.5.
Hewlett-Packard Co. : *See*—
Osgood, Richard B. 3,431,440.
Heyer, Paul O. Nestable stools. 3,430,588, 3–4–69, Cl. 108—91.
Hickmann, Herbert : *See*—
Pantke, Heinz-Dieter, and Hickmann. 3,430,689.
Hildebrandt, Willi, and A. T. Van Huet. Tractor and trailer construction. 3,430,985, 3–4–69, Cl. 280—426.
Hill, Charles W., to General Electric Co. Supporting stand. 3,430,980, 3–4–69, Cl. 280—150.5.
Hill, Raymond R. Adjustable advance limiter for ignition systems. 3,430,459, 3–4–69, Cl. 64—25.
Hill, Richard N., and H. S. Brackney, to W. R. Grace & Co. Process for reducing the evolution of fluorine values from triple superphosphate fertilizer. 3,431,096, 3–4–69, Cl. 71—41.
Hilton, Thomas B., and X. Kowalski, to Monsanto Co. Compositions for and processes of bleaching treated textiles. 3,431,206, 3–4–69, Cl. 252—99.
Hilux Holdings Societe Anonyme : *See*—
Mills, Arnold T. 3,430,654.
Hindermann, Peter : *See*—
Schwander, Hans R., Zenhausern, and Hindermann. 3,431,285.
Hinkein, Donald J., and D. S. Liu, to International Business Machines Corp. Graphic deflection system employing variably damped deflection winding. 3,431,457, 3–4–69, Cl. 315—18.
Hintze, Norman. Polisher for high voltage electric lines. 3,430 279, 3–4–69, Cl. 15—23.
Hirose, Toshio : *See*—
Kanbara, Shu, Takahashi, Nakano, and Hirose. 3,431,248.
Hirshfield, Edward, E. Mizuno, and R. L. Trouard, to United States of America, Army. Electronically variable radio frequency attenuator. 3,431,506, 3–4–69, Cl. 330—22.
Hitachi, Ltd. : *See*—
Douta, Kikuo, Matumaru, and Nishimura. 3,430,334.
Hlinka, Charles F., to Tenex Corp. Machine for continuously forming an elongated cleated runner of plastic material. 3,430,291, 3–4–69, Cl. 18—10.
Hobart Mfg. Co., The : *See*—
Geiger, Russell C., and P. B., and Meeker. 3,430,861.
Hobson, Robert H. Case cutter. 3,430,339, 3–4–69, Cl. 30—2.
Hoch, Glenn M. Self-heating container. 3,430,623, 3–4–69, Cl. 126—262.
Hochstrasser, Elisabeth : *See*—
Hochstrasser, Robert. 3,430,717.
Hochstrasser, Jurgen : *See*—
Hochstrasser, Robert. 3,430,717.
Hochstrasser, Robert, deceased; E. and J. Hochstrasser, administrators. Broaching tool for bore holes partly filled with water. 3,430,717, 3–4–69, Cl. 175—283.
Hodgen, Loran M., to Excel Corp. Method for bedding panels into frames. 3,430,333, 3–4–69, Cl. 29—472.9.
Hoegrel, Otto : *See*—
Valle, Louis J., and Hoegrel. 3,431,544.
Hoess, Erwin, to United States of America, Army. Catalysed Wurtz-Fittig synthesis. 3,431,221, 3–4–69, Cl. 260—2.
Hoff, Trygve & Associates : *See*—
Green, Raymond E. 3,430,398.
Hoffman, Ralph A. : *See*—
Turner, Donald B., and Hoffman. 3,430,787.
Hoffmann-La Roche Inc. : *See*—
Focella, Antonio, Gurien, and Rachlin. 3,431,301.
Fryer, Rodney I., Reeder, and Sternbach. 3,431,304.
Munzel, Kurt. 3,431,338.
Hoffmeister, Friedrich : *See*—
Aichinger, Gerd, Schutz, and Hoffmeister. 3,431,257.
Hogan, Walter H. : *See*—
Stuart, Robert W., and Hogan. 3,430,455.
Holley Carburetor Co. : *See*—
Saussele, Charles W., and Bettoni. 3,430,437.
Holt, Dean A. Multi-flash, flashcube adapter attachment for cameras. 3,430,546, 3–4–69, Cl. 95—11.5.

Homrig, Horace J., to Halliburton Co. Closure for a high pressure vessel. 3,430,801, 3–4–69, Cl. 220—46.
Honeywell Inc. : *See*—
Soltz, Daniel J., and Greer. 3,431,508.
Honjo, Satoru : *See*—
Okubo, Kinji, Honjo, and Nagai. 3,431,412.
Hood, Harold W., Jr., to American Metal Climax, Inc. Feed tip for continuous strip casting machine. 3,430,683, 3–4–69, Cl. 164—281.
Hood, Richard T. : *See*—
Moult, Roy H., and Hood. 3,431,241.
Hooker Chemical Corp. : *See*—
Greenbaum, Sheldon B. 3,431,325.
Hope, William K. Yarn spinning device. 3,430,430, 3–4–69, Cl. 57—76.
Hopkins, Kenneth W., to The British Petroleum Co. Ltd. Fluid handling apparatus. 3,430,670, 3–4–69, Cl. 141—387.
Hoppe, Egon. Electromagnetical protective relay for three-phase receivers. 3,431,518, 3–4–69, Cl. 335—102.
Hopper, Thomas O. Water heating unit for stock tanks. 3,431,394, 3–4–69, Cl. 219—317.
Hormel, Geo. A., & Co. : *See*—
Burton, Jean A., Geppert, Farmer, and Mathis. 3,430,831.
Macy, Christian D., and Butler. 3,431,118.
Horner, Leopold, H. Neumann, and R. Geiger, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Electrolytic process for the cleavage of thiol esters of aromatic carboxylic acids. 3,431,186, 3–4–69, Cl. 204—73.
Hoshi, Hiroshi : *See*—
Susuki, Rinnosuke, and Hoshi. 3,430,845.
Hosokawa, Masuo, and E. Tomon; said Tomon assor. to said Hosokawa. Continuous mixing machine. 3,430,924, 3–4–69, Cl. 259—6.
Hotchkiss, Thomas W., to Eldorado Tool & Mfg. Corp. Hydraulic flow monitoring device. 3,431,375, 3–4–69, Cl. 200—82.
Houdaille Industries, Inc. : *See*—
Struck, Charles R. 3,430,652.
Hovercraft Development Ltd. : *See*—
Nicholas, David W. 3,430,725.
Howard, Joseph M. : *See*—
Lachance, Armand A., and Howard. 3,430,732.
Howles, Daniel J., to TRW Inc. Centerless grinding machine with an automatic feed through the machine. 3,430,392, 3–4–69, Cl. 51—103.
Hoyson, Nickolas. Combination round and hexagonal pusher grips. 3,431,013, 3–4–69, Cl. 294—102.
Hubbard, David C., and D. B. Zumsteg, to A. B. Chance Co. Tap clamp. 3,431,538, 3–4–69, Cl. 339—95.
Hubbard, Jack L., to Mobil Oil Corp. Method and apparatus for installing underwater wellhead support. 3,430,695, 3–4–69, Cl. 166—.5.
Huber, Ludwig K., and H. C. Mandell, Jr., to Pennsalt Chemicals Corp. Preparation of amidosulfuryl fluoride by the reaction of trichlorophosphonitridosulfuryl chloride with hydrogen fluoride. 3,431,088, 3–4–69, Cl. 23—357.
Hudson, Robert B., and R. E. Mesmer, to Monsanto Co. Production of sodium tripolyphosphate. 3,431,069, 3–4–69, Cl. 23—106.
Hufferd, George H., to Clevite Corp. Piezoelectrically ignited gas torch. 3,431,058, 3–4–69, Cl. 431—264.
Huffman, Tommie R., Motorola, Inc. Buried integrated circuit radiation shields. 3,431,468, 3–4–69, Cl. 317—101.
Hughes Aircraft Co. : *See*—
Gee, Allen. 3,430,335.
Garland, William J., Hassencahl, Lenhart, and Wolfe. 3,431,392.
Hughes, Walton to General Motors Corp. Liquid leveling method and apparatus. 3,430,667, 3–4–69, Cl. 141—1.
Hunt, Rodney Co. : *See*—
Peter, Fritz. 3,430,466.
Hulka, Lubor R., and F. M. B. Hynes. Mail sorting letter diverter. 3,430,951, 3–4–69, Cl. 271—64.
Humphries, Darral V., and R. H. Lester, to Bethlehem Steel Corp. Cold molding of nylon on can conveyor rope. 3,430,293, 3–4–69, Cl. 18—17.
Hundley, George K., to A. R. Brown. Non-glare sealed beam headlights. 3,431,449, 3–4–69, Cl. 313—111.
Hunsaker, Vero L., to Universal Oil Products Co. Liquid dispensing system. 3,430,823, 3–4–69, Cl. 222—416.
Hurst, Paul L., and J. Oswald, to Caterpillar Tractor Co. Apparatus for positioning a belt driven generator. 3,430,507, 3–4–69, Cl. 74—242.15.
Hutcherson, Brian K. Interacting steering suspension system for a self-propelled or towed vehicle. 3,430,724, 3–4–69, Cl. 180—79.
Huttenwerk Oberhausen AG : *See*—
Pantke, Heinz-Dieter, and Hickmann. 3,430,689.
Huys, Daniel J. : *See*—
Baetsle, Leon H., and Huys. 3,431,086.
Hwa, Chih M., to W. R. Grace & Co. Organic phosphorous acid compound-chromate corrosion protection in aqueous systems. 3,431,217, 3–4–69, Cl. 252—389.
Hydrahone Equipment Division John Mohr & Sons : *See*—
Knuppel, William F. 3,430,320.
Hymatic Engineering Co. Ltd., The : *See*—
Mack, John E. 3,430,642.
Hynes, Frederick M. B. : *See*—
Hulka, Lubor R., and Hynes. 3,430,951.
Hysaw, James H. Anchor. 3,430,596, 3–4–69, Cl. 114—208.
Ichikawa, Yataro, and N. Suzuki, to Teijin Ltd. Process for preparation of high purity terephthalic acid. 3,431,296, 3–4–69, Cl. 260—525.
Iida, Takahiko, A. Nobata, M. Harasaki, and H. Kumazawa, to Mitsubishi Denki Kabushiki Kaisha. Automatic bread toaster. 3,431,400, 3–4–69, Cl. 219—501.
Ike, Ernest C., to Wiz Corp. Vehicle brake operator. 3,431,031, 3–4–69, Cl. 303—9.
Ikeda, Minoru, to France Bed Co., Ltd. Bed. 3,430,274, 3–4–69, Cl. 5—181.
Ikeda, Takeshi : *See*—
Isobe, Akihiro, Fajinawa, Iwasaki, and Ikeda. 3,431,336.
Ikee, Eitoku : *See*—
Asami, Atsumi, Ikee, Nakashima, and Takata. 3,430,428.
Ilford Ltd. : *See*—
Ficken, Geoffrey E., Fry, and Thurston. 3,431,110.
Illinois Tool Works Inc. : *See*—
Rapata, George M. 3,430,673.
Soltysik, Edmund J. 3,430,904.
Imperial Camera Corp. : *See*—
Irwin, George. 3,431,542.
Imperial Chemical Industries, Ltd. : *See*—
Gabbitus, Derek, Stephens, Brebner, and Lee. 3,430,427.
Edwards, Harry, and Kenyon. 3,431,081.
Dinwoodie, Andrew H., Fort, and Parker. 3,431,261.
Gazzard, Edward G., and Greenshields. 3,431,283.
Nield, Eric. 3,431,276.
Patterson, Edward M. 3,430,566.
Independent Lock Co. : *See*—
Haggstrom, Walter R. G. 3,430,535.
Indiana Contact Lens, Inc. : *See*—
Borish, Irvin M. 3,430,391.
Industrial Nucleonics Corp. : *See*—
Chope, Henry R. 3,431,417.
Ingersoll-Rand Co. : *See*—
Kulman, Melvin L. 3,430,521.
Lawrence, James C. 3,430,718.
Insley, Nathaniel E., and H. E. M. Jacks, to Wiley Mfg. Co. Portable dredge. 3,430,920, 3–4–69, Cl. 254—185.
Integrated Electronics Corp. : *See*—
Copel, Michel. 3,431,356.
International Business Machines Corp. : *See*—
Burge, Helmut W. 3,430,495.
Capozzi, Anthony J. 3,431,558.
Castrucci, Paul P., and Pecoraro. 3,431,472.
Hinkein, Donald J., and Liu. 3,431,457.
Jenkins, Charles S. 3,431,050.
Kwap, Theodore W., and Ruoff. 3,431,490.
Martin, Robert W. 3,431,431.
Rothauser, Ernest H., and Paulus. 3,431,355.
International Harvester Co. : *See*—
Clendenin, Wilbur H. 3,430,757.
Guertler, Rudolf W. 3,430,866.
Kamp, Ronald C. 3,430,444.
Lienemann, Darlo E., and Stufflebeam. 3,430,822.
Palmer, John S. 3,430,992.
Pool, Stuart D., and Morkoski. 3,430,583.
Pool, Stuart D., and Steingas. 3,430,425.
Ralston, William K. 3,430,998.
Ralston, William K., and Littlejohn. 3,430,554.
Richardson, Pierce F. 3,430,984.
Weiss, Heinz. 3,430,438.
International Paper Co. : *See*—
Simmons, Dayton M. 3,430,561.
International Patent Research Corp. : *See*—
Chow, Ho. 3,430,859.
Chow, Ho. 3,430,860.
International Standard Electric Corp. : *See*—
Fettweis, Alfred L. M. 3,431,360.
Siegel, Herbert. 3,431,364.
Siegel, Herbert, and Hackenberg. 3,431,365.
International Telephone and Telegraph Corp. : *See*—
Miller, Thomas P. 3,431,363.
Interpace Corp. : *See*—
Cummings, Howard B. 3,431,332.
Valenziano, Frank P. 3,430,526.
Irbrahim, Chazi Z. : *See*—
O'Brien, John J., and Irbrahim. 3,430,679.
Irwin, Edgar L., to Westinghouse Electric Corp. Electro-optical device having improved coupling. 3,431,421, 3–4–69, Cl. 250—211.
Irwin, George, to Imperial Camera Corp. Flashcube sockets. 3,431,542, 3–4–69, Cl. 339—147.
Irvin Industries, Inc. : *See*—
Kenzie, Ernest D., 3,431,376.
Isaacs, Robert G. : *See*—
Gauntt, Grover C., Jr., Isaacs, Martin, and Walton. 3,430,448.
Ishibashi, Yasuaki : *See*—
Mizutani, Yasuo, Sakamoto, and Ishibashi. 3,431,166.
Ishizaki, Kan., and H. Noto, to Shingu Shoko, Ltd. Cutter. 3,430 343, 3–4–69, Cl. 30—276.
Ismail, Roshdy M., to Dynamit Nobel AG. Film-forming polymeric organic compound stabilized against ultraviolet light degradation with a ketophenoxy silane. 3,431,129, 3–4–69, Cl. 106—287.
Isobe, Akihiro, Y. Fujinawa, K. Iwasaki, and T. Ikeda, to Asahi Kasei Kogyo Kabushiki Kaisha. Funnel spinning of viscose rayon filaments. 3,431,336, 3–4–69, Cl. 264—169.
Ito, Giichi, M. Takamura, K. Kato, and H. Kikuchi, to Nippon Telegraph and Telephone Public Corp. Electromagnet switching device in coordinate arrays. 3,431,519, 3–4–69, Cl. 335—112.
Ito, Shoichi, I. Kawamoto, and Y. Hara, to Toyo Rayon Kabushiki Kaisha. Process and apparatus for photochemical reaction. 3,431,188, 3–4–69, Cl. 204—157.1.
ITT Rayonier Inc. : *See*—
Van Blaricom, Lloyd E., and Johnston. 3,431,202.
Iwasaki, Iwao, to Regents of the University of Minnesota. Method of removing fatty acid coating from iron ores. 3,430,763, 3–4–69, Cl. 209—10.
Iwasaki, Kogi : *See*—
Isobe, Akihiro, Fujinawa, Iwasaki, and Ikeda. 3,431,336.
Jacknau, Alex, to Agfa-Gevaert Aktiengesellschaft: Automatic focusing device for photographic reproducer. 3,431,052, 3–4–69, Cl. 355—58.

Jackoboice, Edward W., to Monarch Road Machinery Co. Compound rotary valve. 3,430,651, 3–4–69, Cl. 137—596.

Jacks, Herbert E. M.: *See*—
Insley, Nathaniel E., and Jacks. 3,430,920.

Jackson, Leslie T.: *See*—
Stone, Kenneth F., and Jackson. 3,431 502.

Jackson, Winston J., Jr., and J. R. Caldwell, to Eastman Kodak Co. Antiplasticized polysulfone ethers. 3,431,230, 3–4–69, Cl. 260—33.8.

Jacobs, Alfred: *See*—
Davenport, Buell E., Flynn, and Jacobs. 3,431,236.

Jacobson, Carol I. Mathematic instruction aid. 3,430,362, 3–4–69, Cl. 35—31.

Jacques, Edward J.: *See*—
Wozniak John J., and Jacques. 3,430,963.

Jager, Rudolf, H. Macho, and R. Zwiener, to Adolph Saurer, Aktiengesellschaft. Weft thread holding arrangement. 3,430,665, 3–4–69, Cl. 139—116.

Jahnig, Charles E., and R. W. Schnept, to Esso Research and Engineering Co. Fluid coking using extraneous seed coke. 3,431,197, 3–4–69, Cl. 208—127.

James Electronics, Inc.: *See*—
Muenow, Richard A., and Plice. 3,431,462.

James, Emily, and R. W. Henson, to Henson-Kickernick, Inc. Brassiere. 3,430,632, 3–4–69 Cl. 128—425.

James, Michael J., to Micro and Precision Mouldings (Cheltenham) Ltd. Door catches. 3,430,999, 3–4–69, Cl. 292—75.

James, Raymond H., V. J. Korkowski, and P. J. Nistler, to Sperry Rand Corp. Transient signal recording system utilizing different frequency recording drivers including means for sampling different portions of the transient signal at different frequencies. 3,431,492, 3–4–69, Cl. 324—102.

Janapol, Melvin N., to Wortso Corp. Dual firmness spring for bedding and the like. 3,430,275, 3–4–69, Cl. 5—351.

Japanese National Railways and Kowa Concrete Co. Ltd.: *See*—
Matsurbara, Kentaro, and Tohyama. 3,430,857.

Jeffrey Galion Mfg. Co.: *See*—
Andrae, Karl H. 3,430,874.

Jenkins, Charles S., to International Business Machines Corp. Combination paper and developer supply. 3,431,050, 3–4–69, Cl. 355—10.

Jenner, Robert K.: *See*—
Dolan, Bernard J., and Jenner. 3,431,410.

Jensen, Elmer R: *See*—
McCormick, Jerry R. D., Joachim, Jensen, and Sjolander. 3,431,303.

Jiruska, John L. Rack for use in developing exceptionally wide film. 3,430,548, 3–4–69, Cl. 95—94.

Joachim, Ursula: *See*—
McCormick, Jerry R. D., Joachim, Jensen, and Sjolander. 3,431,303.
McCormick, Jerry R. D., Joachim, and Jensen. 3,431,303.

John Zink Co.: *See*—
Reed, Robert D. 3,431,057.

Johns, William: *See*—
Canavan, John J., Gawrylowicz, Buckley, and Johns. 3,430,863.

Johnson, Calvin R. Metal tie rod for spaced walls of wood form for concrete wall. 3,430,913, 3–4–69, Cl. 249—217.

Johnson Construction Co. AB: *See*—
Egenvall, Gustaf C. 3,430,693.

Johnson, Donald A.: *See*—
Hershey, Gerald L., and Johnson. 3,430,549.

Johnson, Gordon C., and S. Sterman, to Union Carbide Corp. Process for sizing paper with epoxy silicone and resulting products. 3,431,143, 3–4–69, Cl. 117—155.

Johnson, James S., and K. A. Kraus, to United States of America, Atomic Energy Commission. Hyperfiltration process having ion exchange pretreatment. 3,431,201, 3–4–69, Cl. 210—23.

Johnson, Jerome A.: *See*—
Fruehling, Gene R., and Johnson. 3,431,486.

Johnson, John R., and R. F. Goodwin, to Royal Industries. Wound package. 3,430,893, 3–4–69, Cl. 242—159.

Johnson, Marvin D. Deceleration warning signal system. 3,431,556, 3–4–69, Cl. 340—72.

Johnson, Tom W., E. J. Stropkay, and J. D. White, to Sajar Plastics, Inc. Safety hat suspension. 3,430,260, 3–4–69, Cl. 2—3.

Johnston, Frederic A.: *See*—
Van Blaricom, Lloyd E., and Johnston. 3,431,202.

Johnston, George F., to General Electric Co. Frame device with a strip for removing broken glass fragments and sealing material. 3,430,394, 3–4–69, Cl. 52—127.

Jones, David P.: *See*—
Lewis, Gerald F., and Jones. 3,431,019.

Jones, John A. Trailer hitch for motorcycles. 3,430,983, 3–4–69, Cl. 280—402.

Jones, Kenneth R., to Globe-Union Inc. Deferred action battery having unitary plastic casing. 3,431,148, 3–4–69, Cl. 136—90.

Jones, Robert C., to Shell Oil Co. Hydrogenated block copolymers of butadiene and a monovinyl aryl hydrocarbon. 3,431,323, 3–4–69, Cl. 260—880.

Jones, Robert E., Jr., and H. J. Price, to Kaman Corp. Method and apparatus for automatic neutron activation analysis comprising simultaneous rotation of a known and an unknown sample. 3,431,416, 3–4–69, Cl. 250—83.3.

Jones, Thornton K., to Chevron Research Co. Asphaltic coating compositions containing N-alkyl amino acids. 3,431,128, 3–4–69, Cl. 106—273.

Jordan, Merrill E., to Cabot Corp. Process for the production of highly amorphous carbon black. 3,431,074, 3–4–69, Cl. 23—209.3.

Joseph, Jean-Jacques, to Societe Anonyme Francaise Frangeco Puteaux. Container truck locking mechanism. 3,431,017, 3–4–69, Cl. 296—35.

Joseph, Leonard. Locking mechanism for container lid. 3,430,468, 3–4–69, Cl. 70—164.

Joslyn, John A., to General Electric Co. Phase controlled power amplifier lockout circuit. 3,431,479, 3–4–69, Cl. 318—257.

Junck, John A., and R. A. Rice, to Caterpillar Tractor Co. Balancing of gravitational forces in a vertically disposed valve spool. 3,430,657, 3–4–69, Cl. 137—625.67.

Junker, Arnold E., to Avco Corp. Seal for a high speed shaft. 3,430,967, 3–4–69, Cl. 277—137.

Junod-Deile, Marie-Louise. Child's play pen. 3,430,271, 3–4–69, Cl. 5—93.

Junta, Barbara: *See*—
Pan, Samuel C., Principe, and Junta. 3,431,174.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
Dodo, Taro, and Yamamoto. 3,431,461.

Kafka, Wilhelm, and C.-P. Parsch, to Siemens Aktiengesellschaft. Cryostats for low-temperature cables. 3,431,347, 3–4–69, Cl. 174—15.

Kaiser Steel Corp.: *See*—
Grimoldi, Ranoldo H., and Powers. 3,430,317.
Powers, Joseph E., and Sattler. 3,430,525.

Kalfaian, Meguer V. Amplitude equalizer of speech sound waves with high fidelity. 3,431,359, 3–4–69, Cl. 179—1.

Kalvoda, Jaroslav: *See*—
Anner, Georg, Meystre, Kalvoda, and Ueberwasser. 3,431,191.

Kaman Corp.: *See*—
Jones, Robert E., Jr., and Price. 3,431,416.

Kaminski, Elton G.: *See*—
Stolle, Ralph J., and Kaminski. 3,430,593.

Kamp, Ronald C., to International Harvester Co. Variable volume accumulator seat suspension. 3,430,444, 3–4–69, Cl. 60—51.

Kanaga, Amos R. Tri-cornered bag. 3,430,841, 3–4–69, Cl. 229—53.

Kanbara, Shu, A. Takahashi, M. Nakano, and T. Hirose, to Mitsui Chemical Industry Co., Ltd. Process for producing conjugated diolefin polymers having high regularity with a Co- or Ni-chelate compound/organoaluminum halide catalyst. 3,431,248, 3–4–69, Cl. 260—94.3.

Kappus, Gunter: *See*—
Brunnée, Curt, and Kappus. 3,431,451.

Karasinski, Frank J.: *See*—
Battista, Orlando A., and Karasinski. 3 431,090.

Karkut, Henry E., to Henry E. Karkut, Inc. Card rack. 3,430,774, 3–4–69, Cl. 211—50.

Karkut, Henry E., Inc.: *See*—
Karkut, Henry E. 3,430,774.

Karmazin, John. Return bend construction for heat exchangers. 3,430,692, 3–4–69, Cl. 165—134.

Karp, Johann, and F. Krebsbach, to Dynamit Nobel Aktiengesellschaft. Pipe coupling having identical halves for joining plastic pipes. 3,430,988, 3–4–69, Cl. 285—5.

Kastning, Ernst-Guenther, and H. Naarmann, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process for preparing rubbery 1,3-diene polymers by polymerizing 1,3-dienes in the presence of a preformed polymer. 3,431,227, 3–4–69. Cl. 260—29.7.

Kato, Kaoru, and S. Ogawa, to Daikin Kogyo Kabushiki Kaisha. Method of manufacturing a fluorination catalyst. 3,431,067, 3–4–69, Cl. 23—88.

Kato, Katsuhiro: *See*—
Ito, Giichi, Takamura, Kato, and Kikuchi. 3,431,519.

Kato, Tadashi: *See*—
Kunitake, Tatsuro, and Kato. 3,431,101.

Katsuda, Yoshio, to Dainihon Jochugiku Co., Ltd. Apparatus for vaporizing chemicals and perfumes by heating. 3,431,393, 3–4–69, Cl. 219—274.

Kavanagh, James A.: *See*—
Clark, George B., and Kavanagh. 3,430,360.

Kawamoto, Ichiro: *See*—
Ito, Shoichi, Kawamoto, and Hara. 3,431,188.

Kawecki Chemical Co.: *See*—
Lorgan, James E. 3,431,141.

Kawecki, Ralph E., to Southington Mfg., Inc. Continuous operation mulling apparatus and method for accurately proportioning foundry sand ingredients. 3,430,929, 3–4–69, Cl. 259—146.

Kawecki, Ralph E., to Southington Mfg., Inc. Pneumatically fed continuous operation mulling apparatus and method for accurately proportioning foundry sand ingredients. 3,430,930, 3–4–69, Cl. 259—146.

Kay Mfg. Corp.: *See*—
Pincus, Seymour, and Krakauer. 3,431,331.

Kazama, Seiji: *See*—
Uno, Seiji, Kazama, and Uno. 3,431,243.

Keane, John J., and J. C. Lough, to E. I. du Pont de Nemours and Co. Reducing flame treatment of polyethylene terephthalate film prior to aluminizing. 3,431,135, 3–4–69, Cl. 117—46.

Keeler, Miner S., II. Insulating handle connector and method of making same. 3,430,994, 3–4–69, Cl. 287—53.

Keller, James L., to Union Oil Co. of California. Method of treating ammonia and hydrogen sulfide gases to produce ammonium thiosulfate and sulfur therefrom. 3,431,070, 3–4–69, Cl. 23—115.

Keller, John D., to Bausch & Lomb Inc. Forward scatter photometer. 3,431,423, 3–4–69, Cl. 250—218.

Kelley, James O.: *See*—
Propst, Robert L., and Kelley. 3,430,997.

Kelly, Cornelius J. N., and R. F. Knott, to Canadian Industries Ltd. Aqueous slurry explosive composition containing a chlorinated organic compound as sensitizer. 3,431,154, 3–4–69, Cl. 149—38.

Kelly, William D. Method of making an armored cable. 3,430,337, 3–4–69, Cl. 29—624.

Kemp, Charles L. and I. L., D. J. and G. J. Hartwick. Hair curler oven and method of curling hair. 3,430,635, 3–4–69, Cl. 132—7.

Kemp, Ingrid L.: *See*—
Kemp, Charles L. and I. L., D. J. and G. J. Hartwick. 3,430,635.

Kendall, Svava. Pleat sewing guide. 3,430,591, 3–4–69, Cl. 112—146.

Kenney, Joseph F., to Remington Arms Co., Inc. Complex crystalline picrate explosive containing entrapped amounts of lead azide. 3,431,156, 3–4–69, Cl. 149—26.

Kent, George, Ltd.: *See*—
Stoten, Terence A. 3,430,649.

Kenyon, Charles F.: *See*—
Edwards, Harry, and Kenyon. 3,431,081.

Kenzie, Ernest D., to Irvin Industries, Inc. Self-arming altitude switch responsive to ambient physical variables to initiate one or more operations. 3,431,376, 3–4–69, Cl. 200—83.

Key, Rupert E., to General Dynamics Corp. Fusion welding filler metal with chromium nickel and vanadium alloying elements. 3,431,102, 3–4–69, Cl. 75—128.

Kieronski, John P., to Whitin Machine Works, Inc. Winding apparatus. 3,430,875, 3–4–69, Cl. 242—18.

Kifor, Harry T., W. F. Sprick, L. W. Musser, and C. R. Levesque, to Goodyear Aerospace Corp. Aircraft dispenser pod having self-sealing ejection tubes. 3,430,533, 3–4–69, Cl. 89—1.5.

Kihara, Nobutoshi, and Y. Wada, to Sony Corp. Single motor magnetic tape recording and/or reproducing system. 3,431,353, 3–4–69, Cl. 178—6.6.

Kikuchi, Hideyuki: *See*—
Seno, Kenji, Nozawa, Tanaka, and Kikuchi. 3,431,403.

Kikuchi, Hisael: *See*—
Ito, Giichi, Takamura, Kato, and Kikuchi. 3,431,519.

Kilian, Rolf: *See*—
Ratzsch, Manfred, Grundmann, Kilian, and Reinhardt. 3,431,250.

Kimball, William H.: *See*—
Westeren, Herbert W., Kimball, and Scotto. 3,431,346.

Kimberly-Clark Corp.: *See*—
Fuerst, Milton J. 3,430,284.
Schweitzer, William P., and Flaxman. 3,430,634.

King, J. W., to King Machinery & Sales Co., Inc. Earthworking device. 3,430,366, 3–4–69, Cl. 37—129.

King, Kenneth G., to Westinghouse Brake and Signal Co., Ltd. Control rectifier circuit including an arrangement for rendering a controllable rectifier nonconducting. 3,431,436, 3–4–69. Cl. 307—252.

King Machinery & Sales Co., Inc.: *See*—
King, J. W. 3,430,366.

Kinslow, William G., Jr., to Phillips Petroleum Co. Apparatus for sealing and severing parisons. 3,430,290, 3–4–69, Cl. 18—5.

Kirby, Edward, to United-Carr Inc. Connector with bus-bar. 3,431,545, 3–4–69, Cl. 339—258.

Kirk, Clair F.: *See*—
Kirk, Samuel A. and C. F. 3,430,853.

Kirk, Samuel A. and C. F. Turbine centrifuge. 3,430,853, 3–4–69, Cl. 233—2.

Kirsch Fabric Corp.: *See*—
Kirschbaum, Harry, and Dobbs. 3,430,364.

Kirschbaum, Harry, and J. Dobbs. Fabric display device. 3,430,364, 3–4–69, Cl. 35—49.

Kitaj, Walter, to Owens-Illinois Glass Co. Hypodermic needle. 3,430,627, 3–4–69, Cl. 128—221.

Kitajima, Masaichi. Device for removal of lubricating oil. 3,430,730, 3–4–69, Cl. 184—1.5.

Kitaoka, Atsushi: *See*—
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,233.

Kjemtrup, Jens E., to General Electric Co. Reactor cooling system. 3,431,168, 3–4–69, Cl. 176—55.

Klepfer, Harold H., to United States of America, Atomic Energy Commission. Zirconium base alloy. 3,431,104, 3–4–69, Cl. 75—177.

Klingenberg, Alfred S., to Bell Telephone Laboratories, Inc. Clamping means for retaining electric plug and socket connectors. 3 431,537, 3–4–69, Cl. 339—75.

Klipping, Gustav: *See*—
Bogner, Gunther, and Klipping. 3,430,450.

Klug, Eugene D., to Hercules Inc. Modified hydroxypropyl cellulose and process. 3,431,254, 3–4–69, Cl. 260—231.

Knapsack Aktiengesellschaft: *See*—
Querengasser, Hugo, Krause, Frank, and Cziska. 3,431,103.

Knebel, Robert W.: *See*—
Pandell, Nestor W., and Knebel. 3,430,480.

Knipple, Warren R.: *See*—
Callahan, James L., Grasselli, and Knipple. 3,431,292.

Knoth, Walter, and W. Lüscher, to Micafil A.G. Reflection-free voltage divider for high surge voltages. 3,431,493, 3–4–69, Cl. 324—126.

Knott, Robert F.: *See*—
Kelly, Cornelius J. N., and Knott. 3,431,154.

Knoy, Tyrus R. Ski boot snap fasteners. 3,430,298, 3–4–69, Cl. 24—69.

Knuppel, William F., to Hydrahone Equipment Division John Mohr & Sons. Bag closing apparatus. 3,430,320, 3–4–69, Cl. 29—33.5.

Kobashi, Uichiro: *See*—
Fujita, Saburo, and Kobashi. 3,430,743.

Kobayashi, Kazuo, and M. Yamauchi, to NGK Insulators, Ltd. Method of production of active beryllium oxide powders. 3,431,073, 3–4–69, Cl. 23—183.

Kobayashi, Sadao: *See*—
Hayashi, Shigekazu, Kobayashi, and Fujiwara. 3,431,124.

Koch, Bernhard R., to Grob & Co. Aktiengesellschaft. Heddle frame. 3,430,313, 3–4–69, Cl. 28—46.

Kochey, Edward L., Jr., to Combustion Engineering, Inc. Flow divider for pneumatically conveyed stringy material. 3,431,027, 3–4–69, Cl. 302—28.

Kocks, Friedrich, Kommanditgesellschaft: *See*—
Bindernagel, All. 3,430,836.

Kodaira, Nobuhisa. Jacket type of constant temperature heating apparatus. 3,431,396, 3–4–69, Cl. 219—326.

Kohnlein, Rolf: *See*—
Buchner, Norbert, and Kohnlein. 3,430,805.

Kojima, Mirei: *See*—
Aikawa, Michinosuke, Kojima, and Takahashi. 3,430,289.

Kolbert, Melvin. Communication between submarine and aircraft. 3,431,495, 3–4–69, Cl. 325—28.

Koleske, Otto, to Wilson Mfg. Corp. Pin curl clip. 3,430,637, 3–4–69, Cl. 132—46.

Kollar, James: *See*—
Massey, Grant W. 3,430,954.

Kolze, Lawrence A., to The Dole Valve Co. Ball seat type fluid flow valve. 3,430,918, 3–4–69, Cl. 251—152.

Koninklijke Industrieele Maatschappij Noury and van der Lande N.V.: *See*—
Gülpen, Nicolaas J. H., and Gerritsen. 3,431,247.

Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V.: *See*—
Van der Waard, Willem F., and de Flines. 3,431,173.

Kopelman, Bernard, and R. M. Shimer, to Sylvania Electric Products Inc. Lamp base. 3,431,540, 3–4–69, Cl. 339—112.

Koppers Co., Inc.: *See*—
Baum, Melvin S. 3,431,319.
Baum, Melvin E., Fekete, and Hatton. 3,431,320.
Moult, Roy H., and Hood. 3,431,241.

Korkowski, Vincent J.: *See*—
James, Raymond H., Korkowski, and Nistler. 3,431,492.

Kosonocky, Walter F., to Radio Corp. of America. Optical System for performing digital logic. 3,431,437, 3–4–69, Cl. 307—312.

Kottenhahn, Alfred P., to E. I. du Pont de Nemours and Co. Recovery of catalyst reaction control diluent utilized in the preparation of monovinyl acetylene. 3,431,307, 3–4–69, Cl. 260—612.

Kowalczyk, Walter. Curtain rod bracket. 3,430,908, 3–4–69, Cl. 248—265.

Kowalski, Xavier: *See*—
Hilton, Thomas B., and Kowalski. 3,431,206.

Kozman, Joseph A., Jr. Immersion heating apparatus. 3,430,618, 3–4–69, Cl. 126—360.

Krakauer, Edwin G.: *See*—
Pincus, Seymour, and Krakauer. 3,431,331.

Kraus, Kurt A.: *See*—
Johnson, James S., and Kraus. 3,431,201.

Krause, Johannes: *See*—
Querengasser, Hugo, Krause, Frank, and Cziska. 3,431,103.

Krebsbach, Friedhelm: *See*—.
Karp, Johann, and Krebsbach. 3,430,988.

Kreinik, Jerry M., to FMC Corp. Instant-igniting charcoal. 3,431,093, 3–4–69, Cl. 44—6.

Kryspin, Alfred J., to Automatic Switch Co. Adjustable spring tension means. 3,431,522, 3–4–69, Cl. 335—194.

Kubokawa, Masaharu. Waved flat plate coil or washer. 3,430,672, 3–4–69, Cl. 151—36.

Kuechler, William L., to Entoleter, Inc. Method and apparatus for contacting continuous and disperse phase substances. 3,430,932, 3–4–69, Cl. 261—28.

Kuhn, Stephen J., to The Dow Chemical Co. Method for the preparation of high purity nitronium salts. 3,431,087, 3–4–69, Cl. 23—356.

Kulman, Melvin L., to Ingersoll-Rand Co. Power operated tool having two-speed rotary output. 3,430,521, 3–4–69, Cl. 74—750.

Kumazawa, Hirashi: *See*—
Iida, Takahiko, Nobata, Harasaki, and Kumazawa. 3,431,400.

Kumpf, Leonard P., to Lasalco Inc. Plating apparatus. 3,431,192, 3–4–69, Cl. 204—213.

Kunitake, Tatsuro, and T. Kato. Steel for hot working die having alloying elements of silicon, chromium and aluminum 3,431,101, 3–4–69, Cl. 75—124.

Kurokochi, Michiharu: *See*—
Usui, Akira, Kurokochi, and Sugiyama. 3,431, 160.

Kurtz, Stewart S., Jr.: *See*—
Bohrer, Byron B., and Kurtz. 3,431,249.

Kurumada, Tomoyuki: *See*—
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Murayama, Keisuke, Morimura, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,233.

Kusano, Masayuki, to Fujitsu Ltd. Electromagnetic relay of small size and simple structure with unitary core and yoke member. 3,431,521, 3–4–69, Cl. 335—124.

Kutcher, Eugene R.: *See*—
Hebenar, Edward J., Cass, and Kutcher. 3,430,995.

Kwap, Theodore W., and C. E. Ruoff, to International Business Machines Corp. Apparatus for indicating response of a test circuit to an applied pulse. 3,431,490, 3–4–69, Cl. 324—57.

Kwiatkowski, Wolfgang: *See*—
Wick, Richard, Kwiatkowski, and Schausberger. 3,430,945.

Labrecque, Jean P., to United Aircraft Corp. Shimmy damper. 3,430,896, 3–4–69, Cl. 244—103.

Lachance, Armand A., and J. M. Howard, said Howard assor to said Lachance. Automatic grocery cart. 3,430,732, 3–4–69, Cl. 186—1.

Laclede Steel Co.: *See*—
Weber, Adolph C. 3,430,406.

La Croce, Leonard T., and R. L. Batchelar, to American Can Co. Easy-opening can. 3,430,802, 3–4–69, Cl. 220—54.

Lafuze, David L., to General Electric Co. Cycloconverter power circuits. 3,431,483, 3–4–69, Cl. 321—7.

Laidlaw, Neil R., to Ferranti, Ltd. Radiation sensitive apparatus for reading punched tape. 3,431,426, 3–4–69, Cl. 250—219.

L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des procedes Georges Claude: *See*—
Soulary, Pierre. 3,431,091.

Laitram Corp, The: *See*—
Lapeyre, James M. 3,430,288.

Lakeman, Thomas A. Floatable self-centering target. 3,430,958, 3–4–69, Cl. 273—105.

Lambeth, Ralph M., to A.B.C. Popcorn Co., Inc. Filling nozzle. 3,430,671, 3–4–69, Cl. 141—392.

Lambrecht, Josef, and H. Schubert, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Converter having a carrying structure open on one side. 3,430,941, 3–4–69, Cl. 266—36.

Lamp, Richard W.: *See*—
Nellis, Stewart, and Lamp. 3,431,348.

Lancea Corp.: *See*—
Reagan, Bruce V., Jr., Notchev, and Cederwall. 3,430,302.

Lancor, Joseph H., Jr., to Consolidated Electrodynamics Corp. Film magazine and receptacle. 3,431,047, 3–4–67, Cl. 352—72.

Lancy Laboratories, Inc.: *See*—
Lancy, Leslie E. 3,431,187.

Lancy, Leslie E., to Lancy Laboratories, Inc. Gold recovery. 3,431,187, 3–4–69, Cl. 204—109.

Landes, Benjamin D., and R. Paricio, to Coors Porcelain Co. Means for indicating wear of ball mill lining bricks and the like. 3,430,393, 3–4–69, Cl. 52—105.

Lange, Gotthard: *See*—
Oliva, Klaus, Noack, and Lange. 3,430,505.

Langecker, Hedwig: *See*—
Priewe, Hans, Gutsche, Langecker, Gibian, Gerhards, and Harwart. 3,431,263.

Lammon, C. P., II, to Schlumberger Technology Corp. Formation-sampling apparatus. 3,430,713, 3–4–69, Cl. 175—78.

Lapeyre, James M., to The Laitram Corp. Apparatus for individually treating headless shrimp. 3,430,288, 3–4–69, Cl. 17—2.

Lapham, Rodger J.: *See*—
Miles, Wallace J., Lapham, and Hahn. 3,431,228.

Lard, Edwin W.: *See*—
Braude, George L., and Lard. 3,431,133.

Larson, Daniel A., to Westinghouse Electric Corp. High pressure, metallic vapor discharge lamp including mercury and thallium iodide. 3,431,447, 3–4–69, Cl. 313—25.

Larsson, Karl B., and N. B. L. Sander, to Svenska Aktiebolaget Bromsregulator, Railway vehicle wheel brake unit. 3,430,740, 3–4–69, Cl. 188—202.

Larsson, Paul, to Allmanna Svenska Elektriska Aktiebolaget Hydraulic press with light-sensitive control means. 3,430,471, 3–4–69, Cl. 72—29.

Lasalco Inc.: *See*—
Kumpf, Leonard P. 3,431,192.

La Salle Steel Co.: *See*—
Breyer, Norman N. 3,430,477.

Lashkow, Jack I., to Weather-Tite Division of the Pacific Coast Co. Electrically grounded, lapped siding. 3,430,395, 3–4–69, Cl. 52—173.

Lass, James L., and D. A. Venier, to General Electric Co. Nuclear reactor fuel bundle. 3,431,170, 3–4–69, Cl. 176—78.

Latter, Charles F., to Square D Co. Electrical joint structure including aluminum wire and copper connector. 3,431,547, 3–4–69, Cl. 339—272.

Laub, Joseph L., and M. N. Mansour, to Unitek Corp. Wire clamp. 3,430,834, 3–4–69, Cl. 228—1.

Laufer, William. Medicine bottle with safety closure means. 3,430,795, 3–4–69, Cl. 215—2.

Lavedan, Louis J., Jr.: *See*—
Brediger, James L., Day, Lavedan, and Parks. 3,431,515.

Lavond, Edward A. Automatic locking control for cutter bar. 3,430,423, 3–4–69, Cl. 56—249.

Lawalin, Harold L., and K. Skirvin. Chip removing assembly. 3,430,767, 3–4–69, Cl. 210—79.

Lawrence, James C., to Ingersoll-Rand Co. Roller cutter for rotary drilling apparatus. 3,430,718, 3–4–69, Cl. 175—343.

Lawrence, James F., Jr. Adjustment knob for electric device. 3,430,515, 3–4–69, Cl. 74—527.

Lawrence, Owen N., to Joseph Lucas (Industries) Ltd. Devices for translating forces. 3,430,513, 3–4–69, Cl. 74—519.

Leach Corp.: *See*—
Boyer George W. 3,430,879.

Leas, Arnold M., to Ashland Oil & Refining Co. Hydrocarbon liquids containing polyphenyl substituted lower alkylenes. 3,431,094, 3–4–69, Cl. 44—80.

Ledig, Kurt W.: *See*—
Wendt, Gerhard R., and Ledig. 3,431,262.

Lee, Anthony M.: *See*—
Gabbitus, Derek, Stephens, Brebner, and Lee. 3,430,427.

Lee, David Q.: *See*—
Flanagan, William J., and Lee. 3,430,624.

Leesona Corp.: *See*—
Dudzik, Chester J., and Perkins. 3,430,432.
Sandager, William. 3,430,876.

Lefebvre, Yvon, and J. M. Ferland, to American Home Products Corp. Steroidal 4-hydroxy-2-butenoic acid lactones. 3,431,258, 3–4–69, Cl. 260—239.57.

Leghorn, George R. Method of forming structural shapes from molten material by stream casting. 3,430,680, 3–4–69, Cl. 164—81.

Lehner, William L., to Motorola, Inc. Lead frame members for semiconductor devices. 3,431,092, 3–4–69, Cl. 29—193.5.

Lematta, Wesley G. Apparatus for securing warning markers to cables. 3,430,325, 3–4–69, Cl. 29—203.

Lenhart, Donald D.: *See*—
Garland, William J., Hassencahl, Lenhart, and Wolfe. 3,431,392.

Lenkey, Andrew, and J. B. Graeser, Jr., to Beckman Instruments, Inc. Rotor stabilizer. 3,430,852, 3–4–69, Cl. 233—23.

Lennard, Dean J., to General Electric Co. Supersonic inlet. 3,430,640, 3–4–69, Cl. 137—15.1.

Leo, Albert J., and E. C. Bielskis, to National Pectin Products Co. Apparatus for indicating deviation in output of a cyclically operable pump. 3,430,812, 3–4–69, Cl. 222—14.

Leone, Anthony J. Oil pressure guardian. 3,431,555, 3–4–69, Cl. 340—60.

Leshinsky, Leonard J., to General Motors Corp. Connector. 3,430,993, 3–4–69, Cl. 287—53.

Lester, Raymond H.: *See*—
Humphries, Darral V., and Lester. 3,430,293.

Letter, Eugene C., to Bausch & Lomb Inc. Method of making infrared transmitting element. 3,431,326, 3–4–69, Cl. 264—1.

Levene, Leon, to Owens-Illinois, Inc. Methods for preparing organopolysiloxanes using diaryloxytitanium oxide catalysts. 3,431,229, 3–4–69, Cl. 260—33.4.

Levesque, Charles R.: *See*—
Kilfor, Harry T., Sprinck, Musser, and Levesque. 3,430,533.

Levi, Irving, and H. Blondal, to Charles E. Frosst & Co. Sodium salt of N-dichloroacetyl-DL-serine. 3,431,299, 3–4–69, Cl. 260—534.

Levinsky, Ely S.: *See*—
Strand, Torstein, Levinsky, and Timin. 3,430,894.

Lewis, Gerald F., and D. P. Jones, to Jim Robbins Seat Belt Co. Inertia retracting device with energy absorbing element. 3,431,019, 3–4–69, Cl. 297—386.

Lewis, Robert B., and W. T. Derry, to E. I. du Pont de Nemours and Co. End support for core. 3,430,888, 3–4–69, Cl. 242—68.4.

Lezak, Edward. Mooring device. 3,430,599, 3–4–69, Cl. 114—230.

Lezak, Edward. Mooring device. 3,430,600, 3–4–69, Cl. 114—230.

Libbey-Owens-Ford Glass Co.: *See*—
Ross, Robert E. 3,431,095.

Liebscher, Arthur. Three beam color television deflection system. 3,431,456, 3–4–69, Cl. 315—13.

Lienemann, Darlo E., and J. F. Stufflebeam, to International Harvester Co. Auger centering device. 3,430,822, 3–4–69, Cl. 222—412.

Lightning Fasteners Ltd.: *See*—
Swainson, Eric. 3,430,304.

Lilly, Eli, and Co.: *See*—
Brown, Carter N. 3,431,302.

Lind, James N., and J. C. Aukland, to North American Rockwell Corp. Microwave harmonic generator including a waveguide having oppositely extending channels defining a resonant region therein. 3,431,485, 3–4–69, Cl. 321—69.

Linde Aktiengesellschaft: *See*—
Weishaupt, Josef. 3,430,934.

Lindenberger, William A., to Bell Telephone Laboratories, Inc. Reed switches fused by their walls to each other and a metal support member. 3,431,520, 3–4–69, Cl. 335—112.

Lindmark, Bo M., to A. B. Broderna Hedlung. Roller die bending machine for finishing longitudinal tubular edges including guiding means projecting into a gap therebetween. 3,430,475, 3–4–69, Cl. 72—179.

Linz, Alois P. Valve control for reciprocating piston drive with rapidly starting piston stroke. 3,430,540, 3–4–69, Cl. 91—420.

Liobis, Vytautas A.: *See*—
Freedman, David, and Liobis. 3,430,926.

Lippmann, Seymour A.: *See*—
Stiebel, Ariel I., and Lippmann. 3,431,470.

Liska, Donald O.: *See*—
Reinecke, Paul W., Van Sipe, Dowd, Liske, and Betoski. 3,430,419.

Little, Carl H.: *See*—
Phelps, Malcolm T., and Little. 3,431,040.

Littlefuse, Inc.: *See*—
Raab, Andrew F. 3,431,374.

Littlejohn, Bill R.: *See*—
Ralston, William K., and Littlejohn. 3,430,554.

Litton Precision Products, Inc.: *See*—
Fyler, Norman F. 3,431,511.

Liu, Der S.: *See*—
Hinkein, Donald J., and Liu. 3,431,457.

Lizarralde, Jose M. Television receiver sets. 3,431,463, 3–4–69, Cl. 315—127.

Locke, Joseph K.: *See*—
Webster, Milo E., and Locke. 3,430,622.

Loev, Bernard, to Smith Kline & French Laboratories. Dioxadiazadispiro [4.2.4.2] tetradecane compounds. 3,431,272, 3–4–69, Cl. 260—307.

Loev, Bernard, to Smith Kline & French Laboratories. 1-oxa-4-azaspiro[4.5]-6,9-decadiene compounds. 3,431,273, 3–4–69, Cl. 260—307.

Lofstrand, Warren A., and J. Brugmann, to Consolidated Electronics Industries Corp. Timer. 3,431,432, 3–4–69, Cl. 307—141.

Lohr, Jerome J., to United States of America, National Aeronautics and Space Administration. Variable stiffness polymeric damper. 3,430,902, 3–4–69, Cl. 248—18.

Lohrenz, Victor: *See*—
Wheeler, Donald J., and Lohrenz. 3,431,386.

Long, Charles E. Self adjusting wedge-type disk brake. 3,430,736, 3–4–69, Cl. 188—73.

Long, John R. Anti-jackknife device for fifth-wheel tractor-trailer connections. 3,430,986, 3–4–69, Cl. 280—432.

Longacher, Kenneth E.: *See*—
Smith, Walter W., Longacher, and Zollar. 3,430,681.

Loomis, Russell M.: *See*—
Breen, Henry D., and Loomis. 3,431,015.

Looper, Glenn. Pneumatically fed tufted textile machine. 3,430,590, 3–4–69, Cl. 112—80.

Lorant, George J., to General Foods Corp. Product and process for preparing frozen whipped topping composition. 3,431,117, 3–4–69, Cl. 99—139.

Losfeld, Andre. Combination fuze for explosive devices. 3,430,567, 3–4–69, Cl. 102—72.

Lough, John C.: *See*—
Keane, John J., and Lough. 3,431,135.

Lovegren, Norman V.: *See*—
Feuge, Reuben O., Lovegren, and Gajee. 3,431,116.

Lowe, William: *See*—
Pope, Joseph A., Lowe, and Ellis. 3,430,508.

Lowery, George M. Cleaning device. 3,431,055, 3–4–69, Cl. 401—28.

Lubowitz, Hyman R., to TRW Inc. Polydiene resins including cyclized polydiene resins, method of manufacture and uses. 3,431,235, 3–4–69, Cl. 260—47.

Lucas, Joseph (Industries) Ltd.: *See*—
Lawrence, Owen N. 3,430,513.

Lucas, William D.: *See*—
Woodard, Robert A. 3,430,374.

Ludovici, Bruno F., and G. K. Megla, to Corning Glass Works. Projection system having secondary image carrier. 3,431,048, 3–4–69, Cl. 353—22.

Ludwig, Wilbur G., and R. C. Zimmer, to Bartelt Engineering Co., Inc. Machine for packaging articles in a controlled atmosphere. 3,430,414, 3–4–69, Cl. 53—79.

Lugo, Luigi: *See*—
Reni, Cesare, and Lugo. 3,431,199.

Lund, Gerald:
Head, Frank S., and Lund. 3,431,306.

Lundback, Sven: *See*—
Wennerlund, Eric, and Lundback. 3,430,351.

Lüscher, Werner: *See*—
Knoth, Walter, and Lüscher. 3,431,493.

Lyerly, William M.: *See*—
Dunglinson, Colin, and Lyerly. 3,431,155.

Lyman, Richard E., to United States Steel Corp. Rotary gate for bottom pour vessel. 3,430,644, 3–4–69, Cl. 137—329.6.

Lyons, Stanley L., to Hall Harding Ltd. Means for assembling together in coaxial relation two parts of different diameter. 3,430,321, 3–4–69, Cl. 29—129.

Mabuchi, Takaichi. Miniature electric motor with dielectric cover plate having brush holders. 3,431,442, 3–4–69, Cl. 310—42.

Mac Beinap, Amasa: *See*—
Despain, Alvin A., and Mac Beinap. 3,430,982.

Macchi, Anselmo J.: *See*—
Davis, William R., and Macchi. 3,430,912.

Mac Cragh, Adolfo, M. G. Sanchez, and J. G. Smith, to W. R. Grace Co. Method of preventing reversion in the preparation of ammonium phosphates by the addition of vermiculite. 3,431,097, 3–4–69, Cl. 71—43.

MacGlashen, William F., Jr.: *See*—
Webb, James E. 3,430,942.

Machinery and Welder Mfg. Corp.: *See*—
Meyer, Gilbert F. 3,430,832.

Macho, Helmut: *See*—
Jager, Rudolf, Macho, and Zwiener. 3,430,665.

Mack, John E., to The Hymatic Engineering Co. Ltd. Acceleration-responsive valve assemblies. 3,430,642, 3–4–69, Cl. 137—39.

Mack, Kenneth J., to General Motors Corp. Method of bonding glass fiber reinforced plastic panels to other materials. 3,431,157, 3–4–69, Cl. 156—82.

Mack, Maurice L. Abductor exercising therapeutical appliance. 3,430,955, 3–4–69, Cl. 272—80.

MacKey, Robert J.: *See*—
Martin, John L., MacKey, and Bower. 3,431,011.

Mackey, Thomas S.: *See*—
Case, Forrest N., Mackey, and McFarland. 3,431,328.

Mackie, James, & Sons Ltd.: *See*—
Mackie, John K. P. 3,430,296.

Mackie, John K. P., to James Mackie & Sons Ltd. Oscillating drive for doffer comb. 3,430,296, 3–4–69, Cl. 19—106.

MacPeek, Donald L.: *See*—
Marcus, Erich, and MacPeek. 3,431,309.

Macy, Christian D., deceased, by Laura G. Macy, special administratrix, and H. B. Butler, to Geo. A. Hormel & Co. Process and apparatus for coagulating and drying blood. 3,431,118, 3–4–69, Cl. 99—199.

Macy, Laura G.: *See*—
Macy, Christian D. and L. G., and Butler. 3,431,118.

Magne, Frank C.: *See*—
Skau, Evald L., Mod, and Magne. 3,431,269.

Magnesium Elektron Ltd.: *See*—
Halliwell, Walter, and Pitts. 3,430,610.

Maier, William. Electrical junction boxes. 3,430,799, 3–4–69, Cl. 220—3.94.

Majestic Co., Inc., The: *See*—
Winegardner, Donald E. 3,431,056.

Majewski, Henry: *See*—
Baetzel, Robert J., and Majewski. 3,431,127.

Majewski, John V., to McGraw-Edison Co. Cable junction. 3,431,539, 3–4–69, Cl. 339—103.

Makita, Seiichi, to Nippon Toki Kabushiki Kaisha. Detachable handle apparatus for casserole dishes or the like. 3,431,006, 3–4–69, Cl. 294—31.

Malenfant, Yve P. M. J., ½ to Etablissements J. Danois & Fils. Window structure. 3,430,384, 3–4–69, Cl. 49—371.

Mallory Electric Corp.: *See*—
Chavis, Leon A. 3,430,615.

Malmstrom Chemical Corp.: *See*—
Russell, Kenneth L. 3,431,207.

Mammel, Walter K., to Western Electric Co., Inc. Pickup device for supporting workpieces on a layer of fluid. 3,431,009, 3–4–69, Cl. 294—64.

Mandell, Harry C., Jr.: *See*—
Huber, Ludwig K., and Mandell. 3,431,088.

Manfredonia, Mario, and E. D. Wilcox, Jr., to Union Camp Corporation. Automatic bag opener. 3,430,409, 3–4–69, Cl. 53—3.

Manitowoc Co., Inc., The: *See*—
Dedricks, Alvin N., and Mueller. 3,430,452.

Manjikian, Serop: *See*—
Clark, George B., and Manjikian. 3,430,770.

Manley, Harold J., to United States of America, Air Force. Discontinuous forward automatic gain control. 3,431,497, 3–4–69, Cl. 325—326.

Mann, Morley. Apparatus for forming coils. 3,430,474, 3–4–69, Cl. 72—135.

Mansour, Momtaz N.: *See*—
Laub, Joseph L., and Mansour. 3,430,834.

Manz, August F., to Union Carbide Corp. Work-in-circuit arc starting apparatus. 3,431,390, 3–4–69, Cl. 219—130.

Marconi Co. Ltd., The: *See*—
De Tuillo, Luigi, Spence, and Mostyn. 3,431,549.
Spence, Ian L. 3,431,550.

Marcus, Erich, and D. L. MacPeek, to Union Carbide Corp. Trans-di(hydroxyalkyl)cyclobutanes. 3,431,309, 3–4–69, Cl. 260—617.

Marinescu, Matei, to Ministerul Industriei Constructiilor de Masini. Electric motor with alternating linear motion. 3,431,477, 3–4–69, Cl. 318—125.

Mark, Alexander H., to Massey-Ferguson Inc. Conical threshing assembly. 3,430,633, 3–4–69, Cl. 130—27.

Marks, Robert G. Storage cabinet. 3,431,039, 3–4–69, Cl. 312—221.

Marron, John W. Slope cutting attachment for bulldozers. 3,430,706, 3–4–69, Cl. 172—802.

Marsh, Hugh R. W., and F. W. Wilshin, to Masson Scott Thrissell Engineering Ltd. Sheet feeding mechanism. 3,430,950, 3–4–69, Cl. 271—64.

Martens, Adolf: *See*—
Nimtz, Klaus, Grapp, and Martens. 3,430,431.

Martin, John L., R. J. MacKey, and W. H. Bower, to Beven-Herron, Inc. Releasable lumber sling device. 3,431,011, 3–4–69, Cl. 294—75.

Martin, Robert L.: *See*—
Gauntt, Grover C., Jr., Isaacs, Martin, and Walton. 3,430,448.

Martin, Robert W., to International Business Machines Corp. Switching apparatus. 3,431,431, 3–4–69, Cl. 307—136.

Maschinenfabrik Augsburg - Nurnberg Aktiengesellschaft: *See*—
Stroehlen, Richard. 3,430,608.

Masciantonio, Philip X., and J. H. Schelling, to United States Steel Corp. Method for recovery of pyridine bases. 3,431,266, 3–4–69, Cl. 260—290.

Mason, Gilbert E., and H. L. Armbruster, to American Zinc Co. Photoconductive zinc oxide coating compositions and method of producing them. 3,431,106, 3–4–69, Cl. 96—1.8.

Mason, William H.: *See*—
Appelt, Weldon F., and Mason. 3,430,582.

Massey-Ferguson Inc.: *See*—
Mark, Alexander H. 3,430,633.
Richey, Clarence B. 3,430,703.
Richey, Clarence B. 3,430,705.

Massey, Grant W., ⅜ to J. Kollar. Exercise and gymnastic stand. 3,430,954, 3–4–69, Cl. 272—62.

Masson, Robert G.: *See*—
Ollier, Jacques H. G., Grosshans, and Masson. 3,430,411.

Masson Scott Thrissell Engineering Ltd.: *See*—
Marsh, Hugh R. W., and Wilshin. 3,430,950.

Mathes, Gunther, to Anstalt fur Montage-Technik. Method and device for clamping. 3,430,903, 3–4–69, Cl. 248—68.

Mathis, Joseph J.: *See*—
Burton, Jean A., Geppert, Farmer, and Mathis. 3,430,831.

Matsubara, Kentaro, and S. Tobyama, to Jananese National Railways and Kowa Concrete Co. Ltd. Ballastless railway track structure. 3,430,857, 3–4–69, Cl. 238—1.

Matsushita, Hideo. Phonograph pickup arm. 3,430,965, 3–4–69, Cl. 274—23.

Matumaru, Haruo: *See*—
Douta, Kikuo, Matumaru, and Nishimura. 3,430,334.

Matthews, John H., to Multifastener Corp. Level control system for gravity conveyor. 3,430,808, 3–4–69, Cl. 221—10.

Matthews, Theodore L. Combined mower and vacuum device. 3,430,421, 3–4–69, Cl. 56—23.

Matsumoto, Ryoso, and H. Watanabe, ¼ each to Teijin, Ltd., and Tokyo Seiko Co., Ltd. Apparatus for measuring continuously the temperature of traveling yarn. 3,430,492, 3–4–69, Cl. 73—361.

Mawney, Robert G.: *See*—
Ambler, Walter B., and Mawney. 3,431,526.

Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V.: *See*—
Bogner, Gunther, and Klipping. 3,430,450.

Maxwell, Gary B.: *See*—
Doonan, Douglas D., and Maxwell. 3,431,054.

Mayer, David P., and S. B. Richter, to Velsicol Chemical Corp. Substituted and unsubstituted N-lower alkyl benzhydrylcarbamates as herbicides. 3,431,099, 3–4–69, Cl. 71—106.

Maytag Co., The: *See*—
Ross, Frank E. 3,430,871.

Mazza, Gerald V. Clove construction. 3,430,265, 3–4–69, Cl. 2—162.

Mazzi, Aramis, to Solis Societa a Responsabilita Limitata. Tubular hosiery tensioning device. 3,430,464, 3–4–69, Cl. 66—153.

McCann, Robert J.: *See*—
Webb, James E. 3,430,909.

McCloy, Robert W., to United States of America, Navy. External burning ramjet engine. 3,430,446, 3–4–69, Cl. 60—270.

McClure, James D., to Shell Oil Co. Olefin oligomerization. 3,431,318, 3–4–69, Cl. 260—683.15.

McClure, John L., to General Electric Co. Electric water heater circuit. 3,431,395, 3–4–69, Cl. 219—321.

McColl, Michael J., to Crown Zellerbach Corp. Multi-blank reinforced fiberboard container. 3,430,839, 3–4–69, Cl. 229—23.

McCormick, Jerry R. D., U. Joachim, E. R. Jensen, and N. O. Sjolander, to American Cyanamid Co. 6,11-dihydro-11-keto-6 - methyl - 3,6,10,12 - tetrahydroxynaphthacene - 1,4-quinone-2-carboxamide. 3,431,303, 3–4–69, Cl. 260—559.

McDonald, Harold, to Stauffer Chemical Co. Compacted sulfur and method of producing same. 3,431,214, 3–4–69, Cl. 252—189.

McDonald's System, Inc.: *See*—
Weimer, Ralph E., and Herbert. 3,430,815.

McDonough, James O.: *See*—
Forrester, Jay W., Pease, McDonough, and Susskind. 3,431,478.

McDougall, Franklin M., to Standard Machine & Mfg. Co. Foam generator. 3,430,865, 3–4–69, Cl. 239—427.5.

McElroy, Howard J., to Verson Allsteel Press Co. Transfer assembly for a press. 3,430,779, 3–4–69, Cl. 214—1.

McFarland, Clyde E.: *See*—
Case, Forrest N., Mackey, and McFarland. 3,431,328.

McGraw-Edison Co.: *See*—
Majewski, John V. 3,431,539.

McKee, James C.: *See*—
Chase, Richard R., and McKee. 3,431,061.

McLaughlin, George E., to Bell Telephone Laboratories, Inc. Electrical transmission testing system having test results transmitted in pulse width modulation form. 3,431,369, 3–4–69, Cl. 179—175.3.

McLaughlin, Harry A., to Ford Motor Co. Backhoe swing mechanism. 3,430,503, 3–4–69, Cl. 74—105.

McLeod, Francis D., Jr., to Mennen-Greatbatch Electronics, Inc. Ultrasonic flowmeter for measuring blood flow. 3,430,625, 3–4–69, Cl. 128—2.05.

McMonagle, William H., to Sperry Rand Corp. Punch travel detection arrangement. 3,430,529, 3–4–69, Cl. 83—522.

McNally, Donald E.: *See*—
Poppe, Robert P., and McNally. 3,431,022.

McQuary, Kenneth L.: *See*—
Truesdell, Warren L., and McQuary. 3,430,581.

Meacham, George B. K., to Eaton Yale & Towne Inc. Desmodromic drive arrangement. 3,430,614, 3–4–69, Cl. 123—90.

Mead Corp., The: *See*—
Wood, Prentice J. 3,430,413.

Meeker, David A.: *See*—
Geiger, Russell C., Gieger, and Meeker. 3,430,861.

Megison, Donald R., and S. Barton, to The Procter & Gamble Co. Sanitary napkin. 3,430,630, 3–4–69, Cl. 128—290.

Megla, Gerhard K.: *See*—
Ludovici, Bruno F., and Megla. 3,431,048.

Mehta, Dinshaw D., and A. Christensen, to Chemical Construction Corp. Compression of gaseous streams containing carbon monoxide. 3,430,451, 3–4–69, Cl. 62—85.

Meissner, Josef, GmbH & Co., KG.: *See*—
Toischer, Karl E. L., and Bergmann. 3,431,312.

Melgaard, Hans L., to Despatch Oven Co. Magnetic door latch. 3,431,002, 3–4–69, Cl. 292—251.5.

Melle-Bezons (Societe Anonyme): *See*—
Bounlot, Albert. 3,431,181.

Mennen-Greatbatch Electronics, Inc.: *See*—
McLeod, Francis D., Jr. 3,430,625.

Merck & Co., Inc.: *See*—
Rogers, Edward F., and Clark. 3,431,300.
Schultz, Everett M. 3,431,291.
Walton, Edward. 3,431,252.

Meredith, Norman A., to Gerling Ltd. Disc brakes. 3,430,741, 3–4–69, Cl. 188—218.

Meredith, Oliver H. Grain blender. 3,430,354, 3–4–69, Cl. 34—172.

Merritt & Co. (Engineering) Ltd.: *See*—
Merritt, Henry E. 3,430,523.

Merritt, Henry E., to Merritt & Co. (Engineering) Ltd. Gyratory gearing. 3,430,523, 3–4–69, Cl. 74—805.

Meseke, Curt T., and W. Winkler, to Hammer-Lit GmbH. Closure and suspending device for bags open at the top. 3,430,754, 3–4–69, Cl. 198—177.

Mesmer, Robert E.: *See*—
Hudson, Robert B., and Mesmer. 3,431,069.

Mesta Machine Co.: *See*—
Senn, Charles H., and Cecil. 3,430,786.

Metz, Joseph R., to Norco, Inc. Aircraft door attaching and release device. 3,430,382, 3–4–69, Cl. 49—37.

Metzger, Grant W., to The Flintkote Co. Heat exchange structure for rotary kilns. 3,430,936, 3–4–69, Cl. 263—33.

Meyer, Gilbert F., to Machinery and Welder Mfg. Corp. Welding wire feeding mechanism for continuous welding apparatus. 3,430,832, 3–4–69, Cl. 226—174.

Meystre, Charles: *See*—
Anner, Georg, Meystre, Kalvoda, and Ueberwasser 3,431,191.

Micafil A.G.: *See*—
Knoth, Walter, and Lüscher. 3,431,493.

Micell, Fidelis P. Stairway. 3,430,729, 3–4–69, Cl. 182—93.

Micro and Precision Mouldings (Cheltenham) Ltd.: *See*—
James, Michael J. 3,430,999.

Microdot Inc.: *See*—
Skirvin, Clifford D. 3,431,465.

Microulis, Anthony. Bottle top with resilient attaching sleeve. 3,430,826, 3–4–69, Cl. 222—570.

Microwave Associates, Inc.: *See*—
Evans, Kenneth R. 3,431,453.

Miles, Wallace J., R. J. Lapham, and H. G. Hahn, to The Dow Chemical Co. Homogeneous copolymers of vinylidene chloride and vinyl chloride and coatings therefrom. 3,431,228, 3–4–69, Cl. 260—32.8.

Miller, C. David, C. Soodak, and P. Priarone, to American Instrument Co., Inc. Hydrogen-entrained air total consumption aspirator burner. 3,430,864, 3–4–69, Cl. 239—424.

Miller, Daniel A., to The Black and Decker Mfg. Co. Transmission for rotary hammer. 3,430,708, 3–4–69, Cl. 173—109.

Miller, Daniel A., to The Black and Decker Mfg. Co. Motion transmission mechanism for impact tools. 3,430,709, 3–4–69, Cl. 173—123.

Miller, Herman, Inc.: *See*—
Propst, Robert L., and Kelley. 3,430,997.

Miller Printing Machinery Co.: *See*—
Siebke, Carl O. 3,430,946.

Miller, Ralph L., to Bell Telephone Laboratories, Inc. Voice-excited, bandwidth reduction system employing pitch frequency pulses generated by unencoded baseband signal. 3,431,362, 3–4–69, Cl. 179—15.55.

Miller, Seymour M.: *See*—
Radel, Philip H., and Miller. 3,430,759.

Miller, Thomas P., to International Telephone and Telegraph Corp. NOR logic screening translator. 3,431,363, 3–4–69, Cl. 179—18.

Millmaster Onyx Corp.: *See*—
Wakeman, Reginald L., and Coates. 3,431,265.

Mills, Arnold T., to Hilux Holdings Societe Anonyme. Valve for controlling the rate of flow of solids. 3,430,654, 3–4–69, Cl. 137—625.28.

Mills, Franky D.: *See*—
Hamby, J. W., and Mills. 3,430,702.

Milne, William S.: *See*—
Dain, John E., and Milne. 3,430,738.

Ministerul Industriei Constructiilor de Masini: *See*—
Marinescu, Matei. 3,431,477.

Minnesota Mining and Mfg. Co.: *See*—
Benjamin, John G. 3,430,952.
Vogel, Herward A., and Olen. 3,431,240.

Minnear, Clarence T. Extension trammel. 3,430,347, 3–4–69, Cl. 33—27.

Mirriless National Ltd.: *See*—
Pope, Joseph A., Lowe, and Ellis. 3,430,508.

Mishima Paper Mfg. Co., Ltd.: *See*—
Mizutani, Yasuo, Sakamoto, and Ishibashi. 3,431,166.

Mitsubishi Denki Kabushiki Kaisha: *See*—
Iida, Takahiko, Nobata, Harasaki, and Kumazawa. 3,431,400.

Mitsui Chemical Industry Co., Ltd.: *See*—
Kaubara, Shu, Takahashi, Nakano, and Hirose. 3,431,248.

Mitsui, Hachiro. Method of manufacturing cloth-covered belt buckles and tool assembly used therein. 3,430,315, 3–4–69, Cl. 29—3.

Mitton, Robert E. Pressure equalizer apparatus for hydraulic brake fluid systems. 3,430,660, 3–4–69, Cl. 138—30.

Mizuno, Edward: *See*—
Hirshfield, Edward, Mizuno, and Trouard. 3,431,506.

Mizutani, Yasuo, S. Sakamoto, and Y. Ishibashi, to Mishima Paper Mfg. Co., Ltd. Method of making paper which dissolves in water containing papermaking fibers and fibrous cellulose-glycolic acid. 3,431,166, 3–4–69, Cl. 162—135.

Mobil Oil Corp.: *See*—
Argauer, Robert J. 3,431,219.
Canada, James R. 3,430,701.
Cummings, Walter W. 3,430,696.
Giammaria, John J. 3,431,204.
Hubbard, Jack L. 3,430,695.
Offenhauer, Robert D., and Scheiner. 3,431,189.
Plank, Charles J., and Rosinski. 3,431,218.
Starr, Leon. 3,431,190.

Mod, Robert R.: *See*—
Skau, Evald L., Mod, and Magne. 3,431,269.

Moldovan, Michael T., and E. H. Drew, deceased (E. de B. Drew, administrator, and S. D. Robinson, administratrix), to AVM Corp. Vote record pack print device. 3,430,559, 3–4–69, Cl. 101—269.

Molmberg, Göte E. Y., to G.E.Y.-Patenter Aktiebolag. Automatic strap retracting mechanisms for safety seat belts in cars. 3,430,885, 3–4–69, Cl. 242—107.4.

Molnar, Istvan: *See*—
Häring, Marc, Molnar, and Wagner-Jauregg. 3,431,342.

Monarch Road Machinery Co.: *See*—
Jackoboice, Edward W. 3,430,651.

Monsanto Chemicals Ltd.: *See*—
Gilbert, John H. 3,431,163.
Gilbert, John H. 3,431,164.

Monsanto Co.: *See*—
Fink, Walter. 3,431,222.
Hilton, Thomas B., and Kowalski. 3,431,206.
Hudson, Robert B., and Mesmer. 3,431,069.
Shen, Chung Y. 3,431,210.

Montrose, Anthony A.: *See*—
Bell, Marion S., Montrose, and Spoon. 3,430,479.

Mo och Domsjo Aktiebolag: *See*—
Grunewald, Helmut, and Steijner. 3,431,082.

Moody Dunbar, Inc.: *See*—
Hensley, Sidney G. 3,430,764.

Moog Inc.: *See*—
Hawk, George W. 3,430,656.

Moonan, William, to Sprague Products, Inc. Method and article for the packaging of aerosol products. 3,430,819, 3–4–69, Cl. 222—402.1.

Moore Dry Kiln Co. of Oregon: *See*—
Turner, Donald B. and Hoffman. 3,430,787.

Morgan Paul E.: *See*—
Herdeg, Donald F., and Morgan. 3,430,949.

Moriga, Hiroyuki: *See*—
Oda, Ryohei, Fujii, and Moriga. 3 431,282.

Morimura, Syoji: *See*—
Murayama, Keisuke, Morimura, Akagi, Kurumada, Watanabe, and Kitaoka. 3 431,233.

Morkoski, James: *See*—
Pool, Stuart D., and Morkoski. 3,430,583.

Morris, David R.: *See*—
Simpson, Malcolm P., Hardwick, Blundy and Morris. 3,431,071.

Morris, Lester, R. E. Thompson, and I. P. Seegman, to Products Research & Chemical Corp. Mercaptan terminated polyethers. 3,431 239, 3–4–69, Cl. 260—48.

Morris, Richard M., to Weyerhaeuser Co. Corrugated containerboard and the process of treating the same. 3,431,162, 3–4–69, Cl. 161—133.

Morrison, Robert. Derrick cranes and swinging derricks. 3,430,776 3–4–69, Cl. 212—3.

Moss, Kenneth G. Vehicle. 3,430,791, 3–4–69, Cl. 214—505.

Mostyn, Rodney: *See*—
De Tullio, Luigi, Spence and Mostyn. 3,431,549.

Motorola, Inc.: *See*—
Borg, Lester W. 3,431,357.
Fruehling, Gene R., and Johnson. 3,431,486.
Goncharoff Nikolai. 3,431,358.
Huffman, Tommie R. 3,431,468.
Lehner, William L. 3,431,092.
Schafft, Hugo W. 3,430,316.
Schafft, Hugo W. and Goncharoff. 3,431,516.

Moult, Roy H., and R. T. Hood, to Koppers Co., Inc. Monoisocyanate condensed resorcinol-aldehyde resins. 3,431,241, 3–4–69, Cl. 260—54.

Mouttet, Leon. Electrical connecting device for high tension wire. 3 431,533, 3–4–69, Cl. 339—14.

Moyer, Wendell W., Jr.: *See*—
Nadherny, Russell J., and Moyer. 3,430,816.

Moynes, Frank W. Expandable arbor. 3,430,882, 3–4–69, Cl. 242—72.

Muckleston, Ronald T. Key holder. 3,430,470, 3–4–69, Cl. 70—459.

Mueller, Lester A.: *See*—
Dedricks Alvin N., and Mueller. 3,430,452.

Muenow, Richard A., and G. W. Plice, to James Electronics, Inc. Image conversion cathode ray tube with piezoelectric face element provided with rigidifying means. 3,431,462, 3–4–69, Cl. 315—55.

Multifastener Corp.: *See*—
Matthews, John H. 3,430,808.

Mundt-Petersen, Just H., and K. A. Eriksson, to Aktiebolaget Landsverk. Method of reducing the profile of a vehicle. 3,431,016, 3–4–69, Cl. 296—28.

Munk, Edmund, H. Haas, and G. Weinberg. Stacking container. 3,430,806, 3–4–69, Cl. 220—97.

Munyon, Alfred R. Electric-plug puller and insulator. 3,431,-535, 3–4–69, Cl. 339—45.

Munzel, Kurt, to Hoffmann-La Roche Inc. Coated dosage form adapted to oral emetine or dehydroemetine therapy. 3,431,-338, 3–4–69, Cl. 424—21.

Muraro, Leo L.: *See*—
Waters, Paul F., and Muraro. 3,431,242.

Murayama, Keisuke, S. Morimura, S. Akagi, T. Kurumada, I. Watanabe, and A. Kitaoka, to Sankyo Co. Ltd., and Asahi Kasei Kogyo Kabushiki Kaisha. Novel piperidine N-oxide polyolefin stabilizers. 3,431,233, 3–4–69, Cl. 260—45.8.

Murayama, Keisuke, T. Toda, S. Akagi, T. Kurumada, I. Watanabe, and A. Kitaoka, to Sankyo Co. Ltd., and Asahi Kasei Kogyo Kabushiki Kaisha. Piperidine N-oxide polyolefin stabilizers. 3,431,232, 3–4–69, Cl. 260—45.8.

Murphy, James A., to Canadian International Paper Co. Disposable diaper. 3,430,629, 3–4–69, Cl. 128—284.

Murphy, William S.: *See*—
Bialczak, Edward C., and Murphy. 3,431,109.

Muse, George B. Wall construction method and apparatus. 3,430,403, 3–4–69, Cl. 52—437.

Muse, George B. Apertured wall construction. 3,430,404, 3–4–69, Cl. 52—439.

Muskovac, Nicholas G.: *See*—
Stone, Leonard R., Reim, Muskovac, and Cook. 3,431,415.

Musser, C. Walton, to United Shoe Machinery Corp. Submergible antifriction bearings. 3,431,036, 3–4–69, Cl. 308—187.

Musser, Lester W.: *See*—
Kifor, Harry T., Sprinck, Musser, and Levesque. 3,430,533.

NGK Insulators, Ltd.: *See*—
Fukui, Hiroshi. 3,431,126.
Kobayashi, Kazuo, and Yamauchi. 3,431,073.

Naarmann, Herbert: *See*—
Kastning, Ernst-Guenther, and Naarmann. 3,431,227.

Nadherny, Russell J., and W. W. Moyer, Jr., to Daubert Chemical Co. Apparatus for dispensing adhesive materials. 3,430,816, 3–4–69, Cl. 222—146.

Nagai, Kenichi: *See*—
Okubo, Kinji, Honjo, and Nagai. 3,431,412.

Nagai, Toshihiko: *See*—
Okubo, Kinji, Honjo, and Nagai. 3,431,412.

Nagel, Friedrich; deceased by P. and W. Nagel, and F. Ursel, heirs. Honing tools. 3,430,401, 3–4–69, Cl. 51—331.

Nagel Peter: *See*—
Nagel, Friedrich. 3,430,401.

Nagel, Wolf: *See*—
Nagel, Friedrich. 3,430,401.

Nakano, Masayuki: *See*—
Kanbara, Shu, Takahashi, Nakano, and Hirose. 3,431,248.

Nakamura, Yoshio: *See*—
Arima, Kei, Tamura, Narasaki, Nakamura, and Saiki. 3,431,175.

Nakashima, Eizo: *See*—
Asami, Atsumi. Ikee, Nakashima, and Takata. 3,430,428.

Naico Chemical Co.: *See*—
Newman, Theodore R. 3,430,641.

Nannichi, Yasuo, to Nippon Electric Co., Ltd. Twin semiconductor laser. 3,431,513, 3–4–69, Cl. 331—94.5.

Narasaki, Teiiti: *See*—
Arima, Kei, Tamura, Narasaki, Nakamura, and Saiki. 3,431,175.

Narita, Takeki. Portable scavenging means for removing feces of animals and other untouchable solids. 3,431,008, 3–4–69, Cl. 294—55.

Nash, L. W., Co.: *See*—
Nash, Terry W. 3,430,794.

Nash, Terry W., to L. W. Nash Co. Forked coil buggy. 3,430,-794, 3–4–69, Cl. 214—731.

National Advertising Co.: *See*—
Phillips, John F. 3,430,371.
Rutchick, Robert K. 3,430,372.

National Aeronautics and Space Administration: *See*—
Webb, James E. 3,430,909.
Webb, James E. 3,430,942.
Webb, James E. 3,431,149.
Webb, James E. 3,431,397.
Webb, James E. 3,431,460.
Webb, James E. 3,431,559.

National Cash Register Co., The: *See*—
Zurbuchen, Louis E., and Goldammer. 3,431,401.

National Gypsum Co.: *See*—
Reinecke, Paul W., Van Sipe, Dowd, Liske, and Betoski. 3,430,419.

National Pectin Products Co.: *See*—
Leo, Albert J., and Bielskis. 3,430,812.

National Tel-Tronics Corp.: *See*—
Valle, Louis J., and Hoegrel. 3,431,544.

Nebel, Erhard M.: *See*—
Nebel, Max B. and E. M. 3,430,462.
Nebel, Max B. and E. M. 3,430,463.

Nebel, Max B. and E. M., to Hanes Corp. Method and apparatus for making run-resistant knitted fabric. 3,430,463, 3–4–69, Cl. 66—42.

Nebel, Max B. and E. M., to Hanes Corp. Method and apparatus for knitting run-resistant fabric. 3,430,462, 3–4–69, Cl. 66—42.

Nectoux, Andre, to Societe des Forges et Ateliers du Creusot. Installation comprising a cradle for supplying ingots to a rolling mill. 3,430,781, 3–4–69, Cl. 214—1.

Nellis, Stewart, and R. W. Lamp, to Technical Wire Products, Inc. Electromagnetic shield and viewing laminate. 3,431,348, 3–4–69, Cl. 174—35.

Nelson, Arthur W. Tow bar arresting device. 3,430,789, 3–4–69, Cl. 214—86.

Nelson, Donald R., to Goodard Industries, Inc. Coupling. 3,430,990, 3–4–69, Cl. 285—158.

Nelson, Hoyt H.: *See*—
Webb, James E. 3,431,559.

Nelson, Josephine. Collapsible coat hanger. 3,430,827, 3–4–69, Cl. 223—89.

Nelson, Paul B., to Sinclair-Koppers Co. Semi-disposable tray. 3,430,803, 3–4–69, Cl. 220—63.

Neptune Meter Co.: *See*—
Barber, Ronald B. 3,430,537.

Nervik, John M.: *See*—
Goeller, Leopold F., Jr., and Nervik. 3,431,368.

Netherwood, Paul H.: *See*—
Cormier, George E., and Netherwood. 3,431,473.

Nettleman, John B., to Cowan Pressroom Products, Inc. Cover assembly for impression cylinder of printing equipment. 3,430,560, 3–4–69, Cl. 101—407.

Neubaum, Victor A., to Bethlehem Steel Corp. Immersion quenching apparatus. 3,431,180, 3–4–69, Cl. 202—227.

Neumann, Heinz: *See*—
Horner, Leopold, Neumann, and Geiger. 3,431,186.

New Britain Machine Co., The: *See*—
Gerwalt, Ulrich. 3,430,294.

New Brunswick Scientific Co., Inc.: *See*—
Freedman, David, and Liobis. 3,430,926.

Newcomb, William E., to Welsh Mfg. Co. Universal stop pin for head protective equipment. 3,430,263, 3–4–69, Cl. 2—8.

Newland, Findlay E.: *See*—
Bruhn, Richard A., and Newland. 3,430,907.

Newman, Roger, to Sperry Rand Corp. Optical computer comprising semiconductor p-n junction components. 3,431,438, 3–4–69, Cl. 307—312.

Newman, Theodore R., to Nalco Chemical Co. Method of redispersing deposits. 3,430,641, 3–4–69, Cl. 134—22.

Nicholas, David W., to Hovercraft Development Ltd. Gas cushion vehicles of the side wall type. 3,430,725, 3–4–69, Cl. 180—126.

Nichols, Fred B.: *See*—
Clasen, Richard D., and Nichols. 3,430,914.

Nicki, Franklyn G., to Canteen Corp. Playback apparatus for multiple magnetic tape cartridges. 3,431,367, 3–4–69, Cl. 179—100.2.

Nield, Eric, to Imperial Chemical Industries Ltd. Process for producing imide derivatives. 3,431,276, 3–4–69, Cl. 260—326.5.

Nikko Kagaku Kabushiki Kaisha : *See*—
Yokohama, Yasutsugu. 3,431,078.

Nimtz, Klaus, H. Grapp, and A. Martens, to Palitex Project-Co. G.m.b.H. Balloon restrainer for two-for-one twisting machine. 3,430,431, 3–4–69, Cl. 57—108.

Nippert, Harold : *See*—
Wahl, Harold F., and Nippert. 3,430,873.

Nippon Electric Co., Ltd. : *See*—
Nannichi, Yasuo. 3,431,513.
Yawata, Keiske, Shiraishi, and Shiba. 3,431,144.

Nippon Telegraph and Telephone Public Corp. : *See*—
Ito, Giichi, Takamura, Kato, and Kikuchi. 3,431,519.

Nippon Toki Kabushiki Kaisha : *See*—
Makita, Seiichi. 3,431,006.

Nishimura, Takeo : *See*—
Douta, Kikuo, Matumaru, and Nishimura. 3,430,334.

Nistler, Philip J. : *See*—
James, Raymond H. Korkowski, and Nistler. 3,431,492.

Nitrochemic G.m.b.H. : *See*—
Nolte, Helmuth, Deckers, and Rostock. 3,430,565.

Noack, Christian : *See*—
Oliva, Klaus, Noack, and Lange. 3,430,505.

Nobata, Akio : *See*—
Iida, Takahiko, Nobata, Harasaki, and Kumazawa. 3,431,400.

Nolte, Helmuth, G. Deckers, and H. Rostock, to Nitrochemic G.m.b.H. Molded explosive charge within a shell casing having an inner wall of absorbent material. 3,430,565, 3–4–69, Cl. 102—24.

Nonnenmacher, Helmut, M. Appl, J. Haug, and K. Andrussow, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of pure phthalic anhydride from o-xylene. 3,431,284, 3–4–69, Cl. 260—346.4.

Norco, Inc. : *See*—
Metz, Joseph R. 3,430,382.

Nordberg Mfg. Co. : *See*—
Saunders, Guy L. 3,431,034.

Nordgren, Bo G. Method in rock blasting operations for marking out drill hole patterns. 3,431,049, 3–4–69, Cl. 353—121.

Nordh, Ulf S. I., to Associated Cargo Gear AB. Hatch cover. 3,430,675, 3–4–69, Cl. 160—188.

North American Philips Co., Inc. : *See*—
Daniels, Henricus P. C., and Botden. 3,430,331.
Harrick, Nicolas J. 3,431,411.

North American Rockwell Corp. : *See*—
Davis, Noah S., and Foust. 3,431,200.
Lind, James N., and Aukland. 3,431,485.

Northern Electric Co. Ltd. : *See*—
Berger, Bernard A. 3,430,324.

Northwestern Corp., The : *See*—
Bolen, Richard K. 3,430,746.

Norton, John P., to American Air Filter Co., Inc. Refrigerant condenser arrangement. 3,430,453, 3–4–69, Cl. 62—196.

Norton, Robert L., to Polaroid Corp. Photographic shutter mechanism. 3,430,547, 3–4–69, Cl. 95—60.

Notchev, John S. : *See*—
Reagan, Bruce V., Jr., Notchev, and Cederwall. 3,430,302.

Noto, Hajime : *See*—
Ishizaki, Kan, and Noto. 3,430,343.

Notte, Albert C., Jr. : *See*—
Seitz, Russell. 3,431,066.

Novotny, Rudolf, and F. Schuermann. Anchor bolts and method for fixing same in drill holes especially in friable rock. 3,430,449, 3–4–69, Cl. 61—45.

Nozawa, Koichi : *See*—
Seno, Kenji, Nozawa, Tanaka, and Kikuchi. 3,431,403.

Nunley, Clifford E. : *See*—
Gibson, Ronald F., Nunley, and Waters. 3,430,849.

Nystrom, Charles A. Pneumatic chip ejector. 3,430,811, 3–4–69, Cl. 222—3.

Oberdorfer, Karl : *See*—
Walter, Wallace F., and Oberdorfer. 3,430,278.

Obermann, George, to Controls Co. of America. Timer switch actuation and connection. 3,431,372, 3–4–69, Cl. 200—38.

O'Brien, Eugene L. : *See*—
Fein, Marvin M., Green, and O'Brien. 3,431,234.

O'Brien, John J., and C. Z. Irbrahim, to W. R. Grace & Co. Method of vacuum casting employing a high temperature sealing composition. 3,430,679, 3–4–69, Cl. 164—65.

Oda, Ryohei, H. Fujii, and H. Moriga. Phthalide compounds. 3,431,282, 3–4–69, Cl. 260—343.4.

Odden, La Verne M., to General Mills, Inc. Milling process for rye. 3,430,869, 3–4–69, Cl. 241—9.

O'Donnell, Richard V., to United States of America, Army. Jamming transceiver with automatic frequency tracking of jammed signal. 3,431,496, Cl. 325—132.

Oelrich, John A., to Chandler Evans, Inc. Time modulated pneumatically actuated control mechanism. 3,430,536, 3–4–69, Cl. 91—47.

Offenhauer, Robert D., and P. Scheiner, to Moboil Oil Corp. Method of making an expanded cellular body of polymer. 3,431,189 3–4–69, Cl. 204—159.18.

Office National d'Etudes et de Recherches Aerospatiales par abreviation (O.N.E.R.A.) : *See*—
Philbert, Michel E. C, 3,431,352.

Ogawa, Shigeyoshi : *See*—
Kato, Kaoru, and Ogawa. 3,431,067.

Oguri, Katsuhiko, to Aisin Seiki Kabushiki Kaisha. Clutch release motor with automatic compensator for disc wear. 3,430,744, 3–4–69, Cl. 192—111.

Oien, Hans T. : *See*—
Vogel, Herward A., and Oien. 3,431,240.

Okubo, Kinji, S. Honjo, and T. Nagai, deceased, by N. Kenichi, legal representative, to Fuji Shashin Film Kabushiki Kaisha. Infrared copying process and copying material which releases water of crystallization. 3,431,412, 3–4–69, Cl. 250—65.

Olin Mathieson Chemical Corp. : *See*—
Cimerol, Joseph J., Clarke, and Denton. 3,431,085.
Deronen, Earl R. 3,430,607.

Olinger, Eugene C., W. R. Bradley, and J. H. Smith, to Continental Oil Co. Process for chlorinating hydrocarbons. 3,431,314, 3–4–69, Cl. 260—660.

Oliva, Klaus, C. Noack, and G. Lange, to VEB Kombinat Fortschritt. Variable-speed drive for agricultural implement. 3,430,505, 3–4–69, Cl. 74—230.17.

Ollier, Jacques H. G., G. F. Grosshans, and R. G. Masson. Manufacture of yogurt and similar filled containers. 3,430,411, 3–4–69, Cl. 53—30.

Olsen, La Verne R. Securing means for doors and the like. 3,431,001, 3–4–69, Cl. 292—218.

Olson, Byron W. Wire termination electrical junction and contact retention system. 3,431,536, 3–4–69, Cl. 339—74.

Olson, Dale G. : *See*—
Anderson, Jesse I., and Olson. 3,431,413.

Olson, Robert T. Shorting apparatus. 3,430,911, 3–4–69, Cl. 248—354.

O'Mary, Hollis W. : *See*—
David, Charles E., and O'Mary. 3,431,501.

Omni-Card Systems, Inc. : *See*—
Peters, Alec. 3,430,557.

Opti-Holding A.G. : *See*—
Heimberger, Helmut. 3,431,337.

Optische Werke G. Rodenstock : *See*—
Dietrich, Anton. 3,431,045.

Organon Inc. : *See*—
De Winter, Max Salomon. 3,431,287.

Orion Research, Inc. : *See*—
Frant, Martin S. 3,431,182.

Ortega, Robert. Automatic vacuum pool cleaner. 3,430,277, 3–4–69, Cl. 15—1.7.

Orthmann, Jurgen : *See*—
Wick, Richard, Waschk, and Orthmann. 3,431,053.

Osgood, Richard B., to Hewlett-Packard Co. Retaining apparatus for an ultrasonic coupling medium. 3,431,440, 3–4–69, Cl. 310—8.1.

Oshman, Malin K., and S. E. Harris, to Sylvania Electric Products Inc. Laser frequency stabilization. 3,431,514, 3–4–69, Cl. 331—94.5.

Oslebay Norton Co. : *See*—
Charman, Walter M., Jr., and Beattie. 3,430,682.

Osmood, George. Signal, especially for traffic and vehicle control. 3,431,553, 3–4–69, Cl. 340—31.

Oswald, Joseph : *See*—
Hurst, Paul L., and Oswald. 3,430,507.

Oswald, William N., to Standard Mfg. Co., Inc. Nestable, corrugated forklift and sling pallet. 3,430,586, 3–4–69, Cl. 108—55.

Otto, Noel A., to Automatic Switch Co. Self-holding nut for wall of enclosure. 3,430,991, 3–4–69, Cl. 285—206.

Otto, Wolfgang K. F., to Ashland Oil & Refining Co. Process for production of metal bearing carbon black. 3,431,205, 3–4–69 Cl. 252—62.55.

Overdeck, John S. Apparatus for surface-treating blast furnace bells and the like. 3,430,389, 3–4–69, Cl. 51—34.

Owens-Corning Fiberglas Corp. : *See*—
Heumann, Frederick G. 3,430,892.

Owens-Illinois Glass Co. : *See*—
Kitaj, Walter. 3,430,627.

Owens-Illinois, Inc. : *See*—
Levene, Leon. 3,431,229.

Oxford Paper Co. : *See*—
Fadner, Thomas A. 3,431,137.

PPG Industries, Inc. : *See*—
Dowbenko, Rostyslaw, and Christenson. 3,431,294.

Pacific Clay Products : *See*—
Wendt, Paul H. 3,430,989.

Packaging Corp. of America : *See*—
Bessett, Clifford H. 3,430,838.

Pahl, Henry D., Jr. Solid state color balance controller for incandescent lamps. 3,431,427, 3–4–69, Cl. 250—226.

Paige Co. Containers, Inc., The : *See*—
Paige, Richard E. 3,430,840.

Paige, Richard E., to The Paige Co. Containers, Inc. Collapsible paperboard box. 3,430,840. 3–4–69, Cl. 229—37.

Palitex Project-Co. GmbH : *See*—
Nimtz, Klaus, Grapp, and Martens. 3,430,431.

Palmer, John S., to International Harvester Co. Wedge wheel securing assembly. 3,430,992, 3–4–69, Cl. 287—52.06.

Pan American Petroleum Corp. : *See*—
Satter, Abdus, and Parrish. 3,430,700.

Pan, Samuel C., P. A. Principe, and B. Junta, to E. R. Squibb & Sons, Inc. Synthesis of steroids. 3,431,174, 3–4–69, Cl. 195—51.

Pandell, Nestor W., and R. W. Knebel, to Peabody Cluett & Co., Inc. Apparatus for testing wearability of fabrics. 3,430,480, 3–4–69, Cl. 73—7.

Pandjiris, Anthony K., and A. I. Frederick, to The Pandjiris Weldment Co. Head and tailstock manipulator. 3,430,944, 3–4–69, Cl. 269—61.

Pandjiris Weldment Co., The : *See*—
Pandjiris, Anthony K., and Frederick. 3,430,944.

Pantke, Heinz-Dieter, and H. Hickmann, to Huttenwerk Oberhausen AG. Fluid-control member. 3,430,689, 3–4–69, Cl. 165—47.

Pao, Yoh-han, and P. M. Rentsepis, to Bell Telephone Laboratories, Inc. Second harmonic generator. 3,431,484, 3–4–69, Cl. 321—69.

Parechanian, Haig S., and J. C. Schutzler, to United States of America, Navy. Leading edge for hypersonic vehicle. 3,430,898, 3–4–69, Cl. 244—123.

Paricio, Ray : *See*—
Landes, Benjamin D., and Paricio. 3,430,393.

Parish, Sammie M. Steering apparatus for a swamp boat. 3,430,603, 3–4–69, Cl. 115—35.

Parker, James B. : *See*—
Dinwoodie, Andrew H., Fort, and Parker. 3,431,261.

Parker, Wayland B., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 3,431,021, 3–4–69, Cl. 297—445.

Parkison, Richard G., and R. B. Duggan, to American Standard, Inc. Heat shield for soldering plumbing lines. 3,430,686, 3–4–69, Cl. 165—1.

Parks, Joe K. : *See*—
Brediger, James L., Day, Lavedan, and Parks. 3,431,515.

Parnell, David H. : *See*—
Richardson, Leslie F., and Parnell. 3,430,443.

Paquette, Leo A., to The Upjohn Co. Certain aminoxyethyl derivatives of 2(1H)-pyridones. 3,431,270, 3–4–69, Cl. 260—296.

Parrish, David R. : *See*—
Satter, Abdus, and Parrish. 3,430,700.

Parsch, Claus-Peter : *See*—
Kafka, Wilhelm, and Parsch. 3,431,347.

Parsons, Freeman A. : *See*—
Anderson, Paul G. 3,431,023.

Parsons, John T. : *See*—
Forrester, Jay W., Pease, McDonough, and Susskind. 3,431,478.

Parrella, Alfred T., and G. R. Gagliardi, to Farrel Corp. Method of aligning mill rolls for grinding thereof. 3,430,400, 3–4–69, Cl. 51—289.

Parri, Gwynn J. Paper feeder coordinated with platen. 3,430,748, 3–4–69, Cl. 197—130.

Parrish, Frederick W., to United States of America, Army. Fructose formation from glucose. 3,431,253, 3—4–69, Cl. 260—209.

Paseka, Ivo : *See*—
Balej, Jan, Paseka, Vondrak, and Regner. 3,431,193.

Patterson, Edward M., to Imperial Chemical Industries, Ltd. Marine seismic detonator. 3,430,566, 3–4–69, Cl. 102—28.

Patzer, Hans E. : *See*—
Grable, Ronald C., and Patzer. 3,430,835.

Paulsen, Roy, and R. L. Day. Handle assembly. 3,431,007, 3–4–69, Cl. 294—31.2.

Paulus, Erwin F. : *See*—
Rothauser, Ernst H., and Paulus. 3,431,355.

Pavlovsky, Vadim E. : *See*—
Filatov, Eduard Y., and Pavlovsky. 3,430,502.

Pease, Donald L., and H. A. Twist, to Xerox Corp. Electroscopic particle sensor. 3,430,606, 3–4–69, Cl. 118—637.

Pease, William M. : *See*—
Forrester, Jay W., Pease, McDonough and Susskind. 3,431,478.

Pecnik Franc, to Edwlstahlwerk Witten Aktiengesellschaft. Austenitic steel suitable for exhaust valves subject to great stresses. 3,431,100, 3–4–69, Cl. 75—125.

Pecoraro, Raymond P. : *See*—
Castrucci, Paul P., and Pecoraro. 3,431,472.

Peebles Foods, Inc. : *See*—
Braatz, Douglas R. 3,431,113.

Peerless Plastics, Inc. : *See*—
Copen, Daniel B. 3,430,299.

Pelkey, Joseph, Combination greeting card and phonograph record. 3,430,761, 3–4–69, Cl. 206—62.

Pellett, David L., to Taco, Inc. Instrument adapter. 3,430,917, 3–4–69, Cl. 251—149.6.

Pennsalt Chemicals Corp. : *See*—
Biasi, Edward T., and Skiblak. 3,431,115.
Huber, Ludwig K., and Mandell. 3,431,088.

Pepe, Frank W., to Arc-Co. Inc. Fastening device. 3,430,905, 3–4–69, Cl. 248—74.

Perfection Engineering Co., Inc. : *See*—
Gilreath, Lafayette E. 3,430,850.

Perkins, Guy E. : *See*—
Dudzik, Chester J., and Perkins. 3,430,432.

Perles, David R. Safety cutting instrument for pedicure. 3,430,340, 3–4–69, Cl. 30—28.

Perrin, Donald E., and G. S. Wakefield. Lace wind. 3,430,303, 3–4–69, Cl. 24—117.

Perry, Gerald H. : *See*—
Ball, Robert G., Perry, and Wood. 3,431,433.

Perry, William D., to Weyerhaeuser Co. Method of drying wood and moisture indicator. 3,430,357, 3–4–69, Cl. 34—16.5.

Persson, Gert A., and N. B. L. Sander, to Svenska Aktiebolaget Bromsregulator. Railway vehicle brake rigging. 3,430,739, 3–4–69, Cl. 188—202.

Perstorp Aktiebolag : *See*—
Bergstrand, Sten-Ake. 3,431,083.

Petchen Corp. : *See*—
Schwarz, Herbert. 3,431,142.

Peter, Fritz, to Rodney Hunt Co. Wet processing apparatus. 3,430,466, 3–4–69, Cl. 68—184.

Peters, Alec, to Omni-Card Systems, Inc. Hot die ribbon inker stamping machines. 3,430,557, 3–4–69, Cl. 101—27.

Petersen, Allen J., and E. K. Hansen, to Rae Motor Corp. Electric motor brush holder mounting. 3,431,445, 3–4–69, Cl. 310—239.

Petersen, Allen J., and E. K. Hansen, to Rae Motor Corp. Electric motor brush holder, cap and spring. 3,431,446, 3–4–69, Cl. 310—247.

Peterson, Vincent C. J., to American Chain & Cable Co., Inc. Energy absorbing system. 3,430,897, 3–4–69, Cl. 244—110.

Peytavin, Pierre : *See*—
Babel, Louis, and Peytavin. 3,430,684.

Pfaff, G. M., A.G., and Farbwerke Hoechst A.G. : *See*—
Hartmann, Werner, Schleede, and Schülde. 3,431,203.

Pfrehm, Raymond H., to Esso Research and Engineering Co. Modified turbine mass flow meter. 3,430,489, 3–4–69, Cl. 73—231.

Phelps Dodge Refining Corp. : *See*—
Bell, Marion S., Montrose, and Spoon. 3,430,479.

Phelps, Malcolm T., and C. H. Little, to Weber-Knapp Co. Platform elevation control mechanism. 3,431,040, 3–4–69, Cl. 312—272.

Philbert, Michel E. C., to Office National d'Etudes et de Recherches Aerospatiales (O.N.E.R.A.). Device for the analysis of phenomena involving variations in optical path length. 3,431,352, 3–4–69, Cl. 178—6.

Phillips, George H. Eraser device. 3,430,282, 3–4–69, Cl. 15—210.

Phillips, John F., to National Advertising Co. Interleafed multiple sliding panel six-message display device. 3,430,371, 3–4–69, Cl. 40—61.

Phillips, Lawrence D. : *See*—
Eddy, William R., Phillips, and Beason. 3,430,528.

Phillips Petroleum Co. : *See*—
Banks, Robert L. 3,431,316.
Chapman, Charles C. 3,431,079.
Eddy, William R., Phillips, and Beason. 3,430,528.
Folz, John M. 3,431,315.
Goins, Robert R. 3,430,797.
Gunnell, Thomas J. 3,431,075.
Kinslow, William G., Jr. 3,430,290.

Phillips, Robert E. Testing device. 3,430,415, 3–4–69, Cl. 53—123.

Phillips, Robert L., to Burroughs Corp. Dual voltage regulated power supply. 3,431,429, 3–4–69, Cl. 307—31.

Phipps, Mark, to Western Publishing Co., Inc. Launcher for spinning a top. 3,430,381, 3–4–69, Cl. 46—72.

Picard, Jean P. : *See*—
Seals, William O., Dunigan, and Picard. 3,431,153.

Pickin, John H., to Colgate-Palmolive Co. Aerosol detergent compositions. 3,431,060, 3–4–69, Cl. 8—137.

Pickles, Joseph, to Ferro Mfg. Corp. Six-way seat adjuster. 3,430,516, 3–4–69, Cl. 74—665.

Pickup, Kenneth G. : *See*—
Cooper, Leslie E., and Pickup. 3,431,311.

Pierce, Ernest E. Roll-type closure. 3,430,677, 3–4–69, Cl. 160—264.

Pierson, Charles W. : *See*—
Sutliff, Robert C., Burgo, Butler, and Pierson. 3,431,380.

Pietenpol, Kermit W., and W. E. Schober, to Viking of Minneapolis. Quick connect electrical connector. 3,431,543, 3–4–69. Cl. 339—254.

Piguet, Albert, to Fabrique d'Horlogerie Lemania, Lugrin S.A., l'Orient. Zero reset mechanism for timepieces measuring time intervals. 3,430,434, 3–4–69, Cl. 58—74.

Pike, Kenneth R., Q. I. Wilcox, and A. E. Cooper, to Chrysler Corp. Inboard-outboard drive. 3,430,604, 3–4–69, Cl. 115—41.

Pillsbury Co., The : *See*—
Durst, Jack R. 3,431,112.

Pincus, Seymour, and E. G. Krakauer, to Kay Mfg. Corp. Anticlogging breathable mold and method. 3,431,331, 3–4–69, Cl. 264—45.

Pipe, John, to Steelcase, Inc. Cantilever loading extensible drawer rail. 3,431,042, 3–4–69, Cl. 312—339.

Pirelli S.p.A. : *See*—
Vecellio, Bernardino. 3,431,161.
Vecellio, Bernardino. 3,431,246.

Pitts, Frank : *See*—
Halliwell, Walter, and Pitts. 3,430,610.

Plank, Charles J., and E. J. Rosinski, to Mobil Oil Corp. Conversion of clays to crystalline aluminosilicates and catalysts therefrom. 3,431,218, 3–4–69, Cl. 252—455.

Planting, Peter J. : *See*—
Barlow, Malcolm, and Planting. 3,431,377.

Plessey Co. Ltd., The : *See*—
Godfrey, Alan. 3,431,499.
Turner, Stanley B., and Challis. 3,430,848.

Plice, Gerald W. : *See*—
Muenow, Richard A., and Plice. 3,431,462.

Plume, Alan W. : *See*—
Faulkner, Kenneth F., and Plume. 3,431,345.

Plummer, Walter A. : *See*—
Smith, Ethan A. 3,430,733.

Podell, Allen F., to Adams-Russell Co., Inc. FM multiplex adapter. 3,431,361, 3–4–69, Cl. 179—15.

Poff, Russell G. Trigger for a spring-type mousetrap. 3,430,380, 3–4–69, Cl. 43—81.

Polaroid Corp. : *See*—
Bloom, Stanley M. 3,431,260.
Norton, Robert L. 3,430,547.

Polymer Corp. Ltd. : *See*—
Darcy, Jules, and Dunn. 3,431,231.
Scherf, Gerhard W. H., and Henderson. 3,431,245.

Polytop Corp. : *See*—
Wilson, Woodrow S. 3,430,825.

Pool, Stuart D., and J. Morkoski, to International Harvester Co. Waferizing machine. 3,430,583, 3–4–69, Cl. 107—8.

Pool, Stuart D., and R. R. Steingas, to International Harvester Co. Devices for harvesting fruit and the like. 3,430,425, 3–4–69, Cl. 56—329.

Pope, Joseph A., W. Lowe, and G. H. S. Ellis, to Mirrless National Ltd. Power transmission gearing. 3,430,508, 3–4–69, Cl. 74—410.

Poppe, Robert P., and D. E. McNally, to Steelcase, Inc. Chair construction. 3,431,022, 3–4–69, Cl. 297—445.

Porath, Gordon H. : *See*—
Greenberg, Myron L., and Porath. 3,430,318.

Porter, Stephen L., C. Auville, and A. R. Winch, to Celanese Corp. Warp knit fabric. 3,430,465, 3–4–69, Cl. 66—193.
Potasse & Engrais Chimiques: *See*—
Trimbach, Honore, and Dumont. 3,431,098.
Pouliot, Richard D., to Renriden Corp. Electro-thermal actuator. 3,430,440, 3–4–69, Cl. 60—23.
Poulsen, Ulrik. Working procedure of and apparatus for the manufacture of reinforced plastic tubes. 3,431,158, 3–4–69, Cl. 156—173.
Pouzar, Edward G. Receptacle moving mixer. 3,430,927, 3–4–69, Cl. 259—88.
Powell, John E., to Triplex Safety Glass Co. Ltd. Methods and apparatus for treating glass sheets. 3,430,328, 3–4–69, Cl. 29—407.
Powers, Joseph E.: *See*—
Grimoldi, Ranoldo H., and Powers. 3,430,317.
Powers, Joseph E., and D. W. Sattler, to Kaiser Steel Corp. Workpiece positioning and securing device. 3,430,525, 3–4–69, Cl. 77—63.
Precismeca S.A.: *See*—
Allendorf, Marcel. 3,430,755.
Allendorf, Marcel. 3,430,756.
Presto Lock Co., Inc.: *See*—
D'Ella, Anthony N., and Stolarz. 3,430,742.
Priarone, Paul: *See*—
Miller, C. David, Soodak, and Priarone. 3,430,864.
Price, Harold J.: *See*—
Jones, Robert E., Jr., and Price. 3,431,416.
Priefert, Marvin J. Vertical bumper guard attachment. 3,431,005, 3–4–69, Cl. 293—65.
Priewe, Hans, K. Gutsche, H. Langecker, H. Gibian, E. Gerhards, and A. Harwart, to Schering A.G. Certain 2-benzenesulfonamido-5-oxypyrimidines. 3,431,263, 3–4–69, Cl. 260—256.5.
Principe, Pacifico A.: *See*—
Pan, Samuel C., Principe, and Junta. 3,431,174.
Procter & Gamble Co., The: *See*—
Megison, Donald R., and Barton. 3,430,630.
Products Research & Chemical Corp.: *See*—
Morris, Lester, Thompson, and Seegman. 3,431,239.
Propper Mfg. Co., Inc.: *See*—
Speelman, Irving A. 3,430,514.
Propst, Robert L., and J. O. Kelley, to Herman Miller Inc. Panel joint. 3,430,997, 3–4–69, Cl. 287—189.36.
Pugh, Clyde C.: *See*—
Clark, Frank E., Pugh, and Von Konsky. 3,430,416.
Pyro-Serv Instruments, Inc.: *See*—
Engelhard, William E. 3,430,856.
Quammen, Milton L.: *See*—
Cassidy, Patrick J., and Quammen. 3,431,043.
Quenot, Andre, to Quenot & Cie S.a.r.l. Linear measuring instruments. 3,430,348, 3–4–69, Cl. 33—138.
Quenot & Cie S.a.r.l.: *See*—
Quenot, Andre. 3,430,348.
Querengasser, Hugo, J. Krause, K. Frank, and J. Cziska, to Knapsack Aktiengesellschaft. Process for the manufacture of ferrosilicon. 3,431,103, 3–4–69, Cl. 75—133.
Raab, Andrew F., to Littlefuse, Inc. Adjustable safety switch. 3,431,374, 3–4–69, Cl. 200—61.54.
Rabe, George B., and W. B. Grossman, to Thiokol Chemical Corp. Valve mechanism. 3,430,442, 3–4–69, Cl. 60—39.14.
Rachlin, Albert: *See*—
Focella, Antonio, Gurien, and Rachlin. 3,431,301.
Radel, Philip H., and S. M. Miller, to Gilbert International Corp. Container for air transportation. 3,430,759, 3–4–69, Cl. 206—7.
Rader Pneumatics Inc.: *See*—
Wahl, Harold F., and Nippert. 3,430,878.
Radio Corp. of America: *See*—
D'Agostino, Michael V. 3,431,505.
Kosonocky, Walter F. 3,431,437.
Rae Motor Corp.: *See*—
Petersen, Allen J., and Hansen. 3,431,445.
Petersen, Allen J., and Hansen. 3,431,446.
Raion Yushi Kabushiki Kaisha: *See*—
Susuki, Rinnosuke, and Hoshi. 3,430,845.
Rajamannan, Ambrose H. J. Live cell diluent and process. 3,431,172, 3–4–69, Cl. 195—1.8.
Ralston, William K., to International Harvester Co. Cord holder keeper. 3,430,998, 3–4–69, Cl. 289—14.
Ralston, William K., and B. R. Littlejohn, to International Harvester Co. Self-stripping wire twister hook for wire balers. 3,430,554, 3–4–69, Cl. 100—31.
Ramcon Corp.: *See*—
Raymond, Frank J., Jr. 3,430,916.
Ramsey, Richard T.: *See*—
Silvia, Denis A., Ramsey, and Spencer. 3,430,564.
Ranc, Jean, to Robatel Slpi. Continuously operating centrifugal filters. 3,430,772, 3–4–69, Cl. 210—374.
Randol, Glenn T. Self-adjusting linkage device for clutch actuators. 3,430,745, 3–4–69, Cl. 192—111.
Rapata, George M., to Illinois Tool Works Inc. Fastener unit. 3,430,673, 3–4–69, Cl. 151—37.
Raschke, Herbert A., to E. D. Bullard Co. Welder's face shield mounting bracket for safety hats. 3,430,262, 3–4–69, Cl. 2—8.
Ratti, Gino A., Jr., to Chemetron Corp. Process of preparing fine particle pigments. 3,431,130, 3–4–69, Cl. 106—309.
Ratzsch, Manfred, H. Grundmann, R. Kilian, and G. Reinhardt, to Veb Leuna-Werke. Process for the purification of low-molecular polyethylene mash. 3,431,250, 3–4–69, Cl. 260—94.9.
Rausch, Maurice K., to Sinclair Research, Inc. Two-stage catalytic hydrogenation of a dewaxed raffinate. 3,431,198, 3–4–69, Cl. 208—143.
Rayfield, Harry F., to Burroughs Corp. Tape apparatus. 3,430,878, 3–4–69, Cl. 242—55.12.
Raymond, Frank J., Jr., to Ramcon Corp. Electrically operated valve. 3,430,916, 3–4–69, Cl. 251—71.
Raytheon Co.: *See*—
Christopher, Daryl J. 3,431,458.
Glasspool, William T. 3,431,434.
Reagan, Bruce V., Jr., J. S. Notchev, and L. O. Cederwall, 50% each to Lancea Corp., and B. V. Reagan, Jr. Garment button. 3,430,302, 3–4–69, Cl. 24—108.
Recognition Equipment Inc.: *See*—
Redfield, David, to Union Carbide Corp. Junction laser with controlled output. 3,431,512, 3–4–69, Cl. 331—94.5.
Reed, George A.: *See*—
Warson, Henry, and Reed. 3,431,226.
Reed, Robert D., to John Zink Co. Gas fueled igniter. 3,431,057, 3–4–69, Cl. 431—263.
Reeder, Earl: *See*—
Fryer, Rodney I., Reeder, and Sternbach. 3,431,304.
Rees, Spencer C., to The Singer Co. Reversible hammer drill mechanisms. 3,430,707, 3–4–69, Cl. 173—48.
Regan, Barrie F. Method of making dentures. 3,431,183, 3–4–69, Cl. 204—4.
Regan, Bernard M., to Baxter Laboratories, Inc. 2-halo-1,1,3,3-tetrafluoropropanes. 3,431,313, 3–4–69, Cl. 260—653.
Regie Nationale des Usines Renault: *See*—
Auriol, Jean. 3,430,518.
Bouell, Raymond, and Gardeux. 3,431,029.
Bouell, Raymond, and Gardeux. 3,431,030.
Caron, Georges. 3,431,018.
Regner, Albert: *See*—
Balej, Jan, Paseka, Vondrak, and Regner. 3,431,193.
Rehrig, Houston, to Rehrig Pacific Co. Material handling crate. 3,430,807, 3–4–69, Cl. 220—97.
Rehrig Pacific Co.: *See*—
Rehrig, Houston. 3,430,807.
Reichardt, Walfgang: *See*—
Glockler, Otto, and Reichardt. 3,430,616.
Reichhold Chemicals, Inc.: *See*—
Davis, Bernard J., and Rosetti. 3,431,310.
Reim, Thomas E.: *See*—
Stone, Leonard R., Reim, Muskovac, and Cook. 3,431,415.
Reinecke, Paul W., R. L. Van Sipe, W. W. Dowd, D. O. Liske, and D. J. Betoski, and National Gypsum Co. Apparatus for reverse air cleaning of dust collectors. 3,430,419, 3–4–69, Cl. 55—302.
Reinhardt, Gelmut: *See*—
Ratzsch, Manfred, Grundmann, Kilian, and Reinhardt. 3,431,250.
Reinhardt, Heinz F., to E. I. du Pont de Nemours and Co. 1,3-cyclic acetal-2-yl substiutted alkanals, alkanols and esters. 3,431,280, 3–4–69, Cl. 260—340.9.
Reis, John C., B. L. Sommer, and T. E. Ennis, to General Time Corp. Oscillator system with malfunction detecting means and automatic switchover circuit. 3,431,510, 3–4–69, Cl. 331—49.
Remington Arms Co., Inc.: *See*—
Hartman, Robert B. 3,431,131.
Kenney, Joseph F. 3,431,156.
Reni, Cesare, and L. Lugo, to Societa Italiana Resine S.p.A. Method of separating aromatic hydrocarbons from mixtures containing them. 3,431,199, 3–4–69, Cl. 208—325.
Renner, Frank J.: *See*—
Renner, George B., and Blasfield. 3,430,552.
Renner, George B., and F. A. Blashfield, to F. J., W. M., and G. B. Renner. Coffee making apparatus. 3,430,552, 3–4–69, Cl. 99—283.
Renner, Louis C.: *See*—
Thorsted, Kenneth G., Renner, and Schmidt. 3,430,487.
Renner, William M.: *See*—
Renner, George B., and Blashfiel.d 3,430,552.
Renriden Corp.: *See*—
Pouliot, Richard D. 3,430,440.
Rentzepis, Peter M.: *See*—
Pao, Yoh-han, and Rentzepis. 3,431,484.
Republic Steel Corp.: *See*—
Stone, Leonard R., Reim, Muskovac, and Cook. 3,431,415.
Rette, Stanley P.: *See*—
Bauman, Joseph F., and Rette. 3,430,292.
Reymore, Harold E., Jr., and A. A. R. Sayigh, to The Upjohn Co. Partial esters as polyols for polyurethane foams. 3,431,223, 3–4–69, Cl. 260—2.5.
Reynolds Metals Co.: *See*—
Whiteman, Benton A. 3,430,889.
Whiteman, Benton A. 3,430,890.
Rice, Roger A.: *See*—
Junck, John A., and Rice. 3,430,657.
Richard, Eugene D., to United States of America, Army. All metal seal and thermal switch. 3,431,528, 3–4–69, Cl. 337—414.
Richards, Lorenzo A. Membrane-shield for soil hygrometer. 3,430,486, 3–4–69, Cl. 73—73.
Richardson Co., The: *See*—
Stone, Leslie F. 3,430,766.
Richardson, Leslie F., and D. H. Parnell, to Bristol Siddeley Engines Ltd. Liquid fuel combustion apparatus for gas turbine engines. 3,430,443, 3–4–69, Cl. 60—39.65.
Richardson, Pierce F., to International Harvester Co. Weight transfer system. 3,430,984, 3–4–69, Cl. 280—405.
Richardson, Truman R.: *See*—
Hawkins, Cyril M., and Richardson. 3,430,522.
Richbourg, James M., to Bevis Industries Inc. Differential drive mechanism for tentering machine. 3,430,310, 3–4–69, Cl. 26—57.
Richey, Clarence B., to Massey-Ferguson, Inc. Scarifying and scraping implement. 3,430,703, 3–4–69, Cl. 172—136.
Richey, Clarence B., to Massey-Ferguson, Inc. Land leveling implement. 3,430,705, 3–4–69, Cl. 172—780.
Richter, Charles W. III, and R. H. Erlewine, to General Plastics Corp. Christmas ornament. 3,431,409, 3–4–69, Cl. 240—10.

Richter, Sidney B.: *See*—
Mayer, David P., and Richter. 3,431,099.
Rickett, Edward, to Daco, Inc. Holder for windshield wiper blade. 3,430,285, 3–4–69, Cl. 15—250.42.
Riddel, John W., to General Motors Corp. Method of making a thermistor. 3,430,336, 3–4–69, Cl. 29—612.
Riehl, Wilhelm, to General Motors Corp. Hydropneumatic suspension devices. 3,430,977, 3–4–69, Cl. 280—124.
Riesenberg, James H., to Consolidated Packaging Machinery Corp. Container filling machine head. 3,430,668, 3–4–69, Cl. 141—198.
Riley, Frank D. Method for flushing and cleaning internal combustion engines. 3,431,145, 3–4–69, Cl. 134—22.
Robatel Slpi: *See*—
Ranc, Jean. 3,430,772.
Robbins, Jim Seat Belt Co.: *See*—
Lewis, Gerald F., and Jones. 3,431,019.
Roberts, Lee. Cleaning means for liquid dispensers. 3,430,639, 3–4–69, Cl. 134—169.
Roberts, Morris W.: *See*—
Bryan, Morris M., Jr., and Roberts. 3,430,426.
Robertson, Andrew, to Sterling Drug Inc. Amino-phenol compounds. 3,431,293, 3–4–69, Cl. 260—474.
Robinson, Gene C., to Ethyl Corp. Hydrocarbon lead production. 3,431,185, 3–4–69, Cl. 204—59.
Robinson, Gerald P.: *See*—
Webb, James E. 3,431,149.
Robinson, Sherwood D.: *See*—
Moldovan, Michael T., and Drew. 3,430,559.
Rockwell, Harvey W., and D. W. Hawk, to Allis-Chalmers Mfg. Co. Scraper ejector mechanism. 3,430,367, 3–4–69, Cl. 37—129.
Roczey-Koller, Kalman, to Electrovert Mfg. Co .Ltd. Production line soldering with application of ultrasonic energy directing to molten soider. 3,430,332, 3–4–69, Cl. 29—471.1.
Rodek, Victor, to United States of America, Army. Telephone substation circuit employing a class-A class-C tone detector. 3,431,366, 3–4–69, Cl. 179—84.
Rodgers, James L., and R. B. Caves. Irrigator. 3,430,867, 3–4–69, Cl. 239—542.
Rogers, Cyril B., to Clark Equipment Co. Inflatable material moving device. 3,430,780, 3–4–69, Cl. 214—1.
Rogers, Edward F., and R. L. Clark, to Merck & Co., Inc. Preparation of 2-chloro-4-nitro-6-methylbenzamide. 3,431,300, 3–4–69, Cl. 260—558.
Roll-O-Sheets, Inc.: *See*—
Burke, William J. 3,430,359.
Rollwitz, William L., and H. S. Benson, to Southwest Research Institute. Depth measuring ultrasonic transceiver. 3,431,551, 3–4–69, Cl. 340—1.
Romak, Albert. Split nut adapter tool. 3,430,527, 3–4–69, Cl. 81—90.
Roosevelt, Julian K. Running lights construction for mounting on top of a mast. 3,431,408, 3–4–69, Cl. 240—7.5.
Rooslid, Sven A.: *See*—
Dolan, Russell P., Jr., Buchanan, and Rooslid. 3,431,150.
Roper, Daniel W., to Eaton Yale & Towne, Inc. Differential with temperature compensating clutch. 3,430,519, 3–4–69, Cl. 74—711.
Rosenfeld, Myer, to United States of America, Army. Solvent degreasing, self-emulsifying cleaning composition. 3,431,209, 3–4–69, Cl. 252—118.
Rosetti, Larry B.: *See*—
Davis, Bernard J., and Rosetti. 3,431,310.
Rosinski, Edward J.: *See*—
Plank, Charles J., and Rosinski. 3,431,218.
Ross, Frank E., to The Maytag Co. Control for waste disposer apparatus. 3,430,871, 3–4–69, Cl. 241—32.5.
Ross, Henry S., and M. P. Wolverton. Target having means for opening the reeds of a switch. 3,430,959, 3–4–69, Cl. 273—127.
Ross, Robert E., to Libbey-Owens-Ford Glass Co. Glass bending furnace. 3,431,095, 3–4–69, Cl. 65—274.
Rostaing, Michel, to Commissariat a l'Energie Atomique. Apparatus for the production of heavy water. 3,431,080, 3–4–69, Cl. 23—270.5.
Rostock, Hans: *See*—
Nolte, Helmuth, Deckers, and Rostock. 3,430,565.
Roth, Morris, to Halliburton Co. Constant thread load cover. 3,430,575, 3–4–69, Cl. 103—153.
Rothauser, Ernst H., and E. F. Paulus, to International Business Machines Corp. Device for excitation controlled smoothing of the spectrum-channel signals of a vocoder. 3,431,355, 3–4–69, Cl. 179—1.
Royal Industries: *See*—
Johnson, John R., and Goodwin. 3,430,893.
Rozie, Maurice, and P. Desire, to Societe Progil. Process for recovery and use of sulfur dioxde. 3,431,072, 3–4–69, Cl. 23—165.
Ruoff, Carl E.: *See*—
Kwap, Theodore W., and Ruoff. 3,431,490.
Russell, John D. Material transporting device. 3,431,026, 3–4–69, Cl. 302—27.
Russell, Kenneth L., to Malmstrom Chemical Corp. Water-insoluble bacteriostats in soap and detergent solutions. 3,431,207. 3–4–69, Cl. 252—106.
Rutchick, Robert K., to National Advertising Co. Display device with reversible and replaceable four-message display cartridge. 3,430,372, 3–4–69, Cl. 40—61.
Ruti Machinery Works Ltd.: *See*—
Freihofer, Alexis. 3,430,666.
Ryan, Thomas J., to American Electronic Laboratories, Inc. In-circuit transistor testing apparatus. 3,431,494, 3–4–69, Cl. 324—158.
SCM Corp.: *See*—
Gibbons, Ambrose J., Jr., and De Marco. 3,431,288.
S.I.N.A. Societa Iniziative Nazionali Autostradali S.p.A.: *See*—
Giavotto, Vittorio, and Caprile. 3,430,923.
Sajar Plastics, Inc.: *See*—
Johnson, Tom W., Stropkay, and White. 3,430,260.
Sabine, John B. Flanged plastic pipes. 3,430,661, 3–4–69, Cl. 138—109.
Sage, Earl M. Sheet and pile holder for printing press. 3,430,948, 3–4–69, Cl. 271—61.
Sahmel, Otto H., to Bausch & Lomb Inc. Potentiometer drive unit. 3,431,531, 3–4–69, Cl. 338—196.
Saiki, Takashi: *See*—
Arime, Kei, Tamura, Narasaki, Nakamura, and Saiki. 3,431,175.
Sakamoto, Shoichi: *See*—
Mizutani, Yasuo, Sakamoto, and Ishibashi. 3,431,166.
Salkowski, Martin J.: *See*—
Dravnieks, Andrew, and Salkowski. 3,430,482.
Samodal, Gyula L.: *See*—
Weeks, Richard F., and Samodal. 3,431,552.
Sanchez, Moises G.: *See*—
MacCragh, Adolfo, Sanchez, and Smith. 3,431,097.
Sandager, William, to Leesona Corp. Support apparatus. 3,430,876, 3–4–69, Cl. 242—46.4.
Sander, Nils B. L.: *See*—
Persson, Gert A., and Sander. 3,430,739.
Larsson, Karl B., and Sander. 3,430,740.
Sanders, Marshall E., to Zenith Radio Corp. Cathode-ray tube magnetic shield and tube mount. 3,431,454, 3–4–69, Cl. 315—8.
Sandin, Raymond C., and C. H. Schmitt, to General Electric Co. Cabinet having reversibly mountable doors. 3,430,386, 3–4–69, Cl. 49—382.
Sandor, Bela I. Clock with an illuminated dial. 3,430,433, 3–4–69, Cl. 58—50.
Sani-Jon of America, Inc.: *See*—
Bradshaw, Thomas T. 3,430,269.
Sankyo Co. Ltd.: *See*—
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Murayama, Keisuke, Morimura, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,233.
Santilhano, Phillip D., to Babcock & Wilcox, Ltd. Method of welding. 3,431,385, 3–4–69, Cl. 219—73.
Sanzenbacher, William A. Apparatus for preparing drinkable water. 3,430,769, 3–4–69, Cl. 210—266.
Saotome, Kazuo, and K. Sato, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for the preparation of oxadicarboxylic acids. 3,431,298, 3–4–69, Cl. 260—535.
Sarka, Albert J., to Harris-Intertype Corp. Material processing apparatus with relatively movable processing components. 3,430,542, 3–4–69, Cl. 93—36.
Sartomer Resins, Inc.: *See*—
Cornell, John A. 3,431,330.
Sato, Kenichiro: *See*—
Saotome, Kazuo, and Sato. 3,431,298.
Satter, Abdus, and D. R. Parrish, to Pan American Petroleum Corp. Recovery of petroleum by thermal methods involving transfer of heat from one section of an oil-bearing formation to another. 3,430,700, 3–4–69, Cl. 166—256.
Sattler, Dennis W.: *See*—
Powers, Joseph E., and Sattler. 3,430,525.
Satzinger, Gebhard, to Gebhard Satzinger Metallwarenfabrik. Lubricator. 3,430,731, 3–4–69, Cl. 184—39.
Saunders, Guy L., to Nordberg Mfg. Co. Supporting means for bearings and the like. 3,431,034, 3–4–69, Cl. 308—73.
Saurer, Adolph, Aktiengesellschaft: *See*—
Jager, Rudolf, Macho, and Zwiener. 3,430,665.
Saussele, Charles W., and E. C. Bettoni, to Holley Carburetor Co. Automotive exhaust emission system. 3,430,437, 3–4–69, Cl. 60—30.
Sautier, Pierre J., to Engins Matra. Aircraft bomb. 3,430,562, 3–4–69, Cl. 102—4.
Savage, John W., to The Susquehanna Corp. Current probe with auxiliary winding for unwanted signal rejection. 3,431,487, 3–4–69, Cl. 323—50.
Sawaya, Albert R., to The Goodyear Tire & Rubber Co. Method of preparing 2-methylene-1,3-dioxolane. 3,431,281, 3–4–69, Cl. 260—340.9.
Sayers, Leslie W., to Courtaulds Ltd. Method of bulking textile yarns. 3,430,314. 3–4–69, Cl. 28—72.
Sayigh, Adnan A. R.: *See*—
Reymore, Harold E., Jr., and Sayigh. 3,431,223.
Scalf, William R.: *See*—
Ginnette, Lewis F., and Scalf. 3,430,454.
Schafft, Hugo W., to Motorola, Inc. Method for polarizing piezoelectric material. 3,430,316, 3–4–69, Cl. 29—25.35.
Schafft, Hugo W., and N. Goncharoff, to Motorola, Inc. Electromechanical reverberation delay device. 3,431,516, 3–4–69, Cl. 333—30.
Schausberger, Helmut: *See*—
Wick, Richard, Kwiatkowski, and Schausberger. 3,430,945.
Scheiner, Peter: *See*—
Offenhauer, Robert D., and Scheiner. 3,431,189.
Schell, James E. Toilet seat fastener. 3,431,004, 3–4–69, Cl. 292—258.
Schelling, James H.: *See*—
Masciantonio, Philip X., and Schelling. 3,431,266.
Schenkelberger, Frank J., to Clark Equipment Co. Vehicle steering apparatus. 3,430,974, 3–4–69, Cl. 280—93.
Scherf, Gerhard W. H., and J. F. Henderson, to Polymer Corp. Ltd. Production of novel polymers and polymerization process therefor. 3,431,245, 3–4–69, Cl. 260—79.5.
Schering A.G.: *See*—
Freund, Heinz-Eberhard, and Arndt. 3,431,289.
Priewe, Hans, Gutsche, Langecker, Gibian, Gerhards, and Harwart. 3,431,263.
Schering Corp.: *See*—
Bailey, George A. 3,431,208.

Scherzer, Harry S.: *See*—
Engel, Edward F., and Scherzer. 3,430,283.
Scheufler, Roland: *See*—
Henle, Rudolf, and Scheufler. 3,430,322.
Schindler, Donald G.: *See*—
Henry, Edwin B., Jr., Schindler, and Zemberry. 3,430,-485.
Schipanski, Emil R. Autoclave. 3,431,065, 3–4–69, Cl. 21—96.
Schleede, Dietrich: *See*—
Hartmann, Werner, Schleede, and Schülde. 3,431,203.
Schlegel Mfg. Co., The: *See*—
Engel, Edward F., and Scherzer. 3,430,283.
Schlumberger Ltd. (Schlumberger N.V.): *See*—
Parker, Wayland B. 3,431,021.
Schlumberger Technology Corp.: *See*—
Brieger, Emmet F. 3,430,714.
Fields, Roger Q. 3,430,715.
Lanmon, C. P., II. 3,430,713.
Stafford, John A. 3,430,712.
Urbanosky, Harold J. 3,430,698.
Urbanosky, Harold J. 3,430,716.
Weeks, Richard F., and Samodal. 3,431,552.
Schlussler, Henry: *See*—
Freedman, Harold T., and Schlussler. 3,431,500.
Schmidt, Joseph A.: *See*—
Thorsted, Kenneth G., Renner, and Schmidt. 3,430,487.
Schmidt, Karl, G.m.b.H.: *See*—
Henle, Rudolf, and Scheufler. 3,430,322.
Schmitt, Charles H.: *See*—
Sandin, Raymond C., and Schmitt. 3,430,386.
Schnepf, Robert W.: *See*—
Jahnig, Charles E., and Schnepf. 3,431,197.
Schober, Wayne E.: *See*—
Pietenpol, Kermit W., and Schober. 3,431,543.
Scholl, Gunter. High-capacity air-cooled heat exchanger. 3,430,691, 3–4–69, Cl. 165—122.
Scholl Mfg. Co., Inc., The: *See*—
Emerson, William D. 3,430,396.
Schon, Erich F. Horizontal coke ovens with controlled two stage heating and air admission. 3,431,177, 3–4–69, Cl. 202—135.
Schon, Erich F. Compound coke oven battery with controlled two stage heating and air admission. 3,431,178, 3–4–69, Cl. 202—135.
Schrader, Charles D., and M. A. Schrader, Sr. Secondary ignition wire end assembly. 3,431,534, 3–4–69, Cl. 339—26.
Schrader, Max A., Sr.: *See*—
Schrader, Charles D and M. A., Sr. 3,431,534.
Schriffert, Edward J.: *See*—
Carvalho, Dorothy A., Hauser, Schriffert, and Sprague. 3,431,151.
Schroeder, Lester F., to Steelcase, Inc. Adjustable indexing glide for furniture legs. 3,430,287, 3–4–69, Cl. 16—42.
Schubert, Hermann: *See*—
Lambrecht, Josef, and Schubert. 3,430,941.
Schuermann, Fritz: *See*—
Novotny, Rudolf, and Schuermann. 3,430,449.
Schulde, Felix: *See*—
Hartmann, Werner, Schleede, and Schulde. 3,431,203.
Schulenberg, John W., to Sterling Drug Inc. 1-phenylbenzimidazole-2-methanol. 3,431,274, 3–4–69, Cl. 260—309.2.
Schultz, Everett M., to Merck & Co., Inc. (2-alkylidenealkanoyl)phenoxy derivatives of acetonitrile. 3,431,291, 3–4–69, Cl. 260—465.
Schutz, Siegismund: *See*—
Aichinger, Gerd, Schutz, and Hoffmeister. 3,431,257.
Schutzler, Jerome C.: *See*—
Parechanian, Haig S., and Schutzler. 3,430,898.
Schwander, Hans R., A. Zenbausern, and P. Hindermann, to J. R. Geigy, A.G. Sulfonated 1-sec-alkylamino-4-aralkylaminoanthraquinones. 3,431,285, 3–4–69, Cl. 260—371.
Schwarz, Herbert, to Petchen Corp. Method of improving wearing qualities of organic fibers and fabrics. 3,431,142, 3–4–69, Cl. 117—139.5.
Schweitzer, William P., and N. Flaxman, to Kimberly-Clark Corp. Method of making a reconstituted tobacco sheet having improved filling power. 3,430,634, 3–4–69, Cl. 131—140.
Sciaux, Jean, to Alfa-Laval AB. Centrifugal apparatus for heat exchange. 3,430,690, 3–4–69, Cl. 165—88.
Scotto, Vincent: *See*—
Westeren, Herbert W., Kimball, and Scotto. 3,431,346.
Scovill Mfg. Co.: *See*—
Dritz, Arthur. 3,430,346.
Freeman, Richard B. 3,430,539.
Sealed Power Corp.: *See*—
Hesling, Donald M., and De Bruin. 3,430,968.
Seals, William O., T. E. Dunigan, and J. P. Picard, to United States of America, Army. Solidified plastic matrix containing white phosphorous. 3,431,153, 3–4–69, Cl. 149—19.
Seaman, Gary G., and J. A. Trenerry, to Western Electric Co., Inc. Article assembling apparatus. 3,431,387, 3–4–69, Cl. 219—79.
Seamands, Robert E., and J. H. Williams, to United States of America, Army. Compression rod actuator. 3,430,541, 3–4–69, Cl. 92—113.
Searles, Amos. Conveyor belt cleaner. 3,430,758, 3–4–69, Cl. 198—230.
Season-All Industries, Inc.: *See*—
Biro, Alexander J. 3,430,385.
Seegman, Irvin P.: *See*—
Morris, Lester, Thompson, and Seegman. 3,431,239.
Seibold, Wilhelm: *See*—
Eggers, Gerhard, and Seibold. 3,430,858.
Seitz, Russell, ¼ to A. C. Notte Jr. Method for producing yttrium aluminum oxide garnet crystals. 3,431,066, 3–4–69, Cl. 23—20.
Sekendur, Nafiz. Precision dental attachment. 3,430,344, 3–4–69, Cl. 32—5.
Self, Richard E. Flow control valve. 3,430,658, 3–4–69, Cl. 137—628.
Selinger, Cyril S., to Eugene Ltd. Hair drier. 3,430,353, 3–4–69, Cl. 34—100.
Seney, John S., to E. I. du Pont de Nemours and Co. Calorimetric yarn deniering apparatus. 3,430,488, 3–4–69, Cl. 73—160.
Senn, Charles M., and O. S. Cecil, Jr., to Mesta Machine Co. Changing bench for flash welder dies and the like. 3,430,786, 3–4–69, Cl. 214—16.4.
Sennhenn, Emil, to Fernseh G.m.b.H. Method of transmitting television signals. 3,341,351, 3–4–69, Cl. 178—5.2.
Seno, Kenji, K. Nozawa, N. Tanaka, and H. Kikuchi, to Fujitsu Ltd. Readout control system for perforated tape. 3,431,403, 3–4–69, Cl. 235—61.11.
Shabaker, Robert H.: *See*—
Bartok, William, and Shabaker. 3,431,194.
Shaffer, Herman D. Animated barber pole. 3,430,373, 3–4–69, Cl. 40—126.
Shair, Fredrick H., to United States of America, Air Force. Plasma purification by means of electrostriction. 3,431,-441. 3–4–69, Cl. 310—11.
Sheehan, Desmond, and R. A. Clarke, to American Cyanamid Co. 9-cyanoacridans and process for their production. 3,431,264, 3–4–69, Cl. 260—279.
Shell Oil Co.: *See*—
Jones, Robert C. 3,431,323.
McClure, James D. 3,431,318.
Smith, Noyes D., Jr., and Vogel. 3,430,726.
Zunderdorp, Henricus J. 3,430,597.
Shelton, John J.: *See*—
Brown, Jerald L., and Shelton. 3,431,425.
Shen, Chung Y., to Monsanto Co. Detergent processes. 3,431,-210, 3–4–69, Cl. 252—135.
Shenango Furnace Co., The: *See*—
Smith, Walter W., Longacher, and Zollar. 3,430,681.
Sherr, Allan E.: *See*—
Gillham, Helen C., and Sherr. 3,431,324.
Sherwin, Kenneth A.: *See*—
Hall, Raymond F., and Sherwin. 3,431,076.
Shiba, Horoshi: *See*—
Yawata, Keiske, Shiraishi, and Shiba. 3,431,144.
Shimer, Robert M.: *See*—
Kopelman, Bernard, and Shimer. 3,431,540.
Shimwell, Derrick W., to Weaving Research & Textile Commission Agents Ltd. Looms. 3,430,664, 3–4–69, Cl. 139—12.
Shingu Shoko, Ltd.: *See*—
Ishizaki, Kan, and Noto. 3,430,343.
Shinbaum, Marvin S., and J. S. Strance, to E. W. Bliss Co. Dynamic test machine. 3,430,481, 3–4–69, Cl. 73—12.
Shiraishi, Masamichi: *See*—
Yawata, Keiske, Shiraishi, and Shiba. 3,431,144.
Sickbert, Adolf, to Friedr. Krupp Huttenwerke Aktiengesellschaft. Hose line for sucking of hot gases, particularly in the vacuum degassing of large metal and steel batches. 3,430,663, 3–4–69, Cl. 138—148.
Siebke, Carl O., to Miller Printing Machinery Co. Sheet tensioning and transfer mechanism for presses. 3,430 946, 3–4–69, Cl. 271—51.
Siegel, Herbert, to International Standard Electric Corp. Annoyance call trap. 3,431,364, 3–4–69, Cl. 179—18.
Siegel, Herbert, and W. Hackenberg, to International Standard Electric Corp. Circuit arrangement to release registers in telecommunication exchanges. 3,431,365, 3–4–69, Cl. 179—18.
Siegfried Aktiengesellschaft: *See*—
HRring, Marc, Molnar, and Wagner-Jauregg. 3,431,342.
Siemens Aktiengesellschaft: *See*—
Esche, Rolf, and Hacht. 3,431,382.
Fabris, Wilhelm V. 3,430 833.
Kafka, Wilhelm, and Parsch. 3,431,347.
Zirwas, Johann G. 3,431,507.
Silver, Bernard, and C. C. Bolta, to The Susquehanna Corp. Launcher using a vaporing liquid as a projectile propelling means. 3,430,619, 3–4–69, Cl. 124—11.
Silvia, Denis A., R. T. Ramsey, and J. H. Spencer, to United States of America, Navy. Explosive gate, diode and switch. 3,430,564, 3–4–69, Cl. 102—22.
Simmons, Dayton M., to International Paper Co. Locking device for rotary plate carrier sheet. 3,430,561, 3–4–69, Cl. 101—415.1.
Simpson, Malcolm P., W. H. Hardwick, P. D. Blundy, and D. R. Morris, to United Kingdom Atomic Energy Authority. Recovery of hydrogen fluoride. 3,431,071, 3–4–69, Cl. 23—153.
Sinclair-Koppers Co.: *See*—
Nelson, Paul B. 3,430,803.
Sinclair Research, Inc.: *See*—
Rausch, Maurice K. 3,431,198.
Singer Co., The: *See*—
Florczak, Richard A. 3,430,592.
Rees, Spencer C. 3,430,707.
Sjolander, Newell O.: *See*—
McCormick, Jerry R. D., Joachim, Jensen, and Sjolander. 3,431,303.
Skau, Evald L., R. R. Mod, and F. C. Magne, to United States of America, Agriculture. N,N'-dioleoyl-2,2'-di-piperidylmethane. 3,431,269 3–4–69, Cl. 260—294.
Skaugen, Borg, to Beloit Corp. Nondeflection support for web carrying roll. 3,430,319, 3–4–69, Cl. 29—116.
Sketch, Harry F.: *See*—
Stol, Walter T., Se Lorme, and Sketch. 3,431,371.
Skibiak, John G.: *See*—
Biasi, Edward T., and Skibiak. 3,431,115.
Skirvin, Clifford D., to Microdot Inc. Illuminating system for simulating bubbles. 3,431,465, 3–4–69, Cl. 315—363.

Skirvin, Kenneth: *See*—
Lawalin, Harold L., and Skirvin. 3,430,767.
Slabon, Ivan: *See*—
Ehrenstein, Elemir, and Slabon. 3,431,391.
Smith, Bruce N. Welded spoked wheel. 3,431,025, 3–4–69, Cl. 301—59.
Smith, E. Quimby, Jr., to United States of America, Navy. Combined rocketramjet aircraft. 3,430,445, 3–4–69, Cl. 60—245.
Smith, Ethan A., to W. A. Plummer. Elevator cable protector and method. 3,430,733, 3–4–69, Cl. 187—1.
Smith, Jean G.: *See*—
MacCragh, Adolfo, Sanchez, and Smith. 3,431,097.
Smith, Joel D., Leslie Clyde, and Leslie Curtis. Plastic rotary type ventilator. 3,430,550, 3–4–69, Cl. 98—72.
Smith, John H.: *See*—
Olinger, Eugene C., Bradley, and Smith. 3,431,314.
Smith Kline & French Laboratories: *See*—
Loev, Bernard. 3,431,272.
Loev, Bernard. 3,431,273.
Smith, Leslie Clyde: *See*—
Smith, Joel D., Leslie Clyde, and Leslie Curtis. 3,430,550.
Smith, Leslie Curtis: *See*—
Smith, Joel D., Leslie Clyde, and Leslie Curtis. 3,430,550.
Smith, Noyes D., Jr., and C. B. Vogel, to Shell Oil Co. Acoustical method and apparatus for mapping the wall of a borehole. 3,430,726, 3–4–69, Cl. 181—5.
Smith, Robert L., to Chemetron Corp. Scraping apparatus. 3,430,928, 3–4–69, Cl. 259—109.
Smith, Walter W., K. E. Longacher, and H. H. Zollar, to The Shenango Furnace Co. Method of and apparatus for making centrifugal castings with integral heads. 3,430,681, 3–4–69, Cl. 164—111.
Smyth, Henry L. R., to Canadian Patents and Development Ltd. Coulometer. 3,431,481, 3–4–69, Cl. 320—48.
Sniiloc Corp.: *See*—
Collins, Oliver D. 3,430,735.
Societa Italiana Resine S.p.A.: *See*—
Reni, Cesare, and Lugo. 3,431,199.
Societe Anonyme dite: *See*—
Goyet, Daniel, and Gratiot. 3,430,798.
Societe Anonyme Financiere & Auxiliaire du Textile: *See*—
Andrault, Francois P. 3,430,589.
Societe Civile d'Etudes de Centrifugation: *See*—
Babel, Louis, and Peytavin. 3,430,684.
Societe d'Etudes de Machines Speciales: *See*—
Breacker, Edward A., and Armelin. 3,430,880.
Societe des Forges et Ateliers du Creusot: *See*—
Nectoux, Andre. 3,430,781.
Societe Industrielle Bulf-General Electric (Societe Anonyme): *See*—
Stephan, Alain M. J. 3,430,884.
Societe Industrielle et Commerciale des Automobiles Peugeot: *See*—
Dangauthier, Marcel. 3,431,033.
Dangauthier, Marcel. 3,431,035.
Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See*—
Alder, Robert O., Baudet, Baudier, and Gasset. 3,430,-405.
Societe Progil: *See*—
Rozie, Maurice, and Desire. 3,431,072.
Soderberg, Joseph E. Mooring device. 3,430,598, 3–4–69, Cl. 114—230.
Solis Societa a Responsabilita Limitata: *See*—
Mazzi, Aramis. 3,430,464.
Soltysik, Edmund J., to Illinois Tool Works Inc. Fastening device. 3,430,904, 3–4–69, Cl. 248—68.
Soltz, Daniel J., and H. L. Greer, to Honeywell Inc. pH Detecting device using temperature compensated field-effect transistor differential amplifier. 3,431,508, 3–4–69, Cl. 330—30.
Sommer, Bernard I.: *See*—
Reis, John C., Sommer, and Ennis. 3,431,510.
Sommerfeld, Karl: *See*—
Bader, Otto, Guhne, Sommerfeld, and Chilla. 3,430,436.
Sonoco Products Co.: *See*—
Cunningham, McCleery B. 3,430,543.
Sony Corp.: *See*—
Kihara, Nobutoshi, and Wada. 3,431,353.
Soodak, Charles: *See*—
Miller, C. David, Soodak, and Priarone. 3,430,864.
Soulary, Pierre, to L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude. Wires for arc welding having a low carbon core and a zinc coating. 3,431,091, 3–4–69, Cl. 29—183.5.
Soules, Charlie J. Rotary gripper transfer mechanism. 3,430,-750, 3–4–69, Cl. 198—25.
Southington Mfg., Inc.: *See*—
Kawecki, Ralph E. 3,430,929.
Kawecki, Ralph E. 3,430,930.
Southwest Research Institute: *See*—
Rollwitz, William L., and Benson. 3,431,551.
Sparks, Meredith P. Preparation of baked leavened products. 3,431,114, 3–4–69, Cl. 99—86.
Speelman, Irving A., to Propper Mfg. Co., Inc. Switch for battery handle. 3,430,514, 3–4–69, Cl. 74—527.
Spence, Ian L.: *See*—
De Tullio, Luigi, Spence, and Mostyn. 3,431,549.
Spence, Ian L., to The Marconi Co. Ltd. Ultrasonic presence detectors. 3,431,550, 3–4–69, Cl. 340—1.
Spencer, John H.: *See*—
Silvia, Denis A., Ramsey, and Spencer. 3,430,564.
Spencer, Kenneth H., to Beckett Mfg. Co. Load compactor. 3,430,922, 3–4–69, Cl. 254—93.
Spencer, Richard O.: *See*—
Winters, Gary G., Hamel, and Spencer. 3,430,820.
Winters, Gary G., Hamel, and Spencer. 3,430,821.
Sperry Rand Corp.: *See*—
Andersson, Per L., and Aberth. 3,431,406.
Ashley, Paul E., and Sutter. 3,430,276.
Brediger, James L., Day, Lavedan, and Parks. 3,431,515.
Butler, Lee D. 3,430,783.
Cooper, John H. 3,431,384.
Harklau, Lanny L. 3,431,491.
James, Raymond H., Korkowski, and Nistler. 3,431,492.
McMonagle, William H. 3,430,529.
Newman, Roger. 3,431,438.
Wesner, Charles R. 3,431,475.
Wing, Willis G. 3,430,501.
Spitzer, Cary R., to United States of America, National Aeronautics and Space Administration. Evaporant holder. 3,430,937, 3–4–69, Cl. 263—48.
Spodig, Heinrich. Conveyor for magnetizable commodities. 3,430,752, 3–4–69, Cl. 198—41.
Spoon, Bill H.: *See*—
Bell, Marion S., Montrose, and Spoon. 3,430,479.
Sprague Electric Co.: *See*—
Cormier, George E., and Netherwood. 3,431,473.
Sprague, George S.: *See*—
Carvalho, Dorothy A., Hauser, Schriffert, and Sprague. 3,431,151.
Hauser, Martin, and Sprague. 3,431,152.
Sprague Products, Inc.: *See*—
Moonan, William. 3,430,819.
Sprick, Walter F.: *See*—
Kifor, Harry T., Sprick, Musser, and Levesque. 3,430,-533.
Square D Co.: *See*—
Latter, Charles F. 3,431,547.
Stanback, Harris I. 3,431,469.
Squibb, E. R., & Sons, Inc.: *See*—
Pan, Samuel C., Principe, and Junta. 3,431,174.
Stackpole Carbon Co.: *See*—
Bang, Mogens W. 3,431,529.
Bang, Mogens W. 3,431,530.
Stafford, John A., to Schlumberger Technology Corp. Well tool position indicator. 3,430,712, 3–4–69, Cl. 175—40.
Stalph, Gunter J., to Combustion Engineering, Inc. Duct support arrangement. 3,430,645, 3–4–69, Cl. 137—356.
Stamicarbon N.V.: *See*—
Suverkropp, Geertrudes H. 3,431,295.
Stanback, Harris I., to Square D Co. Electrical panelboard with circuit limiting means. 3,431,469, 3–4–69, Cl. 317—119.
Standard Machine & Mfg. Co.: *See*—
McDougall, Franklin M. 3,430,865.
Standard Mfg. Co., Inc.: *See*—
Oswald, William N. 3,430,586.
Standard Oil Co., The: *See*—
Callahan, James L., Grasselli, and Knipple. 3,431,292.
Standard Pneumatic Motor Co.: *See*—
Coss, Ronald G. 3,430,710.
Standard Screw Co.: *See*—
Barnes, William I. 3,430,613.
Ellison, Joseph E. 3,430,377.
Stanley Works, The: *See*—
Davis, William R., and Macchi. 3,430,912.
Starmer, Roy, to Applied Research and Engineering Ltd. Multi-stage evaporators having distilland by-pass means. 3,431,179, 3–4–69, Cl. 202—173.
Starr, Leon, to Mobil Oil Corp. Photochemical cycloaddition reaction process. 3,431,190, 3–4–69, Cl. 204—162.
Stauffer Chemical Co.: *See*—
McDonald, Harold. 3,431,214.
Staunton, G. S., & Co., Inc.: *See*—
Henning, Dan C. 3,431,335.
Steck, Robert S., and H. N. Barnes. Traverse rod assembly. 3,430,675, 3–4–69, Cl. 160—346.
Stecker, Herbert C. Dimethyl fluoride-subetituted methylene bisphenol germicides and fungicides. 3,431,343, 3–4–69, Cl. 424—347.
Steelcase, Inc.: *See*—
Pipe, John. 3,431,042.
Poppe, Robert P., and McNally. 3,431,022.
Schroeder, Lester F. 3,430,287.
Steijner, Olof: *See*—
Grunewald, Helmut, and Steijner. 3,431,082.
Steingas, Richard R.: *See*—
Pool, Stuart D., and Steingas. 3,430,425.
Stephan, Alain M. J., to Societe Industrielle Bulf-General Electric (Societe Anonyme). Reels for carrying inked ribbons in printing machines. 3,430,884, 3–4–69, Cl. 242—74.
Stephens, Allan: *See*—
Gabbitus, Derek, Stephens, Brebner, and Lee. 3,430,427.
Stephens, John H., to Universal Oil Products Co. Separation process. 3,430,768, 3–4–69, Cl. 210—83.
Sterling Drug Inc.: *See*—
Clinton, Raymond O. 3,431,286.
Robertson, Andrew. 3,431,293.
Schulenberg, John W. 3,431,274.
Sterman, Samuel: *See*—
Johnson, Gordon C., and Sterman. 3,431,143.
Sternbach, Leo H.: *See*—
Fryer, Rodney I., Reeder, and Sternbach. 3,431,304.
Stewart, John K., to Canada Iron Foundries Ltd. Railway track maintenance equipment. 3,430,578, 3–4–69, Cl. 104—7.
Stiebel, Ariel I., and S. A. Lippmann, to Federal Electronics, Inc. Electronic alarm system. 3,431,470, 3–4–69, Cl. 317—142.
Stillwaugh, Eleanor M. Collapsible playpen. 3,430,273, 3–4–69, Cl. 5—98.
Stilmar, Frederic B., to E. I. du Pont de Nemours and Co. Ferrous metal articles with metal galvanic coatings and fluorocarbon copolymer top layers. 3,431,136, 3–4–69, Cl. 117—70.

Stoeng, Gunnar, to Beloit Corp. Arrangement for a baling press. 3,430,556, 3–4–69, Cl. 100—215.
Stol, Walter T., A. R. De Lorme, and H. F. Sketch, to Essex Wire Corp. Multiple position reciprocating switch construction. 3,431,371, 3–4–69, Cl. 200—16.
Stolarz, Edward M.: *See*—
D'Elia, Arthony N., and Stolarz. 3,430,742.
Stolle Corp., The: *See*—
Stolle, Ralph J., and Kaminski. 3,430,593.
Stolle, Ralph J., and E. G. Kaminski, to The Stolle Corp. Method of making a can with integral pull tab. 3,430,593, 3–4–69, Cl. 113—120.
Stone Conveyor Co., Inc.: *See*—
Stone, Guthrie B. 3,430,506.
Stone, Guthrie B., to Stone Conveyor Co., Inc. Driving pulley for a belt conveyor. 3,430,506, 3–4–69, Cl. 74—230.5.
Stone, Kenneth F., and L. T. Jackson, to United States of America, Atomic Energy Commission. Target positioner for accelerator external beam. 3,431,502, 3–4–69, Cl. 328—235.
Stone, Leonard R., T. E. Reim, N. G. Muskovac, and J. E. Cook, to Republic Steel Corp. Nuclear gaging system for moisture content of irregular stream of bulk material. 3,431,415, 3–4–69, Cl. 250—83.1.
Stone, Leslie F., to The Richardson Co. Device for detecting markings and ejecting containers. 3,430,766, 3–4–69, Cl. 209—111.7.
Stone, Samuel M., to General Telephone and Electronics Labs., Inc. Electro-optic modulator. 3,431,418, 3–4–69, Cl. 250—199.
Storch, Dana H., and N. M. Hallman, to Universal Oil Products Co. Purifying make hydrogen in a catalytic reforming process. 3,431,195, 3–4–69, Cl. 208—101.
Stoten, Terence A., to George Kent, Ltd. Control valves. 3,430,649, 3–4–69, Cl. 137—495.
Strance, John S.: *See*—
Shinbaum, Marvin S., and Strance. 3,430,481.
Strand, Torstein, E. S. Levinsky, and M. E. Timin, to Air Vehicle Corp. VTOL aircraft having free-floating wings and independently tilting propellers. 3,430,894, 3–4–69, Cl. 244—7.
Strang, Alastair, to Courtaulds Ltd. Powder feeding. 3,430,753, 3–4–69, Cl. 198—53.
Strange, Booth B., and B. B. Thigpen, to Western Geophysical Co. of America. Seismic signal transducing apparatus. 3,430,727, 3–4–69, Cl. 181—.5.
Strauss, Günther, and W. Thomas, to Chemische Werke Huls A.G. Process for the continuous manufacture of laurolactam in the liquid phase. 3,431,255, 3–4–69, Cl. 260—239.3.
Stresau, Richard H. F., to United States of America, Navy. Flexible detonation wave shaping device. 3,430,563, 3–4–69, Cl. 102—22.
Stricker, Donald E. Extension unit for auger. 3,430,456, 3–4–69, Cl. 64—1.
Stroehlen, Richard, to Maschinenfabrik Augsburg-Nurnberg Aktiengesellschaft. Method of indirect steam generation. 3,430,608, 3–4–69, Cl. 122—31.
Stropkay, Edward J.: *See*—
Johnson, Tom W., Stropkay, and White. 3,430,260.
Stroszynski, Joachim, to Azoplate Corp. Process and apparatus for successively withdrawing individual articles from a stack. 3,431,139, 3–4–69, Cl. 117—119.8.
Struck, Charles R., to Houdaille Industries, Inc. Intermittently operable fluid ballast mechanism. 3,430,652, 3–4–69, Cl. 137—624.14.
Stuart, Robert W., and W. H. Hogan, to 500 Inc. Thermal switch for cryogenic apparatus. 3,430,455, 3–4–69, Cl. 62—383.
Studiecentrum Voor Kernenergie S.C.K.: *See*—
Baetsle, Leon H., and Huys. 3,431,086.
Studies, Inc.: *See*—
Conrad, Tom J., Dayton, and Arlin. 3,431,046.
Studley Paper Co., Inc.: *See*—
Fesco, John J. 3,430,843.
Stufflebeam, John F.: *See*—
Lienemann, Darlo E., and Stufflebeam. 3,430,822.
Suchowolec, Walter T., to Turner Corp. Safety valve for propane cylinders. 3,430,647, 3–4–69, Cl. 137—377.
Sugiyama, Shigeo: *See*—
Usui, Akira, Kurokochi, and Sugiyama. 3,431,160.
Sundstrand Corp.: *See*—
Gantzer, Charles J. 3,430,520.
Sunkist Growers, Inc.: *See*—
Wilson, Clarence W. 3,431,122.
Superior Concrete Accessories, Inc.: *See*—
Clasen, Richard D., and Nichols. 3,430,914.
Courtois, Peter D., and Eriksson. 3,431,012.
Susquehanna Corp., The: *See*—
Savage, John W. 3,431,487.
Silver, Bernard, and Bolta. 3,430,619.
Susskind, Alfred K.: *See*—
Forrester, Jay W., Pease, McDonough, and Susskind. 3,431,478.
Susuki, Rinnosuke, and H. Hoshi, to Raion Yushi Kabushiki Kaisha. Sealed cuboid container utilizing a sheet of synthetic resin film for packing powder of fine particles and its fabricating method. 3,430,845, 3–4–69, Cl. 229—87.
Sutliff, Robert C., P. A. Burgo, E. J. Butler, and C. W. Pierson, to Eastman Kodak Co. Dielectric package sealer. 3,431,380, 3–4–69, Cl. 219—10.53.
Sutter, Clair G.: *See*—
Ashley, Paul E., and Sutter. 3,430,276.
Sutter, Robert W.: *See*—
Grove, Dwight L., Grove, and Sutter. 3,430,792.
Suverkropp, Geertrudes H., to Stamicarbon N.V. Process for the preparation of optically active lysine. 3,431,295, 3–4–69, Cl. 260—501.11.
Suzuki, Nobuo: *See*—
Ichikawa, Yataro, and Suzuki. 3,431,296.
Svenska Aktiebolaget Bromsregulator: *See*—
Larsson, Karl B., and Sander. 3,430,740.
Persson, Gert A., and Sander. 3,430,739.
Swainson, Eric, to Lightning Fasteners Ltd. Sliding clasp fastener stringers. 3,430,304, 3–4–69, Cl. 24—205.1.
Swanberg, Stacy C., and D. C. Bohlsen. Contamination sampler. 3,430,496, 3–4–69, Cl. 73—425.
Sweeney, John M., to Wright & McGill Co. Weight and bait holder for fishhooks. 3,430,378, 3–4–69, Cl. 43—43.6.
Sweeney, John M., to Wright & McGill Co. Bobbin for fishing lines having means for attachment to similar bobbins. 3,430,886, 3–4–69, Cl. 242—118.7.
Sylvania Electric Products Inc.: *See*—
Chenot, Charles F. 3,431,215.
Chenot, Charles F. 3,431,216.
Fisher, Mahlon B. 3,431,420.
Oshman, Malin K., and Harris. 3,431,514.
Kopelman, Bernard, and Shimer. 3,431,540.
Symons Mfg. Co.: *See*—
Bowden, George F., and Dagiel. 3,430,910.
Syntex Corp.: *See*—
Zderic, John A. 3,431,256.
TDX Electronics Co., Ltd.: *See*—
Hayashi, Shigekazu, Kobayashi, and Fujiwara. 3,431,124.
TRW Inc.: *See*—
Herbenar, Edward J. 3,430,327.
Herbenar, Edward J., Cass, and Kutcher. 3,430,995.
Howles, Daniel J. 3,430,392.
Lubowitz, Hyman R. 3,431,235.
Taco, Inc.: *See*—
Pellett, David L. 3,430,917.
Taggart, Harriet A. Casing perforating and screen plug setting device. 3,430,711, 3–4–69, Cl. 175—4.52.
Taggart, Melvin C. Primer attachment for carburetors. 3,430,933, 3–4–69, Cl. 261—34.
Takahashi, Akio: *See*—
Kanbara, Shu, Takahashi, Nakano, and Hirose. 3,431,248.
Takamura, Masao: *See*—
Ito, Gichi, Takamura, Kato, and Kikuchi. 3,431,519.
Takashashi, Chushichi: *See*—
Aikawa, Michinosuke, Kojima, and Takashashi. 3,430,289.
Takata, Hirokichi: *See*—
Asami, Atsumi, Ikee, Nakashima, and Takata. 3,430,428.
Tambert, John. Automatic electric control systems. 3,431,430, 3–4–69, Cl. 307—39.
Tamura, Gakuzo: *See*—
Arima, Kei, Tamura, Narasaki, Nakamura, and Saiki. 3,431,175.
Tanaka, Nobuyuki: *See*—
Seno, Kenji, Nozawa, Tanaka, and Kikuchi. 3,431,408.
Tappan Co., The: *See*—
Anderson, Carl L. 3,431,381.
Tarantola, Michele. System for the safe anchoring of bombs or containers to a conveying means. 3,430,981, 3–4–69, Cl. 280—179.
Tareau, Georges H., to Tarwil-Rosoflex. Separable element connecting device. 3,430,306, 3–4–69, Cl. 24—230.
Tarwil-Rosoflex: *See*—
Tareau, Georges H. 3,430,306.
Technical Wire Products, Inc.: *See*—
Nellis, Stewart, and Lamp. 3,431,348.
Teetor, Macy O. Hanging type therapeutic device having adjustable handle height. 3,430,953, 3–4–69, Cl. 272—62.
Teijin Ltd.: *See*—
Ichikawa, Yataro, and Suzuki. 3,431,296.
Teijin, Ltd.: *See*—
Matsumoto, Ryoso, and Watanabe. 3,430,492.
Uno, Seiji, Kazama, and F. Uno. 3,431,243.
Teledyne Systems, Inc.: *See*—
Craig, Robert J. G. 3,430,499.
Telex Corp., The: *See*—
Crosby, Arthur O. 3,431,370.
Temple, Lemuel M. Adapter for semiautomatic radiotelegraph key. 3,431,354, 3–4–69, Cl. 178—82.
Tenczar, Francis J. Filter probe. 3,430,497, 3–4–69, Cl. 73—425.6.
Tenex Corp.: *See*—
Hlinka, Charles F. 3,430,291.
Tenner, Arnold J.: *See*—
Conley, Kurt H., and Tenner. 3,430,872.
Terry, Sydney L., and R. B. Batchelor, to Chrysler Corp. Inflatable cushioning device. 3,430,979, 3–4–69, Cl. 280—150.
Terzian, Berj A.: *See*—
Woodard, Robert A. 3,430,374.
Texas Instruments Inc.: *See*—
Ambler, Walter B., and Mawney. 3,431,526.
Epstein, Henry D. 3,431,527.
Haberecht, Rolf R. 3,431,350.
Truitt James K. 3,431,146.
Thacker, Louis H.: *See*—
Bate, Lamont C., Dyer, and Thacker. 3,431,414.
Thigpen, Ben B.: *See*—
Strange, Booth B., and Thigpen. 3,430,727.
Thiokol Chemical Corp.: *See*—
Fein, Marvin M., Green, and O'Brien. 3,431,234.
Rabe, George B., and Grossman. 3,430,442.
Thomas, Alan P. L. Drilling and like heads. 3,430,524, 3–4–69, Cl. 77—32.8.
Thomas, Frank J., and R. L. Worthington, to The Bendix Corp. Monitoring system for redundant systems. 3,431,557, 3–4–69, Cl. 340—147.
Thomas, Walter: *See*—
Strauss, Günther, and Thomas. 3,431,255.

Thompson, Benjamin, and T. E. Buckner, to Eastman Kodak Co. Process for the production of 2-(propenyl)-2-cyclohenenone. 3,431,305, 3–4–69, Cl. 260—586.
Thompson, Ron E.: *See*—
Morris, Lester, Thompson, and Seegman. 3,431,239.
Thompson, Theodore F. Barge coupling assembly. 3,430,601, 3–4–69, Cl. 114—235.
Thorn, William O., Jr. Device for protecting occupant of infant's crib. 3,430,272, 3–4–69, Cl. 5—93.
Thornton, William A., Jr., to Westinghouse Electric Corp. Method of activation of phosphor. 3,431,134, 3–4–69, Cl. 117—33.5.
Thorsted, Kenneth G., L. C. Renner, and J. A. Schmidt, to United States of America, Navy. Propellant spin evaluation apparatus. 3,430,487, 3–4–69, Cl. 73—117.4.
Thurston, Elvin F. W.: *See*—
Ficken, Geoffrey E., Fry, and Thurston. 3,431,110.
Timin, Mitchell E.: *See*—
Strand, Torstein, Levinsky, and Timin. 3,430,894.
Titt, Georg. Device for transmitting rotary movement and method for manufacturing the same. 3,430,458, 3–4–69, Cl. 64—15.
Toda, Toshimasa: *See*—
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Toho Aen Kabushiki Kaisha: *See*—
Aikawa, Michinosuke, Kojima, and Takahashi. 3,430,289.
Tohyama, Seikichi: *See*—
Matsubara, Kentaro, and Tohyama. 3,430,857.
Toischer, Karl E. L., and H. S. M. Bergmann, to Josef Meissner GmbH & Co., KG. Halting process in continuous nitration of aromatic hydrocarbons. 3,431,312, 3–4–69, Cl. 260—645.
Tokyo Seiko Co., Ltd.: *See*—
Matsumoto, Ryoso, and Watanabe. 3,430,492.
Tomon, Eiichi: *See*—
Hosokawa, Masuo, and Tomon. 3,430,924.
Topliffe, Doris H. Steam ironing board. 3,430,370, 3–4–69, Cl. 38—104.
Toro Mfg. Corp.: *See*—
Hasenbank, Kenneth N. 3,430,424.
Torrington Co., The: *See*—
Benson, Carl F. 3,431,037.
Tosti, William P., to Dennison Mfg. Co. Photocopier. 3,431,051, 3–4–69, Cl. 355—45.
Toth, Louis R.: *See*—
Webb, James E. 3,430,942.
Towmotor Corp.: *See*—
Grant, Arthur F., and Eggers. 3,430,585.
Toyo Boseki Kabushiki Kaisha: *See*—
Fukumoto, Juichiro, and Yamamoto. 3,431,176.
Toyo Rayon Kabushiki Kaisha: *See*—
Ito, Shoichi, Kawamoto, and Hara. 3,431,188.
Trak-Chief Mfg. Proprietary Ltd.: *See*—
Yard, William J. 3,430,579.
Trenerry, James A.: *See*—
Seaman, Gary G., and Trenerry. 3,431,387.
Trimbach, Honore, and P. Dumont, to Potasse & Engrais Chimiques. Process improvements in the manufacture of complex fertilizers. 3,431,098, 3–4–69, Cl. 71—43.
Triplex Safety Glass Co. Ltd.: *See*—
Powell, John E. 3,430,328.
Trofimenko, Swiatoslaw, to E. I. du Pont de Nemours and Co. 3a,6a-diazapentalenes and method of preparing the same. 3,431,275, 3–4–69, Cl. 260—310.
Trouard, Robert L.: *See*—
Hirshfield, Edward, Mizuno, and Trouard. 3,431,506.
Truesdell, Warren L., and K. L. McQuary, to Eldon Industries. Brake testing device. 3,430,581, 3–4–69, Cl. 104—60.
Truitt, James K., to Texas Instruments Inc. Method of oxidizing residual H_2S to SO_2 in a fuel cell. 3,431,146, 3–4–69, Cl. 136—86.
Tsuetaki, George F. Method of making a bifocal contact lens with an embedded metal weight. 3,431,327, 3–4–69, Cl. 264—1.
Tudor Corp.: *See*—
Tudor, Edward C., and Goff. 3,431,389.
Tudor, Edward C., and J. A. Goff, to Tudor Corp. Method for working materials by means of an energy beam. 3,431,389, 3–4–69, Cl. 219—121.
Tulleners, Harry W. Watercraft. 3,430,595, 3–4–69, Cl. 114—61.
Turner Corp.: *See*—
Suchowolec, Walter T. 3,430,647.
Turner, Darrell J., C. A. Chase, and M. C. S. Gardiner, to United Aircraft Corp. Tube-launched rocket with detaching spin vanes. 3,430,900, 3–4–69, Cl. 244—3.23.
Turner, Donald B., and R. A. Hoffman, to Moore Dry Kiln Co. of Oregon. Composite tipple device. 3,430,787, 3–4–69, Cl. 214—16.4.
Turner, Stanley B., and K. E. Challis, to The Plessey Co. Ltd. Rotary-displacement compressors. 3,430,848, 3–4–69, Cl. 230—210.
Twist, Henry A.: *See*—
Pease, Donald L., and Twist. 3,430,606.
Tyndall, Maurice. Therapeutic supporting device. 3,431,020, 3–4–69, Cl. 297—378.
Tyree, Lewis, Jr. Reciprocating pump. 3,430,576, 3–4–69, Cl. 103—178.
USM Corp.: *See*—
Campbell, Jean K. 3,430,532.
Herdeg, Donald F., and Morgan. 3,430,949.
Ueberwasser, Hellmut: *See*—
Anner, Georg, Meystre, Kalvoda, and Ueberwasser. 3,431,191.
Uhlmann, Erich, to Allmanna Svenska Elektriska Aktiebolaget. Power transmission for high voltage direct current. 3,431,482, 3–4–69, Cl. 321—2.
Ukita, Shigetsugu: *See*—
Watanabe, Toshio, and Ukita. 3,431,466.
Ulatowski, Vincent J., to General Electric Co. Adjusting bolt. 3,430,996, 3–4–69, Cl. 287—189.36.
Ullery, Lee R., Jr., and S. F. Wronski, to Continental Can Co., Inc. Edge guidance of an unseamed tube in the continuous welding of the tube. 3,431,383, 3–4–69, Cl. 219—59.
Ulmer, James C. Wood chisel scabbard. 3,430,760, 3–4–69, Cl. 206—16.
Unarco Industries, Inc.: *See*—
Breen, Henry D., and Loomis. 3,431,015.
Unexcelled, Inc.: *See*—
Walter, Wallace F., and Oberdorfer. 3,430,278.
Union Bag-Camp Paper Corp.: *See*—
Chase, Richard N., and McKee. 3,431,061.
Union Camp Corp.: *See*—
Manfredonia, Mario, and Wilcox. 3,430,409.
Union Carbide Corp.: *See*—
Baetzel, Robert J., and Majewski. 3,431,127.
Johnson, Gordon C., and Sterman. 3,431,143.
Manz, August F. 3,431,390.
Marcus, Erich, and MacPeek. 3,431,309.
Redfield, David. 3,431,512.
Wagner, John L. 3,430,418.
Winters, Gary G., Hamel, and Spencer. 3,430,820.
Winters, Gary G., Hamel, and Spencer. 3,430,821.
Union Oil Co. of California: *See*—
Keller, James L. 3,431,070.
United Aircraft Corp.: *See*—
Buntschuh, Henry C., and Duvoisin. 3,431,525.
Flanagan, William J., and Lee. 3,430,624.
Greiner, Leonard. 3,430,602.
Labrecque, Jean P. 3,430,896.
Turner, Darrell J., Chase, and Gardiner. 3,430,900.
United-Carr Inc.: *See*—
Kirby, Edward. 3,431,545.
United Kingdom Atomic Energy Authority: *See*—
Ellington, John P. 3,431,169.
Hackney, Stanley, and Davidson. 3,431,167.
Simpson, Malcolm P., Hardwick, Blundy, and Morris. 3,431,071.
United Shoe Machinery Corp.: *See*—
Musser, C. Walton. 3,431,036.
United States Steel Corp.: *See*—
Henry, Edwin B., Jr., Schindler, and Zemberry. 3,430,485.
Lyman, Richard E. 3,430,644.
Masciantonio, Philip X., and Schelling. 3,431,266.
United States of America: *See*—
Freeborn, John C. 3,431,459.
United States of America
Agriculture: *See*—
Conner, Charles J., and Danna. 3,431,059.
Feuge, Reuben O., Lovegren, and Gajee. 3,431,116.
Heiland, Wolfgang K. 3,430,643.
Skau, Evald L., Mod, and Magne. 3,431,269.
Air Force: *See*—
Dawson, Edward C. 3,431,405.
Dolan, Russell P., Jr., Buchanan, and Roosild. 3,431,150.
Haase, Kurt H. 3,431,407.
Hale, Murray E., and Wright. 3,431,452.
Manley, Harold J. 3,431,497.
Shair, Fredrick H. 3,431,441.
Army: *See*—
Byers, John R. 3,430,490.
Campagnuolo, Carl J. 3,430,895.
Canavan, John J., Gawrylowicz, Buckley, and Johns. 3,430,863.
Cassidy, Patrick J., and Quammen. 3,431,043.
Crane, Everett D., and Werbel. 3,430,569.
David, Charles E., and O'Mary. 3,431,501.
Dravnicke, Andrew, and Salkowski. 3,430,482.
Freedman, Harold T., and Schlussler. 3,431,500.
Hirshfield, Edward, Mizuno, and Trouard. 3,431,506.
Hoess, Erwin. 3,431,221.
O'Donnell, Richard V. 3,431,496.
Parrish, Frederick W. 3,431,253.
Richard, Eugene D. 3,431,528.
Rodek, Victor. 3,431,366.
Rosenfeld, Myer. 3,431,209.
Seals, William O., Dunigan, and Picard. 3,431,153.
Seamands, Robert E., and Williams. 3,430,541.
Wright, James B. 3,431,476.
Atomic Energy Commission: *See*—
Anderson, Jesse I., and Olson. 3,431,413.
Bate, Lamont C., Dyer, and Thacker. 3,431,414.
Case, Forrest N., Mackey, and McFarland. 3,431,328.
Clawson, Lawrence G., and Ziering. 3,430,483.
Gibson, Ronald F., Nunley, and Waters. 3,430,849.
Johnson, James S., and Kraus. 3,431,201.
Klepfer, Harold H. 3,431,104.
Stone, Kenneth F., and Jackson. 3,431,502.
White, George D., and Handwerk. 3,431,329.
Yrene, Carl S. 3,431,379.
National Aeronautics and Space Administration: *See*—
Lohr, Jerome J. 3,430,902.
Hankinson, Thomas W. E. 3,430,460.
Spitzer, Cary R. 3,430,937.
Navy: *See*—
Cleveland, Clark C. 3,431,147.
Hall, Thomas N. 3,431,290.
Hauser, Martin. 3,431,251.
McCloy, Robert W. 3,430,446.
Parechanian, Haig S., and Schutzler. 3,430,898.
Silvia, Denis A., Ramsey, and Spencer. 3,430,564.
Smith, E. Quimby, Jr. 3,430,445.
Stresau, Richard H. F. 3,430,563.
Thorsted, Kenneth G., Renner, and Schmidt. 3,430,487.
Wales, Charles P. 3,431,480.

Unitek Corp.: *See*—
Laub, Joseph L., and Mansour. 3,430,834.
Universal Oil Products Co.: *See*—
Hunsaker, Vero L. 3,430,823.
Stephens, John H. 3,430,768.
Storch, Dana H., and Hallman. 3,431,195.
Universal Water Corp.: *See*—
Clark, George B., and Majikian. 3,430,770.
University of Minnesota, Regents of the: *See*—
Iwasaki, Iwao. 3,430,763.
Uno, Fumio: *See*—
Uno, Seiji, Kazama, and Uno. 3,431,243.
Uno, Seiji, S. Kazama, and F. Uno, to Teijin Ltd. Process for preparation of poly(ethylene terephthalate) from compressed terephthalic acid. 3,431,243, 3–4–69, Cl. 260—75.
Upjohn Co., The: *See*—
Paquette, Leo A. 3,431,270.
Reymore, Harold E., Jr., and Sayigh. 3,431,223.
Urbanosky, Harold J., to Schlumberger Technology Corp. Selectively operable anchoring system. 3,430,698, 3–4–69, Cl. 166—212.
Urbanosky, Harold J., to Schlumberger Technology Corp. Formation-sampling apparatus. 3,430,716, 3–4–69, Cl. 175—78.
Ursel, Fischer: *See*—
Nagel, Friedrich. 3,430,401.
Usui, Akira, M. Kurokochi, and S. Sugiyama, to Usui Kokusai Sangyo Kabushiki Kaisha. Method of making a wear-resistant sliding-surface structure. 3,431,160, 3–4–69, Cl. 156—228.
Usui Kokusai Sangyo Kabushiki Kaisha: *See*—
Usui, Akira, Kurokochi, and Sugiyama. 3,431,160.
VEB Kombinat Fortschritt: *See*—
Oliva, Klaus, Noack, and Lange. 3,430,505.
VEB Leuna-Werke: *See*—
Ratzsch, Manfred, Grundmann, Kilian, and Reinhardt. 3,431,250.
Vacu-Lift Maschinenbau-Gesellschaft mit Beschrankter Haftung: *See*—
Glanemann, Rudolf. 3,431,010.
Vagedes, Lawrence J., and J. H. Bing, to Avco Corp. Feed controls for material unloaders. 3,430,818, 3–4–69, Cl. 222—178.
Valenziano, Frank P., to Interpace Corp. Shell cutter. 3,430,526, 3–4–69, Cl. 77—69.
Valle, Louis J., and O. Hoegrel, to National Tel-Tronics Corp. Anode connector. 3,431,544, 3–4–69, Cl. 339—256.
Van Alsburg, Jerold H. Materials handling and treating system. 3,430,308, 3–4–69, Cl. 25—2.
Van Blaricom, Lloyd E., and F. A. Johnston, to ITT Rayonier Inc. Complex polymeric product and process. 3,431,202, 3–4–69, Cl. 252—8.5.
Van der Waard, Willem F., and J. de Flines, to Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V. Process for the preparation of 17α-acyloxy-21-hydroxy-pregnanes. 3,431,173, 3–4–69, Cl. 195—51.
Vanegas, Guillermo J., to American Standard Inc. Plumbing fittings. 3,430,270, 3–4–69, Cl. 4—145.
Van Houten, Frances M. Bidet for attachment to conventional commodes. 3,430,267, 3–4–69, Cl. 4—6.
Van Huet, Aloysius T.: *See*—
Hildebrandt, Wili, and Van Huet. 3,430,985.
Van Lare, Earl J.: *See*—
Brooker, Leslie G. S., and Van Lare. 3,431,111.
Van Loo, William J., Jr., to American Cyanamid Co. Dialdehyde as diketone-cyclic amide condensation products. 3,431,271, 3–4–69, Cl. 260—307.
Van Ostrand, William F., to Dynamic Precision Control Corp. Variable frequency fine-coarse position motor control. 3,431,474, 3–4–69, Cl. 318—18.
Van Sipe, Ronald L.: *See*—
Reinecke, Paul W., Van Sipe, Dowd, Liske, and Betoski. 3,430,419.
Vanstrom, Harold J. Metered parts dispensing cartridge. 3,430,809, 3–4–69, Cl. 221—64.
Van Valer, Andrew F. Safety vehicle power distribution system. 3,431,428, 3–4–69, Cl. 307—10.
Van Veelen, George F.: *See*—
Willems, Jozef F., Van Veelen, and De Haes. 3,431,108.
Varian mat G.m.b.H.: *See*—
Brunnée, Curt, and Kappus. 3,431,451.
Vartanian, Andrew and H., to Gem Marketing Corp. Appliance dolly. 3,430,973, 3–4–69, Cl. 280—35.
Varterasian, John H., and C. H. Ek, to General Motors Corp. Radio volume control proportional to speed. 3,431,498, 3–4–69, Cl. 325—406.
Vartanian, Haig: *See*—
Vartanian, Andrew and H. 3,430,973.
Vautier, Jean, to Automobiles M. Berliet. Leaf-spring suspension for automobile vehicles and the like, especially for industrial vehicles. 3,430,976, 3–4–69, Cl. 280—124.
Vecellio, Bernardino, to Pirelli S.p.A. Method of bonding synthetic fiber materials to rubbers. 3,431,161, 3–4–69, Cl. 156—330.
Vecellio, Bernardino, to Pirelli S.p.A. Method for the preparation of organic copolymers of high molecular weight containing double bonds and epoxy groups. 3,431,246, 3–4–69, Cl. 260—80.7.
Velsicol Chemical Corp.: *See*—
Mayer, David P., and Richter. 3,431,099.
Venier, Dominic A.: *See*—
Lass, James L., and Venier. 3,431,170.
Venning, Selby G., to General Electric Co. High and low limit temperature control system. 3,431,399, 3–4–69, Cl. 219—497.
Venus, Hellen E. Cupboard hook. 3,430,301, 3–4–69, Cl. 24—73.
Vepa AG: *See*—
Fleissner, Hans. 3,430,352.
Fleissner, Heinz and G. 3,430,355.
Vereinigte Flugtechnische Werke GmbH: *See*—
Eggers, Gerhard, and Seibold. 3,430,858.
Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft: *See*—
Lambrecht, Josef, and Schubert. 3,430,941.
Vernon Tool Co., Ltd.: *See*—
Blackburn, Marvin J. 3,430,938.
Verson Allsteel Press Co.: *See*—
McElroy, Howard J. 3,430,779.
Vick, Ralph L., to The Bendix Corp. Hot gas relief valve. 3,430,646, 3–4–69, Cl. 137—375.
Viking of Minneapolis: *See*—
Pietenpol, Kermit W., and Schober. 3,431,543.
Vingas, George J.: *See*—
Zrimsek, Arthur H., and Vingas. 3,431,123.
Viroln S.A.: *See*—
Dumont, Marcel. 3,430,435.
Vogel, Charles B.: *See*—
Smith, Noyes D., Jr., and Vogel. 3,430,726.
Vogel, Herward A., and H. T. Olen, to Minnesota Mining and Mfg. Co. Anhydride-containing linear polyarylsulfones. 3,431,240, 3–4–69, Cl. 260—49.
Vogelsberg, Walter H., to Ametek, Inc. Non-cumulative force electric motor or generator brush spring. 3,430,915, 3–4–69, Cl. 267—1.
Vondrak, Jiri: *See*—
Balej, Jan, Paseka, Vondrak, and Regner. 3,431,193.
Von Konsky, Robert H.: *See*—
Clark, Frank E., Pugh, and Von Konsky. 3,430,416.
Vyskumny Ustav Zvaracsky: *See*—
Ehrenstein, Elemir, and Siabon. 3,431,391.
Wada, Yuji: *See*—
Kihara, Nobutoshi, and Wada. 3,431,353.
Wagner-Jauregg, Theodor: *See*—
Haring, Marc, Molnar, and Wagner-Jauregg. 3,431,342.
Wagner, John L., to Union Carbide Corp. Selective adsorption process. 3,430,418, 3–4–69, Cl. 55—25.
Wagner, Josef. High pressure pump for sprayer. 3,430,577, 3–4–69, Cl. 103—221.
Wahl Clipper Corp.: *See*—
Wahl, John F. 3,430,342.
Wahl, Harold F., and H. Nippert, to Rader Pneumatics Inc. Wood fractionator. 3,430,873, 3–4–69, Cl. 241—55.
Wahl, John F., to Wahl Clipper Corp. Adjustable clipper head. 3,430,342, 3–4–69, Cl. 30—201.
Wahle, Gunter, to Haunt-Werke Korber & Co., KG. Apparatus for regulating the transfer of heat. 3,431,398, 3–4–69, Cl. 219—388.
Waite, Warren A.: *See*—
Hebert, John R., and Waite. 3,430,572.
Walbro Corp.: *See*—
Boylan, Carol C. 3,430,461.
Wakefield, Gayle S.: *See*—
Perrin, Donald E., and Wakefield. 3,430,303.
Wakeman, Reginald L., and J. F. Coates, to Millmaster Onyx Corp. Salts of glyceryl sulfates and quaternary ammonium sulfonates. 3,431,265, 3–4–69, Cl. 260—286.
Wales, Charles P., to United States of America, Navy. Method for increasing the discharge capacity of silver electrode storage batteries. 3,431,480, 3–4–69, Cl. 320—21.
Wall, Daniel L., Sr. Portable ball driving practice range. 3,430,493, 3–4–69, Cl. 73—379.
Walter, Wallace F., and K. Oberdorfer, to Unexcelled, Inc. Cleaner for meat products. 3,430,278, 3–4–69, Cl. 15—3.13.
Walton, Edward, to Merck & Co., Inc. 5-dialkyl-D-ribofuranosyl purine compounds and intermediates. 3,431,252, 3–4–69, Cl. 260—209.
Walton, James F.: *See*—
Gauntt, Grower C., Jr., Isaacs, Martin, and Walton. 3,430,448.
Wardale, David J., to Corning Glass Works. Driving means for rotary heat exchangers. 3,430,687, 3–4–69, Cl. 165—8.
Warman, Stephen I., to Data Laboratories Ltd. Board game apparatus for simulating computer operation. 3,430,960, 3–4–69, Cl. 273—131.
Warson, Henry, and G. A. Reed, to The Dunlop Co. Ltd. Acrylic polymer emulsions. 3,431,226, 3–4–69, Cl. 260—29.7.
Warthen, John L.: *See*—
Dobres, Robert M. 3,431,196.
Warwick Electronics, Inc.: *See*—
Grindinger, Gerard R. 3,430,530.
Waschk, Fritz: *See*—
Wick, Richard, Waschk, and Orthmann. 3,431,053.
Watanabe, Hisao: *See*—
Matsumoto, Ryoso, and Watanabe. 3,430,492.
Watanabe, Ichiro: *See*—
Murayama, Keisuke, Toda, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,232.
Murayama, Keisuke, Morimura, Akagi, Kurumada, Watanabe, and Kitaoka. 3,431,233.
Watanabe, Toshio, and S. Ukita. Arc-suppressing circuit for switching devices in alternating current circuit. 3,431,466, 3–4–69, Cl. 317—11.
Waters, Dean A.: *See*—
Gibson, Ronald F., Nunley, and Waters. 3,430,849.
Waters, Paul E., and L. J. Muraro, to W. R. Grace & Co. Process for producing fibrids by violent agitation. 3,431,242, 3–4–69, Cl. 260—67.
Weather-Tite Division of the Pacific Coast Co.: *See*—
Lashkow, Jack I. 3,430,395.

Weatherston, Roger C., to Cornell Aeronautical Laboratory, Inc. Rotary wave compressors and the like. 3,430,847, 3–4–69, Cl. 230—150.
Weaving Research & Textile Commission Agents Ltd.: *See*—
Shimwell, Derrick W. 3,430,664.
Webb Associates, Inc.: *See*—
Crocker, Jeremy F. 3,430,688.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of L. D. Beckerle. Heat shield oven. 3,431,397, 3–4–69, Cl. 219—347.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of J. J. Hawley. Method of erasing target material of a vidicon tube or the like. 3,431,460, 3–4–69, Cl. 315—26.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of R. J. McCann. Device for handling heavy loads. 3,430,909, 3–4–69, Cl. 248—317.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of H. H. Nelson. Telemetry word forming unit. 3,431,559, 3–4–69, Cl. 340—172.5.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of G. P. Robinson, and D. E. Crofts. Heat flux sensor assembly. 3,431,149, 3–4–69, Cl. 136—213.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of L. R. Toth, and W. F. MacGlashan, Jr. Belleville spring assembly with elastic guides. 3,430,942, 3–4–69, Cl. 267—1.
Webber, Jack S.: *See*—
Whitmire, William A., and Webber. 3,430,987.
Weber, Adolph C., to Laclede Steel Co. Reinforcing mat for use in constructing continuously reinforced concrete slabs. 3,430,406, 3–4–69, Cl. 52—660.
Weber-Knapp Co.: *See*—
Phelps, Malcolm T., and Little. 3,431,040.
Webster Electric Co., Inc.: *See*—
Adelman, Joseph K. 3,430,574.
Webster, Milo E., and J. K. Locke, to Bernz-O-Matic Corp. Portable cooking stove. 3,430,622, 3–4–69, Cl. 126—38.
Wecher, Richard P., to American Cyanamid Co. Substituted 3-(3'-aminopropyl) piperidines and process for preparation. 3,431,267, 3–4–69, Cl. 260—293.
Weeks, Richard F., and G. L. Samodal, to Schlumberger Technology Corp. Method and apparatus for analyzing logging information. 3,431,552, 3–4–69, Cl. 340—15.5.
Weier, Jertilynn H. Storing phonograph records. 3,430,297, 3–4–69, Cl. 24—17.
Weimer, Ralph E., and R. M. Herbert, to McDonald's System, Inc. Sanitary method and means for handling, preparing and dispensing fluent food products in and from a suspendible bladder. 3,430,815, 3–4–69, Cl. 222—99.
Weinberg, Gert: *See*—
Munk, Edmund, Haas, and Weinberg. 3,430,806.
Weisenberger, Lavern M., to Allied Research Products Inc. Metal plating by chemical reduction with amineboranes. 3,431,120, 3–4–69, Cl. 106—1.
Weishaupt, Josef, to Linde Aktiengesellschaft. Packing element for fluid columns. 3,430,934, 3–4–69, Cl. 261—94.
Weiss, Adolf, to Alpha Press Co. Stroke limiting mechanism for hydraulically operated machine. 3,430,538, 3–4–69, Cl. 91—361.
Weiss, Heinz, to International Harvester Co. Infinitely variable hydromechanical transmission. 3,430,438, 3–4–69, Cl. 60—53.
Wells, Floyd H.: *See*—
Anderson, Paul G. 3,431,023.
Wellstein, William. Pipe casing side connector. 3,430,697, 3–4–69, Cl. 166—85.
Welsh, Harvey W. Frictional brake system. 3,430,737, 3–4–69, Cl. 188—73.
Welsh Mfg. Co.: *See*—
Newcomb, William E. 3,430,263.
Wendt, Gerhard R., and K. W. Ledig, to American Home Products Corp. Pyrazolo quinoxalines. 3,431,262, 3–4–69, Cl. 260—250.
Wendt, Paul H., to Pacific Clay Products. 3,430,989, 3–4–69, Cl. 285—110.
Wennerlund, Eric, and S. Lunkback, to Allmanna Svenska Elektriska Aktiebolaget. Method of drying objects such as electrical machines and electrical insulating material. 3,430,351, 3–4–69, Cl. 34—5.
Werbel, Burton: *See*—
Crane, Everett D., and Werbel. 3,430,569.
Wesner, Charles R., to Sperry Rand Corp. Solid state servo system including a unique D.C. control triggering A.C. power to the servomotor. 3,431,475, 3–4–69, Cl. 318—18.
Western Electric Co., Inc.: *See*—
Mammel, Walter K. 3,431,009.
Seaman, Gary G., and Trenerry. 3,431,387.
Western Geophysical Co. of America: *See*—
Strange, Booth B., and Thigpen. 3,430,727.
Western Kraft Corp.: *See*—
Buxton, Winslow H., Jr. 3,431,165.
Westeren, Herbert W., W. H. Kimball, and V. Scotto, to C. I. Hayes, Inc. Electric furnace with continuously sealed heating chamber. 3,431,346, 3–4–69, Cl. 13—31.
Western Machinery Corp.: *See*—
Hall, Kenneth J. 3,430,784.
Western Publishing Co., Inc.: *See*—
Phipps, Mark. 3,430,381.
Westinghouse Brake and Signal Co., Ltd.: *See*—
King, Kenneth G. 3,431,436.
Westinghouse Electric Corp.: *See*—
Beyer, Rolf R., and Boerio. 3,431,455.
Borrebach, Edwin J. 3,431,344.
Broverman, Alvin Y. 3,431,524.
Brown, Francis X., and Wismer. 3,430,323.
Calfee, Wendell. 3,431,467.
Grable, Ronald C., and Patzer. 3,430,835.
Irwin, Edgar L. 3,431,421.
Larson, Daniel A. 3,431,447.
Thornton, William A., Jr. 3,431,134.
Weston, David. Simultaneous flotation of silica phosphates and carbonate minerals. 3,430,762, 3–4–69, Cl. 209—5.
Weston, David, to Aerofall Mills Ltd. Fast magnetic drum ore separator control. 3,430,870, 3–4–69, Cl. 241—34.
Westport Development & Mfg. Co., Inc.: *See*—
Heilman, Robert R. 3,431,378.
Weyerhaeuser Co.: *See*—
Currie, Grover C., Jr. 3,430,412.
Morris, Richard M. 3,431,162.
Perry, William D. 3,430,357.
Weyerts, Walter J., to Eastman Kodak Co. Dye developer image transfer systems. 3,431,107, 3–4–69, Cl. 96—3.
Wheeler, Donald J., and V. Lohrenz, to Guild Metal Joining Equipment Co. Method and apparatus for joining strip material. 3,431,386, 3–4–69, Cl. 219—78.
White, George D., and J. H. Handwerk, to United States, Atomic Energy Commission. Method of preparing a fuel material for use in a nuclear reactor. 3,431,329, 3–4–69, Cl. 264—.5.
White, James D.: *See*—
Johnson, Tom W., Stropkay, and White. 3,430,260.
White, Thomas A. Well drilling bit. 3,430,719, 3–4–69, Cl. 175—412.
Whiteman, Benton A., to Reynolds Metals Co. Expandable core carrying mandrel. 3,430,889, 3–4–69, Cl. 242—72.1.
Whiteman, Benton A., to Reynolds Metals Co. Core carrying mandrel. 3 430,890, 3–4–69, Cl. 242—72.1.
Whitin Machine Works, Inc.: *See*—
Kleronski, John P. 3,430,875.
Whitmire, William A., and J. S. Webber, to Bigge Drayage Co. Fifth wheel for vehicle. 3,430,987, 3–4–69, Cl. 280—438.
Whittaker Corp.: *See*—
Wolcott, Charles E., and Filippi. 3,430,390.
Wick, Richard, to Agfa-Gevaert Aktiengesellschaft. Photographic camera with flash unit. 3,430,545, 3–4–69, Cl. 95—11.
Wick, Richard, W. Kwiatkowski, and H. Schausberger, to Agfa-Gevaert Aktiengesellschaft. Sheet feeding apparatus. 3,430,945, 3–4–69, Cl. 271—42.
Wick, Richard, F. Waschk, and J. Orthmann, to Agfa-Gevaert Aktiengesellschaft. Optical copying apparatus. 3,431,053, 3–4–69, Cl. 355—66.
Wiggins, Reatha L. Plurality of aspirators. 3,430,628, 3–4–69, Cl. 128—276.
Wilcox, Edward D., Jr.: *See*—
Manfredonia, Mario, and Wilcox. 3,430,409.
Wilcox, Quentin I.: *See*—
Pike, Kenneth R., Wilcox, and Cooper. 3,430,604.
Wiley Mfg. Co.: *See*—
Insley, Nathaniel E., and Jacks. 3,430,920.
Willems, Jozef F., G. F. van Veelen, and M. L. De Haes, to Gevaert-Agfa N.V. Silver complex diffusion transfer process. 3,431,108, 3–4–69, Cl. 96—29.
Willette, Lawrence A.: *See*—
Baller, Albert H., and Willette. 3,430,810.
Williams, Jimmy H.: *See*—
Seamands, Robert E., and Williams. 3,430,541.
Williams, Robert C., and J. M. Haigh, to Albemarle Paper Co. Manufacture of textryls. 3,431,334, 3–4–69, Cl. 264—122.
Williams, Ronald. Gelatine compositions. 3,431,121, 3–4–69, Cl. 106—14.5.
Wilshin, Frank W.: *See*—
Marsh, Hugh R. W., and Wilshin. 3,430,950.
Wilson, Clarence W., to Sunkist Growers, Inc. Ink composition for marking food products. 3,431,122, 3–4–69, Cl. 106—22.
Wilson, Curtis L. Generator. 3,431,444, 3–4–69, Cl. 310—168.
Wilson, Homer M., and L. C. DeLaTorre, to Dresser Industries, Inc. Stabilized high temperature casing collar logging system utilizing the on-off ratio of a square wave as a signal transmitting means. 3,431,488, 3–4–69, Cl. 324—34.
Wilson, Lucille E.: *See*—
Wilson, Porter C. and L. E. 3,430,829.
Wilson Mfg. Corp.: *See*—
Koleske, Otto. 3,430,637.
Wilson, Porter C., and L. E. Wilson. Apparel attached container. 3 430,829, 3–4–69, Cl. 224—5.
Wilson, Woodrow S., to Polytop Corp. Dispensing closures. 3,430,825, 3–4–69, Cl. 222—534.
Winch, Allen R.: *See*—
Porter, Stephen L., Auville, and Winch. 3,430,465.
Winegardner, Donald E., to The Majestic Co., Inc. Forced draft vent assembly. 3,431,056, 3–4–69, Cl. 431—20.
Wing, Willis G., to Sperry Rand Corp. Compensation apparatus for inertial devices. 3,430,501, 3–4–69, Cl. 74—5.6.
Winget Ltd.: *See*—
Brown, David J. B. 3,430,778.
Winkler, Winfried: *See*—
Meseke, Curt T., and Winkler. 3,430,754.
Winters, Gary G., W. J. Hamel, and R. O. Spencer, to Union Carbide Corp. Vapor-liquid withdrawal valve. 3,430,820, 3–4–69, Cl. 222—402.17.
Winters, Gary G., W. J. Hamel, and R. O. Spencer, to Union Carbide Corp. Vapor-liquid withdrawal valve. 3,430,821, 3–4–69, Cl. 222—402.17.

Wirth, Gustave P. Lock. 3,430,467, 3–4–69, Cl. 70—67.
Wishnie, Frederick T.: *See*—
Broderick, John P., and Wishnie. 3,430,862.
Wismer, Samuel W., Jr.: *See*—
Brown, Francis X., and Wismer. 3,430,323.
Wittgenstein, Gerard F. Land or underwater pipe line. 3,430,484, 3–4–69, Cl. 73—40.5.
Wiz Corp.: *See*—
Ike, Ernest C. 3,431,031.
Wolcott, Charles E., and F. J. Filippi, to Whittaker Corp. Cutting machines and tools for composite materials. 3,430,390, 3–4–69, Cl. 51—59.
Wolf, Lloyd J. Trailer steering arrangement. 3,430,975, 3–4–69, Cl. 280—103.
Wolfe, George, Jr.: *See*—
Garland, William J., Hassencahl, Lenhart, and Wolfe. 3,431,392.
Wolfrum, William M. Holder for fish hooks and the like. 3,430,379, 3–4–69, Cl. 43—57.5.
Wolverton, Marcine P.: *See*—
Ross, Henry S., and Wolverton. 3,430,959.
Wood, Francis H., to Elliott Brothers (London) Ltd. Visual indicators. 3,430,605, 3–4–69, Cl. 116—129.
Wood, John: *See*—
Ball, Robert G., Perry, and Wood. 3,431,433.
Wood, Prentice J., to The Mead Corp. Rotary locking mechanism for wrapper-type cartons. 3,430,413, 3–4–69, Cl. 53—48.
Woodard, Robert A., ½ to Berj A. Terzian and William D. Lucas. Emergency signal for automotive vehicles. 3,430,374, 3–4–69, Cl. 40—129.
Worthington, Robert L.: *See*—
Thomas, Frank J., and Worthington. 3,431,557.
Wortso Corp.: *See*—
Janapol, Melvin N. 3,430,275.
Wossner, Felix, to Fichtel & Sachs A.G. Clutch actuating mechanism. 3,430,512, 3–4–69, Cl. 74—512.
Wozniak, John J., and E. J. Jacques. 3,430,963, 3–4–69, Cl. 273—164.
Wright, James B., to United States of America, Army. Frequency control system with a motor controlled synchronous inverter. 3,431,476, 3–4–69, Cl. 318—18.
Wright & McGill Co.: *See*—
Sweeney, John M. 3,430,378.
Sweeney, John M. 3,430,886.
Wright, Nathaniel L., Jr. Garment spreader. 3,430,368, 3–4–69, Cl. 38—21.
Wright, Robert D.: *See*—
Hale, Murray E., and Wright. 3,431,452.
Wronski, Steve F.: *See*—
Ullery, Lee R., Jr., and Wronski. 3,431,383.
Xerox Corp.: *See*—
Cassano, James R. 3,430,558.
Pease, Donald L., and Twist. 3,430,606.
Yamaguchi, Gennosuke. Valved tag. 3,430,842, 3–4–69, Cl. 229—62.5.
Yamamoto, Manabu: *See*—
Dodo, Taro, and Yamamoto. 3,431,461.
Yamauchi, Michiaki: *See*—
Kobayashi, Kazuo, and Yamauchi. 3,431,073.
Yard, William J., to Australian Railway Equipment Supply Co. Proprietary Ltd., and Trak-Chief Mfg. Proprietary Ltd. Tamping tool. 3,430,579, 3–4–69, Cl. 104—12.
Yawata, Keiske, M. Shiraishi, and H. Shiba, to Nippon Electric Co. Ltd. Method for manufacturing microminiature coils. 3,431,144, 3–4–69, Cl. 117—212.
Yoder, Herbert G. Brake system and method of operation. 3,431,028, 3–4–69, Cl. 303—6.
Yokohama, Yasutsugu, to Yokohama, Yasutsugu and Nikko Kagaku Kabushiki Kaisha. Respiration measuring apparatus. 3,431,078, 3–4–69, Cl. 23—254.
Yokohama, Yasutsugu: *See*—
Yokohama, Yasutsugu. 3,431,078.
Young, Frederick C.: *See*—
Hartwell, Walter T., and Young. 3,430,855.
Yrene, Carl S., to United States of America, Atomic Energy Commission. Method for induction heating. 3,431,379, 3–4–69, Cl. 219—10.41.
Zderic, John A., to Syntex Corp. 16α,α,17-ethylene and substituted ethylene pregane derivatives and process. 3,431,256, 3–4–69, Cl. 260—397.3.
Zemberry, William L.: *See*—
Henry, Edwin B., Jr., Schindler, and Zemberry. 3,430,485.
Zenhausern, Anton: *See*—
Schwander, Hans R., Zenhausern, and Hindermann. 3,431,285.
Zenith Radio Corp.: *See*—
Adler, Robert. 3,431,504.
Sanders, Marshall E. 3,431,454.
Ziering, Marvin B.: *See*—
Clawson, Lawrence G., and Ziering. 3,430,483.
Zimmer, Richard C.: *See*—
Ludwig, Wilbur G., and Zimmer. 3,430,414.
Zimmermann, Rolf, and W. Dathe, to Chemische Werke Albert. Process for the manufacture of ethers of polyhydric alcohols. 3,431,308, 3–4–69, Cl. 260—615.
Zingerman, Joel R., and L. N. Elowe, to American Cyanamid Co. Methods for coating forms pharmaceutical with methyl cellulose. 3,431,138, 3–4–69, Cl. 117—100.
Zirwas, Johann G., to Siemens Aktiengesellschaft. Amplifier with temperature compensation lying in the feedback path. 3,431,507, 3–4–69, Cl. 330—23.
Zoberg, Joseph. Bidet system. 3,430,268, 3–4–69, Cl. 4—7.
Zollar, Herbert H.: *See*—
Smith, Walter W., Longcher, and Zollar. 3,430,681.
Zopf, Edward N. Kite with detachable parachute. 3,430,899, 3–4–69, Cl. 244—153.
Zrimsek, Arthur H., and G. J. Vingas, to Dresser Industries, Inc. Waterless molding sand. 3,431,123, 3–4–69, Cl. 106—38.35.
Zumsteg, David B.: *See*—
Hubbard, David C., and Zumsteg. 3,431,538.
Zunderdorp, Henricus J., to Shell Oil Co. One-point mooring system for loading or unloading fluids into or from a ship. 3,430,597, 3–4–69, Cl. 114—230.
Zurbuchen, Louis E., and F. R. Goldammer, to The National Cash Register Co. Programable function control mechanism for business machines. 3,431,401, 3–4–69, Cl. 235—6.
Zwiener, Rudolf: *See*—
Jager, Rudolf, Macho, and Zwiener. 3,430,665.

CLASSIFICATION OF PATENTS

ISSUED MARCH 4, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,430,260	29– 26	3,430,317	52–236	3,430,398	73– 73	3,430,486	100– 31	3,430,554	124– 11	3,430,619
	3,430,261	27	3,430,318	287	3,430,402	117.4	3,430,487	34	3,430,555	27	3,430,620
8	3,430,262	33.5	3,430,320	437	3,430,403	160	3,430,488	215	3,430,556	126– 25	3,430,621
	3,430,263	116	3,430,319	439	3,430,404	231	3,430,489	101– 27	3,430,557	38	3,430,622
141	3,430,264	129	3,430,321	573	3,430,405	300	3,430,490	132	3,430,558	262	3,430,623
162	3,430,265	149.5	3,430,322	660	3,430,406	358	3,430,491	269	3,430,559	360	3,430,618
193	3,430,266	157.3	3,430,323	689	3,430,407	361	3,430,492	407	3,430,560	128– 1	3,430,624
4– 6	3,430,267	182.5	3,431,090	699	3,430,408	379	3,430,493	415.1	3,430,561	2.05:	3,430,625
7	3,430,268	183.5	3,431,091	53– 3	3,430,409	420	3,430,494	102– 4	3,430,562	218	3,430,626
144	3,430,269	193.5	3,431,092	26	3,430,410	423	3,430,495	22	3,430,563	221	3,430,627
145	3,430,270	203	3,430,324	30	3,430,411	425	3,430,496		3,430,564	276	3,430,628
5– 93	3,430,271		3,430,325	48	3,430,412	.6	3,430,497	24	3,430,565	284	3,430,629
	3,430,272	211	3,430,326		3,430,413	431	3,430,498	28	3,430,566	290	3,430,630
98	3,430,273	243.52:	3,430,327	79	3,430,414	74– 5	3,430,276	72	3,430,567	350	3,430,631
181	3,430,274	407	3,430,328	123	3,430,415	.1	3,430,499	82	3,430,568	425	3,430,632
351	3,430,275	408	3,430,329	159	3,430,416	.4	3,430,500	90	3,430,569	130– 27	3,430,633
8– 52	3,431,059	429	3,430,330	55– 16	3,430,417	.6	3,430,501	93	3,430,570	131–140	3,430,634
137	3,431,060	470.3	3,430,331	25	3,430,418	89	3,430,502		3,430,571	132– 7	3,430,635
13– 12	3,431,344	471.1	3,430,332	302	3,430,419	105	3,430,503		3,430,572	34	3,430,636
22	3,431,345	472.9	3,430,333	387	3,430,420	200	3,430,504	103–129	3,430,573	46	3,430,637
31	3,431,346	577	3,430,334	56– 23	3,430,421	230.17:	3,430,505	136	3,430,574	134– 22	3,430,641
15– 1.7	3,430,277	588	3,430,335	202	3,430,422	.5	3,430,506	153	3,430,575		3,431,145
3.13:	3,430,278	612	3,430,336	249	3,430,423	242.15:	3,430,507	178	3,430,576	112	3,430,638
23	3,430,279	624	3,430,337	255	3,430,424	410	3,430,508	221	3,430,577	169	3,430,639
50	3,430,280	626	3,430,338	329	3,430,425	413	3,430,509	104– 7	3,430,578	136– 86	3,431,146
195	3,430,281	30– 2	3,430,339	57– 34	3,430,426	425	3,430,510	12	3,430,579	90	3,431,147
210	3,430,282	28	3,430,340		3,430,427	469	3,430,511	28	3,430,580		3,431,148
230.12:	3,430,283	40	3,430,341		3,430,428	512	3,430,512	60	3,430,581	213	3,431,149
231	3,430,284	201	3,430,342	66	3,430,429	519	3,430,513	124	3,430,582	137– 15.1	3,430,640
250.42:	3,430,285	276	3,430,343	76	3,430,430	527	3,430,514	106– 1	3,431,120	39	3,430,642
257	3,430,286	32– 5	3,430,344	106	3,430,431		3,430,515	14.5	3,431,121	244	3,430,643
16– 42	3,430,287	46	3,430,345	140	3,430,432	665	3,430,516	22	3,431,122	329.06:	3,430,644
17– 2	3,430,288	33– 2	3,430,346	58– 50	3,430,433	674	3,430,517	38.35:	3,431,123	356	3,430,645
18– 2.5	3,430,289	27	3,430,347	74	3,430,434	705	3,430,518	39	3,431,124	375	3,430,646
5	3,430,290	138	3,430,348	115	3,430,435	711	3,430,519	42	3,431,125	377	3,430,647
10	3,430,291	180	3,430,349	60– 13	3,430,436	714	3,430,520	46	3,431,126	493	3,430,648
17	3,430,293	34– 1	3,430,350	23	3,430,440	750	3,430,521	168	3,431,127	495	3,430,649
19	3,430,292	5	3,430,351		3,430,441	801	3,430,522	187	3,431,129	535	3,430,650
30	3,430,294	15	3,430,352	30	3,430,437	805	3,430,523	273	3,431,128	596	3,430,651
19– 65	3,430,295	16.5	3,430,357	39.14:	3,430,442	75–124	3,431,101	309	3,431,130	624.14:	3,430,652
106	3,430,296	100	3,430,353	.65:	3,430,443	125	3,431,100	107– 8	3,430,583	625.23:	3,430,653
21– 60.5	3,431,061	122	3,430,355	51	3,430,444	128	3,431,102		3,430,584	.28:	3,430,654
	3,431,062	132	3,430,356	53	3,430,438	133	3,431,103	108– 51	3,430,585	.47:	3,430,655
	3,431,063	172	3,430,354	54.5	3,430,439	177	3,431,104	55	3,430,586	.61:	3,430,656
	3,431,064	222	3,430,358	245	3,430,445	208	3,431,105	78	3,430,587	.67:	3,430,657
96	3,431,065	225	3,430,359	270	3,430,446	77– 32.8	3,430,524	91	3,430,588	628	3,430,658
23– 20	3,431,066	35– 18	3,430,360	61– 15	3,430,447	63	3,430,525	112– 2	3,430,589	138– 26	3,430,659
88	3,431,067	19	3,430,361	40	3,430,448	69	3,430,526	80	3,430,590	30	3,430,660
89	3,431,068	31	3,430,362	45	3,430,449	81– 90	3,430,527	146	3,430,591	109	3,430,661
106	3,431,069		3,430,363	62– 45	3,430,450	83–169	3,430,528	252	3,430,592	120	3,430,662
115	3,431,070	49	3,430,364	85	3,430,451	522	3,430,529	113– 1	3,430,594	148	3,430,663
153	3,431,071	36– 2.5	3,430,365	138	3,430,452	84– 1.16:	RE.26,533	120	3,430,593	139– 12	3,430,664
165	3,431,072	37–129	3,430,366	196	3,430,453	471	3,430,530	114– 61	3,430,595	116	3,430,665
183	3,431,073		3,430,367	353	3,430,454	85– 47	3,430,531	208	3,430,596	125	3,430,666
209.3	3,431,074	38– 21	3,430,368	383	3,430,455	86– 1	3,430,532	230	3,430,597	141– 1	3,430,667
.4	3,431,075	66	3,430,369	64– 1	3,430,456	89– 1.5	3,430,533		3,430,598	5	RE.26,529
230	3,431,076	104	3,430,370	15	3,430,457	42	3,430,534		3,430,599	198	3,430,668
253	3,431,077	40– 61	3,430,371		3,430,458	90– 13.05:	3,430,535		3,430,600	353	3,430,669
254	3,431,078		3,430,372	25	3,430,459	91– 47	3,430,536	235	3,430,601	387	3,430,670
260	3,431,079	126	3,430,373	28	3,430,460	56	3,430,537	115– 6.1	3,430,602	392	3,430,671
270.5	3,431,080	129	3,430,374		3,430,461	361	3,430,538	35	3,430,603	148– 1.5	3,431,150
285	3,431,081	158	3,430,375	65–274	3,431,095	411	3,430,539	41	3,430,604	149– 19	3,431,151
	3,431,082	209	3,430,376	66– 42	3,430,462	420	3,430,540	116–129	3,430,605		3,431,152
288	3,431,083	332	3,430,377		3,430,463	92–113	3,430,541	117– .5	3,431,131		3,431,153
	3,431,084	42– 62	RE.26,534	153	3,430,464	93– 36	3,430,542	7	3,431,132	26	3,431,156
	3,431,085	43– 43.6	3,430,378	193	3,430,465	94	3,430,543	24	3,431,133	38	3,431,154
315	3,431,086	57.5	3,430,379	68–184	3,430,466	94– 18	3,430,544	33.5	3,431,134	47	3,431,155
356	3,431,087	81	3,430,380	70– 67	3,430,467	95– 11	3,430,545	46	3,431,135	151– 36	3,430,672
357	3,431,088	44– 6	3,431,093	164	3,430,468	.5	3,430,546	70	3,431,136	37	3,430,673
358	3,431,089	80	3,431,094	386	3,430,469	60	3,430,547	93.1	3,431,137	41.7	3,430,674
24– 17	3,430,297	46– 72	3,430,381	459	3,430,470	94	3,430,548	100	3,431,138	156– 82	3,431,157
69	3,430,298	49– 37	3,430,382	71– 41	3,431,096	96– 1.8	3,431,106	119.8	3,431,139	173	3,431,158
73	3,430,299	80	3,430,383	43	3,431,097	3	3,431,107	121	3,431,140	180	3,431,159
	3,430,300	371	3,430,384		3,431,098	29	3,431,108	135.1	3,431,141	228	3,431,160
	3,430,301	380	3,430,385	106	3,431,099	49	3,431,109	139.5	3,431,142	330	3,431,161
108	3,430,302	382	3,430,386	72– 29	3,430,471	104	3,431,110	155	3,431,143	160–188	3,430,675
117	3,430,303	491	3,430,387	56	3,430,472	106	3,431,111	212	3,431,144	202	3,430,676
205.1	3,430,304	51– 3	3,430,388	63	3,430,473	98– 62	3,430,549	118–637	3,430,606	264	3,430,677
211	3,430,305	34	3,430,389	135	3,430,474	72	3,430,550	119– 4	3,430,607	346	3,430,678
230	3,430,306	59	3,430,390	179	3,430,475	115	3,430,551	122– 31	3,430,608	161–133	3,431,162
241	3,430,307	103	3,430,392	190	3,430,476	99– 1	3,431,112	448	3,430,609	161	3,431,163
25– 2	3,430,308	105	3,430,391	275	3,430,477	57	3,431,113	479	3,430,610		3,431,164
43	3,430,309	205	3,430,396	298	3,430,478	86	3,431,114	123– 41.82:	3,430,611	162– 30	3,431,165
26– 57	3,430,310	283	3,430,399	400	3,430,479	116	3,431,115	90	3,430,612	135	3,431,166
28– 1	3,430,311	289	3,430,400	73– 7	3,430,480	118	3,431,116		3,430,613	164– 65	3,430,679
	3,430,312	331	3,430,401	12	3,430,481	139	3,431,117		3,430,614	81	3,430,680
46	3,430,313	52–105	3,430,393	23.1	3,430,482	199	3,431,118	102	3,430,615	111	3,430,681
72	3,430,314	127	3,430,394	29	3,430,483	204	3,431,119	119	3,430,616	159	3,430,682
29– 3	3,430,315	173	3,430,395	40.5	3,430,484	283	3,430,552	136	RE.26,530	281	3,430,683
25.35:	3,430,316	227	3,430,397	49.6	3,430,485	336	3,430,553	148	3,430,617	282	3,430,684

164–314 : 3,430,685	198–213 : 3,430,757	220– 97 : 3,430,806
165– 1 : 3,430,686	230 : 3,430,758	3,430,807
8 : 3,430,687	200– 16 : 3,431,371	221– 10 : 3,430,808
46 : 3,430,688	38 : 3,431,372	64 : 3,430,809
47 : 3,430,689	61.34: 3,431,373	205 : 3,430,810
88 : 3,430,690	.54: 3,431,374	222– 3 : 3,430,811
122 : 3,430,691	82 : 3,431,375	14 : 3,430,812
134 : 3,430,692	83 : 3,431,376	43 : 3,430,813
166 : 3,430,693	166 : 3,431,377	64 : 3,430,814
3,430,694	168 : 3,431,378	99 : 3,430,815
166– .5 : 3,430,695	202–135 : 3,431,177	146 : 3,430,816
53 : 3,430,696	3,431,178	173 : 3,430,817
85 : 3,430,697	173 : 3,431,179	178 : 3,430,818
212 : 3,430,698	227 : 3,431,180	402.1 : 3,430,819
217 : 3,430,699	203– 8 : 3,431,181	.17: 3,430,820
256 : 3,430,700	204– 1 : 3,431,182	3,430,821
269 : 3,430,701	4 : 3,431,183	412 : 3,430,822
172– 44 : 3,430,702	59 : 3,431,184	416 : 3,430,823
136 : 3,430,703	3,431,185	523 : 3,430,824
372 : 3,430,704	73 : 3,431,186	534 : 3,430,825
780 : 3,430,705	109 : 3,431,187	570 : 3,430,826
802 : 3,430,706	157.1 : 3,431,188	223– 89 : 3,430,827
173– 48 : 3,430,707	158 : 3,431,191	224– 1 : 3,430,828
109 : 3,430,708	159.18: 3,431,189	5 : 3,430,829
123 : 3,430,709	162 : 3,431,190	42.1 : RE.26,538
169 : 3,430,710	213 : 3,431,192	RE.26,539
174– 15 : 3,431,347	224 : RE.26,531	225–103 : 3,430,830
35 : 3,431,348	266 : 3,431,193	226–105 : 3,430,831
38 : 3,431,349	206– 7 : 3,430,759	174 : 3,430,832
68.5 : 3,431,350	16 : 3,430,760	195 : 3,430,833
175– 4.52: 3,430,711	62 : 3,430,761	228– 1 : 3,430,834
40 : 3,430,712	208– 89 : 3,431,194	4 : 3,430,835
78 : 3,430,713	101 : 3,431,195	15 : 3,430,836
3,430,714	111 : 3,431,196	53 : 3,430,837
3,430,715	127 : 3,431,197	229– 2.5 : 3,430,838
3,430,716	143 : 3,431,198	23 : 3,430,839
263 : 3,430,717	325 : 3,431,199	37 : 3,430,840
343 : 3,430,718	209– 5 : 3,430,762	53 : 3,430,841
412 : 3,430,719	10 : 3,430,763	62.5 : 3,430,842
176– 19 : 3,431,167	3,430,764	3,430,843
55 : 3,431,168	11 : 3,430,765	3,430,844
68 : 3,431,169	111.7 : 3,430,766	87 : 3,430,845
78 : 3,431,170	210– 10 : 3,431,200	230–117 : 3,430,846
3,431,171	23 : 3,431,201	150 : 3,430,847
177– 1 : 3,430,720	79 : 3,430,767	210 : 3,430,848
2 : 3,430,721	83 : 3,430,768	233– 1 : 3,430,849
178– 5.2 : 3,431,351	266 : 3,430,769	7 : 3,430,850
6 : 3,431,352	321 : 3,430,770	19 : 3,430,851
.6 : 3,431,353	323 : 3,430,771	23 : 3,430,852
82 : 3,431,354	374 : 3,430,772	3,430,853
179– 1 : 3,431,355	211– 13 : 3,430,773	235– 6 : 3,431,401
3,431,356	50 : 3,430,774	30 : 3,430,854
3,431,357	123 : 3,430,775	61.11: 3,431,402
3,431,358	212– 3 : 3,430,776	3,431,403
3,431,359	144 : 3,430,778	.12: 3,431,404
15 : 3,431,360	214– 1 : 3,430,779	150.5 : 3,431,405
3,431,361	3,430,780	153 : 3,431,406
.55: 3,431,362	3,430,781	180 : 3,431,407
18 : 3,431,363	3,430,782	197 : 3,430,855
3,431,364	6 : 3,430,783	236– 15 : 3,430,856
3,431,365	3,430,784	238– 1 : 3,430,857
84 : 3,431,366	3,430,785	239–127.3 : 3,430,858
100.2 : 3,431,367	16.4 : 3,430,786	183 : 3,430,859
175.2 : 3,431,368	3,430,787	242 : 3,430,860
.3 : 3,431,369	17 : 3,430,788	251 : 3,430,861
182 : 3,431,370	86 : 3,430,789	280 : 3,430,862
180– 44 : 3,430,722	91 : RE.26,535	412 : 3,430,863
79 : 3,430,723	138 : 3,430,790	424 : 3,430,864
3,430,724	505 : 3,430,791	427.5 : 3,430,865
126 : 3,430,725	3,430,792	533 : 3,430,866
181– .5 : 3,430,726	515 : 3,430,793	542 : 3,430,867
3,430,727	731 : 3,430,794	590.3 : 3,430,868
31 : 3,430,728	215– 2 : 3,430,795	240– 7.5 : 3,431,408
182– 93 : 3,430,729	9 : 3,430,796	10 : 3,431,409
184– 1.5 : 3,430,730	41 : 3,430,797	.1 : 3,431,410
39 : 3,430,731	3,430,798	241– 9 : 3,430,869
186– 1 : 3,430,732	52 : 3,430,777	32.5 : 3,430,871
187– 1 : 3,430,733	219– 10.41: 3,431,379	34 : 3,430,870
10 : 3,430,734	.53: 3,431,380	55 : 3,430,872
188– 67 : 3,430,735	.55: 3,431,381	3,430,873
73 : 3,430,736	.79: 3,431,382	98 : 3,430,874
3,430,737	59 : 3,431,383	242– 18 : 3,430,875
75 : 3,430,738	68 : 3,431,384	46.4 : 3,430,876
202 : 3,430,739	73 : 3,431,385	55.12: 3,430,878
3,430,740	78 : 3,431,386	3,430,879
218 : 3,430,741	79 : 3,431,387	.2 : 3,430,877
190– 58 : 3,430,742	86 : 3,431,388	56 : 3,430,880
192– 58 : 3,430,743	121 : 3,431,389	3,430,881
111 : 3,430,744	130 : 3,431,390	68.2 : 3,430,887
3,430,745	3,431,391	.4 : 3,430,888
194– 63 : 3,430,746	210 : 3,431,392	72 : 3,430,882
92 : 3,430,747	274 : 3,431,393	.1 : 3,430,883
195– 1.8 : 3,431,172	317 : 3,431,394	3,430,889
51 : 3,431,173	321 : 3,431,395	3,430,890
3,431,174	326 : 3,431,396	74 : 3,430,884
62 : 3,431,175	347 : 3,431,397	107.4 : 3,430,885
66 : 3,431,176	388 : 3,431,398	3,430,891
197–130 : 3,430,748	497 : 3,431,399	118.7 : 3,430,886
198– 24 : 3,430,749	501 : 3,431,400	129.5 : 3,430,892
25 : 3,430,750	220– 3.94: 3,430,799	159 : 3,430,893
37 : 3,430,751	3,430,800	244– 3.23: 3,430,900
41 : 3,430,752	46 : 3,430,801	7 : 3,430,894
53 : 3,430,753	54 : 3,430,802	78 : 3,430,895
177 : 3,430,754	63 : 3,430,803	103 : 3,430,896
192 : 3,430,755	3,430,804	110 : 3,430,897
3,430,756	66 : 3,430,805	123 : 3,430,898

244–153 : 3,430,899	260–249.6 : 3,431,261	273–127 : 3,430,959
248– 8 : 3,430,901	250 : 3,431,262	131 : 3,430,960
18 : 3,430,902	256.5 : 3,431,263	134 : 3,430,961
68 : 3,430,903	279 : 3,431,264	136 : 3,430,962
3,430,904	286 : 3,431,265	164 : 3,430,963
74 : 3,430,905	290 : 3,431,266	195 : 3,430,964
126 : 3,430,906	293 : 3,431,267	274– 23 : 3,430,965
140 : 3,430,907	3,431,268	42 : 3,430,966
265 : 3,430,908	294 : 3,431,269	277–137 : 3,430,967
317 : 3,430,909	296 : 3,431,270	139 : 3,430,968
354 : 3,430,910	307 : 3,431,271	189.5 : 3,430,969
3,430,911	3,431,272	279–112 : 3,430,970
361 : 3,430,912	3,431,273	280– 11.35: 3,430,971
249–217 : 3,430,913	309.2 : 3,431,274	30 : 3,430,972
3,430,914	310 : 3,431,275	35 : 3,430,973
250– 43.5 : 3,431,411	326.5 : 3,431,276	41 : RE.26,536
65 : 3,431,412	327 : 3,431,277	93 : 3,430,974
71.5 : 3,431,413	340.2 : 3,431,278	103 : 3,430,975
3,431,414	3,431,279	124 : 3,430,976
83.1 : 3,431,415	.9 : 3,431,280	3,430,977
.3 : 3,431,416	3,431,281	3,430,978
3,431,417	343.4 : 3,431,282	150 : 3,430,979
199 : 3,431,418	345.7 : 3,431,283	.5 : 3,430,980
202 : 3,431,419	346.4 : 3,431,284	179 : 3,430,981
207 : 3,431,420	371 : 3,431,285	255 : 3,430,982
211 : 3,431,421	397.3 : 3,431,256	402 : 3,430,983
214 : 3,431,422	.4 : 3,431,286	405 : 3,430,984
218 : 3,431,423	3,431,287	426 : 3,430,985
3,431,424	429.3 : 3,431,288	432 : 3,430,986
219 : 3,431,425	453 : 3,431,289	438 : 3,430,987
3,431,426	463 : 3,431,290	282– 25 : RE.26,532
226 : 3,431,427	465 : 3,431,291	285– 5 : 3,430,988
251– 71 : 3,430,916	.3 : 3,431,292	110 : 3,430,989
149.6 : 3,430,917	474 : 3,431,293	158 : 3,430,990
152 : 3,430,918	486 : 3,431,294	206 : 3,430,991
283 : 3,430,919	501.11: 3,431,295	287– 52.06: 3,430,992
252– 8.5 : 3,431,202	525 : 3,431,296	53 : 3,430,993
12.2 : 3,431,203	533 : 3,431,297	3,430,994
28 : 3,431,204	534 : 3,431,299	87 : 3,430,995
62.55: 3,431,205	535 : 3,431,298	189.36: 3,430,996
99 : 3,431,206	558 : 3,431,300	3,430,997
106 : 3,431,207	3,431,301	289– 14 : 3,430,998
3,431,208	559 : 3,431,302	292– 75 : 3,430,999
118 : 3,431,209	3,431,303	95 : 3,431,000
135 : 3,431,210	570 : 3,431,304	218 : 3,431,001
172 : 3,431,211	586 : 3,431,305	251.5 : 3,431,002
182 : 3,431,212	591 : 3,431,306	256 : 3,431,003
3,431,213	612 : 3,431,307	258 : 3,431,004
189 : 3,431,214	615 : 3,431,308	293– 65 : 3,431,005
301.4 : 3,431,215	617 : 3,431,309	294– 31 : 3,431,006
3,431,216	619 : 3,431,310	.2 : 3,431,007
389 : 3,431,217	638 : 3,431,311	55 : 3,431,008
455 : 3,431,218	645 : 3,431,312	64 : 3,431,009
3,431,219	653 : 3,431,313	3,431,010
472 : 3,431,220	660 : 3,431,314	75 : 3,431,011
253– 3 : 3,430,920	677 : 3,431,315	86 : 3,431,012
45 : 3,430,921	683 : 3,431,316	102 : 3,431,013
254– 93 : 3,430,922	.15: 3,431,317	296– 1 : 3,431,014
256– 13.1 : 3,430,923	3,431,318	24 : 3,431,015
259– 6 : 3,430,924	861 : 3,431,319	28 : 3,431,016
8 : 3,430,925	865 : 3,431,320	35 : 3,431,017
54 : 3,430,926	872 : 3,431,321	297– 66 : 3,431,018
88 : 3,430,927	873 : 3,431,322	378 : 3,431,020
109 : 3,430,928	880 : 3,431,323	386 : 3,431,019
146 : 3,430,929	893 : 3,431,324	445 : 3,431,021
3,430,930	938 : 3,431,325	3,431,022
178 : 3,430,931	261– 28 : 3,430,932	452 : 3,431,023
260– 2 : 3,431,221	34 : 3,430,933	299– 34 : 3,431,024
3,431,222	94 : 3,430,934	301– 59 : 3,431,025
.5 : 3,431,223	109 : 3,430,935	302– 27 : 3,431,026
13 : 3,431,224	263– 33 : 3,430,936	28 : 3,431,027
23 : 3,431,225	48 : 3,430,937	303– 6 : 3,431,028
29.7 : 3,431,226	264– .5 : 3,431,328	7 : 3,431,029
3,431,227	3,431,329	3,431,030
32.8 : 3,431,228	1 : 3,431,326	9 : 3,431,031
33.4 : 3,431,229	3,431,327	307– 10 : 3,431,428
.8 : 3,431,230	17 : 3,431,330	31 : 3,431,429
41.5 : 3,431,231	45 : 3,431,331	39 : 3,431,430
45.75: 3,431,236	86 : 3,431,332	136 : 3,431,431
.8 : 3,431,232	107 : 3,431,333	141 : 3,431,432
3,431,233	122 : 3,431,334	221 : 3,431,433
46.5 : 3,431,234	138 : 3,431,335	233 : 3,431,434
47 : 3,431,235	169 : 3,431,336	247 : 3,431,435
3,431,237	281 : 3,431,337	252 : 3,431,436
3,431,238	266– 23 : 3,430,938	312 : 3,431,437
48 : 3,431,239	34 : 3,430,939	3,431,438
49 : 3,431,240	35 : 3,430,940	308– 15 : 3,431,032
54 : 3,431,241	36 : 3,430,941	26 : 3,431,033
67 : 3,431,242	267– 1 : 3,430,915	73 : 3,431,034
75 : 3,431,243	3,430,942	184 : 3,431,035
78.5 : 3,431,244	269– 20 : 3,430,943	187 : 3,431,036
79.5 : 3,431,245	61 : 3,430,944	217 : 3,431,037
80.7 : 3,431,246	271– 42 : 3,430,945	310– 4 : 3,431,439
88.2 : 3,431,247	51 : 3,430,946	8.1 : 3,431,440
93.7 : 3,431,249	53 : 3,430,947	11 : 3,431,441
94.3 : 3,431,248	61 : 3,430,948	42 : 3,431,442
.9 : 3,431,250	63 : 3,430,949	65 : 3,431,443
140 : 3,431,251	64 : 3,430,950	168 : 3,431,444
209 : 3,431,252	3,430,951	239 : 3,431,445
3,431,253	74 : 3,430,952	247 : 3,431,446
231 : 3,431,254	272– 62 : 3,430,953	312– 31 : 3,431,038
239.3 : 3,431,255	3,430,954	221 : 3,431,039
3,431,257	80 : 3,430,955	272 : 3,431,040
.57: 3,431,258	83 : 3,430,956	284 : 3,431,041
243 : 3,431,259	273– 80.1 : 3,430,957	339 : 3,431,042
244 : 3,431,260	105 : 3,430,958	313– 25 : 3,431,447

313– 37 : 3,431,448	317–142 : 3,431,471	324–126 : 3,431,493
111 : 3,431,449	234 : 3,431,472	158 : 3,431,494
125 : 3,431,450	258 : 3,431,473	325– 28 : 3,431,495
231 : 3,431,451	318– 18 : 3,431,474	132 : 3,431,496
3,431,452	3,431,475	326 : 3,431,497
315– 3.6 : 3,431,453	3,431,476	406 : 3,431,498
8 : 3,431,454	125 : 3,431,477	328– 48 : 3,431,499
11 : 3,431,455	162 : 3,431,478	110 : 3,431,500
13 : 3,431,456	257 : 3,431,479	161 : 3,431,501
18 : 3,431,457	320– 21 : 3,431,480	235 : 3,431,502
3,431,458	48 : 3,431,481	329–103 : 3,431,503
24 : 3,431,459	321– 2 : 3,431,482	129 : 3,431,504
26 : 3,431,460	7 : 3,431,483	330– 14 : 3,431,505
39 : 3,431,461	69 : 3,431,484	22 : 3,431,506
55 : 3,431,462	3,431,485	23 : 3,431,507
127 : 3,431,463	323– 9 : 3,431,486	30 : 3,431,508
158 : 3,431,464	50 : 3,431,487	331– 25 : 3,431,509
363 : 3,431,465	324– 34 : 3,431,488	49 : 3,431,510
317– 11 : 3,431,466	3,431,489	94.5 : 3,431,511
47 : 3,431,467	37 : RE.26,537	3,431,512
101 : 3,431,468	57 : 3,431,490	3,431,513
119 : 3,431,469	68 : 3,431,491	3,431,514
142 : 3,431,470	102 : 3,431,492	333– 21 : 3,431,515

333– 30 : 3,431,516	339– 95 : 3,431,538	350– 75 : 3,431,043
335– 35 : 3,431,517	103 : 3,431,539	158 : 3,431,044
102 : 3,431,518	112 : 3,431,540	351–137 : 3,431,045
112 : 3,431,519	128 : 3,431,541	160 : 3,431,046
3,431,520	247 : 3,431,542	352– 72 : 3,431,047
124 : 3,431,521	254 : 3,431,543	353– 22 : 3,431,048
194 : 3,431,522	256 : 3,431,544	121 : 3,431,049
210 : 3,431,523	258 : 3,431,545	355– 10 : 3,431,050
336– 60 : 3,431,524	269 : 3,431,546	45 : 3,431,051
123 : 3,431,525	272 : 3,431,547	58 : 3,431,052
337– 89 : 3,431,526	278 : 3,431,548	66 : 3,431,053
347 : 3,431,527	340– 1 : 3,431,549	356–100 : 3,431,054
414 : 3,431,528	3,431,550	401– 28 : 3,431,055
338–183 : 3,431,529	3,431,551	424– 21 : 3,431,338
3,431,530	15.5 : 3,431,552	52 : 3,431,339
196 : 3,431,531	31 : 3,431,553	107 : 3,431,340
339– 8 : 3,431,532	32 : 3,431,554	177 : 3,431,341
14 : 3,431,533	60 : 3,431,555	250 : 3,431,342
26 : 3,431,534	72 : 3,431,556	347 : 3,431,343
45 : 3,431,535	147 : 3,431,557	431– 20 : 3,431,056
74 : 3,431,536	172.5 : 3,431,558	263 : 3,431,057
75 : 3,431,537	3,431,559	264 : 3,431,058

CLASSIFICATION OF DESIGNS

D 2–320 : 213,414	D 9–149 : 213,424	D23– 3 : 213,440
213,415	177 : 213,425	28 : 213,441
213,416	194 : 213,426	49 : 213,442
213,417	219 : 213,427	101 : 213,443
423 : 213,418	220 : 213,428	153 : 213,444
432 : 213,419	223 : 213,429	D26– 5 : 213,445
448 : 213,420	285 : 213,430	213,446
D 8–138 : 213,432	D13– 1 : 213,434	14 : 213,447
144 : 213,431	213,435	213,448
195 : 213,433	6 : 213,436	D29– 23 : 213,449
D 9–101 : 213,421	D14– 3 : 213,437	28 : 213,450
118 : 213,422	D15– 1 : 213,438	D33– 17 : 213,451
137 : 213,423	213,439	D34– 15 : 213,452

D42– 7 : 213,453	D52– 6 : 213,466	D83– 1 : 213,478
213,454	213,467	213,479
213,455	D54– 13 : 213,468	D86– 10 : 213,480
213,456	213,469	213,481
213,457	D64– 10 : 213,470	D87– 2 : 213,482
D44– 9 : 213,458	D71– 1 : 213,471	213,483
213,459	213,472	213,484
213,460	213,473	D89– 1 : 213,485
15 : 213,461	D72– 1 : 213,474	213,486
D45– 4 : 213,462	213,475	D90– 16 : 213,487
D48– 20 : 213,463	D77– 1 : 213,476	213,488
23 : 213,464	D81– 10 : 213,477	D94– 3 : 213,489
D52– 2 : 213,465		

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,430,661
3,431,476
3,431,501
4 : 3,430,276
3,430,341
3,430,469
3,430,829
3,430,956
3,431,092
3,431,468
5 : 3,430,607
6 : RE.26,533
3,430,262
3,430,266
3,430,273
3,430,275
3,430,277
3,430,302
3,430,307
3,430,309
3,430,317
3,430,320
3,430,326
3,430,335
3,430,349
3,430,360
3,430,379
3,430,390
3,430,396
3,430,415
3,430,416
3,430,421
3,430,423
3,430,441
3,430,445
3,430,454
3,430,459
3,430,470
3,430,478
3,430,486
3,430,487
3,430,495
3,430,499
3,430,510
3,430,515
3,430,525
3,430,530
3,430,560
3,430,581
3,430,591
6 : 3,430,602
3,430,639
3,430,646
3,430,652
3,430,658
3,430,660
3,430,680
3,430,683
3,430,696
3,430,703
3,430,704
3,430,705
3,430,706
3,430,710
3,430,711
3,430,733
3,430,734
3,430,737
3,430,749
3,430,770
3,430,775
3,430,783
3,430,807
3,430,809
3,430,823
3,430,826
3,430,834
3,430,835
3,430,841
3,430,852
3,430,867
3,430,878
3,430,879
3,430,893
3,430,894
3,430,898
3,430,900
3,430,902
3,430,914
3,430,922
3,430,936
3,430,938
3,430,966
3,430,970
3,430,971
3,430,987
3,430,989
3,431,011
3,431,023
3,431,031
6 : 3,431,036
3,431,046
3,431,047
3,431,062
3,431,063
3,431,064
3,431,065
3,431,070
3,431,104
3,431,122
3,431,128
3,431,149
3,431,168
3,431,170
3,431,183
3,431,200
3,431,235
3,431,239
3,431,318
3,431,323
3,431,359
3,431,367
3,431,377
3,431,392
3,431,405
3,431,420
3,431,424
3,431,428
3,431,429
3,431,431
3,431,434
3,431,440
3,431,441
3,431,459
3,431,465
3,431,485
3,431,502
3,431,506
3,431,511
3,431,514
3,431,536
3,431,545
3,431,553
8 : 3,430,378
3,430,393
3,430,468
3,430,624
3,430,765
3,430,837
3,430,886
8 : 3,430,943
3,431,416
3,431,444
9 : RE.26,534
3,430,286
3,430,340
3,430,382
3,430,400
3,430,476
3,430,536
3,430,537
3,430,621
3,430,645
3,430,695
3,430,799
3,430,872
3,430,896
3,430,905
3,430,912
3,430,929
3,430,930
3,430,967
3,431,027
3,431,037
3,431,085
3,431,131
3,431,152
3,431,154
3,431,156
3,431,223
3,431,251
3,431,264
3,431,267
3,431,278
3,431,321
3,431,375
3,431,378
3,431,383
3,431,422
3,431,432
3,431,552
10 : 3,430,488
3,430,650
3,430,888
3,431,089
3,431,135
3,431,136
3,431,184
3,431,211
3,431,254
10 : 3,431,280
11 : 3,430,300
3,430,909
3,430,942
3,431,397
3,431,413
3,431,460
3,431,559
12 : 3,430,269
3,430,350
3,430,383
3,430,564
3,430,634
3,430,736
3,430,935
3,431,096
3,431,142
3,431,515
13 : 3,430,368
3,430,403
3,430,404
3,430,413
3,430,426
3,430,493
3,430,590
3,431,061
16 : 3,430,279
3,430,933
17 : RE.26,531
RE.26,532
3,430,281
3,430,291
3,430,303
3,430,316
3,430,337
3,430,342
3,430,347
3,430,367
3,430,371
3,430,372
3,430,381
3,430,386
3,430,414
3,430,425
3,430,433
3,430,444
3,430,446
3,430,448
3,430,474
3,430,477
17 : 3,430,482
3,430,491
3,430,497
3,430,498
3,430,507
3,430,509
3,430,520
3,430,527
3,430,541
3,430,552
3,430,576
3,430,583
3,430,584
3,430,611
3,430,620
3,430,641
3,430,644
3,430,647
3,430,657
3,430,671
3,430,673
3,430,678
3,430,720
3,430,724
3,430,746
3,430,757
3,430,766
3,430,768
3,430,779
3,430,800
3,430,812
3,430,815
3,430,816
3,430,822
3,430,838
3,430,882
3,430,904
3,430,906
3,430,910
3,430,916
3,430,918
3,430,927
3,430,959
3,430,972
3,430,984
3,430,992
3,431,012
3,431,015
3,431,099
3,431,109

17 : 3,431,123
3,431,127
3,431,195
3,431,198
3,431,217
3,431,313
3,431,327
3,431,329
3,431,357
3,431,358
3,431,372
3,431,374
3,431,445
3,431,446
3,431,454
3,431,462
3,431,486
3,431,504
3,431,510
3,431,516
3,431,532
3,431,541
3,431,542
18 : 3,430,333
3,430,365
3,430,376
3,430,389
3,430,391
3,430,522
3,430,767
3,430,796
3,430,866
3,430,907
3,430,948
3,430,955
3,431,007
3,431,056
3,431,302
3,431,341
3,431,373
3,431,388
3,431,389
3,431,409
3,431,449
3,431,474
3,431,534
19 : 3,430,601
3,430,854
3,430,871
3,431,001
3,431,077
3,431,509
20 : 3,430,528
3,430,549
3,430,723
3,431,394
21 : 3,430,270
3,430,686
3,430,747
3,430,913
3,430,928
3,431,050
3,431,094
3,431,307
3,431,469
22 : 3,430,288
3,430,699
3,430,953
3,431,044
3,431,059
3,431,116
3,431,185
3,431,212
3,431,213
3,431,269
23 : 3,431,137
24 : 3,430,408
3,430,420
3,430,548
3,430,570
3,430,571
3,430,572
3,430,631
3,430,708
3,430,709
3,430,745
3,430,804
3,430,864
3,430,895
3,431,097
3,431,133
3,431,155
3,431,196
3,431,209
3,431,219
3,431,242
3,431,288
3,431,290
3,431,421
3,431,487
3,431,528
25 : 3,430,375
3,430,429
3,430,440
3,430,455
3,430,466
25 : 3,430,483
3,430,511
3,430,535
3,430,547
3,430,679
3,430,732
3,430,761
3,430,810
3,430,868
3,430,875
3,430,876
3,430,949
3,430,964
3,430,990
3,431,039
3,431,051
3,431,074
3,431,150
3,431,182
3,431,224
3,431,238
3,431,253
3,431,260
3,431,407
3,431,410
3,431,438
3,431,453
3,431,458
3,431,478
3,431,479
3,431,497
3,431,526
3,431,527
3,431,540
26 : RE.26,530
RE.26,536
RE.26,538
RE.26,539
3,430,261
3,430,287
3,430,297
3,430,298
3,430,318
3,430,327
3,430,336
3,430,369
3,430,419
3,430,437
3,430,439
3,430,457
3,430,461
3,430,494
3,430,503
3,430,504
3,430,516
3,430,519
3,430,553
3,430,561
3,430,612
3,430,613
3,430,614
3,430,615
3,430,618
3,430,633
3,430,651
3,430,674
3,430,692
3,430,780
3,430,782
3,430,808
3,430,908
3,430,947
3,430,954
3,430,963
3,430,968
3,430,974
3,430,979
3,430,993
3,430,994
3,430,995
3,430,997
3,431,000
3,431,019
3,431,022
3,431,042
3,431,068
3,431,120
3,431,130
3,431,228
3,431,237
3,431,371
3,431,430
3,431,470
3,431,498
27 : 3,430,280
3,430,285
3,430,339
3,430,364
3,430,424
3,430,456
3,430,598
3,430,751
3,430,763
3,430,831
3,430,869
3,430,952
27 : 3,431,002
3,431,112
3,431,118
3,431,157
3,431,172
3,431,240
3,431,404
3,431,491
3,431,492
3,431,543
3,431,556
28 : 3,431,310
29 : 3,430,359
3,430,406
3,430,453
3,430,839
3,430,865
3,430,944
3,431,069
3,431,192
3,431,210
3,431,427
3,431,538
3,431,554
31 : 3,430,278
3,430,301
3,430,496
3,430,648
3,431,387
33 : 3,431,025
3,431,452
34 : 3,430,268
3,430,292
3,430,330
3,430,410
3,430,442
3,430,472
3,430,526
3,430,531
3,430,569
3,430,592
3,430,667
3,430,728
3,430,777
3,430,802
3,430,811
3,430,820
3,430,821
3,430,855
3,430,859
3,430,860
3,430,863
3,430,883
3,430,926
3,430,991
3,431,060
3,431,066
3,431,114
3,431,132
3,431,134
3,431,138
3,431,140
3,431,153
3,431,174
3,431,189
3,431,190
3,431,194
3,431,197
3,431,204
3,431,207
3,431,208
3,431,214
3,431,218
3,431,220
3,431,221
3,431,234
3,431,252
3,431,271
3,431,300
3,431,301
3,431,304
3,431,324
3,431,333
3,431,339
3,431,343
3,431,348
3,431,362
3,431,368
3,431,369
3,431,390
3,431,437
3,431,447
3,431,484
3,431,489
3,431,496
3,431,500
3,431,505
3,431,520
3,431,522
3,431,535
3,431,537
3,431,555
3,431,557
35 : 3,430,308
3,431,379
36 : RE.26,529
36 : 3,430,264
3,430,265
3,430,283
3,430,284
3,430,299
3,430,305
3,430,329
3,430,344
3,430,345
3,430,346
3,430,361
3,430,374
3,430,392
3,430,397
3,430,409
3,430,417
3,430,418
3,430,451
3,430,480
3,430,501
3,430,506
3,430,514
3,430,557
3,430,558
3,430,559
3,430,588
3,430,599
3,430,600
3,430,606
3,430,609
3,430,617
3,430,622
3,430,625
3,430,628
3,430,656
3,430,662
3,430,668
3,430,669
3,430,687
3,430,735
3,430,738
3,430,742
3,430,759
3,430,774
3,430,789
3,430,795
3,430,813
3,430,840
3,430,843
3,430,847
3,430,856
3,430,862
3,430,877
3,430,962
3,431,038
3,431,040
3,431,048
3,431,054
3,431,107
3,431,111
3,431,117
3,431,143
3,431,151
3,431,274
3,431,277
3,431,286
3,431,303
3,431,325
3,431,326
3,431,331
3,431,356
3,431,366
3,431,380
3,431,408
3,431,411
3,431,418
3,431,423
3,431,450
3,431,455
3,431,457
3,431,472
3,431,490
3,431,495
3,431,503
3,431,512
3,431,525
3,431,531
3,431,544
3,431,558
37 : 3,430,394
3,430,412
3,430,430
3,430,555
3,431,003
38 : 3,430,282
39 : 3,430,260
3,430,272
3,430,362
3,430,377
3,430,395
3,430,398
3,430,473
3,430,533
3,430,539
3,430,542
3,430,585
39 : 3,430,593
3,430,595
3,430,627
3,430,630
3,430,635
3,430,640
3,430,681
3,430,682
3,430,688
3,430,697
3,430,722
3,430,794
3,430,818
3,430,819
3,430,824
3,430,830
3,430,844
3,430,851
3,430,861
3,430,874
3,430,892
3,430,921
3,430,969
3,431,028
3,431,058
3,431,095
3,431,106
3,431,206
3,431,225
3,431,229
3,431,270
3,431,292
3,431,381
3,431,386
3,431,401
3,431,415
3,431,417
3,431,448
3,431,467
3,431,546
40 : 3,430,290
3,430,575
3,430,596
3,430,700
3,430,707
3,430,797
3,430,801
3,430,919
3,431,057
3,431,075
3,431,079
3,431,314
3,431,315
3,431,316
3,431,425
3,431,038
3,431,040
41 : 3,430,532
3,430,784
3,430,787
3,430,873
3,430,982
3,430,983
3,431,165
3,431,340
42 : RE.26,535
3,430,293
3,430,311
3,430,312
3,430,323
3,430,385
3,430,481
3,430,485
3,430,521
3,430,529
3,430,538
3,430,568
3,430,623
3,430,637
3,430,643
3,430,729
3,430,758
3,430,786
3,430,792
3,430,803
3,430,887
3,430,897
3,430,915
3,430,931
3,430,932
3,430,939
3,430,940
3,430,946
3,430,973
3,430,996
3,431,009
3,431,013
3,431,026
3,431,032
3,431,043
42 : 3,431,241
3,431,249
3,431,262
3,431,265
3,431,266
3,431,268
3,431,272
3,431,273
3,431,275
3,431,279
3,431,291
3,431,294
3,431,319
3,431,320
3,431,330
3,431,332
3,431,344
3,431,384
3,431,406
3,431,456
3,431,494
3,431,508
3,431,524
3,431,529
3,431,530
3,431,548
44 : 3,430,263
3,430,432
3,430,825
3,430,917
3,431,346
45 : 3,430,310
3,430,543
3,430,578
3,430,721
3,430,773
3,430,961
3,431,205
46 : 3,430,853
47 : 3,430,554
3,430,587
3,430,764
3,430,849
3,430,998
3,431,201
3,431,230
3,431,236
3,431,305
3,431,322
3,431,328
3,431,363
3,431,370
3,431,414
48 : RE.26,537
3,430,267
3,430,366
3,430,373
3,430,479
3,430,489
3,430,550
3,430,582
3,430,586
3,430,603
3,430,632
3,430,653
3,430,655
3,430,659
3,430,677
3,430,698
3,430,701
3,430,702
3,430,712
3,430,713
3,430,714
3,430,715
3,430,716
3,430,719
3,430,726
3,430,727
3,430,850
3,430,975
3,430,986
3,431,004
3,431,005
3,431,055
3,431,102
3,431,145
3,431,146
3,431,317
3,431,350
3,431,402
3,431,488
3,431,551
49 : 3,430,422
50 : 3,431,147
3,431,354
3,431,473
51 : 3,430,380
3,430,460
3,430,465
3,430,619
3,430,889
3,430,890
3,430,937
3,430,980
3,431,021

51 : 3,431,334	53 : 3,430,357	53 : 3,431,162	55 : 3,430,358	55 : 3,430,788	55 : 3,431,148
3,431,399	3,430,370	3,431,202	3,430,452	3,430,817	3,431,335
3,431,475	3,430,718	54 : 3,431,093	3,430,563	3,430,832	3,431,349
3,431,480	3,430,750	3,431,309	3,430,574	3,430,911	3,431,395
3,431,483	3,430,760	55 : 3,430,319	3,430,604	3,430,957	3,431,539
53 : 3,430,325	3,430,899	3,430,338	3,430,748	3,431,113	56 : 3,430,546

Design Patents

6 : 213,441	12 : 213,430	24 : 213,416	36 : 213,419	36 : 213,484	39 : 213,451
213,445	213,485	213,417	213,452	213,487	213,469
213,447	17 : 213,431	25 : 213,418	213,453	213,488	40 : 213,435
213,465	213,432	26 : 213,434	213,456	37 : 213,446	42 : 213,436
213,470	213,433	27 : 213,422	213,457	39 : 213,420	213,442
213,471	213,443	213,440	213,458	213,421	47 : 213,467
213,478	213,444	29 : 213,464	213,459	213,423	48 : 213,463
213,479	213,454	213,477	213,461	213,424	213,466
213,481	213,455	34 : 213,426	213,468	213,427	213,472
213,486	213,460	213,473	213,482	213,428	55 : 213,437
9 : 213,425	24 : 213,414	213,480	213,483	213,449	213,476
213,448	213,415				

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 4, 1969 Volume 860 Number 1

TRADEMARKS

NOTICES

Trademark Rules of Practice

[37 CFR Part 6]

Classification of Goods and Services Under the Trademark Act

The Patent Office is considering a change in the Trademark Rules of Practice of the Patent Office (Title 37, Code of Federal Regulations) relating to classification of goods and services under the Trademark Act (15 U.S.C. 1112).

All persons who desire to present their views, objections, recommendations or suggestions in connection with the proposed change are invited to do so in writing on or before April 15, 1969, on which date a hearing will be held at 10 a.m., in Room 3D48, Building 3–4, 2011 Jefferson Davis Highway, Arlington, Virginia. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

The proposed change would establish the "International Classification of Goods and Services to which Trademarks are Applied" (The subject of the "Agreement of Nice concerning the international classification of goods and services to which trademarks are applied. Done at Nice, on 15 June 1957" (550 U.N.T.S. 45), as revised at Stockholm, on 14 July 1967) as the primary and sole classification of goods and services for registration of trademarks and service marks beginning on July 1, 1969.

The Patent Office has been studying the International Classification for the past two years and has since March 5, 1968 indicated the appropriate international class on all published applications, newly issued registrations and renewals as a subsidiary classification. Based on this experience it is now believed that adoption of the international schedule as the primary and sole classification is desirable both from the standpoint of the Office and the public. The international schedule is in use in more than 50 countries and is the subject of the aforementioned Nice Agreement, to which 24 countries are parties. The Nice Agreement provides for an International Committee of Experts whose task is to keep the classification up-to-date through a simple and rapid procedure.

Specifically, it is proposed that all applications for registration of trademarks and service marks having a filing date later than June 30, 1969 be classified according to the International Classification for all purposes set forth in the Trademark Act.

Applications which are pending at the close of business on June 30, 1969 would continue to carry the classification set forth in existing Rule 6.1 (37 C.F.R. 6.1) as the principal classification for all purposes in the Trademark Act. However, the Office will mark all such published applications and registrations with the appropriate international class as a subsidiary classification under the program which was started on March 5, 1968. Renewals according to the provisions of Section 9 of the Trademark Act of 1946 (15 U.S.C. 1059)

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	16,535
Date of oldest new application	January 3, 1968
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	5-8 -68	9-8 -66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	5-21-68	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	5-12-68	7-30-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1-3 -68	9-22-65
Renewals (All Classes)	12-9 -68	.....
Sec. 12(c) Publications (All Classes)	12-11-68	.....

Applications filed during the month of January 1969—2,803

Registrations Issued ..... 427—No. 865,544 to No. 865,970
Renewals Issued 90

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

will be similarly marked with the appropriate international class as a subsidiary classification. Except for this program, it is not now proposed that existing registrations be reclassified. It should be noted in this regard that approximately 53% of the trademark search file is indexed alphabetically without regard to class. The remaining 47% of the file is set up under approximately 50 headings (e.g., common prefixes such as SAN, GOLD, etc., and numerals, letters, design features, etc.) under each of which the marks are organized by class. This portion of the search file would be maintained as at present, i.e., classified according to the present schedule of classes. However, an additional file drawer or drawers would be set up in which all registrations issued or renewed subsequent to June 30, 1969, would be organized by class according to the international schedule.

For an interim period (i.e., until all marks pending as of June 30, 1969 have been disposed of) the Trademark sections of the OFFICIAL GAZETTE which are organized by class (i.e., Publications for opposition purposes, Registrations issued on the Principal Register and Registrations issued on the Supplemental Register) will include two parts, one part for applications published or marks issued on the basis of applications filed prior to July 1, 1969, organized by class according to the existing schedule of classes; the other for applications published or marks issued on the basis of applications filed after June 30, 1969, organized by class according to the new international schedule.

None of the above changes would apply to certification marks and collective membership marks which would continue to be classified as set forth in Rules 6.2 and 6.3 (37 C.F.R. 6.2 and 6.3) of the Trademark Rules of Practice.

Reference should be made to the OFFICIAL GAZETTES of January 30 and May 21, 1968 for further information about the International Classification, including the availability of the English edition of an alphabetical list of goods and services which is a valuable aid in using the international system.

Notice is hereby given, therefore, that under the authority contained in Section 6 of the Act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6) and in Section 30 of the Trademark Act of 1946, as Amended (Oct. 9, 1962, 76 Stat. 773; 15 U.S.C. 1112), the Patent Office proposes to revise § 6.1 of Title 37, of the Code of Federal Regulations, to read as follows:

By revising 6.1 to read as follows:

§ 6.1 *Schedule of classes of goods and services.*

GOODS

1. Chemical products used in industry, science, photography, agriculture, horticulture, forestry; artificial and synthetic resins; plastics in the form of powders, liquids or pastes, for industrial use; manures (natural and artificial); fire extinguishing compositions; tempering substances and chemical preparations for soldering; chemical substances for preserving foodstuffs; tanning substances; adhesive substances used in industry.
2. Paints, varnishes, lacquers; preservatives against rust and against deterioriation of wood; colouring matters, dyestuffs; mordants; natural resins; metals in foil and powder form for painters and decorators.
3. Bleaching preparations and other substances for laundry use; cleaning, polishing, scouring and abrasive preparations; soaps; perfumery, essential oils, cosmetics, hair lotions; dentifrices.
4. Industrial oils and greases (other than edible oils and fats and essential oils); lubricants; dust laying and absorbing compositions; fuels (including motor spirit) and illuminants; candles, tapers, night-lights and wicks.
5. Pharmaceutical veterinary and sanitary substances; infants' and invalids' foods; plasters, material for bandaging; material for stopping teeth, dental wax; disinfectants; preparations for killing weeds and destroying vermin.
6. Unwrought and partly wrought common metals and their alloys; anchors, anvils, bells, rolled and cast building materials; rails and other metallic materials for railway tracks; chains (except driving chains for vehicles); cables and wires (non-electric); locksmiths' work; metallic pipes and tubes; safes and cash boxes; steel balls; horseshoes; nails and screws; other goods in non-precious metal not included in other classes; ores.
7. Machines and machine tools; motors (except for land vehicles); machine couplings and belting (except for land vehicles); large size agricultural implements; incubators.
8. Hand tools and instruments; cutlery, forks and spoons; side arms.
9. Scientific, nautical, surveying and electrical apparatus and instruments (including wireless), photographic, cinematographic, optical, weighing, measuring, signalling, checking (supervision), life-saving and teaching apparatus and instruments; coin or counter-freed apparatus; talking machines; cash registers; calculating machines; fire extinguishing apparatus.
10. Surgical, medical, dental and veterinary instruments and apparatus (including artificial limbs, eyes and teeth).
11. Installations for lighting, heating, steam generating, cooking, refrigerating, drying, ventilating, water supply and sanitary purposes.
12. Vehicles; apparatus for locomotion by land, air or water.
13. Firearms; ammunition and projectiles; explosive substances; fireworks.
14. Precious metals and their alloys and goods in precious metals or coated therewith (except cutlery, forks and spoons); jewellery, precious stones, horological and other chronometric instruments.
15. Musical instruments (other than talking machines and wireless apparatus).
16. Paper and paper articles, cardboard and cardboard articles; printed matter, newspapers and periodicals, books; book-binding material; photographs; stationery, adhesive materials (stationery); artists' materials; paint brushes; typewriters and office requisites (other than furniture); instructional and teaching material (other than apparatus); playing cards; printers' type and cliches (stereotype).
17. Gutta percha, indiarubber, balata and substitutes, articles made from these substances and not included in other classes; plastics in the form of sheets, blocks and rods, being for use in manufacture; materials for packing, stopping or insulating; asbestos, mica and their products; hose pipes (non-metallic).
18. Leather and imitations of leather, and articles made from these materials and not included in other classes; skins, hides; trunks and travelling bags; umbrellas, parasols and walking sticks; whips, harness and saddlery.
19. Building materials, natural and artificial stone, cement, lime, mortar, plaster and gravel; pipes of earthenware or cement; road-making materials; asphalt, pitch and bitumen; portable buildings; stone monuments; chimney pots.
20. Furniture, mirrors, picture frames; articles (not included in other classes) of wood, cork, reeds, cane, wicker, horn, bone, ivory, whalebone, shell, amber, mother-of-pearl, meerschaum, celluloid, substitutes for all these materials, or of plastics.
21. Small domestic utensils and containers (not of precious metal or coated therewith); combs and sponges; brushes (other than paint brushes); brush-making materials; instruments and material for cleaning purposes; steelwool; glassware, porcelain and earthenware, not included in other classes.
22. Ropes, string, nets, tents, awnings, tarpaulins, sails, sacks; padding and stuffing materials (hair, capoc, feathers, seaweed, etc.); raw fibrous textile materials.
23. Yarns, threads.
24. Tissues (piece goods); bed and table covers; textile articles not included in other classes.
25. Clothing, including boots, shoes and slippers.
26. Lace and embroidery, ribands and braid; buttons, press buttons, hooks and eyes, pins and needles; artificial flowers.
27. Carpets, rugs, mats and matting; linoleums and other materials for covering floors; wall hangings (non-textile).
28. Games and playthings; gymnastic and sporting articles (except clothing); ornaments and decorations for Christmas trees.
29. Meat, fish, poultry and game; meat extracts; preserved, dried and cooked fruits and vegetables; jellies; jams; eggs, milk and other dairy products; edible oils and fats; preserves, pickles.
30. Coffee, tea, cocoa, sugar, rice, tapioca, sago, coffee substitutes; flour, and preparations made from cereals; bread, biscuits, cakes, pastry and confectionery, ices; honey, treacle; yeast, baking-powder; salt, mustard; pepper, vinegar, sauces, spices; ice.
31. Agricultural, horticultural and forestry products and grains not included in other classes; living animals; fresh fruits and vegetables; seeds; live plants and flowers; foodstuffs for animals, malt.
32. Beer, ale and porter; mineral and aerated waters and other non-alcoholic drinks; syrups and other preparations for making beverages.
33. Wines, spirits and liqueurs.
34. Tobacco, raw or manufactured; smokers' articles; matches.

SERVICES

35. Advertising and business.
36. Insurance and financial.
37. Construction and repair.
38. Communication.
39. Transportation and storage.
40. Material treatment.
41. Education and entertainment.
42. Miscellaneous.

EDWARD J. BRENNER,
Commissioner of Patents.

Feb. 5, 1969.

Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 2052, Feb. 12, 1969

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 399,390 (HELI-COIL), Heli-Coil Corporation, Spark plug bushings; **Reg. No. 419,109**, same, Tools, apparatus and machines for use in connection with screw connections and their parts—namely, screw-thread-tapping tools, coiling machines for wire thread inserts, tools for inserting and extracting wire thread bushings, staking tools for securing thread bushings in boss members; **Reg. No. 419,476**, same, Screw connections and parts of screw connections—namely, screws, bolts, studs, nuts, thread inserts and thread bushings, for use in drilled or threaded holes; **Reg. No. 514,560**, same, Gages for use in screw connections with or without wire thread—namely, screw thread gages and flush gages; **Reg. No. 516,681**, same, Tools, apparatus and machines for use in connection with screw connections and their parts—namely, screw-thread-tapping tools, coiling machines for wire thread inserts, tools for inserting and extracting wire thread bushings, staking tools for securing thread bushings in boss members; **Reg. No. 707,397**, same, Self-locking wire fasteners, screw locks, and self locking nuts; **Reg. No. 759,898**, same, Screw thread inserts loaded in plastic strips for magazine feeding, **filed** Oct. 28, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–1109, *Heli-Coil Corp.* v. *Long-Lok Corp.*

Reg. No. 407,143 (C-THRU), C-Thru Ruler Company, Ruling and calculating instruments, **filed** Jan. 13, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66–C–33, *The C-Thru Ruler Co.* v. *CTP Industries, Inc.* Consent decree filed for injunction, Nov. 25, 1968.

Reg. No. 419,109. (See Reg. No. 399,390.)

Reg. No. 419,476. (See Reg. No. 399,390.)

Reg. No. 514,560. (See Reg. No. 399,390.)

Reg. No. 516,681. (See Reg. No. 399,390.)

Reg. No. 592,540. (HOLIDAY INN), Holiday Inns of America, Inc., Motel services—namely, providing lodgings and meals in motels; **Reg. No. 708,521** (HOLIDAY INN OF AMERICA AND DESIGN), same, **filed** Nov. 6, 1968, D.C., N.D.N.Y. (Utica), Doc. ----------, *Francis K. Gadway, doing business as Holiday Motel* v. *Holiday Inns of America, Inc.*

Reg. No. 603,047 (LONDON FOG), The Londontown Manufacturing Company, Raincoats for men, women and children, **filed** Nov. 21, 1968, D.C., S.D.N.Y., Doc. 68–C–4604, *The Londontown Manufacturing Co.* v. *Passaic Apparel Industries, Inc.*

Reg. No. 691,424 (EXECUTIVES UNLIMITED AND DESIGN), Executives Unlimited, Inc., Personnel placement service, **filed** Nov. 14, 1968, D.C., S.D.N.Y., Doc. 68–C–4491, *Executives Unlimited, Inc.* v. *Executives Unlimited International, Inc.*

Reg. No. 707,397. (See Reg. No. 399,390.)

Reg. No. 708,521. (See Reg. No. 592,540.)

Reg. No. 749,886 (MICRO-DATA), Bell & Howell Company, Microfilm recording and reading equipment and electrophotographic recording equipment, **filed** Nov. 22, 1968, D.C., S.D.N.Y., Doc. 68–C–4624, *Bell & Howell Co.* v. *Microdata, Inc.*

Reg. No. 759,898. (See Reg. No. 399,390.)

Reg. No. 760,523 (GASAMAT), Pat Griffin, doing business as Pat Griffin Co., Gasoline and motor oil, **filed** Nov. 21, 1968, D.C. Ariz. (Phoenix), Doc. C–1213–PCT, *Pat Griffin Company et al.* v. *John B. Knight, Jr. et al.*

Reg. No. 761,750 (GBS AND DESIGN), General Business Services, Inc., Business advisory, tax, and recordkeeping service, **filed** Oct. 4, 1968, D.C., N.D. Ill (Chicago), Doc. 68c1839, *General Business Services, Inc.* v. *Harvey J. Franks, doing business as General Business Services.* Consent judgment, defendants infringed and perpetually enjoined, Dec. 4, 1968.

Reg. No. 775,552 (SERVOMATION IN CIRCLE DESIGN), Servomation Corp., Cafeteria services rendered by means of a variety of vending machines which dispense foods including complete menus, beverages, and tobacco products, **filed** Sept. 13, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49950, *Servomation Corp. et al.* v. *Clarence Lee et al.* Consent judgment, permanent injunction against defendants, Nov. 25, 1968.

Reg. No. 822,863 (HOT NEWS), Tunlaw Corporation, Grates for burning newspapers in a manner as to extract useful heat therefrom, **filed** Nov. 25, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2288, *Tunlaw Corporation* v. *E. F. MacDonald Co. and Joseph Breck and Sons Corp.*

Reg. No. 835,606 (HAI KARATE AND DESIGN), Chas. Pfizer & Co., Inc., After shave lotion, **filed** Oct. 22, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–1081, *Chas. Pfizer & Co., Inc.* v. *Louangel Corp. et al.* Consent judgment for injunction filed Nov. 7, 1968.

Reg. No. 841,389 (ATLAS AND DESIGN), Atlas Van-Lines, Inc., Transporting household and other goods by motor van, **filed** July 11, 1968, D.C., E.D. La. (Baton Rouge), Doc. 68–115, *Atlas Van Lines, Inc.* v. *Dan J. Constant.* Final judgment in favor of plaintiff, defendant perpetually restrained and enjoined, Nov. 20, 1968.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 267,354. Picture Craft Corporation, Bronxville, N.Y. Filed Mar. 22, 1967.



Class 100—Miscellaneous

For Commercial Photographic Services (Int. Cl. 42).

Class 106—Material Treatment

For Photographic Processing Services for Others (Int. Cl. 40).

First use Jan. 21, 1963.

SN 275,330. UMC Industries, Inc., St. Louis, Mo. Filed July 3, 1967.



Owner of Reg. Nos. 596,407 and 818,884.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Carbonators (Int. Cl. 7).

Class 31—Filters and Refrigerators

For Refrigerated Vendors for Dispensing Individually Containerized Beverages, Refrigerated Vendors for Dispensing Carbonated Beverages, and Converter Units for Converting Pre-Mix Refrigerated Vendors to Post-Mix Refrigerated Vendors (Int. Cl. 9).

First use June 9, 1967.

SN 294,253. Bete Fog Nozzle, Inc., Greenfield, Mass. Filed Mar. 27, 1968.

BETE

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Nozzles (Int. Cl. 11).
First use 1948.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Humidifiers (Int. Cl. 11).
First use 1963.

SN 298,783. The Anaconda Company, New York, N.Y. Filed May 22, 1968.

ANACONDA

Owner of Reg. Nos. 115,138, 790,206, and others.

Class 2—Receptacles

For Containers Made of Sheet Metal and Foil—Namely, Rigid Aluminum Foil Containers (Int. Cl. 6).

Class 50—Merchandise Not Otherwise Classified

For Container Closures of Metal-Paper Laminates (Int. Cl. 20).

First use January 1960.

SN 299,286. The Akchurin Corporation, Hempstead, N.Y. Filed May 29, 1968.

A K

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hardware Items—Namely, Machine, Stove, Carriage, Lag and Toggle Bolts, Barrel Bolts, Wood Screws, Hinges, Safety Hasps, Butts, Sash Pulleys, Template Butts, and Catches (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Sledge Hammers (Int. Cl. 8).

First use on or about May 30, 1967.

SN 300,504. Daniels Manufacturing Company, Rhinelander, Wis. Filed June 17, 1968.



Class 2—Receptacles

For Flexible Film-Type Packaging Material in the Form of Pouches (Int. Cl. 16).
First use May 31, 1968.

Class 37—Paper and Stationery

For Flexible Film-Type Packaging Material in the Form of Sheets and Roll Stock (Int. Cl. 16).
First use May 15, 1968.

SN 306,090. Burger King Corporation, Miami, Fla. Filed Sept. 9, 1968.

BURGER KING

Applicant disclaims the word "Burger" apart from the mark as shown, without sacrificing any common law rights.
Owner of Reg. No. 722,375.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks of All Varieties (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Hamburger Sandwiches (Int. Cl. 29).
First use July 28, 1953.

SN 306,536. Burger King Corporation, Miami, Fla. Filed Sept. 12, 1968.



Owner of Reg. No. 714,249.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks of All Varieties (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Hamburger Sandwiches (Int. Cl. 29).
First use January 1954.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 277,656. Freeman Chemical Corporation, Port Washington, Wis. Filed Aug. 7, 1967.



The mark is a monogram comprised of the letters "FCC" arranged to resemble a round bottom chemical flask having a right angle elbowed delivery tube.
For Synthetic Resins (Int. Cl. 1).
First use Aug. 10, 1966.

SN 298,649. Vistron Corporation, Cleveland, Ohio. Filed May 20, 1968.

BAREX

For Thermoplastic Acrylic Resins Useful in the Manufacture of Bottles, Tubes, Sheets, Films, etc. (Int. Cl. 1).
First use in or about March 1965.

SN 299,291. Allaco Products, Inc., Braintree, Mass. Filed May 29, 1968.

THE INDESTRUCTIBLE TOE

For Resins for Use in Remodeling Shoe Lasts (Int. Cl. 1).
First use May 20, 1968.

SN 299,292. Allaco Products, Inc., Braintree, Mass. Filed May 29, 1968.

THE PERFECTLY INDESTRUCTIBLE TOE

For Resins for Use in Remodeling Shoe Lasts (Int. Cl. 1).
First use May 20, 1968.

SN 299,659. Eastman Kodak Company, Rochester, N.Y. Filed June 4, 1968.

EKTAFILL

For Synthetic Batting Material (Int. Cl. 22).
First use Feb. 13, 1968.

SN 302,548. Welch Brothers Nursery, Inc., Wilmer, Ala. Filed July 11, 1968.

WELCH JUNIOR MISS

For Flowering Dogwood Tree (Int. Cl. 31).
First use Feb. 16, 1967.

Class 2—Receptades

SN 273,788. Peterson and Associates, Inc., Abington, Pa. Filed June 13, 1967.



For Label Bins (Int. Cl. 6).
First use May 26, 1967.

SN 283,734. Tokheim Corporation, Fort Wayne, Ind. Filed Oct. 30, 1967.

ardmore

For Hose Reels (Int. Cl. 6).
First use at least as early as July 13, 1959.

SN 286,115. First Colony Corporation, Marietta, Ohio. Filed Dec. 4, 1967.

1ST COLONY

For Storage Silos, Bins and Tanks (Int. Cl. 6).
First use as early as August 1967.

SN 286,612. United States Steel Corporation, Pittsburgh, Pa. Filed Dec. 11, 1967.

SAMSON

For Plastic Industrial Shipping Pails (Int. Cl. 20).
First use Oct. 20, 1967.

SN 302,425. L & H Designs, Inc., Paramus, N.J. Filed July 10, 1968.

GRASSHOPPER

For Frames for Supporting Plastic Bags, and Bags Therefor, Sold as a Unit for Use as Receptacles for Leaves and Other Refuse (Int. Cl. 21).
First use June 13, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 305,571. Since 1868 Crescent Corporation, d.b.a. Crescent Corporation, New York, N.Y. Filed Aug. 20, 1968.

FLEUR DE LIS

For Luggage and Tote Bags (Int. Cl. 18).
First use January 1968.

SN 305,572. Since 1868 Crescent Corporation, d.b.a. Crescent Corporation, New York, N.Y. Filed Aug. 20, 1968.

SASSI

For Luggage and Tote Bags (Int. Cl. 18).
First use Mar. 4, 1968.

Class 5 — Adhesives

SN 275,462. Perstorp Aktiebolag, Perstorp, Sweden. Filed July 6, 1967.

Owner of Swedish Reg. No. 112,230, dated Feb. 19, 1965.
For Industrial Adhesives for General Use (Int. Cl. 1).

Class 6 — Chemicals and Chemical Compositions

SN 282,342. Aspro-Nicholas Limited, Slough, England. Filed Oct. 12, 1967.

RESIGUARD

Owner of British Reg. No. 874,322, dated Jan. 15, 1965.
For Disinfectants (Int. Cl. 5).

SN 283,830. Uniroyal, Inc., New York, N.Y. Filed Oct. 31, 1967.

ROYALAC

Owner of Reg. No. 777,450.
For Accelerator Useful in the Curing of Polymers (Int. Cl. 1).
First use at least as early as June 1964.

SN 284,262. Worthington Biochemical Corporation, Freehold, N.J. Filed Nov. 6, 1967.

HEREDITEST

For Diagnostic Reagent for the Detection of Galactosemia, and Kits Containing Diagnostic Reagents for the Detection of Red Blood Cell Galactos-1-Phosphate Uridyl Transferase Activity in Whole Blood Samples; All for Laboratory Use (Int. Cl. 1).
First use Oct. 19, 1965.

SN 287,538. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 26, 1967.

CONQUER

For Chemical Ingredient Used in the Manufacture of Insecticides (Int. Cl. 1).
First use Dec. 12, 1967.

SN 291,928. West Chemical Products, Inc., Long Island City, N.Y. Filed Feb. 26, 1968.

SUPER RID-ALL

Applicant disclaims "Super" apart from the mark as used.
Owner of Reg. No. 521,085.
For Insecticide Used for Pest Control (Int. Cl. 5).
First use Dec. 27, 1967.

SN 293,740. Roman Cleanser Company, Detroit, Mich. Filed Mar. 20, 1968.

NOBOIL

Owner of Reg. Nos. 563,547 and 567,625.
For Fabric Softener and Starch Concentrate (Int. Cl. 3).
First use September 1962.

SN 300,763. Uniroyal, Inc., New York, N.Y. Filed June 18, 1968.

BXA

For Anti-Oxidant (Int. Cl. 1).
First use at least as early as 1950.

SN 301,076. Huntington Laboratories, Inc., Huntington, Ind. Filed June 21, 1968.

ZEFIR

Owner of Reg. No. 166,266.
For Anti-Static Spray for Rugs and Upholstery (Int. Cl. 1).
First use June 12, 1968.

SN 301,195. Chemical Insecticide Corporation, Edison, N.J. Filed June 24, 1968.

FREE-A-BUG

For Insecticide (Int. Cl. 5).
First use Aug. 30, 1967.

SN 301,320. Amchem Products, Inc., Ambler, Pa. Filed June 25, 1968.

155

For Brushkiller (Int. Cl. 5).
First use June 6, 1967.

SN 301,409. Chemcot International, Inc., Orlando, Fla. Filed June 26, 1968.

CHEMOCIDE

For Industrial Microbiocides and Fungistats (Int. Cl. 5).
First use Aug. 1, 1967.

SN 301,430. Philip A. Hunt Chemical Corporation, Palisades Park, N.J. Filed June 26, 1968.

ULTRA-MAT

For Photographic Developer and Replenisher for Same (Int. Cl. 1).
First use Mar. 24, 1967.

SN 301,431. Philip A. Hunt Chemical Corporation, Palisades Park, N.J. Filed June 26, 1968.

AEROFLO

For Photographic Developer and Replenisher for Same (Int. Cl. 1).
First use July 31, 1967.

SN 301,432. Philip A. Hunt Chemical Corporation, Palisades Park, N.J. Filed June 26, 1968.

STARMAT

For Photographic Developer and Replenisher for Same (Int. Cl. 1).
First use Mar. 22, 1966.

Class 7 — Cordage

SN 280,299. Bow Master, Inc., Minneapolis, Minn. Filed Sept. 14, 1967.

BOW MASTER

Owner of Reg. No. 851,851.
For Ribbon (Int. Cl. 26).
First use Aug. 11, 1964.

Class 10 — Fertilizers

SN 307,902. Medina Agricultural Products Co., Inc., Hondo, Tex. Filed Sept. 20, 1968.

MEDINA

For Liquid Concentrate Soil Activator (Int. Cl. 1).
First use Jan. 1, 1962.

SN 312,159. International Minerals & Chemical Corporation, Skokie, Ill. Filed Nov. 14, 1968.

REGIM-8

Owner of Reg. No. 839,015.
For Plant Growth Regulators (Int. Cl. 1).
First use Apr. 21, 1967.

Class 12 — Construction Materials

SN 269,985. H. B. Fuller Company, St. Paul, Minn. Filed Apr. 25, 1967.

TWEED TEX

For Epoxy Resin Primers, Binders and Sealers, and Fillers Therefor, Which Are Comprised of Coated Granules of Stone, All of Which Are Used in the Construction Industry in the Building of Floors and Other Surfaces (Int. Cl. 19).
First use Mar. 1, 1963.

SN 276,864. Products Research & Chemical Corporation, Burbank, Calif. Filed July 26, 1967.

PRC RUBBER CALK

Applicant disclaims each of the words "Rubber" and "Calk" when used separate and apart from the mark. Owner of Reg. Nos. 586,910 and 766,100.
For Glazing, Caulking and Sealing Compounds Made of Synthetic Polymerized Rubber Compounds, Including Polysulfide and Polyurethane Compositions (Int. Cl. 17).
First use July 1957.

SN 277,659. Gare Ceramic Supply Co., Inc., Haverhill, Mass. Filed Aug. 7, 1967.

SYMPHONY

For Ceramic Materials—Namely, Unfired Glazing Materials (Int. Cl. 19).
First use 1953.

SN 287,604. Vistron Corporation, Cleveland, Ohio. Filed Dec. 26, 1967.

TUFLITE

For Glass Fiber and Nylon Fiber Reinforced Plastic Panels for Sign Facings and Letters (Int. Cl. 19).
First use at least as early as September 1966.

SN 290,645. Pioneer Plastics Corp., Auburn, Maine. Filed Feb. 8, 1968.

COPPERLITE

For Decorative Plastic Laminate Copper Faced Paneling for Use in the Construction of Cocktail Tables and Television Cabinets (Int. Cl. 19).
First use Jan. 30, 1968.

SN 290,913. The Upjohn Company, Kalamazoo, Mich. Filed Feb. 12, 1968.

U-THANE

For Laminated Roof Board (Int. Cl. 19).
First use Sept. 1, 1967.

SN 291,260. Frantz Manufacturing Company, Sterling, Ill. Filed Feb. 16, 1968.

WOOD GRAIN FILUMA

The words "Wood Grain" are disclaimed apart from the mark as shown. Owner of Reg. No. 700,359.
For Garage Doors (Int. Cl. 19).
First use Jan. 15, 1968.

SN 294,561. Allan Irvin Silverstein, d.b.a. Steel Company of America, Columbus, Ohio. Filed Apr. 1, 1968.

STEELCOA

For Structural Steel Fabrications and Construction Products—Namely, Framing Channels, Joists, Roofing, Floor and Wall Panels, and I-Beams, Used in Connection With Framing of Pre-Engineered Steel Buildings, Including Roof and Wall Panels of Color-Coated, Roll-Formed Galvanized Steel (Int. Cl. 6).
First use Feb. 13, 1968; Oct. 1, 1966, as to "Steelcoa."

SN 295,434. International Pipe & Ceramics Corporation, Los Angeles, Calif. Filed Apr. 11, 1968.

GM

For Refractory Castable Mortar and Fireclay Composition and Refractory Brick (Int. Cl. 19).
First use Dec. 19, 1950.

SN 295,437. International Pipe & Ceramics Corporation, Los Angeles, Calif. Filed Apr. 11, 1968.

LITECRETE

For Refractory Insulating Castable Composition (Int. Cl. 19).
First use Feb. 3, 1952.

SN 301,983. Varco-Pruden, Inc., Pine Bluff, Ark. Filed July 3, 1968.

VP

For Prefabricated Metal Building Structures (Int. Cl. 6).
First use May 4, 1968.

SN 305,148. Manhattan Terrazzo Brass Strip Co., Inc., Norwalk, Conn. Filed Aug. 14, 1968.

TWIN ANCHOR BRAND

No registration rights are claimed for the word "Brand" apart from the rest of the mark, but applicant waives none of its common-law rights in said mark or any feature thereof. Owner of Reg. No. 245,595.
For Dividing Strips or Other Formed Pieces, Whether of Metal or Other Material, Such as Are Used in or on Terrazzo or Composition or Cement Floors or Walls (Int. Cl. 6).
First use on or about July 1, 1925.

SN 308,076. Edward Hines Lumber Co., Chicago, Ill. Filed Sept. 24, 1968.

WIDEBOARD

Owner of Reg. No. 751,855.
For Lumber Paneling (Int. Cl. 19).
First use Nov. 28, 1961.

SN 310,280. General Refractories Company, Philadelphia, Pa. Filed Oct. 23, 1968.

GREFCOTE

Owner of Reg. Nos. 690,071, 829,662, and 834,575.
For Refractory Gunning Mix (Int. Cl. 19).
First use July 12, 1968.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 278,570. Atlantic Company, Atlanta, Ga. Filed Aug. 18, 1967.

WORLD BAZAAR

Owner of Reg. Nos. 833,913, 842,439, and others.
For Carved Wooden Trivets, Brass Cups, Brass Bells, Iron Trays and Brass Trays (Int. Cls. 6 and 21).
First use on or about Nov. 15, 1965).

SN 291,779. Scovill Manufacturing Company, Waterbury, Conn. Filed Feb. 23, 1968.

NYGUARD

For Slide Fasteners (Int. Cl. 26).
First use Jan. 16, 1968.

SN 294,487. Fisher Governor Company, Marshalltown, Iowa. Filed Mar. 29, 1968.

easy-e

For Control Valve Bodies (Int. Cl. 6).
First use Sept. 11, 1967.

SN 295,868. Yoshida Kogyo K.K., Chiyoda-ku, Tokyo, Japan. Filed Apr. 17, 1968.

HIDDEN

For Slide Fasteners Made of Both Metal and Plastics (Int. Cl. 26).
First use January 1959; in commerce December 1960.

SN 296,879. Societa Metallurgica Italiana, Fiorence, Italy. Filed Apr. 29, 1968.

SMIGI

Priority claimed under Sec. 44(d) on Italian application filed Dec. 9, 1967; Reg. No. 220,096, dated Jan. 29, 1968. Owner of U.S. Reg. No. 824,749.
For Taps, Cocks, Joints, Couplings, and Fittings Made of Copper and Copper Alloys for Use in Sanitation and Heating Systems and for the Conveyance and Distribution of Gases or Other Fluids (Int. Cl. 6).

SN 297,816. Towle Manufacturing Company, Newburyport, Mass. Filed May 9, 1968.

NEWBURYPORT PEWTER
TOWLE

The word "Pewter" is disclaimed apart from the mark as shown. Owner of Reg. No. 540,881.
For Pewter Hollow Ware (Int. Cl. 21).
First use Feb. 20, 1968.

SN 302,419. Johns-Manville Corporation, New York, N.Y. Filed July 10, 1968.

FLEXTRAN

For Reinforced Plastic Water Pipe (Int. Cl. 17).
First use at least on or about June 11, 1968.

SN 302,569. Postmark Corporation, Minneapolis, Minn. Filed July 12, 1968.

KLIP-STIK

For Device for Supporting Coupons and Point of Sale Advertising From the Price Rails of Grocery Shelves (Int. Cl. 16).
First use May 15, 1968.

SN 308,394. North & Judd Manufacturing Company, New Britain, Conn. Filed Sept. 27, 1968.

DIVISION OF NORTH & JUDD
WILCOX-CRITTENDEN
MIDDLETOWN, CONN.

For Marine Toilets and Marine Hardware Including Blocks, Bolts, Brackets, Chocks, Cleats, Clips, Control Handles, Couplings, Deck Plates, Drains and Drain Plugs, Eye Straps, Flag Pole Holders, Goosenecks, Hand Rail Sockets, Handles, Gudgeons, Hinges, Hooks, Leaks, Links, Locks, Mast Steppe Plates, Mast Tabernacles, Oarlocks, Plates, Pole Holders and Sockets, Pulleys, Rails, Rings, Rope Guides, Rub Rail Caps, Shackles, Sheaves, Snaps, Sockets, Stanchions, Steps, Strainers, Straps, Thimbles, Tiller Fittings, and Turnbuckles (Int. Cls. 6 and 11).
First use on or before Apr. 5, 1955.

SN 311,103. Price-Pfister Brass Mfg. Co., Pacoima, Calif. Filed Nov. 1, 1968.

PIGGY-PAK

For General Line of Plumbing Fixtures for Lavatories, Sinks, Tubs and Showers, and Having Both Rough and Finish Parts (Int. Cl. 11).
First use Sept. 30, 1968.

Class 15—Oils and Greases

SN 292,880. James D. Brazil and Luke J. Davich (joint owners), d.b.a. Sportsmen's Laboratories, Anoka, Minn. Filed Mar. 11, 1968.

GUN LIFE

Applicant disclaims the word "Gun" apart from the mark as shown.
For Liquid Aerosol Cleaner and Lubricant for Guns (Int. Cl. 4).
First use Nov. 1, 1967.

SN 293,732. Marathon Oil Company, Findlay, Ohio. Filed Mar. 20, 1968.

MARAFLUID

Owner of Reg. Nos. 783,505 and 783,506.
For Oil and Grease Lubricants (Int. Cl. 4).
First use July 10, 1961.

SN 293,841. Mitann Inc., North Hollywood, Calif. Filed Mar. 21, 1968.

ZIP-CHEM

For High Temperature Thread Lubricant and Anti-Seize Compound (Int. Cl. 4).
First use Jan. 26, 1968.

SN 297,044. De Mert & Dougherty, Inc., Chicago, Ill. Filed May 1, 1968.

RUST LUBE

Applicant claims the exclusive right to the use of the word "Lube" as a part of its trademark, but not otherwise.
For Pressurized Penetrating and Lubricating Oil (Int. Cl. 4).
First use on or about Apr. 5, 1968.

SN 298,972. The Shivell-Hall Company, Inc., d.b.a. Shivell-Hall Co., New York, N.Y. Filed May 23, 1968.

MODERN DISTILLATE

Without waiving its common-law rights, applicant makes no claim to the word "Modern" and the word "Distillate" apart from the mark as shown.
For Heating Oil (Int. Cl. 4).
First use Apr. 15, 1968; Oct. 28, 1966, in a different form.

SN 310,276. Fairchild Chemical Corporation, Farmingdale, N.Y. Filed Oct. 23, 1968.

SWISSOIL

For Cutting Oil (Int. Cl. 4).
First use January 1967.

SN 311,648. Husky Oil Company of Delaware, Denver, Colo. Filed Nov. 8, 1968.

MUSTANG

For Gasoline (Int. Cl. 4).
First use on or about Jan. 3, 1965.

Class 16—Protective and Decorative Coatings

SN 282,649. Wyandotte Paint Products Company, Wyandotte, Mich. Filed Oct. 16, 1967.

TOPTEX

For Paint for Simulating Textured Vinyl Auto Roof Covering (Int. Cl. 2).
First use Apr. 6, 1966.

SN 282,850. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 18, 1967.

KINOX

For Paint Products Especially Adapted for Masonry Applications (Int. Cl. 2).
First use Apr. 7, 1967.

SN 283,770. Continental Coatings Corporation, Brooklyn, N.Y. Filed Oct. 31, 1967.

MAGNA BOND

For Aluminum Vinyl Protective Coating for Industrial and Marine Purposes (Int. Cl. 2).
First use July 11, 1966.

SN 287,631. Byk-Gulden Lomberg Chemische Fabrik GmbH, Constance, Germany. Filed Dec. 27, 1967.

BYKANOL

Owner of German Reg. No. 346,572, dated Apr. 29, 1925.
For Thinners for Lacquers, Paints, and Varnishes Which May Contain Antigelling Agents (Int. Cl. 2).

SN 298,338. Kelley Technical Coatings, Inc., Louisville, Ky. Filed May 16, 1968.

COLORDEK

For Paints (Int. Cl. 2).
First use Jan. 1, 1963.

SN 300,577. Fuller-O'Brien Corporation, Menlo Park, Calif. Filed June 17, 1968.

FUL-STAIN

Owner of Reg. Nos. 190,750, 808,031, and others.
For Wood Stains Including Semi-Transparent and Opaque Stains (Int. Cl. 2).
First use on or about May 15, 1968.

SN 310,028. International Minerals & Chemical Corporation, Skokie, Ill. Filed Oct. 21, 1968.

IMCO-BLAK

For Coating Composition for Producing a Black Finish on Bricks (Int. Cl. 2).
First use Jan. 20, 1967.

Class 17—Tobacco Products

SN 284,248. Tabacalera Nacional, S.A., Coral Gables, Fla. Filed Nov. 6, 1967.



Applicant disclaims the word "Honduras" apart from the mark as shown, also the phrases "Hand Made Cigars" and "Hecho en Honduras." The mark is Spanish, which means "flower of Honduras."
For Cigars (Int. Cl. 34).
First use July 28, 1967.

SN 290,107. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Filed Feb. 1, 1968.



Owner of Reg. No. 438,723.
For Cigarettes (Int. Cl. 34).
First use Oct. 3, 1967; in commerce Oct. 3, 1967.

SN 305,604. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Aug. 21, 1968.

HILTON

Owner of Reg. No. 749,561.
For Cigarettes (Int. Cl. 34).
First use Feb. 23, 1962.

SN 308,795. Lorillard Corporation, New York, N.Y. Filed Oct. 3, 1968.

COMET

For Chewing Tobacco (Int. Cl. 34).
First use about 1886.

SN 308,796. Lorillard Corporation, New York, N.Y. Filed Oct. 3, 1968.

DEITIES

For Cigarettes (Int. Cl. 34).
First use about 1893.

Class 18—Medicines and Pharmaceutical Preparations

SN 262,923. Cockburn and Company, Fort Worth, Tex. Filed Jan. 20, 1967.



The drawing is lined for the color red.
For Veterinary Pharmaceuticals—Namely, Isopropyl Alcohol (Int. Cl. 5).
First use Jan. 18, 1967.

SN 276,886. The Upjohn Company, Kalamazoo, Mich. Filed July 26, 1967.

ALDEX-A

For Analgesic Preparation (Int. Cl. 5).
First use Apr. 11, 1967.

SN 281,225. Philips Roxane Laboratories, Inc., New York, N.Y., assignee of Philips Roxane, Inc., New York, N.Y. Filed Sept. 26, 1967.

BRONKODYL

For Bronchial Antispasmodic, Antitussive, and Epectorant (Int. Cl. 5).
First use June 1956; in commerce June 1956.

SN 281,300. Andrew Don McCasland, d.b.a. Liquitein Feed Company, Dodge City, Kans. Filed Sept. 27, 1967.

LIQUITEIN

For Liquid Protein Supplement for Cattle (Int. Cl. 5).
First use at least as early as Feb. 8, 1967.

SN 284,577. Beecham Products Inc., Clifton, N.J. Filed Nov. 13, 1967.

PURACLOX

For Antibiotic (Int. Cl. 5).
First use Sept. 18, 1967.

SN 294,610. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. Filed Apr. 1, 1968.

KESSODANTEN

For Anti-Convulsant, Medicinal Preparation Used in the Treatment of Epilepsy—Namely, Sodium Diphenylhydantoin (Int. Cl. 5).
First use at least as early as Mar. 19, 1968.

SN 294,677. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Apr. 1, 1968.

DEVRYL

For Psychopharmaceutical Preparation (Int. Cl. 5).
First use Mar. 18, 1968.

SN 294,723. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 2, 1968.

ULTRA BRITE

Owner of Reg. Nos. 823,067 and 833,786.
For Oral Antiseptic (Int. Cl. 5).
First use Mar. 20, 1968.

SN 294,904. American Home Products Corporation, New York, N.Y. Filed Apr. 4, 1968.

DRISTETTES

Owner of Reg. Nos. 639,946 and 682,786.
For Decongestant Tablets (Int. Cl. 5).
First use Mar. 27, 1968.

SN 297,377. Bristol-Myers Company, New York, N.Y. Filed May 6, 1968.

IMPETUS

For Analgesic (Int. Cl. 5).
First use Mar. 25, 1968.

SN 297,527. Bristol-Myers Company, New York, N.Y. Filed May 7, 1968.

NEOLIN

For Analgesic (Int. Cl. 5).
First use Mar. 21, 1968.

SN 297,873. Merck & Co., Inc., Rahway, N.J. Filed May 10, 1968.

ABOLISH

For Pharmaceutical Preparation for the Relief of Sore Throat and Minor Throat Irritations (Int. Cl. 5).
First use Apr. 25, 1968.

SN 297,874. Merck & Co., Inc., Rahway, N.J. Filed May 10, 1968.

INVOKE

For Pharmaceutical Preparation for the Relief of Sore Throat and Minor Throat Irritations (Int. Cl. 5).
First use Apr. 25, 1968.

SN 304,391. Raladam Company, Grosse Pointe Woods, Mich. Filed Aug. 5, 1968.

MARMOLA

Owner of Reg. No. 66,843.
For Medicinal Composition Prepared in Tablet Form To Be Used as an Obesity Remedy (Int. Cl. 5).
First use Aug. 1, 1907.

SN 304,849. Amfre-Grant, Inc., Brooklyn, N.Y. Filed Aug. 12, 1968.

AMALGIN

For Pharmaceutical Preparation for Relief of Gastric Intestinal Disfunction and Gastric Hyperacidity (Int. Cl. 5).
First use Aug. 30, 1949.

SN 309,209. Sterling Drug Inc., New York, N.Y. Filed Oct. 9, 1968.

LYSETTE

Owner of Reg. Nos. 53,937, 381,120, and 806,215.
For Feminine Hygiene Douche Preparation (Int. Cl. 5).
First use at least as early as 1959.

Class 19—Vehicles

SN 263,063. Hard Sails, Inc., Islip, N.Y. Filed Jan. 23, 1967.
For Finished Sailcloth Sails (Int. Cl. 22).

DYNAMINT

First use during October 1965.

SN 282,338. Allied Aero Industries, Inc., New York, N.Y. Filed Oct. 12, 1967.

WACO

Owner of Reg. No. 216,240.
For Airplanes, Airframes, and Parts (Int. Cl. 12).
First use January 1920.

SN 298,464. Fruehauf Corporation, Clifton, N.J. Filed May 17, 1968.

FLEXI-QUAD

For Railway Cars (Int. Cl. 12).
First use Sept. 30, 1963.

SN 301,725. Durkee-Atwood Company, Minneapolis, Minn. Filed July 1, 1968.

DUR-A-SHIELD

Owner of Reg. Nos. 341,919, 716,473, and others.
For Splash Guards for Automotive Vehicles (Int. Cl. 12).
First use during May 1961.

SN 301,915. The Commodore Corporation (Delaware corporation), Omaha, Nebr., assignee of The Commodore Corporation (Nebraska corporation), Omaha, Nebr. Filed July 3, 1968.

sandpiper

For Travel Trailers (Int. Cl. 12).
First use on or about Apr. 1, 1968.

SN 310,917. Pioneer Parachute Company, Inc., Manchester, Conn. Filed Oct. 30, 1968.

PI-CON

For Parachutes (Int. Cl. 12).
First use March 1968.

Class 20 — Linoleum and Oiled Cloth

SN 292,067. Armstrong Cork Company, Lancaster, Pa. Filed Feb. 28, 1968.

CRAFTLON

Owner of Reg. Nos. 282,992 and 594,816.
For Vinyl Floor Tile Units (Int. Cl. 19).
First use Oct. 25, 1967.

SN 295,935. Mannington Mills Inc., Salem, N.J. Filed Apr. 18, 1968.

MANOLUX

Owner of Reg. No. 555,445.
For Felt Base Floor Coverings (Int. Cl. 27).
First use January 1965.

SN 295,936. Mannington Mills Inc., Salem, N.J. Filed Apr. 18, 1968.

QUIET FLOOR

For Felt Base Floor Coverings (Int. Cl. 27).
First use January 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 210,204. General Precision, Inc., Binghamton, N.Y. Filed Jan. 19, 1965.

LINK

For Electrical Servomechanisms and Servomechanism Components, Including Amplifiers, Phase Detectors, Potentiometers and Gearboxes; Electrical Power Supplies; and Signalling Equipment for Traffic Control Including Vehicle Presence Detectors; and Parts Thereof (Int. Cl. 9).
First use at least as early as 1940.

SN 241,654. Fifth Dimension, Inc., Princeton, N.J. Filed Mar. 23, 1966.

STEP/SCAN

For Multiplex Switch (Int. Cl. 9).
First use Jan. 24, 1965.

SN 250,532. Textron, Inc., Providence, R.I. Filed July 18, 1966.

WALKERDUCT

For Electrical Underfloor Distribution Systems and Underfloor Raceways (Int. Cl. 9).
First use March 1952 on underfloor raceways.

SN 250,533. Textron, Inc., Providence, R.I. Filed July 18, 1966.

WALKER

For Electrical Underfloor Distribution Systems, Floor Fittings, Junction Boxes, Underfloor Raceways, Adaptors, Elbows, and Offsets (Int. Cl. 9).
First use at least by 1924 on electrical underfloor distribution systems and junction boxes.

SN 280,507. Southwestern Drug Corporation, d.b.a. Mark-T Products, Dallas, Tex. Filed Sept. 18, 1967.

MARK t.

For Radios and Walkie Talkies (Int. Cl. 9).
First use July 17, 1967.

SN 285,967. Bell Electric Co., Chicago, Ill. Filed Dec. 1, 1967.



For Electrical Wiring Devices for Interior and/or Outdoor Uses, Including Electrical Outlet and/or Junction Boxes, Adaptors, Extensions, Covers and Cover Plates Therefor, Electrical Switches, Electrical Receptacles, 3-Wire Grounding Devices, Electric Garden and Walk Light and Wall Plates (Int. Cls. 9 and 11).
First use on or about July 15, 1966.

SN 286,628. Bird-Adams Company, Inc., Doraville, Ga. Filed Dec. 11, 1967.

Bobberbeam

For Boating and Fishing Lights (Int. Cl. 11).
First use on or about Nov. 17, 1967.

SN 296,550. Metex Corporation, Edison, N.J. Filed Apr. 25, 1968.

FELTEX

For Electromagnetic Shielding Guide and Gasket (Int. Cl. 9).
First use March 1966.

SN 296,552. Metex Corporation, Edison, N.J. Filed Apr. 25, 1968.

ZIP-EX

For Radio Frequency Interference Shielding Devices, Especially in Gasket Form (Int. Cl. 9).
First use January 1968.

SN 296,580. Royal Ascot Lamps Co., Inc., Skokie, Ill. Filed Apr. 25, 1968.

ROYAL ASCOT

For Electric Filament Lamps of All Kinds; and Electric Discharge Lamps of All Kinds (Int. Cl. 11).
First use Nov. 1, 1967.

SN 300,013. Spartans Industries, Inc., New York, N.Y. Filed June 7, 1968.

KOR/SONIC

For Radios (Int. Cl. 9).
First use Mar. 1, 1968.

SN 311,095. Dow Corning Corporation, Midland, Mich. Filed Nov. 1, 1968.

4

For Silicone Sealant, Electrical Insulating, and Lubricating Compound (Int. Cl. 17).
First use Mar. 1, 1943.

Class 22 — Games, Toys, and Sporting Goods

SN 272,357. Coinart, Inc., Elkhart, Ind. Filed May 25, 1967.

PATIO POOL

Without relinquishing any of its common law rights, applicant disclaims the word "Pool" apart from the mark as shown.
For Pool Tables (Int. Cl. 28).
First use Apr. 13, 1967.

SN 282,118. Kenneth C. Rolin, Lake Villa, Ill. Filed Oct. 9, 1967.

MOONEE

For Manually Operated Educational and Amusement Type Dexterity Toy (Int. Cl. 28).
First use on or before Aug. 28, 1967.

SN 284,210. Lawrence Sports Limited, Stanwick, Wellingborough, England. Filed Nov. 6, 1967.

Lawrence

For Football Boots, Cricket Boots, Running Shoes, Cross-Country Shoes, Ten Pin Bowling Shoes, and Bowling Shoes (Int. Cl. 25).
First use 1959; in commerce Feb. 13, 1967.

SN 287,054. Wiener Metallwarenfabrik Smolka & Co., Wien-Mauer, Austria. Filed Dec. 15, 1967.

CLIX

Priority claimed under Sec. 44(d) on Austrian application filed June 22, 1967; Reg. No. 60,485, dated Oct. 12, 1967.
For Skis, Ski Bindings, Ski Poles, Ski Pole Rings, and Ice Skates (Int. Cl. 28).

SN 287,740. Jole Enterprises, Incorporated, Dallas, Tex. Filed Dec. 28, 1967.

JOLE ENTERPRISES

The term "Enterprises" is disclaimed apart from the mark as shown.
For Game Apparatus Having a Plurality of Separately Revolvable Plunger Activated Dials Having Alpha Numeric Characters Thereupon (Int. Cl. 28).
First use at least as early as July 17, 1967.

SN 289,146. The Yeilding Company, Inc., Houston, Tex. Filed Jan. 18, 1968.



The representations of the individual playing pieces appearing in the mark are disclaimed apart from the mark. The drawing is lined for the color red, but color is not claimed as a feature of the mark.
For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).
First use about Dec. 20, 1967.

SN 291,277. McClellan Industries, Inc., Traverse City, Mich. Filed Feb. 16, 1968.

CHAIN WORM

No claim of exclusive right is made to "Worm" for the goods recited.
For Artificial Fishing Lures Resembling a Worm or Night Crawler (Int. Cl. 28).
First use Jan. 10, 1968.

SN 293,947. Remco Industries, Inc., Harrison, N.J. Filed Mar. 22, 1968.

MIGHTY MIKE

For Toy Vehicles and Accessories (Int. Cl. 28).
First use July 20, 1966.

SN 294,010. Cameo Doll Products Co., Inc., Port Allegany, Pa. Filed Mar. 25, 1968.

KEWPIEVILLE
♡KEWP.

Owner of Reg. Nos. 707,169 and 776,119.
For Dolls (Int. Cl. 28).
First use Feb. 27, 1967.

SN 294,309. Plastics Research and Development Corporation, Fort Smith, Ark. Filed Mar. 27, 1968.

DEPTH-CHARGER

For Fishing Lures (Int. Cl. 28).
First use Feb. 15, 1968.

SN 295,235. Imperial Golf Company, Chicago, Ill. Filed Apr. 9, 1968.

All American

For Golf Clubs (Int. Cl. 28).
First use Aug. 2, 1967.

SN 295,367. Philips Maine Corporation, Biddeford, Maine. Filed Apr. 10, 1968.

BLAST-A-JET

For Toys—Namely, a Plane and Missile Kit (Int. Cl. 28).
First use Jan. 4, 1968.

SN 298,230. Kohner Bros., Inc., East Paterson, N.J. Filed May 15, 1968.

ZIGGEDY ZAGS

For Teeter-Type Toy for Use in Playing a Race Game (Int. Cl. 28).
First use April 1968.

SN 301,448. Reynolds Metals Company, Richmond, Va. Filed June 26, 1968.

PACE-SETTER

For Treadmill Exercising Devices (Int. Cl. 28).
First use at least as early as Apr. 10, 1968.

SN 301,477. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed June 26, 1968.

LITTLE SOPHISTICATES

For Dolls and Doll Accessories (Int. Cl. 28).
First use on or about Oct. 2, 1967.

SN 303,124. Westminster Industries Inc., New York, N.Y. Filed July 19, 1968.

PAIL-FULL OF PUZZLE

Applicant disclaims any rights in the word "Puzzle" separate and apart from use in the mark.
For Jigsaw Puzzles (Int. Cl. 28).
First use July 1, 1968.

SN 308,090. Cameo Doll Products Co., Inc., Port Allegany, Pa. Filed Sept. 24, 1968.

CUDDLE ♡ KEWPIE



Owner of Reg. Nos. 707,169, 852,653, and others.
For Dolls (Int. Cl. 28).
First use 1947.

SN 308,965. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

RAH-RAH

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 8, 1968.

SN 308,968. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

KOSMIC KIDDLES

Owner of Reg. Nos. 814,385 and 851,840.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 8, 1968.

SN 310,019. William A. Borba, Sr., d.b.a. Flippo Manufacturing Co., South San Francisco, Calif. Filed Oct. 21, 1968.

FLIPPO

For Fishing Rods (Int. Cl. 28).
First use Sept. 3, 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 242,239. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed Mar. 30, 1966.

HOSEMASTER

For Fluid Operated Sprayers for Home and Garden Use—Namely, for Spraying Fertilizers, Insecticides, Weed Eradicators, Disinfectants, and Detergent-Type Materials; and Fluid Operated Tools for Home and Industrial Cleaning Operations—Namely, Dispensing Acids, Solvents, Detergent-Type Materials, Cleaning Compounds, and Solutions Thereof (Int. Cl. 7).
First use at least as early as Sept. 4, 1956.

SN 278,955. Dura Corporation, Oak Park, Mich. Filed Aug. 24, 1967.

NEW ORBIT

For Automobile Washing Equipment (Int. Cl. 7).
First use April 1966.

SN 280,532. All Products Company, Mineral Wells, Tex. Filed Sept. 18, 1967.

PAIR-A-MATIC

For Cable Splicer Machines and Parts Therefor (Int. Cl. 7).
First use July 31, 1967.

SN 282,891. Direct Image Corporation, Monterey Park, Calif. Filed Oct. 19, 1967.

SPEEDEE SLEEVES

Applicant disclaims the word "Sleeves."
For Covers for Rotary Printing Rollers (Int. Cl. 22).
First use on or about Sept. 7, 1967.

SN 284,244. Slifer Manufacturing Co., Inc., Humboldt, Iowa. Filed Nov. 6, 1967.

H. O. P.

Owner of Reg. No. 790,294.
For High Pressure Spray-Type Cleaning Machines Incorporating Power Operated Pumps Adapted for Handling Cleaning Fluids and the Like (Int. Cl. 7).
First use Jan. 30, 1964.

SN 288,875. Rawlen T. Smith, d.b.a. Special Products Co., Golden, Colo. Filed Jan. 15, 1968.

PLANE'O'MATIC

For Land Leveling Machinery (Int. Cl. 7).
First use on or about Jan. 14, 1964.

SN 290,579. Certus Maschinenbau GmbH, Augsburg, Germany. Filed Feb. 8, 1968.

SET PACKER

Applicant disclaims the word "Packer."
For Machines for Encasing and Uncasing of Merchandise (Int. Cl. 7).
First use Sept. 29, 1967; in commerce Oct. 3, 1967.

SN 293,795. Bigham Brothers, Lubbock, Tex. Filed Mar. 21, 1968.

CRUSTIVATOR

For Agricultural Cultivating Machines (Int. Cl. 7).
First use Mar. 18, 1968.

SN 299,026. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed May 24, 1968.

KAISER

Owner of Reg. Nos. 522,385, 818,497, and others.
For Machines for Placing Lids Upon, Closing and Otherwise Handling Aluminum Foil Containers for Food, and Can Body Making Machinery (Int. Cl. 7).
First use at least as early as June 1, 1963.

SN 299,949. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products, Wilmington, Del. Filed June 7, 1968.

Commando FIFTY

Owner of Reg. No. 705,210.
For Power-Operated Vehicles for Mounting Trailer Connections, Earth Moving Shovels Such as Backhoes, and Drop Hammers and the Like (Int. Cl. 12).
First use Jan. 5, 1968.

SN 299,950. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products, Wilmington, Del. Filed June 7, 1968.

Commando Express THIRTY

Owner of Reg. Nos. 550,665 and 705,210.
For Power-Operated Vehicles for Mounting Trailer Connections, Earth Moving Shovels Such as Backhoes, and Drop Hammers and the Like (Int. Cl. 12).
First use Mar. 1, 1968.

SN 299,951. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products, Wilmington, Del. Filed June 7, 1968.

Ottawa Commando SPOTMASTER

Owner of Reg. Nos. 550,665 and 705,210.
For Power-Operated Vehicles for Mounting Trailer Connections, Earth Moving Shovels Such as Backhoes, and Drop Hammers and the Like (Int. Cl. 12).
First use Mar. 1, 1968.

SN 300,066. Chemineer, Inc., Dayton, Ohio. Filed June 10, 1968.

REDIPAK

For Fluid Mixing Equipment—Namely, Impellers and Agitators for Industrial Blending and Mixing Operations (Int. Cl. 7).
First use Apr. 19, 1968.

SN 300,091. Medevco of Los Alamitos, Inc., Los Alamitos, Calif. Filed June 10, 1968.



For Coin Operated Shoe Shining Machine (Int. Cl. 9).
First use Apr. 2, 1968.

SN 300,598. The International Silver Company, Meriden, Conn. Filed June 17, 1968.

INSPIRATION

For Flatware Made of Non-Precious Material (Int. Cl. 8).
First use at least as early as Apr. 8, 1968.

SN 310,994. Wallace-Murray Corporation, d.b.a. Heller Tool Division, and Simonds Saw and Steel Division, Fitchburg, Mass. Filed Oct. 31, 1968.

SUPER DUTY

Owner of Reg. No. 252,686.
For Hand Tools—Namely, Hammers, Hatchets, and Picks (Int. Cl. 8).
First use January 1964 on hammers.

Class 24—Laundry Appliances and Machines

SN 298,687. Borg-Warner Corporation, Chicago, Ill. Filed May 21, 1968.

VHQ

Owner of Reg. No. 836,272.
For Washing Machines and Clothes Dryers (Int. Cl. 7).
First use on or prior to Mar. 7, 1966.

Class 26—Measuring and Scientific Appliances

SN 251,854. General Signal Corporation, Rochester, N.Y. Filed Aug. 8, 1966.

Speed Frate

For Railroad Yard Classification Equipment—Namely, Railroad Car Retarders Controlled Electrically, Pneumatically, or Hydraulically by Measuring Equipment and Components Thereof (Int. Cl. 9).
First use July 14, 1966.

SN 281,116. Raytek, Inc., Mountain View, Calif. Filed Sept. 25, 1967.

THERMALERT

For Radiometric Thermometers for Measuring Heat Radiation (Int. Cl. 9).
First use Aug. 16, 1967.

SN 283,007. W. H. Joens & Co. G.m.b.H., Dusseldorf, Germany. Filed Oct. 20, 1967.



Owner of German Reg. No. 827,354, dated Dec. 13, 1966.
For Indicating Instruments, Measuring Stations, Portable Test Instruments, Point and Continuous Line Recorders, Controllers, Feedbacks, Servomotors, Thermostats, Thermocouples, Constant Current Sources, Inductive Signal Transmitters, Amplifiers, Quantity Meters, Resistance Transmitters, B.t.u. Meters, and Gas Detectors (Int. Cl. 9).

Class 27 — Horological Instruments

SN 292,107. Kabushiki Kaisha Hattori Tokeiten, Chuo-ku, Tokyo, Japan. Filed Feb. 28, 1968.



Owner of Japanese Reg. No. 583,309, dated Mar. 7, 1962; and U.S. Reg. Nos. 686,264 and 687,955.
For Watches, Clocks, and Parts Thereof (Int. Cl. 14).

SN 295,925. Endura Time Corporation, New York, N.Y. Filed Apr. 18, 1968.

ETIQUETTE

For Clocks; Watches; Movements; and Parts of Said Goods (Int. Cl. 14).
First use Apr. 10, 1968.

Class 28 — Jewelry and Precious-Metal Ware

SN 300,470. Medicated Products Co., d.b.a. Princess Pride Creations, Chicago, Ill. Filed June 14, 1968.

PPC

For Rings, Pins, Pendants, Bracelets, and Earrings (Int. Cl. 14).
First use June 1, 1953.

SN 301,030. Bamet Jewelry, Inc., New York, N.Y. Filed June 21, 1968.

BX

For Men's and Women's Rings of Precious Metal (Int. Cl. 14).
First use Mar. 15, 1968.

Class 29 — Brooms, Brushes, and Dusters

SN 300,127. South Eastern Cordage Co., Cleveland, Ohio. Filed June 10, 1968.

THE TRAPPER

For Dust Mops (Int. Cl. 21).
First use in January 1968.

Class 31 — Filters and Refrigerators

SN 249,016. International Cold Storage, Inc., Wichita, Kans. Filed June 27, 1966.

FIBRA FOAM

Applicant disclaims the word "Foam" apart from the mark as shown.
For Self-Contained Cold Storage Plants Mountable in Use on the Ground, a Floor or a Platform, and Having Insulated Walls, and Roof Structure Composed of a Combination of Layers of Materials—Namely, Aluminum Siding, Plastic Film, Plastic Foam, Glass Fibers Batting, and Outer Sheet Steel (Int. Cl. 11).
First use on or about May 11, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 287,681. Sunbeam Corporation, Chicago, Ill. Filed Dec. 27, 1967.

CAPE COD

For Humidifiers and Parts Therefor (Int. Cl. 11).
First use Aug. 10, 1967.

SN 298,330. Hadco Products, Inc., Littlestown, Pa. Filed May 16, 1968.

CRAFTLITE

For Gas Lighting Fixtures Serving an Ornamental as Well as a Functional Purpose (Int. Cl. 11).
First use Apr. 5, 1967.
Subj. to Intf. with SN 271,719.

SN 303,183. Midland-Ross Corporation, Cleveland, Ohio. Filed July 19, 1968.

RADICATOR

For Trash and Garbage Incinerators (Int. Cl. 11).
First use on or about Mar. 29, 1968.

SN 303,205. The Tappan Company, Mansfield, Ohio. Filed July 19, 1968.

MIRA-COOL

For Cooking Ovens (Int. Cl. 11).
First use on or about Apr. 22, 1968.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 311,797. J. E. Rhoads & Sons, Inc., Wilmington, Del. Filed Nov. 12, 1968.

POLYFOOD

For Rubber Conveyor Belt (Int. Cl. 7).
First use Oct. 29, 1968.

SN 311,798. J. E. Rhoads & Sons, Inc., Wilmington, Del. Filed Nov. 12, 1968.

HY-WHITE

For Rubber Conveyor Belt (Int. Cl. 7).
First use Oct. 29, 1968.

Class 36 — Musical Instruments and Supplies

SN 287,823. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka Prefecture, Japan. Filed Dec. 29, 1967.

PANASONIC

For Electronic Organs (Int. Cl. 15).
First use June 25, 1966; in commerce June 25, 1966.

SN 293,174. Electro Learner Corporation, Wilmington, Del., assignee of Arthur R. Schmoyer, Potomac, Md. Filed Mar. 13, 1968.

Prompt-A-cord

For Musical Instrument—Namely, an Organ, Featuring Instructional Indicators Visually Associated With Individual Keys of a Keyboard (Int. Cl. 15).
First use Sept. 24, 1967.

SN 298,426. Cloverlay, Inc., Philadelphia, Pa. Filed May 17, 1968.



For Phonograph Records (Int. Cl. 9).
First use Mar. 2, 1968.

SN 305,121. Gam Enterprises, Inc., Brooklyn, N.N.Y. Filed Aug. 14, 1968.



Applicant disclaims the word "Tone" apart from the mark as shown.
For Drum Mutes (Int. Cl. 15).
First use June 11, 1968.

SN 305,545. Virgil Leroy Hume, d.b.a. Roy Kelly, Fort Worth, Tex. Filed Aug. 20, 1968.

BONANZA

For Phonograph Records (Int. Cl. 9).
First use Sept. 19, 1966.

SN 311,733. American Association of Recorded Talent, Inc., d.b.a. Amarent Records, Los Angeles, Calif. Filed Nov. 12, 1968.



No claim is made to the representation of a phonograph record, apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use Oct. 22, 1968.

Class 37 — Paper and Stationery

SN 297,459. United Fruit Company, Boston, Mass. Filed May 6, 1968.

BANAVAC

Owner of Reg. No. 829,204.
For Sheet Packaging Film for Produce (Int. Cl. 16).
First use Apr. 11, 1968.

Class 38 — Prints and Publications

SN 263,903. Ford Motor Company, Dearborn, Mich. Filed Feb. 3, 1967.

AUTO TECH

For Training Manuals and Supplements for Use in Instructing Installation and Service Personnel (Int. Cl. 16).
First use on or before May 15, 1962.

SN 277,081. Gloria Stavers, New York, N.Y. Filed July 28, 1967.

GEEGEE

For Newsletter (Int. Cl. 16).
First use May 23, 1967.

SN 283,436. Edwill Publications, Inc., New York, N.Y. Filed Oct. 26, 1967.

GERIATRIC TIMES

For Monthly Newspaper Devoted to Matters Concerning Medical Care of the Aged (Int. Cl. 16).
First use Sept. 5, 1967.

SN 288,312. The Harvest Publishing Company, Cleveland, Ohio. Filed Jan. 8, 1968.

PEST CONTROL

For Magazine Published Monthly (Int. Cl. 16).
First use July 1, 1949.

SN 289,573. Caddylak Systems, Inc., Westbury, N.Y. Filed Jan. 25, 1968.

EXECUTIVE SHOPPER

For Catalogues Relating to Information of Products To Be Purchased (Int. Cl. 16).
First use June 1967.

SN 294,623. Handler-Tamarkin Publishing, Chicago, Ill. Filed Apr. 1, 1968.

GENERATION

For Magazine Devoted to Business and Stocks, Published From Time to Time (Int. Cl. 16).
First use Aug. 24, 1967.

SN 297,547. Famous Artists Schools, Inc., Westport, Conn. Filed May 7, 1968.

FAMOUS ARTISTS MAGAZINE

The word "Magazine" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 636,967, 797,917, and others.
For Serially Published Magazine (Int. Cl. 16).
First use at least as early as October 1952.

SN 306,039. Success Motivation Institute, Inc., Waco, Tex. Filed Aug. 27, 1968.

EXECUTIVE MOTIVATION PROGRAM

Without relinquishing any common law rights therein, the wording "Executive Motivation Program" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 722,587, 794,469, and others.
For Educational and Training Courses Comprising Books, Booklets, and Related Printed Instructional Material, and Sound Recordings Pertaining Thereto (Int. Cl. 16).
First use at least as early as Apr. 10, 1968.

SN 308,657. HDB Publishing Co., Inc., New York, N.Y. Filed Oct. 2, 1968.

ZANY

For Magazine (Int. Cl. 16).
First use July 17, 1968.

Class 39—Clothing

SN 271,394. Well Made Pants Co., Inc., Baltimore, Md. Filed May 12, 1967.

PLEET International

For Trousers (Int. Cl. 25).
First use in or about November 1966.

SN 277,366. Modern Shoe Company, St. Louis, Mo. Filed Aug. 2, 1967.

SAVINI

For Men's Shoes (Int. Cl. 25).
First use January 1960.

SN 282,307. Pete Uram Sales, Wyandotte, Mich. Filed Oct. 11, 1967.

FIRST Tee

For Sweaters (Int. Cl. 25).
First use Sept. 19, 1967.

SN 282,493. Twin Togs Creations Inc., New York, N.Y. Filed Oct. 13, 1967.



The lining shown on the drawing serves the purpose of reproducing the lining shown on the specimens.
For Men's, Women's, and Children's Shirts (Int. Cl. 25).
First use on or about Sept. 1, 1960.

SN 282,603. M. Nirenberg Sons, Inc., New York, N.Y. Filed Oct. 16, 1967.

MIRA-CLEAN

For Men's Shirts (Int. Cl. 25).
First use Sept. 25, 1967.

SN 288,817. Hayward Marum, Inc., Ipswich, Mass. Filed Jan. 15, 1968.

THE MARUM MAN

Owner of Reg. Nos. 561,979, 763,986, and others.
For Men's Hosiery (Int. Cl. 25).
First use Dec. 15, 1967.

SN 289,126. Rooster, Inc., Philadelphia, Pa. Filed Jan. 18, 1968.

TYS BY ROOSTER

The word "Tys" is disclaimed apart from the mark as shown.
For Men's Ties (Int. Cl. 25).
First use Jan. 4, 1968.

SN 289,895. Hoover Manufacturing & Sales Co., Inc., Woodside, N.Y. Filed Jan. 30, 1968.

HOOVER FASHIONS

Applicant disclaims the word "Fashions," separate and apart from the mark. Owner of Reg. No. 517,080.
For Ladies' Uniforms (Int. Cl. 25).
First use Oct. 4, 1967.

SN 290,384. Flexnit Company, Inc., New York, N.Y. Filed Feb. 6, 1968.

BACK HELP

For Girdles (Int. Cl. 25).
First use Jan. 20, 1968.

SN 290,507. Mirsa Italian Knitwear Ltd., New York, N.Y. Filed Feb. 7, 1968.

MIRSA

For Women's Knitted Apparel—Namely, Two and Three Piece Suits, Dresses, Coats, Separates (Sweaters, Slacks, Skirts); and Men's Knitted Shirts and Blazer Jackets (Int. Cl. 25).
First use March 1937.

SN 290,968. Pic 'n Pay Stores, Inc., Matthews, N.C. Filed Feb. 13, 1968.

STIX 'N STONES

For All Types of Children's Shoes, Including Oxfords, Slip-Ons, Sandals, Little Girls' Strap Style Shoes, and Patent Leather Shoes (Int. Cl. 25).
First use July 1966.

SN 291,092. Parklane Hosiery Company, Inc., Great Neck, N.Y. Filed Feb. 14, 1968.

parklane

For Ladies' Hosiery (Int. Cl. 25).
First use June 1, 1967.

SN 291,828. Barringer Knitting Mills Incorporated, Philadelphia, Pa. Filed Feb. 26, 1968.

Jane Roberts

The name "Jane Roberts" is fanciful and does not refer to any living individual.
For Ladies' and Women's Sweaters (Int. Cl. 25).
First use June 11, 1956.

SN 293,701. ESB Incorporated, Philadelphia, Pa. Filed Mar. 20, 1968.

WILLSON JET-CAP

The word "Cap" is disclaimed apart from the mark as shown.
For Safety Caps (Int. Cl. 9).
First use Oct. 20, 1967.

SN 297,537. Commonwealth Shoe & Leather Co., Inc., d.b.a. London Character Shoes, Whitman, Mass. Filed May 7, 1968.

London Character "Bootique"

Owner of Reg. Nos. 136,518, 831,109, and others.
For Shoes (Int. Cl. 25).
First use Apr. 5, 1968; 1907 as to "London"; May 24, 1919, as to "London Character"; Mar. 21, 1948, as to "London Character" with representation of the lion design.

SN 297,610. Spartans Industries, Inc., New York, N.Y. Filed May 7, 1968.

Minarelli

The name "Minarelli" is fanciful, and is not intended to identify or be identified with any living individual.
For Men's Apparel—Namely, Sweaters and Knit Shirts (Int. Cl. 25).
First use May 1, 1963.

SN 299,758. Cupid Foundations, Inc., New York, N.Y. Filed June 5, 1968.

Cupid

For Foundation Garments—Namely, Girdles (Int. Cl. 25).
First use 1944.

SN 302,852. Malia Imports, Ltd., Honolulu, Hawaii. Filed July 16, 1968.

Sandwich Isles

For Men's Clothing—Namely, Dinner Jackets, Sport Jackets, Casual Jackets, Shirts, Vests, and Neckwear (Int. Cl. 25).
First use June 12, 1968.

SN 304,681. First Virginia Corporation, Philadelphia, Pa. Filed Aug. 8, 1968.

SPREE-TOGS

Applicant disclaims the word "Togs" apart from the mark as shown. Owner of Reg. No. 440,939.
For Children's Outer Wearing Apparel—Namely, Trousers, Slacks, Jodhpurs, Shorts, Play Overalls, Toddler Overalls and Jackets, and Sport Jackets (Int. Cl. 25).
First use June 25, 1946.

SN 304,733. Arthur R. Altieri, d.b.a. Sunland Sandals, San Luis Obispo, Calif. Filed Aug. 9, 1968.

OLD MISSION

For Sandals (Int. Cl. 25).
First use on or about Mar. 30, 1968.

SN 311,204. Blair Fashions, Inc., Chicago, Ill. Filed Nov. 4, 1968.

CUPCAKE

For Pantie Girdle (Int. Cl. 25).
First use Nov. 29, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 299,408. Kemtech Incorporated, Dorchester, Mass. Filed May 31, 1968.

HAPPY CURL

For Hair Rollers (Int. Cl. 26).
First use at least as early as May 15, 1968.

SN 300,143. V.I.P. International Scientific Corp., New York, N.Y. Filed June 10, 1968.

FLEXA-BASE

For Toupees and Hairpieces (Int. Cl. 26).
First use Apr. 2, 1968.

Class 41—Canes, Parasols, and Umbrellas

SN 298,600. L. P. Henryson & Co., Inc., New York, N.Y. Filed May 20, 1968.



Applicant disclaims the words "Windproof Umbrella" and the representation of the umbrella apart from the mark as shown. The person shown in the drawing is fictitious.
For Umbrellas (Int. Cl. 18).
First use Oct. 3, 1945.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 265,121. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, assignee of Stevcoknit Textile Co., New York, N.Y. Filed Feb. 20, 1967.

CHEVERRA

For Fabric Piece Goods of Polyester Fibers for Use in Making Garments (Int. Cl. 24).
First use Feb. 8, 1967; in commerce Feb. 8, 1967.

SN SN 286,265. William Heller, Inc., New York, N.Y. Filed Dec. 5, 1967.

WONDERELLA

For Knit Fabrics Used in Making Ladies' Outer Wear Apparel (Int. Cl. 24).
First use Nov. 9, 1967.

SN 288,184. Berroco SSM Corporation, New York, N.Y. Filed Jan. 5, 1968.

Berroco's Accroché

Applicant disclaims the word "Accroché" apart from its use in connection with the mark.
For Knit Fabrics for Ladies' Suits and Dresses (Int. Cl. 24).
First use Nov. 30, 1967.

SN 291,611. Arthur H. Johnson, d.b.a. Strike-Mor Company, Milwaukee, Wis. Filed Feb. 21, 1968.

STRI-KING
COLORFUL ACOUSTICAL DRAPES

Applicant disclaims the words "Colorful," "Acoustical," and "Drapes."
For Acoustical Drapes, Made of Fabrics Such as Burlap, Fibre Glass, or Materials of Similar Nature Which Have Sound Absorbing Qualities (Int. Cl. 24).
First use May 1, 1967.

SN 292,810. J. C. Penney Company, New York, N.Y. Filed Mar. 8, 1968.

OXHIDE

Owner of Reg. Nos. 253,832 and 303,405.
For Fabrics for Making Into Slacks, Shirts, Overalls, Men's and Boys' Work Clothes, and the Like (Int. Cl. 24).
First use Feb. 2, 1968.

SN 294,060. Lively Knits, Inc., Fayetteville, N.C. Filed Mar. 25, 1968.

LIVELY-KNITS

For Knitted Fabrics in the Piece for Use in Making Women's Dresses, Suits, Jackets, Bathing Suits; and Men's Slacks and Suits, and the Like (Int. Cl. 24).
First use Jan. 15, 1968.

SN 302,128. Regal Rugs, Inc., North Vernon, Ind. Filed July 5, 1968.

GENESIS

For Rugs (Int. Cl. 27).
First use June 1968.

Class 44—Dental, Medical, and Surgical Appliances

SN 281,457. Conrac Corporation, New York, N.Y. Filed Sept. 29, 1967.

TURNER

For Embalming Machines for Forcing Fluid Into the Blood Vessel System of a Cadaver (Int. Cl. 10).
First use 1937.

SN 282,181. Endura Appliance Corporation, Freeport, N.Y. Filed Oct. 10, 1967.

Endura-dent

For Water Pulsed Dental Massage and Cleaning Device (Int. Cl. 10).
First use Mar. 7, 1967.

SN 284,320. Sani-Pac Corporation, New York, N.Y. Filed Nov. 7, 1967.



Applicant disclaims exclusive rights in the representation of the goods apart from the mark as shown, without waiving and without prejudice to any rights at common law. Owner of Reg. No. 859,371.
For Incontinent Pants (Int. Cl. 5).
First use Apr. 13, 1960.

SN 285,274. Verlam Distributors, Inc., d.b.a. Jack Frost Laboratories, Fort Lauderdale, Fla. Filed Nov. 20, 1967.

E-Z FREEZ

For Instant Cold Pack, Primarily for Medical Purposes (Int. Cl. 5).
First use on or about Feb. 1, 1963.

SN 288,582. Ira V. Ainsworth, El Paso, Tex. Filed Jan. 11, 1968.

BANDMASTER

For Dental Matrix Band Retainer and Bands Therefor (Int. Cl. 10).
First use Aug. 5, 1967.

SN 293,172. Prak-T-Kal Corporation, Elizabeth, N.J. Filed Mar. 13, 1968.

HUMITRON

For Humidifier-Vaporizer for Medical Use (Int. Cl. 10).
First use Feb. 16, 1968.

SN 307,196. Delga Enterprises Inc., Franklin Square, N.Y. Filed Sept. 12, 1968.

SWIV-L-EZE

For Dental Evacuation Hand Pieces (Int. Cl. 10).
First use July 29, 1968.

SN 307,340. Merck & Co., Inc., Rahway, N.J. Filed Sept. 13, 1968.

TURBINAIRE

Owner of Reg. No. 759,939.
For Medical Device for the Intranasal Application of Medicines (Int. Cl. 10).
First use Jan. 7, 1963.

SN 307,412. Belvedere Products, Inc., Belvidere, Ill. Filed Sept. 16, 1968.

CHRONA

For Hair Dryers of the Type Used in Beauty Parlors (Int. Cl. 7).
First use Mar. 2, 1968.

SN 307,510. Svend Schrøder, d.b.a. the firm Svend Schrøder, Rodovre, Denmark. Filed Sept. 16, 1968.

ANTIGON

Owner of Danish Reg. No. 1,157, dated Apr. 14, 1967.
For Medical Apparatus—Namely, Intra-Uterine Contraceptive Devices (Int. Cl. 10).
First use June 2, 1966; in commerce Dec. 22, 1966.

SN 307,558. Cardinal Instrument Corporation, Cambridge, Mass. Filed Sept. 17, 1968.

CARDINAL

For Medical Instruments—Namely, Automatic Ear Syringes (Int. Cl. 10).
First use May 10, 1968.

SN 307,646. Hirtz & Co., Kommanditgesellschaft, Cologne (Rhine), Germany. Filed Sept. 18, 1968.

Klimamaske

Owner of U.S. Reg. No. 727,832.
For Inhalators (Int. Cl. 10).
First use Mar. 10, 1958; in commerce Oct. 31, 1959.

SN 308,367. Fuller Laboratories, Inc., Eden Prairie, Minn. Filed Sept. 27, 1968.

GRASONHOFF

For Swabs Used in Medical Applications (Int. Cl. 5).
First use Sept. 12, 1968.

SN 309,356. C. R. Bard, Inc., Murray Hill, N.J. Filed Oct. 10, 1968.



The mark consists of a stylized design of a catheter with needle within a circle. Applicant disclaims the representation of the catheter end, apart from the mark as shown.
For Intravenous Catheterization Sets (Int. Cl. 10).
First use Sept. 19, 1968.

SN 309,481. Right-Gard Corporation, Philadelphia, Pa. Filed Oct. 11, 1968.

VACU-PRESS

For Machines for Forming Plastic Dental Transfers and Waxing Copings, Waxing Cusps and Linguals, Temporary Splints, Impression Trays, Base Plates, Teeth Guards, Retainers, Surgical Masks, Periodontal Gloves, and Plastic Discs for Use in Said Machines (Int. Cl. 10).
First use Sept. 20, 1968.

SN 311,171. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Nov. 1, 1968.

PANCENTRIC

For Head Positioning Device for Use in Radiography (Int. Cl. 10).
First use August 1968.

SN 311,195. Williams Gold Refining Company Incorporated, Buffalo, N.Y. Filed Nov. 1, 1968.

PYROCOLOR

Owner of Reg. Nos. 802,788, 832,602, and others.
For Coloring Materials for Use in the Preparation of Aesthetic Dental Restorations (Int. Cl. 5).
First use on or about June 19, 1968.

Class 45—Soft Drinks and Carbonated Waters

SN 281,587. James V. Legg, d.b.a. J & R Root Beer and Rocketburger Drive-In, Abilene, Tex. Filed Oct. 2, 1967.

J & R ROOT BEER

Applicant disclaims any right to the registration of the words "Root Beer."
For Root Beer (Int. Cl. 32).
First use Apr. 19, 1966.

SN 291,963. Canada Dry Corporation, New York, N.Y., assignee of Canada Dry Corporation, New York, N.Y. Filed Feb. 27, 1968.

ZEBRA STRIPE

For Carbonated Beverages Used as Soft Drinks and as Mixers (Int. Cl. 32).
First use in or before September 1967.

Class 46 — Foods and Ingredients of Foods

SN 262,941. Grace, Kennedy & Co. (Canada) Ltd., Montreal, Quebec, Canada. Filed Jan. 20, 1967.

GRACE BRAND

The word "Brand" is disclaimed.
For Canned Fruits and Vegetables (Int. Cl. 29).
First use July 13, 1961; in commerce July 13, 1961.
Subj. to Intf. with SN 280,904.

SN 272,621. Mother's Cake & Cookie Co., Oakland, Calif. Filed May 29, 1967.

MOTHER'S
Whimsies

Owner of Reg. Nos. 577,159, 852,851, and others.
For Cookies (Int. Cl. 30).
First use May 11, 1967.

SN 281,824. SCM Corporation, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Oct. 4, 1967.

DURKO

For Shortening Made From Meat Fats and Vegetable Oils (Int. Cl. 29).
First use at least by July 5, 1956.

SN 285,027. Kitchens of Sara Lee, Inc., Deerfield, Ill. Filed Nov. 16, 1967.

SARA LEE

Owner of Reg. Nos. 592,511 and 623,191.
For Bakery Goods—Namely, Coffee Cakes, Cheese Cakes, Dessert Cakes, Layer Cakes, Pound Cakes, Dinner Rolls, Sweet Rolls, Pastries, and Brownies; Frozen Prepared Foods—Namely, Chicken and Noodles With Vegetables, Chicken Casserole With Vegetables, Chicken With Mushrooms and Water Chestnuts in Sauce, Beef Stroganoff, Beef Casserole, Shrimp Creole, Macaroni With Cheese and Sauce, and Dumplings in Cream Sauce (Int. Cls. 29 and 30).
First use on or about Mar. 19, 1944.

SN 285,758. Wechsler Coffee Corporation, Bronx, N.Y., by change of name from Ph. Wechsler & Son, Inc., Bronx, N.Y. Filed Nov. 28, 1967.

WECHSLER

For Coffee (Int. Cl. 30).
First use as early as 1922.

SN 285,759. Wechsler Coffee Corporation, Bronx, N.Y., by change of name from Ph. Wechsler & Son, Inc., Bronx, N.Y. Filed Nov. 28, 1967.



For Coffee (Int. Cl. 30).
First use June 29, 1967.

SN 285,760. Wechsler Coffee Corporation, Bronx, N.Y., by change of name from Ph. Wechsler & Son, Inc., Bronx, N.Y. Filed Nov. 28, 1967.



For Coffee (Int. Cl. 30).
First use June 29, 1967; as early as 1922 as to "Wechsler."

SN 287,037. National Tea Co., Chicago, Ill. Filed Dec. 15, 1967.



Owner of Reg. Nos. 444,626, 827,931, and others.
For Milled Flour Used in Domestic Baking (Int. Cl. 30).
First use Dec. 14, 1965.

SN 289,674. General Foods Corporation, White Plains, N.Y. Filed Jan. 26, 1968.

MAXWELL HOUSE



Owner of Reg. Nos. 102,050, 856,142, and others.
For Coffee (Int. Cl. 30).
First use Oct. 31, 1967.

SN 291,584. Clement Pappas & Co., Cedarville, N.J. Filed Feb. 21, 1968.

COMO BRAND

The word "Brand" is disclaimed.
For Canned Cranberry Sauce, Canned Tomatoes, and Canned Tomato Puree (Int. Cls. 29 and 30).
First use Aug. 21, 1952.
Subj. to Intf. with SN 250,362 and SN 278,761.

SN 294,583. Bristol-Myers Company, New York, N.Y. Filed Apr. 1, 1968.

PATH FINDER

For Dietary Supplement in the Form of a Cookie (Int. Cl. 5).
First use Mar. 6, 1968.

SN 295,241. Frederick F. Lowenfels & Son, New York, N.Y. Filed Apr. 9, 1968.

CONTIN-U-WIP

For Butter (Int. Cl. 29).
First use Mar. 1, 1968.

SN 301,674. Dellwood Dairy Co., Inc., Yonkers, N.Y. Filed July 1, 1968.



For Fluid Skim Milk (Int. Cl. 29).
First use Mar. 1, 1968.

SN 302,124. Prince Macaroni Manufacturing Company, Lowell, Mass. Filed July 5, 1968.

4 SQUARE

Owner of Reg. Nos. 789,811 and 807,948.
For Spaghetti and Macaroni (Int. Cl. 30).
First use Sept. 12, 1962.

SN 303,224. Florida Bonded Packing Co., Inc., Jacksonville, Fla. Filed July 22, 1968.

CUBAMAR

For Canned Bonito Fish (Int. Cl. 29).
First use on or about Aug. 15, 1967.

SN 303,437. C. Pappas Company Inc., Boston, Mass. Filed July 23, 1968.

SANTA LUCIA

For Salad Oil (Int. Cl. 29).
First use December 1923.

SN 303,476. General Mills, Inc., Minneapolis, Minn. Filed July 24, 1968.

FRACKERS

For Vegetable Protein Based Ready-To-Eat Food in the Form of a Bar (Int. Cl. 30).
First use on or prior to Aug. 9, 1967.

SN 303,573. General Mills, Inc., Minneapolis, Minn. Filed July 25, 1968.

NATCHOS

For Potato Derived Ready-To-Eat Snack (Int. Cl. 30).
First use on or prior to Nov. 3, 1967.

SN 306,040. York Bar Bell Company, Inc., d.b.a. York Barbell Co., and A Bob Hoffman Product, York, Pa. Filed Aug. 27, 1968.

LECITOL

For Soy Bean-Lecithin Dietary Food Supplement (Int. Cl. 5).
First use July 25, 1968.

SN 311,440. General Mills, Inc., Minneapolis, Minn. Filed Nov. 6, 1968.

EARLY DEW

For Dehydrated Onions (Int. Cl. 29).
First use on or prior to Oct. 4, 1967.

SN 311,655. Sahara Packing Company, Brawley, Calif. Filed Nov. 8, 1968.

Sahara

For Fresh Vegetables (Int. Cl. 31).
First use Oct. 19, 1968.

SN 311,656. Sahara Packing Company, Brawley, Calif. Filed Nov. 8, 1968.

Sphinx

For Fresh Vegetables (Int. Cl. 31).
First use Oct. 19, 1968.

SN 311,657. Sahara Packing Company, Brawley, Calif. Filed Nov. 8, 1968.

Pharaoh

For Fresh Vegetables (Int. Cl. 31).
First use Oct. 23, 1968.

Class 47 — Wines

SN 292,492. Monarch Wine Co., Inc., Brooklyn, N.Y. Filed Mar. 5, 1968.

PEACOCK

Owner of Reg. No. 830,295.
For Champagne (Int. Cl. 33).
First use Feb. 20, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 308,444. Wellington Importers, Ltd., d.b.a. Wetherby Locke & Co. Ltd., Hauppauge, N.Y. Filed Sept. 30, 1968.

HICKEY RIGGS

The name "Hickey Riggs" is fanciful.
For Scotch Whisky (Int. Cl. 33).
First use Aug. 16, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 287,536. Femia Gesellschfat fur Kosmetische und Pharmazeutische Erzeugnisse m.b.H., Berlin-Charlottenburg, Germany. Filed Dec. 26, 1967.

FEMIA

Owner of German Reg. No. 560,751, dated Feb. 26, 1942.
For Skin Creams, Skin Lotions, Face Powder, Rouge, Lipsticks, Perfumes, and Eyebrow Pencils (Int. Cl. 3).

SN 290,282. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Feb. 5, 1968.

HAPPY FACE
FACIAL WASHING CREAM

No claim is made to any exclusive right in the words "Facial Washing Cream" apart from the mark as shown. The drawing is lined for the colors red and pink. Owner of Reg. No. 796,120.
For Facial Washing Cream (Int. Cl. 3).
First use Jan. 10, 1968.

SN 294,276. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Mar. 27, 1968.

HAPPY FACE

Owner of Reg. No. 796,120.
For Facial Washing Cream (Int. Cl. 3).
First use Jan. 10, 1968.

SN 295,271. The Wella Corporation, Englewood, N.J. Filed Apr. 9, 1968.

GENTLE SET

Applicant disclaims the word "Set" apart from the mark as shown. Owner of Reg. Nos. 717,669 and 807,365.
For Hair Setting and Hair Conditioning Lotions (Int. Cl. 3).
First use Apr. 3, 1968.

SN 296,638. Bristol-Myers Company, New York, N.Y. Filed Apr. 26, 1968.

DISCREET

Owner of Reg. Nos. 433,210, 809,663, and others.
For Depilatory Lotion (Int. Cl. 3).
First use Mar. 27, 1968.

SN 297,285. The Fuller Brush Company, East Hartford, Conn. Filed May 3, 1968.

HOUSE OF FULLER

Owner of Reg. Nos. 143,340, 815,964, and others.
For Bath Crystals, Bath Oil, Cake Eyeliner, Cream Make-Up Base, Body Sachet, Dusting Powder, Eye Make-Up Remover Oil, Eye Shadow, Cologne, Gel Hairdressing, Lipsticks, Mascara, Perfume, Personal Deodorants, Pressed Powder, and Powder Filled Mitt (Int. Cls. 3 and 5).
First use January 1963.

SN 297,378. Bristol-Myers Company, New York, N.Y. Filed May 6, 1968.

TELEGRAM

For After Shave and Men's After Bath Body Rub (Int. Cl. 3).
First use Apr. 1, 1968.

SN 298,115. Essex Chemical Corporation, Clifton, N.J. Filed May 14, 1968.



For Hair Tonic, After-Shave Lotion, Styling Lotion, and Hair Conditioner (Int. Cl. 3).
First use Jan. 10, 1968.

SN 298,798. Bristol-Myers Company, New York, N.Y. Filed May 22, 1968.

STROBE

For After Bath Body Rub and After Shave Lotion (Int. Cl. 3).
First use Apr. 1, 1968.

SN 300,245. Avon Products, Inc., New York, N.Y. Filed June 12, 1968.

CONTENTMENT

For Dusting Powder, Bath Oil, Cologne, and Perfume (Int. Cl. 3).
First use May 13, 1968.

SN 300,809. Estee Lauder Incorporated, New York, N.Y. Filed June 19, 1968.

CRYSTAL PAVILION

For Cosmetic Skin Lotion (Int. Cl. 3).
First use June 11, 1968.

SN 301,155. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

HUMORESQUE

For Perfume, Talcum Powder, Dusting Powder, and Cologne (Int. Cl. 3).
First use May 27, 1968.

SN 301,163. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MAINSTREAM

For After Shave Lotion, and Talcum Powder (Int. Cl. 3).
First use May 27, 1968.

SN 310,390. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 24, 1968.

HAND 'N HAND

Owner of Reg. No. 816,730.
For Hand Lotion (Int. Cl. 3).
First use June 26, 1968.

Class 52 — Detergents and Soaps

SN 286,505. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Dec. 8, 1967.

CLEVE-TEK ALKA-14

Owner of Reg. Nos. 787,402, 787,646, and 787,940.
For Cleaner for Cleaning Walls or Floors (Int. Cl. 3).
First use Oct. 17, 1965.

SN 286,506. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Dec. 8, 1967.

CLEVE-TEK

Owner of Reg. Nos. 787,402, 787,646, and 787,940.
For Cleaner for Cleaning Walls or Floors (Int. Cl. 3).
First use Oct. 17, 1965.

SN 286,507. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Dec. 8, 1967.

ALKA-14

Owner of Reg. Nos. 787,402, 787,646, and 787,940.
For Cleaner for Cleaning Walls or Floors (Int. Cl. 3).
First use Oct. 17, 1965.

SN 297,286. The Fuller Brush Company, East Hartford, Conn. Filed May 3, 1968.

HOUSE OF FULLER

Owner of Reg. Nos. 143,340, 815,964, and others.
For Hair Shampoos and Toilet Soaps (Int. Cl. 3).
First use March 1965.

SN 299,806. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed June 5, 1968.

PENDULUM

For Liquid Cleaner Especially Suitable for Use in the Food Serving Industry (Int. Cl. 3).
First use Mar. 29, 1968.

SN 300,244. Avon Products, Inc., New York, N.Y. Filed June 12, 1968.

CONTENTMENT

For Toilet Soap (Int. Cl. 3).
First use May 13, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 274,712. Compata Incorporated, Tarzana, Calif. Filed June 26, 1967.

COMPATA

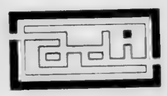
For Computer Design and Application Consulting Services (Int. Cl. 42).
First use Oct. 1, 1965.

SN 279,681. Ruby Red's, Inc., New Orleans, La. Filed Sept. 5, 1967.



"Ruby Red's" is a fictitious person.
For Restaurant and Bar Services Featuring Food and Drink (Int. Cl. 42).
First use December 1962.

SN 286,240. American Dynamics International, Inc., Fort Lauderdale, Fla. Filed Dec. 5, 1967.



For Engineering Services Relating to Gas Leakage Detection in the Fuel Gas Transmission Industry (Int. Cl. 42).
First use Sept. 1, 1967.

SN 287,146. The R. L. Clark Corp., Pittsburgh, Pa. Filed Dec. 18, 1967.



For Blast Furnace and Steel Plant Engineering (Int. Cl. 42).
First use July 10, 1967.

SN 294,699. Tube Transit Corporation, Palo Alto, Calif. Filed Apr. 1, 1968.



For Engineering and Consulting Services in the Design, Construction, and Operation of Ground Transportation Systems (Int. Cl. 42).
First use Aug. 11, 1967.

SN 310,961. Dear's Country House, Inc., Terry, Miss. Filed Oct. 31, 1968.



For Serving and Dispensing Foods and Beverages in Restaurants (Int. Cl. 42).
First use on or about Sept. 17, 1968; on or about Aug. 17, 1967, as to "Dear's Country House."

Class 101 — Advertising and Business

SN 294,150. Ascus Communication and Services Center, Inc., Hershey, Pa. Filed Mar. 26, 1968.

ASCUS FILE

For Collection and Dissemination of Information on Qualified Candidates for Employment in the Field of Education (Int. Cl. 35).
First use Feb. 15, 1968.

SN 303,468. Applied Computer Technology, Inc., Silver Spring, Md. Filed July 24, 1968.



For Computer Programming Services (Int. Cl. 35).
First use Aug. 29, 1967.

Class 102 — Insurance and Financial

SN 300,100. Northwestern Mutual Insurance Company, Seattle, Wash. Filed June 10, 1968.

Unigard

The drawing is lined for gray.
For Insurance Services—Namely, Property and Casualty Insurance, Workmen's Compensation Insurance, Surety Underwriting, Life Insurance, Accident and Health Insurance, Medical and Hospital Insurance, Marine and Transportation Insurance, Annuities, and Insurance Premium Financing (Int. Cl. 36).
First use May 21, 1968.

SN 300,873. Medicredit, Incorporated, Narberth, Pa., assignee of Innova, Inc., Philadelphia, Pa. Filed June 20, 1968.

MEDICREDIT

For Operating Combination Medical and Health Insurance Credit Card Program (Int. Cl. 36).
First use Nov. 1, 1967.

Class 103 — Construction and Repair

SN 294,308. Plastic Corporation of Chicago, Romeoville, Lockport, Ill. Filed Mar. 27, 1968.

PLA-COR

For Custom Fabrication for Others of Foundry Tooling, Plastic Forming Tools, Metal Forming Tools, Concrete Forms, Epoxy Fibre Glass Laminate Tooling, and Fibre Glass Products (Int. Cl. 37).
First use on or about Mar. 18, 1968.

SN 294,573. The Bart & Dee Corporation, Akron, Ohio. Filed Apr. 1, 1968.

BART & DEE

For Automatic Car Washing Services (Int. Cl. 37).
First use December 1967.

SN 309,039. Hamilton Cosco, Inc., Columbus, Ind. Filed Oct. 7, 1968.

COSCO

Owner of Reg. Nos. 518,072, 722,569, and others.
For Interior Decorating Services (Int. Cl. 37).
First use on or about July 1, 1965.

Class 105 — Transportation and Storage

SN 297,048. El Patio Travel Inc., San Diego, Calif. Filed May 1, 1968.

WESTWARD HO

For Travel Tour Services (Int. Cl. 39).
First use Feb. 28, 1968.

SN 299,222. Emery Air Freight Corporation, Wilton, Conn. Filed May 28, 1968.

CAPS

For Air Freight Forwarding Services (Int. Cl. 39).
First use August 1954.

SN 306,845. KMK Airlines, Inc., Washington, D.C. Filed Sept. 9, 1968.

THE V.I.P. AIRLINE

The word "Airline" is disclaimed apart from the mark as shown.
For Air Transportation Services (Int. Cl. 39).
First use Apr. 24, 1968.

Class 107 — Education and Entertainment

SN 261,736. Arthur Taylor Lee, Los Angeles, Calif. Filed Dec. 30, 1966.

LOVE

For Musical Entertainment Services by a Vocal and Instrument Group (Int. Cl. 41).
First use middle of November 1965.

SN 267,975. Pepper Sound Studios, Inc., d.b.a. Airplay International, Memphis, Tenn. Filed Mar. 30, 1967.

AIRPLAY

For Periodically Manufacturing, Supervising and Distributing Customized Tape Recordings for Subscribing Radio Stations, Furnishing Instructional Material and Supplemental Information, Including Promotional Materials Concerning Such Tape Recordings, to Each Subscribing Radio Station, for Assisting Each Subscribing Radio Station in Its Programming of Advertising and Programs (Int. Cl. 41).
First use Jan. 25, 1967.

SN 274,645. Charles C. Page, Bozeman, Mont. Filed June 23, 1967.



For Operation of Recreational Facilities (Int. Cl. 41).
First use October 1966.

SN 276,086. Irving E. Bartron, Jr., Fayetteville, N.C. Filed July 17, 1967.

THE ORIGINAL STRANGERS

For Musical Entertainment Services Consisting of Popular Music Performed by a Small Group (Int. Cl. 41).
First use May 1966.

SN 278,467. Chicago National League Ball Club (Inc.), Chicago, Ill. Filed Aug. 17, 1967.

CUBS

The mark is lined for the colors red and blue which are claimed as a feature of the mark.
For Entertainment Services in the Nature of Baseball Exhibitions Rendered Live and Through the Media of Radio and Television (Int. Cl. 41).
First use on or before Nov. 6, 1947.

SN 279,278. Council on Family Health, New York, N.Y. Filed Aug. 29, 1967.

COUNCIL ON FAMILY HEALTH
CFH

Without waiving its common law rights, applicant disclaims the exclusive right to use the words "Council on Family Health" or the pictorial representation of a family apart from the mark shown.
For Gathering and Distributon of Basic Health and Safety Information in Order To Promote Family Health and Safety Standards (Int. Cl. 41).
First use May 12, 1967.

SN 285,494. Harrah's Club, Reno, Nev. Filed Nov. 24, 1967.

THE WORLD'S GREATEST ENTERTAINERS APPEAR AT HARRAH'S

For Services in the Form of the Presentation of Night Club and Variety Entertainment (Int. Cl. 41).
First use no later than on or about Sept. 30, 1961.

SN 305,793. Radio Corporation of America, New York, N.Y. Filed Aug. 23, 1968.

RCA

Owner of Reg. Nos. 167,591, 694,707, and others.
For Education and Instruction in Electronics, Drafting, Computer Programming, Radio and Television Broadcasting, Radio and Television Servicing, Telecommunications, and Radio-Telegraph Operation (Int. Cl. 41).
First use at least as early as June 23, 1968; at least as early as 1929 in another form.

SN 305,794. Radio Corporation of America, New York, N.Y. Filed Aug. 23, 1968.

RCA

Owner of Reg. Nos. 167,591, 694,707, and others.
For Education and Instruction in Electronics, Drafting, Computer Programming, Radio and Television Broadcasting, Radio and Television Servicing, Telecommunications, and Radio-Telegraph Operation (Int. Cl. 41).
First use at least as early as 1929.

SN 307,062. Donnybrooke, Inc., St. Paul, Minn. Filed Sept. 11, 1968.

DONNYBROOKE

For Operating a Speedway for Automobiles (Int. Cl. 41).
First use on or about May 1, 1968.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 291,518. National Personnel Consultants, Detroit, Mich. Filed Feb. 20, 1968.

NPC

Owner of Reg. No. 854,374.
For Indicating Membership in Applicant.
First use January 1953.

CERTIFICATION MARKS

Class A — Goods

SN 284,295. DHJ Industries Inc., New York, N.Y. Filed Nov. 7, 1967.

VAPORIZED

The drawing is lined for the colors red and pink, the letters "Vap" being red and the letters "orized" being pink. The mark certifies that the goods to which the mark is affixed have been manufactured in accordance with a special permanent press process which is controlled exclusively by the applicant and which imparts to such goods a predetermined shape and a permanent press quality which causes the goods to become and remain crease retentive and wrinkle resistant.
For Trousers, Slacks, Dresses, Suits, Brassieres, Shirts, Underwear, Uniforms, Uniform Coats, Aprons, Household and Industrial Aprons, Hospital Gowns and Aprons, Waiters' Jackets, Household, Restaurant and Hospital Linens, Bed Sheets, Pillow Cases, Tablecloths, Napkins, Curtains, Draperies and All Types of Similar Goods and Wearing Apparel Which Are Manufactured and Produced From Natural and/or Synthetic Woven, Non-Woven and Knit Fabrics and Textiles.
First use Nov. 16, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

865,544. ASTRATHERM. Dynamit Nobel Aktiengesellschaft. SN 280,939. Pub. 9–17–68. Filed 9–22–67.

865,545. BLAZER. National Wax Company. SN 289,204. Pub. 12–17–68. Filed 1–19–68.

865,546. EX-CEL. House of Ceramics, Inc. SN 291,070. Pub. 12–17–68. Filed 2–14–68.

865,547. CARIFLEX. Shell Oil Company. SN 291,104. Pub. 12–17–68. Filed 2–14–68.

865,548. MISCELLANEOUS DESIGN. Uniroyal, Inc. SN 291,110. Pub. 12–17–68. Filed 2–14–68.

865,549. FILMCRAFT. Filmcraft-Chicago. SN 291,404. Pub. 12–17–68. Filed 2–19–68.

865,550. SQUIRE. Allied Supermarkets, Inc. MULTIPLE CLASS (Classes 1, 6, 14, 37, and 52). SN 294,429. Pub. 12–17–68. Filed 3–29–68.

865,551. BARZONA. Francis N. Bard. SN 300,866. Pub. 12–17–68. Filed 6–20–68.

865,552. LS ERIE KRAFT. Lake Superior Pulp & Paper Inc. SN 301,012. Pub. 12–17–68. Filed 6–21–68.

865,553. LS SUPERIOR KRAFT. Lake Superior Pulp & Paper Inc. SN 301,013. Pub. 12–17–68. Filed 6–21–68.

865,554. LS (DESIGN). Lake Superior Pulp & Paper Inc. SN 301,014. Pub. 12–17–68. Filed 6–21–68.

Class 2 — Receptacles

865,555. COLEMAN AND DESIGN. The Coleman Company, Inc. MULTIPLE CLASS (Classes 2, 6, 13, 15, 22, and 34). SN 262,737. Pub. 12–17–68. Filed 1–18–67.

865,556. BATHIQUE. Wolff Products Co. SN 270,177. Pub. 12–17–68. Filed 4–27–67.

865,557. PAK ALL AND DESIGN. Union Camp Corporation, assignee of Pak-All Products, Inc. SN 270,703. Pub. 12–17–68. Filed 5–4–67.

865,558. RUTH-ANNE. Harry K. Tharpe, d.b.a. Ruth-Anne Woodcrafts. SN 275,085. Pub. 12–17–68. Filed 6–29–67.

865,559. FASHION ROSE. Rexall Drug and Chemical Company, d.b.a. Syroco. SN 282,136. Pub. 12–17–68. Filed 10–9–67.

865,560. UNIT LINER COMPANY AND DESIGN. John A. Hendershot, Jr., d.b.a. Unit Liner Company. SN 305,046. Pub. 12–17–68. Filed 8–13–68.

865,561. MISCELLANEOUS DESIGN. Iroquois Popcorn Co., Inc. MULTIPLE CLASS (Classes 2 and 46). SN 306,985. Pub. 12–17–68. Filed 9–10–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

865,562. CONTROLMASTER. Conlker Enterprises, Inc. SN 283,635. Pub. 12–17–68. Filed 10–30–67.

865,563. ROMP. PepsiCo, Inc. SN 291,008. Pub. 12–17–68. Filed 2–14–68.

865,564. TRACKER. Jack C. Abert, d.b.a. Mechanical Products Company. SN 299,080. Pub. 12–17–68. Filed 5–27–68.

865,565. SUPER STICK. Hartz Mountain Products Corp. SN 300,704. Pub. 12–17–68. Filed 6–18–68.

Class 4 — Abrasives and Polishing Materials

865,566. (See Class 21 for this trademark.)

865,567. FANCY FINISH. The Betco Corporation. SN 273,593. Pub. 12–17–68. Filed 6–12–67.

865,568. SHYNEBRITE. Sterling Drug Inc. SN 304,874. Pub. 12–17–68. Filed 8–12–68.

Class 5 — Adhesives

865,569. XL8 AND DESIGN. Excel Corporation. SN 277,549. Pub. 12–17–68. Filed 8–4–67.

Class 6 — Chemicals and Chemical Compositions

865,550. (See Class 1 for this trademark.)

865,555. (See Class 2 for this trademark.)

865,570. DRAIN-AID AND DESIGN. Lewis Research Laboratories, Inc. SN 173,371. Pub. 1–26–65. Filed 7–19–63.

865,571. SILVER SURF. Amway Corporation. SN 275,504. Pub. 1–23–68. Filed 7–7–67.

865,572. TENNANT AND DESIGN. G. H. Tennant Company. SN 277,731. Pub. 12–17–68. Filed 8–7–67.

865,573. CORCO AND DESIGN. Commonwealth Oil Refining Company, Inc. SN 282,681. Pub. 7–23–68. Filed 10–17–67.

865,574. SPRING MIST. Spring Crest Company. SN 282,835. Pub. 12–17–68. Filed 10–18–67.

865,575. CUTINA. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 283,780. Pub. 12–17–68. Filed 10–31–67.

865,576. GALAX. Aktiebolaget Kabi. SN 286,886. Pub. 12–17–68. Filed 12–14–67.

865,577. TYPO RADIATOR AND BLOCK SURE SEAL. Manlius W. Noble, d.b.a. Noble Oil Products Company. SN 288,063. Pub. 12–17–68. Filed 1–4–68.

865,578. ACURICON. Anti-Hydro Waterproofing Co. SN 288,419. Pub. 12–17–68. Filed 1–9–68.

865,579. ANSCOGRAPH. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 290,484. Pub. 12–17–68. Filed 2–7–68.

Class 7 — Cordage

865,580. YELLOWBRAID. Broderick & Bascom Rope Company. SN 287,890. Pub. 12–17–68. Filed 1–2–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

865,581. HEALTHWAYS CO_2 POW-R-JETS. Healthways. SN 265,064. Pub. 12–17–68. Filed 2–20–67.

865,582. SPENITE. Gulf Oil Corporation. SN 276,129. Pub. 12–17–68. Filed 7–17–67.

865,583. TENEX. Imperial Metal Industries (Kynoch) Limited. SN 278,105. Pub. 12–17–68. Filed 8–11–67.

865,584. MISCELLANEOUS DESIGN. Delta-Visier G.m.b.H. SN 281,271. Pub. 12–17–68. Filed 9–27–67.

Class 10 — Fertilizers

865,585. AGRO-CULTURE AND DESIGN. Jegco Inc. SN 262,536. Pub. 12–17–68. Filed 1–16–67.

865,586. BUMPER CROP. Occidental Petroleum Corporation. SN 284,718. Pub. 12–17–68. Filed 11–13–67.

865,587. BUMPER CROP AND DESIGN. Occidental Petroleum Corporation. SN 284,719. Pub. 12–17–68. Filed 11–13–67.

865,588. GOLDEN SUPREME. Occidental Petroleum Corporation. SN 284,720. Pub. 12–17–68. Filed 11–13–67.

865,589. RICH-N-GREEN. Capitol Insulation Company, Inc. SN 295,911. Pub. 12–17–68. Filed 4–18–68.

865,590. GREEN-ER-AMA. Capitol Insulation Company, Inc. SN 295,912. Pub. 12–17–68. Filed 4–18–68.

Class 11 — Inks and Inking Materials

865,591. BURROUGHS. Burroughs Corporation. SN 288,674. Pub. 12–17–68. Filed 1–12–68.

865,592. OPTICHROME. Lawter Chemicals, Inc. SN 289,811. Pub. 12–17–68. Filed 1–29–68.

Class 12 — Construction Materials

865,593. THERMA VISTA POOL PODS. Tyson & Van, Inc. SN 254,637. Pub. 12–17–68. Filed 9–16–66.

865,594. PACKAGE AND DESIGN. Package Builders, Inc. SN 262,279. Pub. 12–17–68. Filed 1–10–67.

865,595. MISCELLANEOUS DESIGN. The Verticel Company. SN 262,984. Pub. 12–17–68. Filed 1–20–67.

865,596. GARRETT AND DESIGN. The Garrett Corporation. SN 274,966. Pub. 12–17–68. Filed 6–28–67.

865,597. VOLKSHAUS. Ralph Delgado. SN 275,366. Pub. 12–17–68. Filed 7–5–67.

865,598. A IN CIRCLE. Amerock Corporation. MULTIPLE CLASS (Classes 12, 13, 23, and 25). SN 293,770. Pub. 12–17–68. Filed 3–21–68.

865,599. ALWITRA. Witra KG, Klaus Gobel. SN 294,426. Pub. 12–17–68. Filed 3–28–68.

865,600. SKY SPAN. The General Tire & Rubber Company. SN 295,328. Pub. 12–17–68. Filed 4–10–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

865,555. (See Class 2 for this trademark.)

865,598. (See Class 12 for this trademark.)

865,601. SPIN-SPRAY. Missimers, Incorporated. SN 236,619. Pub. 12–17–68. Filed 1–17–66.

865,602. BRAND HYDRAULICS. Brand Hydraulics Co. SN 258,893. Pub. 12–17–68. Filed 11–17–66.

865,603. ZENITH. Zenith Radio Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 269,591. Pub. 12–17–68. Filed 4–19–67.

865,604. ROYPAK. Litton Business Systems, Inc., by change of name from Monroe International, Inc. MULTIPLE CLASS (Classes 13 and 37). SN 274,641. Pub. 12–17–68. Filed 6–23–67.

865,605. SVENSK DESIGN AND DESIGN. Mid America Distributors, Inc. SN 274,978. Pub. 12–17–68. Filed 6–28–67.

865,606. FOUNTAIN FLO. Standard Screw Company. SN 276,259. Pub. 12–17–68. Filed 7–18–67.

865,607. MR. BIDET AND DESIGN. Mr. Bidet Corporation. SN 278,314. Pub. 7–16–68. Filed 8–15–67.

865,608. TY-RAP. The Thomas & Betts Co. SN 278,923. Pub. 10–29–68. Filed 8–23–67.

865,609. REEL-EZY. Steel Drum Packaging & Accessories, Inc. SN 289,430. Pub. 12–17–68. Filed 1–23–68.

865,610. YKK. Yoshida Kogyo K.K. SN 290,795. Pub. 12–17–68. Filed 2–9–68.

865,611. ROCK-A-CRIB. N.K.R. Precision Manufacturing Corp. SN 295,840. Pub. 12–17–68. Filed 4–17–68.

865,612. CORO-COATED. "Automatic" Sprinkler Corporation of America. SN 298,497. Pub. 12–17–68. Filed 5–20–68.

865,613. SCOTCH-GRIP. Minnesota Mining and Manufacturing Company. SN 306,991. Pub. 12–17–68. Filed 9–10–68.

Class 14 — Metals and Metal Castings and Forgings

865,550. (See Class 1 for this trademark.)

865,614. LANGALLOY. Langley Alloys Limited. SN 286,157. Pub. 12–17–68. Filed 12–4–67.

865,615. BAR LOK. Aluminum Company of America. SN 306,321. Pub. 12–17–68. Filed 8–30–68.

Class 15 — Oils and Greases

865,555. (See Class 2 for this trademark.)

865,616. ECON. Famariss Oil and Refining Company. SN 258,903. Pub. 12–17–68. Filed 11–17–66.

865,617. MARINE GUARD. Fiske Brothers Refining Company. SN 302,557. Pub. 12–17–68. Filed 7–12–68.

865,618. AUTO GUARD. Fiske Brothers Refining Company. SN 302,558. Pub. 12–17–68. Filed 7–12–68.

Class 16 — Protective and Decorative Coatings

865,619. NAP-GARD. Napko Corporation. SN 270,599. Pub. 12–17–68. Filed 5–3–67.

865,620. TEX-TOP. Cal Corporation. SN 273,852. Pub. 12–17–68. Filed 6–14–67.

865,621. POLYASTICS POLY-U NO. 16. Polyastics Corporation. SN 287,945. Pub. 12–17–68. Filed 1–2–68.

Class 17 — Tobacco Products

865,622. PANCHO ARANGO AND DESIGN OF BULLFIGHTER. Glaser Bros. SN 264,664. Pub. 12–17–68. Filed 2–14–67.

865,623. SOUTH WINDSOR. House of Windsor, Inc. SN 270,918. Pub. 12–17–68. Filed 5–8–67.

865,624. PAUL REVERE 1775 AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 276,037. Pub. 12–17–68. Filed 7–14–67.

865,625. PAUL REVERE ETC. AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 277,071. Pub. 12–17–68. Filed 7–28–67.

865,626. ROTHMANS KING SIZE CIGARETTES ETC. AND DESIGN. Rothmans of Pall Mall Limited. SN 284,043. Pub. 12–17–68. Filed 11–2–67.

865,627. PARLIAMENT AND DESIGN. Philip Morris Incorporated. SN 286,716. Pub. 12–17–68. Filed 12–11–67.

865,628. DON JOAQUIN ETC. AND DESIGN. Cuesta Cigars, Inc., by change of name from Don Joaquin Cigars Inc. SN 287,919. Pub. 12–17–68. Filed 1–2–68.

Class 18 — Medicines and Pharmaceutical Preparations

865,629. ORATRILE. Biozymes International Limited. SN 271,915. Pub. 12–17–68. Filed 5–19–67.

865,630. KNOLLIDE. Knoll Aktiengesellschaft. SN 287,367. Pub. 12–17–68. Filed 12–21–67.

865,631. STALEY DAY-ONE AND DESIGN. A. E. Staley Manufacturing Company. SN 290,545. Pub. 8–6–68. Filed 2–7–68.

Class 19 — Vehicles

865,632. PAPOOSE AND DESIGN. Burkhart Trailer Manufacturing Company. SN 265,789. Pub. 12–17–68. Filed 3–2–67.

865,633. ARCTIC CAT. Arctic Enterprises, Inc. SN 267,388. Pub. 12–17–68. Filed 3–23–67.

865,634. PACECO. Fruehauf Corporation, by change of name and assignment from Pacific Coast Engineering Company. SN 268,218. Pub. 12–17–68. Filed 4–3–67.

865,635. FAWN. Fawn Corporation. SN 268,483. Pub. 12–17–68. Filed 4–6–67.

865,636. ALURA. Bangor Punta Operations, Inc. SN 277,976. Pub. 12–17–68. Filed 6–13–68.

865,637. BANGOR PUNTA'S WIDE WORLD OF BOATING. Bangor Punta Operations, Inc. SN 277,979. Pub. 12–17–68. Filed 6–13–68.

865,638. INSTANT. R-W Industries, Inc. SN 279,496. Pub. 12–17–68. Filed 8–31–67.

865,639. BUMPERSCOPE. Western Progress, Inc. SN 280,122. Pub. 12–17–68. Filed 9–11–67.

865,640. COUGAR AND DESIGN. Richard E. Brown, d.b.a. Rebcats. SN 289,918. Pub. 12–17–68. Filed 1–30–68.

865,641. SANI-BULK. Florig Equipment Co., Inc. SN 291,856. Pub. 12–17–68. Filed 2–26–68.

865,642. RAMROD. Fenton Manufacturing Corp. SN 292,566. Pub. 12–17–68. Filed 3–6–68.

865,643. FISH-N-SKI AND DESIGN. John E. Nast. SN 293,045. Pub. 12–17–68. Filed 3–12–68.

865,644. CONSOL-AIR. Stolper Industries, Inc. SN 293,864. Pub. 12–17–68. Filed 3–21–68.

965,645. AMICA. Guido Carnielli. SN 294,593. Pub. 12–17–68. Filed 4–1–68.

865,646. SAMBAR. Fuji Jyukogyo Kabushiki Kaisha. SN 295,524. Pub. 12–17–68. Filed 4–12–68.

865,647. CADET II AND DESIGN. Alexander-Reynolds Corp. SN 296,000. Pub. 12–17–68. Filed 4–19–68.

865,648. FAIRCHILD HILLER. Fairchild Hiller Corporation. SN 304,071. Pub. 12–17–68. Filed 8–1–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

865,566. VECOR. Vidaire Electronics Manufacturing Corp. SN 297,931. Pub. 11–5–68. Filed 5–13–68.

865,649. NEOLYTHIC. Marshall Industries. SN 217,317. Pub. 9–20–66. Filed 4–26–65.

865,650. RC. Redcor Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 242,532. Pub. 3–12–68. Filed 4–4–66.

865,651. LUMINATOR. Luminator, Inc., by change of name from Luminator-Harrison, Inc. SN 248,496. Pub. 12–17–68. Filed 6–20–66.

865,652. LAFAYETTE AND DESIGN. Lafayette Radio Electronics Corporation. MULTIPLE CLASS (Classes 21, 26, and 36). SN 257,434. Pub. 12–17–68. Filed 10–28–66.

865,653. CORTITE. The Carbone Corporation. SN 258,356. Pub. 12–17–68. Filed 11–10–66.

865,654. VIBRASONIC. Amédée Pons and Reno-France (joint owners). SN 274,541. Pub. 12–17–68. Filed 6–22–67.

865,655. FISH FINDER. Herter's, Inc. SN 279,191. Pub. 12–17–68. Filed 8–28–67.

865,656. CITATION. Graphic Electronics, Inc. SN 279,943. Pub. 12–17–68. Filed 9–8–67.

865,657. UNISEP CP AND DESIGN. Electromite Corporation. SN 280,863. Pub. 12–17–68. Filed 9–21–67.

865,658. BLASS ISOPHASE. Blass Antenna Electronics Corporation. SN 281,437. Pub. 12–17–68. Filed 9–29–67.

865,659. JEFFERSON AND DESIGN. Jefferson Electric Company. SN 282,094. Pub. 12–17–68. Filed 10–9–67.

865,660. VIDICODER. Philco-Ford Corporation. SN 289,061. Pub. 12–17–68. Filed 1–18–68.

865,661. CONTEMPRA. Northern Electric Company, Limited. SN 290,104. Pub. 8–13–68. Filed 2–1–68.

865,662. MCI AND DESIGN. Micro Communications, Inc. SN 291,084. Pub. 12–17–68. Filed 2–14–68.

865,663. INCONECT. Molex Products Company. SN 291,415. Pub. 12–17–68. Filed 2–19–68.

865,664. ITRON. Ishimoto Trading Company. SN 292,102. Pub. 12–17–68. Filed 2–28–68.

865,665. NS (DESIGN). National Semiconductor Corporation. SN 292,949. Pub. 12–17–68. Filed 3–11–68.

865,666. MICROPHASE. Microphase Corporation. SN 293,544. Pub. 12–17–68. Filed 3–18–68.

865,667. MERCOTAC. Leslie Manufacturing Company. SN 293,935. Pub. 12–17–68. Filed 3–22–68.

865,668. VARI-WATT. Dial-A-Lite Company. SN 295,125. Pub. 12–17–68. Filed 4–8–68.

865,669. OPTIMUS. Tandy Corporation, d.b.a. Radio Shack. SN 296,594. Pub. 12–17–68. Filed 4–25–68.

865,670. MINIMUS. Tandy Corporation, d.b.a. Radio Shack. SN 296,596. Pub. 12–17–68. Filed 4–25–68.

865,671. VALCOM. The Valtronic Corporation. SN 300,882. Pub. 12–17–68. Filed 6–20–68.

865,672. SUBMARINE (DESIGN). ESB Incorporated. SN 302,677. Pub. 12–17–68. Filed 7–15–68.

Class 22 — Games, Toys, and Sporting Goods

865,555. (See Class 2 for this trademark.)

865,673. SKI-BOB. Ski-Bob, Inc. SN 262,446. Pub. 12–17–68. Filed 1–12–67.

865,674. HANDE PAK. Pflueger Corporation. SN 268,068. Pub. 12–17–68. Filed 3–31–67.

865,675. VIP AND DESIGN. Brunswick Corporation. SN 268,148. Pub. 12–17–68. Filed 4–3–67.

865,676. TALKSTARTER8. Scott, Foresman and Company. SN 272,311. Pub. 12–17–68. Filed 5–24–67.

865,677. FAMILY GOLF AND DESIGN. Earl A. Wisemiller, d.b.a. Earl Ad Company. SN 280,125. Pub. 12–17–68. Filed 9–11–67.

865,678. SAFE-T-GARD. Atlantic Lures, Inc. SN 280,199. Pub. 12–17–68. Filed 9–13–67.

865,679. CF (DESIGN). Consolidated Freightways Corporation of Delaware. SN 283,875. Pub. 12–17–68. Filed 11–1–67.

865,680. AVANTE. Fyanes Corporation. SN 286,923. Pub. 12–17–68. Filed 12–14–67.

865,681. DRI-TEX. The Coleman Company, Inc. SN 291,586. Pub. 12–17–68. Filed 2–21–68.

865,682. DM. Dri Mark Products, Inc. SN 295,812. Pub. 12–17–68. Filed 4–17–68.

865,683. STUDENT SURVIVAL. Gamemasters, Inc. SN 297,184. Pub. 12–17–68. Filed 5–2–68.

865,684. MASTER SPOON. Atlantic Lures, Inc. SN 297,749. Pub. 12–17–68. Filed 5–9–68.

865,685. JUMPKINS. Kohner Bros., Inc. SN 298,228. Pub. 12–17–68. Filed 5–15–68.

865,686. TOUCH COMMAND. Eldon Industries, Inc. SN 300,776. Pub. 12–17–68. Filed 6–19–68.

865,687. MORE FUN FROM WHAM-O. Wham-O Mfg. Co. SN 302,205. Pub. 12–17–68. Filed 7–8–68.

865,688. MORE COOL FUN FROM WHAM-O. Wham-O Mfg. Co. SN 302,206. Pub. 12–17–68. Filed 7–8–68.

865,689. FUN SCULPTOR. Rainbow Crafts, Inc. SN 305,899. Pub. 12–17–68. Filed 8–26–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

865,598. (See Class 12 for this trademark.)

865,603. (See Class 13 for this trademark.)

865,690. EXCALIBUR. The Gillette Company. SN 246,072. Pub. 5–23–67. Filed 5–19–66.

865,691. POLAR CUB. Sears, Roebuck and Co. SN 248,364. Pub. 2–14–67. Filed 6–17–66.

865,692. SPACERAIL. Rudolph F. Gerisch, d.b.a. R. F. Gerisch Company. SN 259,544. Pub. 12–17–68. Filed 11–28–66.

865,693. TIE-O-MATIC. Murray Company of Texas, Inc. SN 262,051. Pub. 12–17–68. Filed 1–6–67.

865,694. PACECO PORTAINER. Fruehauf Corporation, by change of name and assignment from Pacific Coast Engineering Company. SN 268,217. Pub. 12–17–68. Filed 4–3–67.

865,695. PACECO. Fruehauf Corporation, by change of name and assignment from Pacific Coast Engineering Company. SN 268,219. Pub. 12–17–68. Filed 4–3–67.

865,696. AMERICAN. Applied Power Industries, Inc. SN 268,936. Pub. 12–17–68. Filed 4–12–67.

865,697. HYDRAMOTE. Albritton Engineering Corporation. SN 269,492. Pub. 11–19–68. Filed 4–19–67.

865,698. MOTOFEED. Electro-Craft Corporation. SN 272,261. Pub. 12–17–68. Filed 5–24–67.

865,699. ATOMIC TRANSMISSIONS AND DESIGN. Atomic Transmissions Service, Inc. SN 275,028. Pub. 12–17–68. Filed 6–29–67.

865,700. DIREX. Victory Diamond Tool Company. SN 275,090. Pub. 12–17–68. Filed 6–29–67.

865,701. ELPROCAN. Listo Products Ltd. SN 275,152. Pub. 12–17–68. Filed 6–30–67.

865,702. ETCH-MASTER. American Hospital Supply Corporation, assignee of V. Mueller & Company. SN 276,459. Pub. 12–17–68. Filed 7–20–67.

865,703. UMC AND DESIGN. UMC Industries, Inc. SN 281,330. Pub. 12–17–68. Filed 9–27–67.

865,704. LE BLOND AND DESIGN. The R. K. Le Blond Machine Tool Co. SN 281,474. Pub. 12–17–68. Filed 9–29–67.

865,705. MODERN. Slifer Manufacturing Co., Inc. MULTIPLE CLASS (Classes 23 and 52). SN 284,129. Pub. 12–17–68. Filed 11–6–67.

865,706. PEECO. Automation Devices, Inc. SN 284,573. Pub. 12–17–68. Filed 11–13–67.

865,707. SPECIAL AND DESIGN. The Union Fork and Hoe Company. SN 286,211. Pub. 12–17–68. Filed 12–4–67.

865,708. PLASTUBE. Textube Corporation. SN 288,386. Pub. 12–17–68. Filed 1–8–68.

865,709. SPEEDI-SLEEVE. International Speedi-Sleeve Ltd., d.b.a. Speedi-Sleeve International. SN 290,613. Pub. 12–17–68. Filed 2–8–68.

865,710. PERFECTO ETC. AND DESIGN. Auto Laundry Equipment Sales Company. SN 302,002. Pub. 12–17–68. Filed 7–5–68.

Class 24 — Laundry Appliances and Machines

865,711. TARZAN. American Associated Companies, Inc. SN 294,714. Pub. 12–17–68. Filed 4–2–68.

Class 25 — Locks and Safes

865,598. (See Class 12 for this trademark.)

Class 26 — Measuring and Scientific Appliances

865,650. (See Class 21 for this trademark.)

865,652. (See Class 21 for this trademark.)

865,712. THERA-PEDIC. Herbst Shoe Manufacturing Company. SN 254,152. Pub. 12–17–68. Filed 9–9–66.

865,713. BALL. Ball Brothers Company Incorporated. SN 263,886. Pub. 12–17–68. Filed 2–3–67.

865,714. LUMINOSCOPE. Nuclide Corporation. SN 264,225. Pub. 12–17–68. Filed 2–8–67.

865,715. DISCOVERY LAB. OMSI/KIT, Inc., assignee of Oregon Museum of Science & Industry. SN 269,340. Pub. 12–17–68. Filed 4–17–67.

865,716. MISCELLANEOUS DESIGN. OMSI/KIT, Inc., assignee of Oregon Museum of Science & Industry. SN 269,342. Pub. 12–17–68. Filed 4–17–67.

865,717. TOMSETT. Tomsett Corporation. SN 277,230. Pub. 12–17–68. Filed 7–31–67.

865,718. MERRILL. Pennsalt Chemicals Corporation. SN 280,627. Pub. 12–17–68. Filed 9–18–67.

865,719. FOCI. Farrand Optical Co., Inc. SN 281,567. Pub. 12–17–68. Filed 10–2–67.

865,720. MICRO TOL AND DESIGN. Micro-Tol Engineering Corporation. SN 281,605. Pub. 12–17–68. Filed 10–2–67.

865,721. FAST LINE. Fabri-Tek Incorporated. SN 285,536. Pub. 12–17–68. Filed 11–24–67.

865,722. TESADIGIT. Tesa S.A. SN 286,293. Pub. 12–17–68. Filed 12–5–67.

865,723. PSI PYRO-SERV INSTRUMENTS. Pyro-Serv Instruments, Inc. SN 288,030. Pub. 12–17–68. Filed 1–3–68.

865,724. COMPUTE-A-TROT AND DESIGN. Compute-A-Trot & Associates Inc. SN 289,972. Pub. 12–17–68. Filed 1–31–68.

865,725. MISOMATIC. Royal Zenith Corporation. SN 290,023. Pub. 12–17–68. Filed 1–31–68.

865,726. TRAINING MATE. Charles Beseler Company. SN 290,155. Pub. 12–17–68. Filed 2–2–68.

865,727. UNATHERM GOVERNOR. Raypak Company, Inc. SN 291,428. Pub. 12–17–68. Filed 2–19–68.

865,728. MINITEL. Spiratone, Inc. SN 294,088. Pub. 12–17–68. Filed 3–25–68.

865,729. LASER-GARD. American Cyanamid Company. SN 296,004. Pub. 12–17–68. Filed 4–19–68.

865,730. CHANCE. Chance Brothers Limited. MULTIPLE CLASS (Classes 26 and 33). SN 298,493. Pub. 12–17–68. Filed 5–20–68.

Class 27 — Horological Instruments

865,731. MULTIFIT. Mido G. Schaeren & Co. S.A. SN 279,332. Pub. 12–17–68. Filed 8–29–67.

865,732. PERMALUB. Manufacture d'Horlogerie Rayville S.A. Montres Blancpain (Rayville Watch Manufacturing Co. Limited, Blancpain Watches). SN 288,962. Pub. 12–17–68. Filed 1–16–68.

Class 28 — Jewelry and Precious-Metal Ware

865,733. MR AND DESIGN. Morris Reibman & Sons, Inc. SN 273,111. Pub. 12–17–68. Filed 6–5–67.

865,734. ALB. Albithel Jewelry Mfg., Inc. SN 292,537. Pub. 12–17–68. Filed 3–6–68.

865,735. MISCELLANEOUS DESIGN. Bates Creations, Inc. SN 294,803. Pub. 12–17–68. Filed 4–3–68.

Class 29 — Brooms, Brushes, and Dusters

865,736. PATIO-TIP. The Drackett Company. SN 288,288. Pub. 12–17–68. Filed 1–8–68.

Class 31 — Filters and Refrigerators

865,737. AQUA GUARD AND DESIGN. Aqua-Guard, Incorporated. SN 269,840. Pub. 12–17–68. Filed 4–24–67.

865,738. SNO FLAKER. Millersville Manufacturing Company. SN 271,495. Pub. 12–17–68. Filed 5–15–67.

865,739. PUFF-FROST. Multiplex Company. SN 286,358. Pub. 12–17–68. Filed 12–6–67.

865,740. NORTHERN PRODUCTS ETC. AND DESIGN. Nor-Lake, Incorporated. SN 290,514. Pub. 12–17–68. Filed 2–7–68.

865,741. OZARKA. Ozarka Water Company. SN 291,007. Pub. 12–17–68. Filed 2–14–68.

Class 32 — Furniture and Upholstery

865,742. GLAMOUREST. The E. B. Malone Corporation. SN 209,523. Pub. 2–14–67. Filed 1–7–65.

865,743. GLAMOUREST. Simmons Company. SN 236,154. Pub. 2–14–67. Filed 1–10–66.

865,744. COTTON-KOOL. Mattress Warehouse, Inc. SN 289,411. Pub. 12–17–68. Filed 1–23–68.

865,745. EYEWARE GALERIE. Tura, Inc. SN 290,419. Pub. 12–17–68. Filed 2–6–68.

Class 33 — Glassware

865,730. (See Class 26 for this trademark.)

865,746. ZENITH. Zenith Radio Corporation. SN 269,592. Pub. 12–17–68. Filed 4–19–67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

865,555. (See Class 2 for this trademark.)

865,747. KRUEGER MANUFACTURING CO., INC. AND DESIGN. Krueger Manufacturing Company, Inc. SN 284,673. Pub. 12–17–68. Filed 11–13–67.

865,748. A. O. SMITH. A. O. Smith Corporation. SN 287,589. Pub. 12–17–68. Filed 12–26–67.

865,749. MOISTAIRE. Space Conditioning, Inc. SN 289,724. Pub. 12–17–68. Filed 1–26–68.

865,750. DATA MATIC. Glenwood Range Company, d.b.a. Sunray Stove Company. SN 294,834. Pub. 12–17–68. Filed 4–3–68.

865,751. CARRIER AND DESIGN. Carrier Corporation. SN 295,305. Pub. 12–17–68. Filed 4–10–68.

865,752. HIDE'N SEE. The Tappan Company. SN 295,475. Pub. 12–17–68. Filed 4–11–68.

865,753. SMITERM. Società Metallurgica Italiana S.p.A. SN 296,878. Pub. 12–17–68. Filed 4–29–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

865,754. INSTAFIND. The Goodyear Tire & Rubber Company. SN 294,181. Pub. 12–17–68. Filed 3–26–68.

865,755. REMNAC RACER AND CROSSED FLAGS DESIGN. The Goodyear Tire & Rubber Company. SN 299,668. Pub. 12–17–68. Filed 6–4–68.

865,756. STACKER. The Goodyear Tire & Rubber Company. SN 299,980. Pub. 12–17–68. Filed 6–7–68.

865,757. STAR. Dana Corporation. SN 300,174. Pub. 12–17–68. Filed 6–11–68.

865,758. PENETRATOR. Penetred Corporation. SN 300,478. Pub. 12–17–68. Filed 6–14–68.

865,759. LAND JET. Penetred Corporation. SN 300,479. Pub. 12–17–68. Filed 6–14–68.

865,760. ARMOR-GARD. Louis Fishman & Co., Inc. SN 301,218. Pub. 12–17–68. Filed 6–24–68.

865,761. SOFT AIR SKYWAY. Bridgestone Tire Company Limited. SN 302,006. Pub. 12–17–68. Filed 7–5–68.

865,762. L-MILER. Bridgestone Tire Company Limited. SN 302,009. Pub. 12–17–68. Filed 7–5–68.

865,763. MIGHTY RIB. Bridgestone Tire Company Limited. SN 302,010. Pub. 12–17–68. Filed 7–5–68.

865,764. SKYWAY DE LUXE. Bridgestone Tire Company Limited. SN 302,012. Pub. 12–17–68. Filed 7–5–68.

865,765. U-LUG PREMIUM. Bridgestone Tire Company Limited. SN 302,013. Pub. 12–17–68. Filed 7–5–68.

865,766. U-LUG. Bridgestone Tire Company Limited. SN 302,014. Pub. 12–17–68. Filed 7–5–68.

865,767. R-LUG. Bridgestone Tire Company Limited. SN 302,015. Pub. 12–17–68. Filed 7–5–68.

865,768. SUPER L-MILER. Bridgestone Tire Company Limited. SN 302,016. Pub. 12–17–68. Filed 7–5–68.

Class 36 — Musical Instruments and Supplies

865,652. (See Class 21 for this trademark.)

865,769. MISCELLANEOUS DESIGN. Gauss Electrophysics, Inc. SN 269,728. Pub. 8–29–67. Filed 4–21–67.

865,770. MINI-MEMO. DeJur-Amsco Corporation. SN 285,120. Pub. 9–24–68. Filed 11–17–67.

865,771. PROBE SOUND WHERE THERE HAS BEEN SILENCE. Capitol Records, Inc. SN 307,266. Pub. 12–17–68. Filed 9–13–68.

865,772. GEORGE VAN EPS. The Fred Gretsch Company, Inc. SN 307,269. Pub. 12–17–68. Filed 9–13–68.

Class 37 — Paper and Stationery

865,550. (See Class 1 for this trademark.)

865,604. (See Class 13 for this trademark.)

865,773. THE PER-SON-ALL ETC. AND DESIGN. Master-Craft Corporation. SN 260,263. Pub. 12–17–68. Filed 12–7–66.

865,774. SL (DESIGN). Simpson Lee Paper Company. SN 263,120. Pub. 12–17–68. Filed 1–23–67.

865,775. TUFFLEX. Wilson Jones Company. SN 270,392. Pub. 12–17–68. Filed 5–1–67.

865,776. MOD-CAP. Lindy Pen Company, Incorporated. SN 279,082. Pub. 12–17–68. Filed 8–25–67.

865,777. MOD CAP AND DESIGN. Lindy Pen Company, Incorporated. SN 279,083. Pub. 12–17–68. Filed 8–25–67.

865,778. LAUREATE AND DESIGN. Nekoosa-Edwards Paper Company. SN 279,089. Pub. 12–17–68. Filed 8–25–67.

865,779. STAY-DRI. W. R. Grace & Co. SN 279,549. Pub. 12–17–68. Filed 9–1–67.

865,780. QUIKLIPS. Durable International, Inc. SN 288,944. Pub. 12–17–68. Filed 1–16–68.

865,781. B AND CIRCLE DESIGN. Burroughs Corporation. SN 290,250. Pub. 12–17–68. Filed 2–5–68.

865,782. BURROUGHS. Burroughs Corporation. SN 290,251. Pub. 12–17–68. Filed 2–5–68.

865,783. POCKET-REF. Wilson Jones Company. SN 292,312. Pub. 12–17–68. Filed 3–1–68.

Class 38 — Prints and Publications

865,784. STENOGRAPH. Stenographic Machines, Inc. SN 218,705. Pub. 12–17–68. Filed 5–12–65.

865,785. NEW ORLEANS. Flambeaux Publishing Company, Inc. SN 255,429. Pub. 12–17–68. Filed 9–29–66.

865,786. NEW ORLEANS GUIDE. Flambeaux Publishing Company, Inc. SN 255,611. Pub. 12–17–68. Filed 10–3–66.

865,787. U.S. CATHOLIC. Congregation of Sons of the Immaculate Heart of Mary, Eastern Province, d.b.a. Claretian Fathers. SN 257,460. Pub. 12–17–68. Filed 10–28–66.

865,788. WHITMAN AND DESIGN. Whitman Publishing Company. SN 275,097. Pub. 12–17–68. Filed 6–29–67.

865,789. PISTILLI ROMAN. Visual Graphics Corporation. SN 280,828. Pub. 12–17–68. Filed 9–20–67.

865,790. BADGER BARBER ETC. AND DESIGN. Wisconsin State Barber and Beauty Culture Association. SN 281,150. Pub. 12–17–68. Filed 9–25–67.

865,791. CENTERTREND INDEX. Food Fair Properties, Inc. SN 283,120. Pub. 12–17–68. Filed 10–23–67.

865,792. TROOPER ROMAN. Visual Graphics Corporation. SN 283,946. Pub. 12–17–68. Filed 11–1–67.

865,793. TIME FOR CHRISTMAS. Metropolitan Greetings, Inc. SN 286,021. Pub. 12–17–68. Filed 12–1–67.

865,794. MEXICO 68. Comite Organizador de los Juegos de la XIX Olimpiada. MULTIPLE CLASS (Classes 38, 105, and 107). SN 286,590. Pub. 12–17–68. Filed 12–11–67.

865,795. SPEAKING OF MONEY. Kennedy Sinclaire, Inc. SN 288,329. Pub. 12–17–68. Filed 1–8–68.

865,796. 16. 16 Magazine, Inc. SN 289,107. Pub. 12–17–68. Filed 1–18–68.

865,797. STUDIO D'ARTE A. DEVITY ETC. AND DESIGN. Umberto Marone. SN 290,396. Pub. 12–17–68. Filed 2–6–68.

865,798. MEN'S BAZAAR. The Hearst Corporation. SN 291,607. Pub. 12–17–68. Filed 2–21–68.

865,799. PIXIE (DESIGN). United States Steel Corporation. SN 302,818. Pub. 12–17–68. Filed 7–16–68.

865,800. COMPUTER BITS. Fabri-Tek Incorporated. SN 303,604. Pub. 12–17–68. Filed 7–25–68.

865,801. CHERRY CIRCLE. Chicago Athletic Association. SN 306,611. Pub. 12–17–68. Filed 9–5–68.

Class 39 — Clothing

865,802. GINGER GROUP. Mary Quant's Ginger Group Limited. SN 268,605. Pub. 7–9–68. Filed 4–7–67.

865,803. LAMICA. C.L.M. Imports, Ltd. SN 276,099. Pub. 12–17–68. Filed 7–17–67.

865,804. GINGER-ETTS. Pollak Feather Corp. SN 279,410. Pub. 7–9–68. Filed 8–30–67.

865,805. TRISSI. Latest Trends, Inc. SN 282,196. Pub. 12–17–68. Filed 10–10–67.

865,806. TERRI TONES. Craddock-Terry Shoe Corporation, assignee of Polly Preston Shoes, Inc. SN 282,207. Pub. 12–17–68. Filed 10–10–67.

865,807. BABY JORDAN AND DESIGN. Arlan's Dept. Stores, Inc. SN 283,416. Pub. 12–3–68. Filed 10–26–67.

865,808. EAGLE OAK. Genesco Inc. SN 285,418. Pub. 12–17–68. Filed 11–22–67.

865,809. SOPHISTICATE COLLECTION. Wembley, Inc. SN 285,781. Pub. 12–17–68. Filed 11–28–67.

865,810. VIGORN. Burleigh-Smith Brothers (Vigorn) Limited. MULTIPLE CLASS (Classes 39 and 42). SN 287,891. Pub. 12–17–68. Filed 1–2–68.

865,811. SMOOTHLINE. Sears, Roebuck and Co. SN 288,236. Pub. 12–17–68. Filed 1–5–68.

865,812. SALVATORE. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 290,020. Pub. 12–17–68. Filed 1–31–68.

865,813. JAN ARCY AND DESIGN. Colonial Frocks, Inc. SN 290,160. Pub. 12–17–68. Filed 2–2–68.

865,814. BBW AND DESIGN. B. B. Walker Shoe Company. SN 292,732. Pub. 12–17–68. Filed 3–7–68.

865,815. DESIGN OF A MAN'S HEAD. The Enro Shirt Company, Inc. SN 292,772. Pub. 12–17–68. Filed 3–8–68.

865,816. LORRAINE WALKER. B. B. Walker Shoe Company. SN 293,966. Pub. 12–17–68. Filed 3–22–68.

865,817. JILETOS. Avant Garde Sportswear, Inc. SN 294,250. Pub. 12–17–68. Filed 3–27–68.

865,818. JULIANELLI. Mabel Julianelli, d.b.a. Julianelli. SN 298,335. Pub. 12–17–68. Filed 5–16–68.

865,819. STETSON. John B. Stetson Company. SN 298,874. Pub. 12–17–68. Filed 5–22–68.

865,820. PAPPAGALLO. Pappagallo, Inc. SN 300,408. Pub. 12–17–68. Filed 6–14–68.

865,821. MISTER UNIFORM AND DESIGN. Mister Trio Uniforms Inc. SN 300,788. Pub. 12–17–68. Filed 6–19–68.

865,822. FASHION T AND DESIGN. Mister Trio Uniforms Inc. SN 300,789. Pub. 12–17–68. Filed 6–19–68.

865,823. ROLLPROOF. Hickey-Freeman Co., Inc. SN 305,887. Pub. 12–17–68. Filed 8–26–68.

Class 40 — Fancy Goods, Furnishings, and Notions

865,824. DESIGN OF HAND AND BUTTERFLY. Diantha Fielding. SN 272,601. Pub. 12–17–68. Filed 5–29–67.

865,825. NAIL DO. Modish Imports, Inc. SN 279,490. Pub. 12–17–68. Filed 8–31–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

865,810. (See Class 39 for this trademark.)

865,826. BOUBOUDIMA. Vlisco Textieldrukkerij Jen. N.V. SN 279,340. Pub. 12–17–68. Filed 8–29–67.

865,827. SATURN MOSAIC. Roller Process Corp. SN 279,751. Pub. 12–17–68. Filed 9–6–67.

865,828. CANASIL. Chemcell Limited-Chemcell Limitee. SN 290,580. Pub. 12–17–68. Filed 2–8–68.

865,829. LADY MARIAN. Premium Corporation of America, Inc. SN 295,171. Pub. 12–17–68. Filed 4–8–68.

865,830. FONDEAU. Fieldcrest Mills, Inc. SN 299,448. Pub. 12–17–68. Filed 5–31–68.

865,831. PRIMALENE. Burlington Industries, Inc. SN 299,544. Pub. 12–17–68. Filed 6–3–68.

Class 43 — Thread and Yarn

865,832. MUSCLEFLEX. American Enka Corporation. SN 298,522. Pub. 12–17–68. Filed 5–20–68.

Class 44 — Dental, Medical, and Surgical Appliances

865,833. AUROLAIN. Precious Metals Research Works, Inc. SN 284,316. Pub. 12–17–68. Filed 11–7–67.

865,834. BREATHMAKER. Geigy Chemical Corporation. SN 289,669. Pub. 12–17–68. Filed 1–26–68.

865,835. 707. Sierra Engineering Company. SN 292,621. Pub. 12–17–68. Filed 3–6–68.

865,836. DEMURE. Roycemore, Inc. SN 296,930. Pub. 12–17–68. Filed 4–30–68.

Class 45 — Soft Drinks and Carbonated Waters

865,837. CAR FRISK CITRUSDRYCK ETC. AND DESIGN. Tingsryds Bryggeri Aktiebolag. SN 263,415. Pub. 12–17–68. Filed 1–26–67.

865,838. KOOL SHAKES. General Foods Corporation. SN 284,360. Pub. 12–17–68. Filed 11–8–67.

865,839. KOOL SHOT. General Foods Corporation. SN 284,361. Pub. 12–17–68. Filed 11–8–67.

865,840. SOUR SHAKES. General Foods Corporation. SN 284,363. Pub. 12–17–68. Filed 11–8–67.

Class 46 — Foods and Ingredients of Foods

865,561. (See Class 2 for this trademark.)

865,841. MARFOOD AND DESIGN. International Maritime Supplies Company Limited. SN 178,202. Pub. 5–14–68. Filed 10–2–63.

865,842. RICHWHIP. Rich Products Corporation (Delaware corporation), assignee of Rich Products Corporation (New York corporation). SN 241,807. Pub. 1–2–68. Filed 3–24–66.

865,843. PUFFIN. Superior Foods, Inc. SN 254,737. Pub. 8–8–67. Filed 9–19–66.

865,844. BARBECUE CHEF. Products Engineering Corp. SN 260.072. Pub. 12–17–68. Filed 12–5–66.

865,845. HAV'A SHAKE. Garelick Bros. Farms, Inc. SN 260,740. Pub. 10–17–67. Filed 12–14–66.

865,846. MINERAL KING AND DESIGN. Lindsay Groves, Inc. SN 263,093. Pub. 12–17–68. Filed 1–23–67.

865,847. SCARLET BEAUTY. Harrisons (London) Limited. SN 264,541. Pub. 12–17–68. Filed 2–13–67.

865,848. FLOWERPOPS. Cresca Company, Inc. SN 265,280. Pub. 12–17–68. Filed 2–23–67.

865,849. KELCO. Kelco Company. SN 269,667. Pub. 12–17–68. Filed 4–20–67.

865,850. CHOCORICH. Rose Brand Corporation. SN 270,203. Pub. 12–17–68. Filed 4–28–67.

865,851. CHICKEN ROYALE. Chicken Delight, Inc. SN 272,257. Pub. 12–17–68. Filed 5–24–67.

865,852. FUDGECO. H. C. Brill Company, Inc. SN 273,250. Pub. 12–17–68. Filed 6–7–67.

865,853. ORANGE BARN. Gray's Groves, Inc., d.b.a. Gray's Orange Barn. SN 274,204. Pub. 12–17–68. Filed 6–19–67.

865,854. HARRISON HOUSE. Super Valu Stores, Inc. SN 274,256. Pub. 12–17–68. Filed 6–19–67.

865,855. HARRISON HOUSE AND DESIGN. Super Valu Stores, Inc. SN 274,257. Pub. 12–17–68. Filed 6–19–67.

865,856. DESIGN OF CHEF. Super Valu Stores, Inc. SN 274,259. Pub. 12–17–68. Filed 6–19–67.

865,857. URE-O-LASS. Otto A. Kohl, d.b.a. Cedar Rapids Molasses Processing Co. SN 275,273. Pub. 12–17–68. Filed 7–3–67.

865,858. FLAVO-LASS. Otto A. Kohl, d.b.a. Cedar Rapids Molasses Processing Co. SN 275,274. Pub. 12–17–68. Filed 7–3–67.

865,859. RANCH COOK AND DESIGN. Hunt Oil Company. SN 275,524. Pub. 12–17–68. Filed 7–7–67.

865,860. CAPRICE DES DIEUX AND DESIGN. J. Bongrain & Cie (Societe Anonyme). SN 277,014. Pub. 12–17–68. Filed 7–28–67.

865,861. CHICK A·DEES. Borden, Inc., by change of name from The Borden Company. SN 278,085. Pub. 11–5–68. Filed 8–11–67.

865,862. ADAPT. Wallace & Tiernan Inc. SN 279,237. Pub. 12–17–68. Filed 8–28–67.

865,863. SOLAR. Peavey Company. SN 281,486. Pub. 12–17–68. Filed 9–29–67.

865,864. SUNDO. Peavey Company. SN 281,487. Pub. 12–17–68. Filed 9–29–67.

865,865. NORTH COUNTRY. Peavey Company. SN 281,488. Pub. 12–17–68. Filed 9–29–67.

865,866. VALLEY BOY. Dumont Packing Company. SN 285,727. Pub. 12–17–68. Filed 11–28–67.

865,867. FAMIGLIA. Dumont Packing Company. SN 285,728. Pub. 12–17–68. Filed 11–28–67.

865,868. KADANA. Kelly, Douglas & Company, Limited. SN 286,269. Pub. 12–17–68. Filed 12–5–67.

865,869. KELLOGG'S 1001. Kellogg Company. SN 286,883. Pub. 12–17–68. Filed 12–14–67.

865,870. MISCELLANEOUS DESIGN. Whiting Milk Company Inc. SN 287,330. Pub. 12–17–68. Filed 12–20–67.

865,871. PLANTATION FRIED CHICKEN AND DESIGN. Plantation Fried Chicken Corporation. SN 288,044. Pub. 12–17–68. Filed 11–24–67.

865,872. WATEKE. Wajay Bakery, Inc. SN 288,144. Pub. 12–17–68. Filed 1–4–68.

865,873. WHITE LILAC. Ben Silverstein, d.b.a. Silver Foods Company. SN 288,357. Pub. 12–17–68. Filed 1–8–68.

865,874. GRACE AND DESIGN. W. R. Grace & Co. SN 291,735. Pub. 12–17–68. Filed 2–23–68.

865,875. SUPER A ASSOCIATED AND DESIGN. Associated Food Stores, Inc. SN 293,104. Pub. 12–17–68. Filed 3–13–68.

865,876. S.D.S. H. C. Brill Company, Inc. SN 293,687. Pub. 12–17–68. Filed 3–20–68.

865,877. "HANSEN'S" 50–50 AND DESIGN. Chr. Hansen's Laboratory, Inc. SN 294,373. Pub. 12–17–68. Filed 3–28–68.

865,878. LENNY'S. Mal-Len Corp. SN 294,635. Pub. 12–17–68. Filed 4–1–68.

865,879. Y & S AND DESIGN. National Licorice Company. SN 295,841. Pub. 12–17–68. Filed 4–17–68.

865,880. WA AND DESIGN. Western Alfalfa Corporation. SN 295,866. Pub. 12–17–68. Filed 4–17–68.

865,881. SIERRA GRANDE. Fairmont Foods Company. SN 296,068. Pub. 12–17–68. Filed 4–22–68.

865,882. WESTERN SIESTA AND DESIGN. Fairmont Foods Company. SN 296,069. Pub. 12–17–68. Filed 4–22–68.

865,883. TRI-M BRAND AND DESIGN. Delicious Foods Co. SN 299,221. Pub. 12–17–68. Filed 5–28–68.

865,884. ATHENA. Reese Finer Foods, Inc. SN 300,112. Pub. 12–17–68. Filed 6–10–68.

865,885. BURRY'S LICKITY SPLITS AND DESIGN. The Quaker Oats Company. SN 300,235. Pub. 12–17–68. Filed 6–12–68.

865,886. MOUTH FULL. The Donruss Company. SN 300,271. Pub. 12–17–68. Filed 6–12–68.

865,887. ALPHA. Central Alberta Dairy Pool, d.b.a. Alpha Milk Co. and Alpha Milk Company. SN 300,555. Pub. 12–17–68. Filed 6–17–68.

865,888. XXXX PLUS. Desert Produce, Inc. SN 305,269. Pub. 12–17–68. Filed 8–16–68.

865,889. RICARDO AND DESIGN. Desert Produce, Inc. SN 305,270. Pub. 12–17–68. Filed 8–16–68.

Class 47 — Wines

865,890. ROMA ROCKET. Schenley Industries, Inc. SN 294,859. Pub. 12–17–68. Filed 4–3–68.

865,891. JUSTINA. Brown & Pank Limited. SN 295,303. Pub. 12–17–68. Filed 4–10–68.

865,892. GLADIATOR. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines. SN 297,574. Pub. 12–17–68. Filed 5–7–68.

865,893. WAHTOKE. California Wine Association. MULTIPLE CLASS (Classes 47 and 49). SN 297,913. Pub. 12–17–68. Filed 5–13–68.

Class 48 — Malt Beverages and Liquors

865,894. LOTUS FLOWER. Foreign Vintages, Inc. SN 293,710. Pub. 12–17–68. Filed 3–20–68.

865,895. COAT OF ARMS (DESIGN). Haffenreffer & Co., Inc. SN 294,495. Pub. 12–17–68. Filed 3–29–68.

Class 49 — Distilled Alcoholic Liquors

865,893. (See Class 47 for this trademark.)

865,896. RED HACKLE AND DESIGN. Hepburn & Ross Limited. SN 287,292. Pub. 12–17–68. Filed S.R. 12–20–67; Am. P.R. 8–27–68.

865,897. SCHENLY SUPERB. Schenley Industries, Inc. SN 292,719. Pub. 12–17–68. Filed 3–7–68.

865,898. CANVASBACK. Glenmore Distilleries Company. SN 295,429. Pub. 12–17–68. Filed 4–11–68.

Class 50 — Merchandise Not Otherwise Classified

865,899. TOUCH INC. AND DESIGN. Touch Incorporated. SN 280,988. Pub. 12–17–68. Filed 9–22–67.

865,900. TRESS-TREE. New Products Corporation. SN 282,473. Pub. 12–17–68. Filed 10–13–67.

865,901. PIP AND DESIGN. Anodyne, Inc. SN 296,485. Pub. 12–17–68. Filed 4–25–68.

865,902. FLEX-O-LITE AND DESIGN. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 300,351. Pub. 12–17–68. Filed 6–13–68.

865,903. MAWA. Mawa Metallwarenfabrik Wagner G.m.b.H. & Co. KG. SN 300,604. Pub. 12–17–68. Filed 6–17–68.

Class 51 — Cosmetics and Toilet Preparations

865,904. FINAL NET. Ellen Kaye Laboratories, Inc. SN 275,148. Pub. 12–17–68. Filed 6–30–67.

865,905. MISCELLANEOUS DESIGN. E. R. Holloway Limited. SN 280,359. Pub. 12–17–68. Filed 8–28–67.

865,906. CHANTILLY. Houbigant, Inc. SN 282,369. Pub. 12–17–68. Filed 10–12–67.

865,907. AMBRULSION. Guerlain, Inc. SN 285,541. Pub. 12–17–68. Filed 11–24–67.

865,908. KOSCOT. Koscot Interplanetary, Inc. SN 285,557. Pub. 12–17–68. Filed 11–24–67.

865,909. FORMULOTION. Clairol Incorporated. SN 288,781. Pub. 12–17–68. Filed 1–15–68.

865,910. LONDONDERRY. Yardley of London, Inc. SN 290,128. Pub. 12–17–68. Filed 2–1–68.

865,911. FASHION NET. Gem, Incorporated. SN 307,063. Pub. 12–17–68. Filed 9–11–68.

Class 52 — Detergents and Soaps

865,550. (See Class 1 for this trademark.)

865,705. (See Class 23 for this trademark.)

865,912. WORKS LIKE 50 MEN. Duo Chem Corporation. SN 282,691. Pub. 12–17–68. Filed 10–17–67.

865,913. RICHCO. Richardson Chemical Products Company. SN 283,819. Pub. 12–17–68. Filed 10–31–67.

865,914. BULOVA. Bulova Watch Company, Inc. SN 283,976. Pub. 12–17–68. Filed 11–2–67.

865,915. HLD. Chemical Associates, Inc. SN 289,275. Pub. 12–17–68. Filed 1–22–68.

865,916. B AND CIRCLE DESIGN. Burroughs Corporation. SN 291,246. Pub. 12–17–68. Filed 2–16–68.

865,917. BURROUGHS. Burroughs Corporation. SN 291,247. Pub. 12–17–68. Filed 2–16–68.

Service Marks

Class 100 — Miscellaneous

865,918. TORKELSON ENGINEERS AND DESIGN. F. C. Torkelson Co. MULTIPLE CLASS (Classes 100 and 103). SN 252,368. Pub. 12–17–68. Filed 8–15–66.

865,919. EPA AND DESIGN. Environmental Planning Associates, Inc. SN 269,754. Pub. 12–17–68. Filed 4–21–67.

865,920. THE HUNGRY DUTCHMAN. The Hungry Dutchman Restaurants, Inc. SN 271,472. Pub. 12–17–68. Filed 5–15–67.

865,921. FW AND DESIGN. Foster Wheeler Corporation. MULTIPLE CLASS (Classes 100 and 103). SN 271,700. Pub. 12–17–68. Filed 5–17–67.

865,922. THE PEPPER TREE AND DESIGN. International Food Plaza Inc. SN 274,875. Pub. 12–17–68. Filed 6–27–67.

865,923. IEM. International Electro-Magnetics, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 276,451. Pub. 12–17–68. Filed 7–20–67.

865,924. PHOCAL. Electronic Calculating Service, Inc. SN 285,655. Pub. 12–17–68. Filed 11–27–67.

865,925. POLAR BEAR. Rerebaz, Inc. SN 286,178. Pub. 12–17–68. Filed 12–4–67.

865,926. MISCELLANEOUS DESIGN. Fred Harvey, Inc., assignee of Fred Harvey. SN 291,060. Pub. 12–10–68. Filed 2–14–68.

865,927. THE BRIGHT NEW IDEAS ARE ELECTRIC. Commonwealth Edison Company. SN 296,232. Pub. 12–17–68. Filed 4–23–68.

865,928. MANIKIN (DESIGN). Across the Street Restaurants of America, Incorporated. SN 298,080. Pub. 12–17–68. Filed 5–14–68.

865,929. ABC AND DESIGN. Alaska Business Council. SN 304,278. Pub. 12–17–68. Filed 8–5–68.

Class 101 — Advertising and Business

865,930. WURLITZER MEANS MUSIC TO MILLIONS. The Wurlitzer Company. SN 252,921. Pub. 12–17–68. Filed 8–22–66.

865,931. OLSTEN. The Olsten Corporation, assignee of William Olsten. SN 260,878. Pub. 12–17–68. Filed 12–15–66.

865,932. BUCCELLATI. Mario Buccellati Inc. SN 261,610. Pub. 12–17–68. Filed 12–29–66.

865,933. R & R (DESIGN). Allis-Chalmers Manufacturing Company. SN 272,146. Pub. 12–17–68. Filed 5–23–67.

865,934. THE CUSTOM MAILER AND DESIGN. Custom Mailers & Consultants, Inc. SN 273,610. Pub. 12–17–68. Filed 6–12–67.

865,935. LBI AND DESIGN. Llewellyn Brothers, Incorporated, d.b.a. Llewellyn Bros., Inc. SN 273,785. Pub. 12–17–68. Filed 6–13–67.

865,936. CENTELIBUS. Rome Arnold & Company. SN 278,658. Pub. 12–17–68. Filed 8–21–67.

865,937. SNAP SHOPS. District Photo, Inc. MULTIPLE CLASS (Classes 101 and 106). SN 281,047. Pub. 12–17–68. Filed 9–25–67.

865,938. "THE UN-COMMON EXECUTIVE." John F. Robinson, d.b.a. Robinson Executive Search and Consulting Associates. SN 282,926. Pub. 12–17–68. Filed 10–19–67.

865,939. THE "LIVING CATALOG" STORE. Spencer Gifts Retail Stores, Inc. SN 284,879. Pub. 12–17–68. Filed 11–15–67.

865,940. DONNELLEY MARKET INFORMATION SERVICE. The Reuben H. Donnelley Corporation. SN 286,514. Pub. 12–17–68. Filed 12–8–67.

865,941. TRS AND DESIGN. Ticket Reservation Systems, Inc. SN 289,855. Pub. 12–17–68. Filed 1–22–68.

865,942. JOBS NATIONAL ALLIANCE OF BUSINESSMEN AND DESIGN. National Alliance of Businessmen. SN 295,452. Pub. 12–17–68. Filed 4–11–68.

865,943. XEROCENTER AND DESIGN. Xerocenter, Inc. SN 300,883. Pub. 12–17–68. Filed 6–20–68.

Class 102 — Insurance and Financial

865,944. MILLERS GROUP AND DESIGN. The Millers Casualty Insurance Company of Texas, The Millers Mutual Fire Insurance Company of Texas, The Millers Life Insurance Company of Texas (joint owners), d.b.a. Millers Group. SN 257,790. Pub. 12–17–68. Filed 11–2–66.

865,945. LOANEASE. Girard Trust Bank. SN 274,425. Pub. 12–17–68. Filed 6–21–67.

865,946. THE PROTECTIVE GROUP. The Protective Group. SN 283,707. COLLECTIVE MARK. Pub. 12–17–68. Filed 10–30–67.

865,947. MISCELLANEOUS DESIGN. The Protective Group. SN 283,817. COLLECTIVE MARK. Pub. 12–17–68. Filed 10–31–67.

865,948. CA AND DESIGN. Continental American Life Insurance Company. SN 287,725. Pub. 12–17–68. Filed 12–28–67.

865,949. BONUS SAVINGS. Beverly Bank. SN 302,666. Pub. 12–17–68. Filed 7–15–68.

Class 103 — Construction and Repair

865,918. (See Class 100 for this trademark.)

865,921. (See Class 100 for this trademark.)

865,923. (See Class 100 for this trademark.)

865,950. HUGHES NUMERICS AND DESIGN. Hughes Tool Company. SN 262,336. Pub. 12–17–68. Filed 1–11–67.

865,951. T-VION. T-Vion, Inc. SN 266,110. Pub. 12–17–68. Filed 3–6–67.

865,952. G AND DESIGN. Graflex, Inc. SN 275,441. Pub. 12–17–68. Filed 7–6–67.

865,953. DAIRY-SERV. Midland-Ross Corporation. SN 276,940. Pub. 12–17–68. Filed 7–27–67.

865,954. ORKIN 12. Orkin Exterminating Company, Inc. SN 298,753. Pub. 12–17–68. Filed 5–21–68.

Class 105 — Transportation and Storage

865,794. (See Class 38 for this trademark.)

865,955. HUB AND DESIGN. HUB Airlines, Inc. SN 290,295. Pub. 12–17–68. Filed 2–5–68.

Class 106 — Material Treatment

865,937. (See Class 101 for this trademark.)

865,956. CAMERA (DESIGN). Supra Color Inc. SN 272,868. Pub. 12–17–68. Filed 6–1–67.

865,957. TODAY'S PHOTOGRAPHIC PLEASURES ARE TOMORROW'S VALUED TREASURES. Skyland Studios, Inc., d.b.a. Sky Land Photo Service. SN 288,122. Pub. 12–17–68. Filed 1–4–68.

865,958. COLORESIN. Cooper Industries, Inc. SN 291,002. Pub. 12–17–68. Filed 2–14–68.

Class 107 — Education and Entertainment

865,794. (See Class 38 for this trademark.)

865,959. ASP AMERICAN SELF PROTECTION ASSOCIATION AND DESIGN. American Self-Protection Association, Inc. SN 272,461. Pub. 12–17–68. Filed 5–26–67.

865,960. AWAY WE GO. Jackie Gleason, d.b.a. Jaglea Music Company. SN 281,788. Pub. 12–17–68. Filed 10–4–67.

865,961. GAF. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 290,597. Pub. 12–17–68. Filed 2–8–68.

865,962. GAF AND DESIGN. GAF Corporation, by change of Name from General Aniline & Film Corporation. SN 290,598. Pub. 12–17–68. Filed 2–8–68.

Collective Membership Mark

Class 200

865,963. APRA ETC. AND DESIGN. Automotive Parts Rebuilders Association. SN 279,775. Pub. 12–17–68. Filed 9–7–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 21 — Electrical Apparatus, Machines, and Supplies

865,964. Precision Paper Tube Company, Wheeling, Ill. SN 274,986. Filed P.R. 6–28–67; Am. S.R. 11–20–68.

THINWALL

For Electrical Coil Forms (Int. Cl. 9).
First use on or before May 1, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

865,965. Oliver Corporation, Chicago, Ill. SN 275,458. Filed P.R. 7–6–67; Am. S.R. 6–4–68.

MIGHTY·TOW

For Industrial Tractors (Int. Cl. 12).
First use Mar. 13, 1967.

Class 39 — Clothing

865,966. André Fantasies, Baltimore, Md. SN 259,213. Filed P.R. 11–22–66; Am. S.R. 10–25–68.

Rain-Visor

For Hair Protecting Hoods for Women and Girls (Int. Cl. 25).
First use Aug. 24, 1966.

865,967. Gerberich-Payne Shoe Company, Mount Joy, Pa. SN 272,924. Filed P.R. 6–2–67; Am. S.R. 10–15–68.

gerberich shoes

For Shoes (Int. Cl. 25).
First use Aug. 14, 1964.

Class 46 — Foods and Ingredients of Foods

865,968. House-Autry Mills, Inc., Newton Grove, N.C., assignee of Autry Bros. Milling Company, Inc., Autryville, N.C. SN 269,619. Filed P.R. 4–20–67; Am. S.R. 10–23–68.

MY-T-QUIK

For Hushpuppy Mix (Int. Cl. 30).
First use Apr. 6, 1967.

Class 50 — Merchandise Not Otherwise Classified

865,969. Loewengart & Co., Inc., New York, N.Y. SN 295,830. Filed P.R. 4–17–68; Am. S.R. 11–13–68.

STEERHIDE INTERIORS

Applicant disclaims any exclusive rights in the word "Steerhide" separate and apart from its use in the mark as shown.
For Genuine Steerhide and Calfskin Rugs (Int. Cl. 27).
First use Feb. 21, 1966.

Service Mark

Class 106 — Material Treatment

865,970. Synthetics Finishing Corporation, Philadelphia, Pa. SN 278,136. Filed P.R. 8–11–67; Am. S.R. 10–16–68.

SUEDEBAC

For Application of Coating and Impregnating Materials to Textile Fabrics of Others (Int. Cl. 40).
First use Apr. 6, 1967.

TRADEMARK REGISTRATIONS RENEWED

70,977. "GOTHAM" AND DIAMOND-SHAPED DESIGN. Cl. 39 (Int. Cl. 25). 10–20–08.
238,074. LOFT DINNER MINTS. Cl. 46 (Int. Cl. 30). 1–24–28.
250,241. "GETS-IT" AND CIRCULAR DESIGN. Cl. 18 (Int. Cl. 5). 12–4–28.
250,507. PANCRO. Cl. 6 (Int. Cl. 3). 12–11–28.
250,675. LUBRI-KIT. Cl. 23 (Int. Cl. 7). 12–11–28.
251,208. ARCADIAN. Cl. 10 (Int. Cl. 1). 1–1–29.
251,292. CLOROX. Cl. 6 (Int. Cl. 5). 1–1–29.
251,383. FORD. Cl. 35 (Int. Cls. 7, 12, and 17). 1–8–29.
251,430. SOLVAY. Cl. 6 (Int. Cl. 1). 1–8–29.
251,751. TANGEE. Cl. 51 (Int. Cl. 3). 1–15–29.
252,025. PREMIER. Cl. 39 (Int. Cl. 25). 1–22–29.
252,216. FORD. Cl. 19 (Int. Cl. 12). 1–29–29.
252,325. "GOLDEN GUINEA" ETC. AND DESIGN. Cl. 47 (Int. Cl. 33). 2–5–29.
252,494. TRILANESE. Cl. 42 (Int. Cl. 24). 2–12–29.
254,585. GOLDEN GUINEA. Cl. 47 (Int. Cl. 33). 3–26–29.
254,956. PITOCIN. Cl. 18 (Int. Cl. 5). 4–2–29.
256,578. "WORSTED-TEX" AND DESIGN. Cl. 42 (Int. Cl. 24). 5–21–29.
257,246. "ANHEUSER-BUSCH'S MALT-NUTRINE" AND DESIGN. Cl. 48 (Int. Cl. 32). 6–4–29.
439,846. FOLLOW THE ARROW. Cl. 22 (Int. Cl. 28). 7–27–48.
440,332. L AND HEART DESIGN. Cl. 46 (Int. Cl. 30). 8–24–48.
441,285. POWELL. Cl. 13 (Int. Cl. 6). 11–9–48.
441,371. THREADS. Cl. 39 (Int. Cl. 25). 11–23–48.
441,427. DAPPER DO AND DESIGN. Cl. 39 (Int. Cl. 25). 11–23–48.
441,470. DUAL. Cl. 26 (Int. Cl. 9). 11–30–48.
441,696. DESIGN OF A TRAWLER. Cl. 18 (Int. Cl. 5). 12–28–48.
441,863. AMF AND DESIGN. Cl. 23 (Int. Cl. 7). 1–18–49.
503,629. FALLS CITY. Cl. 48 (Int. Cl. 32). 11–2–48.
503,931. TURKISH TROPHIES. Cl. 17 (Int. Cl. 34). 11–16–48.
504,092. SOME STRIKE ETC. AND FISH DESIGN. Cl. 46 (Int. Cl. 29). 11–23–48.
504,538. BELLE OF KENTUCKY. Cl. 49 (Int. Cl. 33). 12–7–48.
506,842. BEMILIN. Cl. 2 (Int. Cl. 22). 2–22–49.
506,844. TWO-IN-ONE AND DESIGN. Cl. 2 (Int. Cl. 16). 2–22–49.
506,846. BEMIS. Cl. 2 (Int. Cls. 16 and 22). 2–22–49.
506,990. NIGHT HAVEN. Cl. 32 (Int. Cl. 20). 2–22–49.
507,039. WASHOUGAL. Cl. 42 (Int. Cls. 24 and 25). 2–22–49.
507,530. CLAMP-MASTER. Cl. 23 (Int. Cl. 8). 3–15–49.
507,647. EAGLE. Cl. 22 (Int. Cl. 28). 3–15–49.
507,670. MEM. Cl. 52 (Int. Cl. 3). 3–15–49.
507,888. CHAMPION. Cl. 44 (Int. Cls. 7, 9, and 10). 3–22–49.
507,922. WESTER BROS. Cl. 44 (Int. Cl. 8). 3–22–49.
504,562. GAM. Cl. 48 (Int. Cl. 32). 12–7–48.
504,672. TRIANGLE CUE AND TRIANGLE DESIGN. Cl. 22 (Int. Cl. 28). 12–7–48.
504,752. COW BRAND. Cl. 46 (Int. Cl. 1). 12–14–48.
504,773. KK ETC. AND DESIGN. Cl. 46 (Int. Cl. 29). 12–14–48.
504,828. KEY. Cl. 2 (Int. Cls. 16, 21, and 22). 12–14–48.
504,841. LEDEX. Cl. 21 (Int. Cl. 9). 12–14–48.
504,922. ANNULAR BAND (BLUE). Cl. 46 (Int. Cl. 1). 12–21–48.
504,923. ANNULAR BAND (RED). Cl. 46 (Int. Cl. 1). 12–21–48.
504,924. DWIGHT'S. Cl. 46 (Int. Cl. 1). 12–21–48.
504,971. BB AND DESIGN. Cl. 1 (Int. Cl. 31). 12–21–48.
505,019. INLAND. Cl. 12 (Int. Cl. 6). 12–21–48.
505,062. THOR. Cl. 12 (Int. Cl. 19). 12–21–48.
505,166. OBLONG RECTANGULAR BAND (BLUE). Cl. 52 (Int. Cl. 3). 12–28–48.
505,168. CHURCH & DWIGHT CO., INC. Cl. 52 (Int. Cl. 3). 12–28–48.
505,175. ACKERMAN-JOHNSON. Cl. 13 (Int. Cl. 6). 12–28–48.

505,177. LITTLE SIX. Cl. 21 (Int. Cl. 9). 12–28–48.
505,201. TOOTSIETOY. Cl. 22 (Int. Cl. 28). 12–28–48.
505,275. TWIN-SIX. Cl. 21 (Int. Cls. 9 and 11). 12–28–48.
505,361. BEMIS SPECIAL. Cl. 43 (Int. Cl. 23). 1–4–49.
505,447. WISSCOLASTIC. Cl. 7 (Int. Cl. 6). 1–4–49.
505,707. SILVERCOTE. Cl. 12 (Int. Cl. 17). 1–18–49.
505,765. ENAMELITE. Cl. 14 (Int. Cl. 6). 1–18–49.
505,901. MASON'S OLD FASHION ROOT BEER. Cl. 45 (Int. Cl. 32). 1–18–49.
506,105. THE EXPLOSIVES ENGINEER. Cl. 38 (Int. Cl. 16). 1–25–49.
506,283. KNAPP-FELT. Cl. 39 (Int. Cl. 25). 2–1–49.
506,533. CELANESE. Cl. 6 (Int. Cl. 1). 2–8–49.
506,559. ORGELECTRA. Cl. 21 (Int. Cl. 9). 2–8–49.
506,607. CHANTILLY. Cl. 28 (Int. Cls. 8 and 14). 2–15–49.
506,608. GREENBRIER. Cl. 28 (Int. Cls. 8 and 14). 2–15–49.
506,609. STRASBOURG. Cl. 28 (Int. Cls. 8 and 14). 2–15–49.
507,923. GOODYEAR AND WINGED FOOT DESIGN. Cl. 35 (Int. Cls. 7, 12, and 17). 3–22–49.
508,102. CAPTURING AMERICA BY THE BITE. Cl. 46 (Int. Cl. 30). 3–29–49.
508,515. STELA. Cl. 46 (Int. Cl. 31). 4–12–49.
508,516. TOLTEC. Cl. 46 (Int. Cl. 31). 4–12–49.
508,552. PREST-O-PRESS AND DESIGN. Cl. 24 (Int. Cl. 7). 4–12–49.
508,819. WISSCOTE. Cl. 7 (Int. Cl. 6). 4–19–49.
509,287. POMTONGS. Cl. 23 (Int. Cl. 21). 5–3–49.
509,375. SUN IDOL. Cl. 46 (Int. Cl. 31). 5–3–49.
509,436. NOB HILL. Cl. 17 (Int. Cl. 34). 5–3–49.
509,529. WOVEN INTO THE LIFE OF AMERICA. Cl. 42 (Int. Cl. 24). 5–3–49.
509,530. WOVEN INTO THE LIFE OF AMERICA. Cl. 43 (Int. Cl. 23). 5–3–49.
509,721. GOLDSHEEN. Cl. 11 (Int. Cl. 2). 5–10–49.
509,727. DR. MOFFETT'S TEETHINA. Cl. 18 (Int. Cl. 5). 5–10–49.
509,771. XX. Cl. 6 (Int. Cl. 1). 5–10–49.
509,914. FRIEL'S. Cl. 46 (Int. Cls. 29 and 32). 5–17–49.
509,959. SKYKOOL. Cl. 42 (Int. Cl. 24). 5–17–49.
509,986. STA-THIK. Cl. 6 (Int. Cl. 1). 5–17–49.
510,325. YORK MODE M AND DESIGN. Cl. 39 (Int. Cl. 25). 5–31–49.
510,353. STAYBIND. Cl. 5 (Int. Cl. 1). 5–31–49.
510,472. MASTER MECHANIC. Cl. 38 (Int. Cl. 16). 5–31–49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

20,906. S AND BIRD DESIGN. Cl. 39. 3–29–1892.
726,716. TLC. Cl. 26. 1–23–62.
729,657. PROATRIC. Cl. 18. 4–10–62.
732,335. GPI AND DESIGN. Cl. 11. 6–5–62.
733,570. SABRA. Cl. 105. 6–26–62.
735,286. CRUMPAC ORBIT WOUND AND DESIGN. Cl. 23.
736,563. STYLIZED T AND DESIGN. Cl. 105. 8–21–62.
738,016. BIG BOSS AND DESIGN. Cl. 52. 9–18–62.

The following registrations issued Jan. 15, 1963

743,598. DN200. Cl. 1.
743,605. HALO. Cl. 2.
743,609. STANDARD. Cl. 2.
743,610. VAN-NEET. Cl. 2.
743,617. LEFKOWELD. Cl. 5.
743,619. CRYSTAL HEAT. Cl. 6.
743,629. INNER SHINE. Cl. 6.
743,633. TYLON. Cl. 7.
743,636. DEW. Cl. 10.
743,637. THE GULF FERTILIZER CO. AND MALTESE CROSS DESIGN. Cl. 10.
743,641. TEXITE. Cl. 12.
743,644. DUR-A-FRAME. Cl. 12.
743,646. KOMAR. Cl. 12.
743,648. ZIRGRAIN. Cl. 12.
743,650. LEVER LOCK. Cl. 13.
743,652. BIG RED. Cl. 13.
743,656. TUFF TWIST. Cl. 13.
743,661. IMPACT. Cl. 13.
743,664. KARIZOL. Cl. 15.
743,670. VI-RAY. Cl. 16.
743,671. HORNBLOCK. Cl. 16.
743,672. LIQUALIN. Cl. 16.
743,676. HI-PURE. Cl. 18.
743,677. DENTA MED AND DESIGN. Cl. 18.
743,679. CINDERELLA. Cl. 18.
743,682. LIPOSTABLE. Cl. 18.
743,684. OTOCETIC. Cl. 18.
743,685. RUMI JEX AND DESIGN. Cl. 18.
743,689. IONITUSS–12. Cl. 18.
743,692. WUNDERSPRINGS. Cl. 19.
743,697. CELL BIN. Cl. 19.
743,699. APLACO. Cl. 20.
743,700. ASTRALITE. Cl. 21.
743,708. FOILAC. Cl. 21.
743,722. PHONE-BUTLER. Cl. 21.
743,726. HERITAGE HOUSE. Cl. 22.
743,729. HOLE-IN-ONE. Cl. 22.
743,730. CAST-A-SPELL. Cl. 22.
743,731. TABLESS. Cl. 22.
743,732. MAGICMARK. Cl. 23.
743,737. ROLA CHEK. Cl. 23.
743,739. LIQUID STOP. Cl. 23.
743,758. CESI. Cl. 24.
743,761. GAMATEK. Cl. 26.
743,762. LINGUA VAN. Cl. 26.
743,763. STYLIZED T. Cl. 26.
743,766. PENDULOHM. Cl. 26.
743,767. PYROGYRO. Cl. 26.
743,770. THE CHRISTIAN. Cl. 27.
743,781. CHAMITT. Cl. 29.
743,783. AMF. Cl. 31.
743,792. DUODESK. Cl. 32.
743,794. KOOLFOAM-S. Cl. 32.
743,796. SHADOWS-OUT. Cl. 32.
743,797. PEUCHEN AND DESIGN. Cl. 34.
743,799. H-P AND DESIGN. Cl. 34.
743,807. CHESS. Cl. 36.
743,810. SPACE-SAVER. Cl. 37.
743,812. TRANSITION. Cl. 38.
743,817. IN RE :. Cl. 38.
743,822. HAMLET AND DESIGN. Cl. 39.
743,824. TAILO. Cl. 39.
743,830. PENROD. Cl. 39.
743,831. LARONDE. Cl. 39.
743,835. ANDRE CHATEAU. Cl. 39.
743,839. LONDON FOG RAINMENT. Cl. 39.
743,842. VANAROLA. Cl. 39.
743,843. POTPOURRI. Cl. 39.
743,845. MAGIC-GLO. Cl. 39.
743,848. DOVTEX. Cl. 42.
743,849. FLEXICORD. Cl. 42.
743,858. A & W. Cl. 46.
743,863. LITTLE KING AND DESIGN. Cl. 46.
743,865. BIG W. Cl. 46.
743,867. CATFISH KING'S AND DESIGN. Cl. 46.
743,883. ALLIED-IMPERIAL. Cl. 50.
743,884. MR. NEAT AND DESIGN. Cl. 50.
743,890. BALOO. Cl. 51.
743,891. RIKKI TAVI. Cl. 51.
743,898. EUTHAGENA. Cl. 51.
743,902. NORGE. Cl. 52.
743,903. TAAG. Cl. 52.
743,904. QUICK STICK. Cl. 52.
743,905. BUNNY BEAR. Cl. 52.
743,906. S AND DESIGN. Cl. 52.
743,907. INSTA-REDI SERVICE. Cl. 100.
743,909. DECOR. Cl. 101.
743,917. SPRA-WHITE. Cl. 16.
743,918. ELECTRO-DRIVE. Cl. 21.

Section 18

442,158. REPRESENTATION OF A FISH. Cl. 46. 3–1–49.

TRADEMARK REGISTRATIONS RENEWED DISCLAIMED, CORRECTED, ETC.

126,844. FANNY FARMER. Cl. 46. 10–7–19. Fanny Farmer Candy Shops, Inc., Rochester, N.Y. Amended to appear:

Fanny Farmer

261,627. UNIVERSAL. Cl. 23. 9–17–29. Universal Motor Company, Oshkosh, Wis. Amended to appear:

UNIVERSAL

294,978. ROYAL OAK. Cl. 1. 6–14–32. The Crossett Chemical Company. Georgia-Pacific Corporation, Portland, Oreg. Amended to appear:

ROYAL OAK

374,805. REPRESENTATION OF A CHEF AND BOWL. Cl. 46. 1–23–40. The Cream of Wheat Corporation, Minneapolis, Minn. Amended: In the statement, column 1, line 8, "wheat" is deleted.

507,568. NO DRIP. Cl. 12. 3–15–49. J. W. Mortell Company, Kankakee, Ill. Amended: In the statement, column 1, lines 7 and 8, "granulated cork" is deleted and *synthetic insulating fillers* is inserted.

756,713. COPE'S NAVY DE LUXE ESCUDO BRAND. Cl. 17. 9–17–63. Cope & Lloyd (Overseas) Limited, London, England. Amended: In the statement, column 2, line 3, "words" is deleted and *word* is inserted, in line 4, "and 'Brand'" is deleted, and the drawing is amended to appear:

COPE'S
ESCUDO
NAVY DE LUXE

851,275. PARKERSBURG. Cl. 12. 6–25–68. Textron, Inc., Providence, R.I. Corrected: In the statement, column 2, line 1, "building" should be deleted and *buildings* should be inserted.

852,931. SP AND DESIGN. Cl. 101. 7–16–68. Scientific Placement, Inc., Houston, Tex. Amended to appear:

SP

854,919. KIMBALL ELECTRAMATIC PLAYER AND DESIGN. Cl. 36. 8–13–68. Kimball Piano & Organ Co., Jasper, Ind. Corrected: In the statement, column 1, line 1, "Indiana" should be deleted and *Delaware* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 18—Medicines and Pharmaceutical Preparations

31,505. May 3, 1898. Allen & Hanburys, Limited, London, England. Pub. by Glaxo-Allenburys (Canada) Limited, Weston, Ontario, Canada.

A
H

For Medicinal Preparations and Medicated Foods (Int. Cl. 5).

435,640. Jan. 6, 1948. N.V. Algemeene Norit Maatschappij, d.b.a. General Norit Company, Limited, Amsterdam, Netherlands, and Jacksonville, Fla. Pub. by Norit N.V., Amsterdam, Netherlands.

NORIT

For Active Carbon, etc. (Int. Cl. 1).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

198,349. May 12, 1925. Cullen-Friestedt Company, Chicago, Ill. Pub. by Federal Sign and Signal Corporation, Blue Island, Ill.

BURRO

For Derricks and Traveling Cranes.

392,082. Dec. 9, 1941. Cullen-Friestedt Company, Chicago, Ill. Pub. by Federal Sign and Signal Corporation, Blue Island, Ill.

C-F

For Stationary Power Driven Apparatus for Pulling Railroad Cars, Gantry Cranes, Ingot Mold Lifters, Sheet Lifters, Welding Positioners, Cross Tie Lifters, and Switch Tie Lifters.

Class 38 — Prints and Publications

249,185. Nov. 6, 1928. Western Electric Company, Incorporated, New York, N.Y. Pub. by registrant.

Western Electric News

For Title of a Monthly Publication (Int. Cl. 16).

Class 46 — Foods and Ingredients of Foods

441,962. Feb. 1, 1949. Aktiengesellschaft Chocolat Tobler, Bern, Switzerland. Pub. by registrant.



For Chocolate, Cocoa Powder, Assorted Chocolates, etc. (Int. Cl. 30).

INDEX OF REGISTRANTS

MARCH 4, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A & W Root Beer Co., Santa Monica, Calif. 743,858, canc. Cl. 46.
Abert, Jack C., d.b.a. Mechanical Products Co., Phoenix, Ariz. 865,564, pub. 12–17–68. Cl. 3.
Ackerman-Johnson Co., to Illinois Tool Works Inc., Chicago, Ill. 505,175, ren. 3–4–69. Cl. 13.
Across The Street Restaurants of America, Inc., Oklahoma City, Okla. 865,928, pub. 12–17–68. Cl. 100.
Airtron, Inc., Morris Plains, N.J. 743,812, canc. Cl. 38.
Aktiebolaget Kabi, Stockholm, Sweden. 865,576, pub. 12–17–68. Cl. 6.
Aktiengesellschaft Chocolat Tobler, Bern, Switzerland. 441,962, 12(c) pub. 3–4–69. Cl. 46.
Alaska Business Council, Anchorage, Alaska. 865,929, pub. 12–17–68. Cl. 100.
Albany Billiard Ball Co., Albany, N.Y. 504,672, ren. 3–4–69. Cl. 22.
Albithel Jewelry Mfg., Inc., New York, N.Y. 865,734, pub. 12–17–68. Cl. 28.
Albritton Engineering Corp., Bryan, Tex. 865,697, pub. 11–19–68. Cl. 23.
Alexander-Reynolds Corp., Dumont, N.J. 865,647, pub. 12–17–68. Cl. 19.
Allen & Hanburys, Ltd., London, England, by Glaxo-Allenburys (Canada) Ltd., Weston, Ontario, Canada. 31,505, 12(c) pub. 3–4–69. Cl. 18.
Allied Chemical Corp. : *See*—
Barrett Co., The.
Solvay Process Co., The.
Allied Decals, Inc., Cleveland, Ohio. 743,883, canc. Cl. 50.
Allied Supermarkets, Inc., Detroit, Mich. 865,550, pub. 12–17–68. Multiple Class (Classes 1, 6, 14, 37, and 52).
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 865,933, pub. 12–17–68. Cl. 101.
Alpha Milk Co. : *See*—
Central Alberta Dairy Pool.
Aluminum Co. of America, Pittsburgh, Pa. 865,615, pub. 12–17–68. Cl. 14.
Amedee Pons & Reno-France, Paris, France. 865,654, pub. 12–17–68. Cl. 21.
American Associated Companies, Inc., Atlanta, Ga. 865,711, pub. 12–17–68. Cl. 24.
American Cyanamid Co., Wayne, N.J. 865,729, pub. 12–17–68. Cl. 26.
American Enka Corp., Enka, N.C. 865,832, pub. 12–17–68. Cl. 43.
American Hospital Supply Corp., Evanston, Ill., from V. Mueller & Co., Chicago, Ill. 865,702, pub. 12–17–68. Cl. 23.
American Machine & Foundry Co., New York, N.Y. 441,863, ren. 3–4–69. Cl. 23.
American Machine & Foundry Co., New York, N.Y. 743,783, canc. Cl. 31.
American Plastic Products Corp., Bridgeport, Conn. 743,699, canc. Cl. 20.
American Self-Protection Association, Inc., Brookfield, Ill. 865,959, pub. 12–17–68. Cl. 107.
Amerock Corp., Rockford, Ill. 865,598, pub. 12–17–68. Multiple Class (Classes 12, 13, and 23).
Amway Corp., Ada, Mich. 865,571, pub. 1–23–68. Cl. 6.
André Fantasies, Baltimore, Md. 865,966. Cl. 39.
Anheuser-Busch, Inc., St. Louis, Mo. 257,246, ren. 3–4–69. Cl. 48.
Anodye, Inc., North Miami Beach, Fla. 865,901, pub. 12–17–68. Cl. 50.
Anti-Hydro Waterproofing Co., Newark, N.J. 865,578, pub. 12–17–68. Cl. 6.
Applied Power Industries, Inc., Milwaukee, Wis. 865,696, pub. 12–17–68. Cl. 23.
Aqua-Guard, Inc., Birmingham, Ala. 865,737, pub. 12–17–68. Cl. 31.
Arctic Enterprises, Inc., Thief River Falls, Minn. 865,633, pub. 12–17–68. Cl. 19.
Arlan's Dept Stores, Inc., New York, N.Y. 865,807, pub. 12–3–68. Cl. 39.
Arnold, Rome, & Co., Chicago, Ill. 865,936, pub. 12–17–68. Cl. 101.
Associated Food Stores, Inc., Jamaica, N.Y. 865,875, pub. 12–17–68. Cl. 46.
Atlantic Lures, Inc., Providence, R.I. 865,678, pub. 12–17–68. Cl. 22.
Atlantic Lures, Inc., Providence, R.I. 865,684, pub. 12–17–68. Cl. 22.
Atomic Transmissions Service, Inc., Beverly Hills, Calif. 865,699, pub. 12–17–68. Cl. 23.
Auto Laundry Equipment Sales Co., Northbrook, Ill. 865,710, pub. 12–17–68. Cl. 23.
Automatic Poultry Feeder Co., Zeeland, Mich. 743,644, canc. Cl. 12.
"Automatic" Sprinkler Corp. of America, Cleveland, Ohio. 865,612, pub. 12–17–68. Cl. 13.
Automation Devices, Inc., Fairview, Pa. 865,706, pub. 12–17–68. Cl. 23.
Automotive Parts Rebuilders Association, Los Angeles, Calif. 865,963, pub. 12–17–68. Cl. 200.
Autry Bros. Milling Co., Inc. : *See*—
House-Autry Mills, Inc.
Avant Garde Sportswear, Inc., New York, N.Y. 865,817, pub. 12–17–68. Cl. 39.
Baker & Gubbins Co., Detroit, Mich. 743,664, canc. Cl. 15.
Ball Brothers Co. Inc., Muncie, Ind. 865,713, pub. 12–17–68. Cl. 26.
Bangor Punta Operations, Inc., New York, N.Y. 865,636–7, pub. 12–17–68. Cl. 19.
Bard, Francis N., Barrington, Ill. 865,551, pub. 12–17–68. Cl. 1.
Barnes, Eugene, d.b.a. Shadows-Out Mirror Co., New York, N.Y. 743,796, canc. Cl. 32.
Barrett Co., The, to Allied Chemical Corp., New York, N.Y. 251,208, ren. 3–4–69. Cl. 10.
Bates Creations, Inc., New York, N.Y. 865,735, pub. 12–17–68. Cl. 28.
Bauer's : *See*—
House of Bauer, The.
Becton Dickinson & Co., East Rutherford, N.J. 507,888, ren. 3–4–69. Cl. 44.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 505,361, ren. 3–4–69. Cl. 43.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 506,842, ren. 3–4–69. Cl. 2.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 506,844, ren. 3–4–69. Cl. 2.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 506,846, ren. 3–4–69. Cl. 2.
Bemis Co., Inc. : *See*—
Bemis Bro. Bag Co.
Bennett Pumps Corp., The, to John Wood Co., Muskegon, Mich. 250,675, ren. 3–4–69. Cl. 23.
Beseler, Charles, Co., East Orange, N.J. 865,726, pub. 12–17–68. Cl. 26.
Bessiere, Pierre E., (Seine), France. 743,739, canc. Cl. 23.
Betco Corp., The, Toledo, Ohio. 865,567, pub. 12–17–68. Cl. 4.
Beverly Bank, Chicago, Ill. 865,949, pub. 12–17–68. Cl. 102.
Biozymes International Ltd., Montreal, Quebec, Canada. 865,629, pub. 12–17–68. Cl. 18.
Blass Antenna Electronics Corp., Leonia, N.J. 865,658, pub. 12–17–68. Cl. 21.
Bongrain, J., & Cie (Societe Anonyme), Haute-Marne, France. 865,860, pub. 12–17–68. Cl. 46.
Borden Co., The : *See*—
Borden, Inc.
Borden, Inc., from The Borden Co., New York, N.Y. 865,861, pub. 11–5–68. Cl. 46.
Borg-Warner Corp., Chicago, Ill. 743,902, canc. Cl. 52.
Boyd-Richardson Co., St. Louis, Mo. 441,371, ren. 3–4–69. Cl. 39.
Brand Hydraulics Co., Omaha, Nebr. 865,602, pub. 12–17–68. Cl. 13.
Bridgestone Tire Co. Ltd., Kyobashi, Chuo-ku, Tokyo, Japan. 865,761–8, pub. 12–17–68. Cl. 35.
Brigham, William T., New York, N.Y. 743,737, canc. Cl. 23.
Brill, H. C., Co., Inc., Cedar Grove, N.J. 865,852, pub. 12–17–68. Cl. 46.
Brill, H. C., Co., Inc., Cedar Grove, N.J. 865,876, pub. 12–17–68. Cl. 46.
British Cod Liver Oils (Hull & Grimsby) Ltd., Hull, to Marfleet Refining Co. Ltd., Yorkshire, England. 441,696, ren. 3–4–69. Cl. 18.
Broderick & Bascom Rope Co., St. Louis, Mo. 865,580, pub. 12–17–68. Cl. 7.
Brown & Pank Ltd., Stockwell, London, England. 865,891, pub. 12–17–68. Cl. 47.
Brown, Richard E., d.b.a. Rebcats, Washington, D.C. 865,640, pub. 12–17–68. Cl. 19.
Brunswick Corp., Chicago, Ill. 865,675, pub. 12–17–68. Cl. 22.
Buccellati, Mario, Inc., New York, N.Y. 865,932, pub. 12–17–68. Cl. 101.
Bulova Watch Co., Inc., Flushing, N.Y. 865,914, pub. 12–17–68. Cl. 52.
Bunny Bear, Inc., Everett, Mass. 743,905, canc. Cl. 52.
Burgess Battery Co., Freeport, Ill., to Clevite Corp., Cleveland, Ohio. 505,177, ren. 3–4–69. Cl. 21.
Burgess Battery Co., Freeport, Ill., to Clevite Corp., Cleveland, Ohio. 505,275, ren. 3–4–69. Cl. 21.
Burkhart Trailer Mfg. Co., Fort Worth, Tex. 865,632, pub. 12–17–68. Cl. 19.
Burleigh-Smith Bros. (Vigorn) Ltd., near Kidderminster, England. 865,810, pub. 12–17–68. Multiple Class (Classes 39 and 42).
Burlingham, E. F., & Sons, to E. F. Burlingham & Sons, Forest Grove, Oreg. 504,971, ren. 3–4–69. Cl. 1.
Burlington Industries, Inc. : *See*—
Burlington Mills Corp.
Burlington Industries, Inc., New York, N.Y. 865,831, pub. 12–17–68. Cl. 42.
Burlington Mills Corp., to Burlington Industries, Inc., Greensboro, N.C. 509,529–30, ren. 3–4–69. Cl. 42.
Burlington Mills Corp., to Burlington Industries, Inc., Greensboro, N.C. 509,959, ren. 3–4–69. Cl. 42.
Burroughs Corp., Detroit, Mich. 865,591, pub. 12–17–68. Cl. 11.
Burroughs Corp., Detroit, Mich. 865,781–2, pub. 12–17–68. Cl. 37.

Burroughs Corp., Detroit, Mich. 865,916–17, pub. 12–17–68. Cl. 52.
CF & I Steel Corp.: *See*—
Colorado Fuel & Iron Corp., The.
C.L.M. Imports, Ltd., New York, N.Y. 865,803, pub. 12–17–68. Cl. 39.
Cal Corp., Ferndale, Mich. 865,620, pub. 12–17–68. Cl. 16.
California Wine Association, San Francisco, Calif. 865,893, pub. 12–17–68. Multiple Class (Classes 47 and 49).
Can-Rite, Inc., d.b.a. Can-Rite, Inc., Longwood, Fla. 743,697, canc. Cl. 19.
Capitol Insulation Co., Inc., Denver, Colo. 865,589–90, pub. 12–17–68. Cl. 10.
Capitol Records, Inc., Los Angeles, Calif. 865,771, pub. 12–17–68. Cl. 36.
Carbona Products Co., Long Island City, N.Y. 743,904, canc. Cl. 52.
Carbone Corp., The, Boonton, N.J. 865,653, pub. 12–17–68. Cl. 21.
Carnielli, Guido, Milan, Italy. 865,645, pub. 12–17–68. Cl. 19.
Carrier Corp., Syracuse, N.Y. 865,751, pub. 12–17–68. Cl. 34.
Catfish King: *See*—
Seaton, Wilson E.
Cedar Rapids Molasses Processing Co.: *See*—
Kohl, Otto A.
Celanese Corp.: *See*—
Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 252,494, ren. 3–4–69. Cl. 42.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 506,533, ren. 3–4–69. Cl. 6.
Central Alberta Dairy Pool, d.b.a. Alpha Milk Co. & Alpha Milk Co., Red Deer, Alberta, Canada. 865,887, pub. 12–17–68. Cl. 46.
Central Valley Citrus & Packing Co.: *See*—
El Ranchito Citrus Association.
Chance Brothers Ltd., Birmingham, England. 865,730, pub. 12–17–68. Multiple Class (Classes 26 and 33).
Chemcell Ltd.-Chemcell Limitee, Montreal, Quebec, Canada. 865,828, pub. 12–17–68. Cl. 42.
Chemical Associates, Inc., Houston, Tex. 865,915, pub. 12–17–68. Cl. 52.
Chess Producing Corp., Chicago, Ill. 743,807, canc. Cl. 36.
Chicago Athletic Association, Chicago, Ill. 865,801, pub. 12–17–68. Cl. 38.
Chicken Delight, Inc., Des Plaines, Ill. 865,851, pub. 12–17–68. Cl. 46.
Christian Time Co., Niles, from Anthony Dembski, Chicago, Ill. 743,770, canc. Cl. 27.
Church & Dwight Co., Inc., New York, N.Y. 504,752, ren. 3–4–69. Cl. 46.
Church & Dwight Co., Inc., New York, N.Y. 504,922–4, ren. 3–4–69. Cl. 46.
Church & Dwight Co., Inc., New York, N.Y. 505,166, ren 3–4–69. Cl. 52.
Church & Dwight Co., Inc., New York, N.Y. 505,168, ren. 3–4–69. Cl. 52.
Cinderella International Co., Inc., Chicago, Ill. 743,679, canc. Cl. 18.
Clairol Inc., New York, N.Y. 865,909, pub. 12–17–68. Cl. 51.
Claretian Fathers: *See*—
Congregation of Sons of The Immaculate Heart of Mary.
Clear Spring Distilling Co., The, Clermont, Ky. 504,538, ren. 3–4–69. Cl. 49.
Clevite Corp.: *See*—
Burgess Battery Co.
Clorox Chemical Corp., assor. to Clorox Chemical Co., to The Clorox Co., Oakland, Calif. 251,292, ren. 3–4–69. Cl. 6.
Clorox Co., The: *See*—
Clorox Chemical Corp.
Cluett, Peabody & Co., Inc.: *See*—
Tim & Co.
Cohen, Goldman & Co, Inc., New York, N.Y., to House of Worsted-Tex, Inc., Philadelphia, Pa. 256,578, ren. 3–4–69. Cl. 42.
Coleman Co., Inc., The, Wichita, Kans. 865,555, pub. 12–17–68. Multiple Class (Classes 2, 6, 13, 15, 22, and 34).
Coleman Co., Inc., The, Wichita, Kans. 865,681, pub. 12–17–68. Cl. 22.
Colonial Frocks, Inc., Aurora, Ill. 865,813, pub. 12–17–68. Cl. 39.
Colorado Fuel & Iron Corp., The, to CF & I Steel Corp., Denver, Colo. 505,447, ren. 3–4–69. Cl. 7.
Colorado Fuel & Iron Corp., The, to CF & I Steel Corp., Denver, Colo. 508,819, ren. 3–4–69. Cl. 7.
Comite Organizador De Los Juegos De La XIX Olimpiada, Mexico City, Mexico. 865,794, pub. 12–17–68. Multiple Class (Classes 38, 105, and 107).
Commonwealth Edison Co., Chicago, Ill. 865,927, pub. 12–17–68. Cl. 100.
Commonwealth Oil Refining Co., Inc., San Juan, Puerto Rico. 865,573, pub. 7–23–68. Cl. 6.
Compute-A-Trot & Associates Inc., West Pittston, Pa. 865,724, pub. 12–17–68. Cl. 26.
Cone Mills Inc., New York, N.Y. 743,849, canc. Cl. 42.
Congregation of Sons of The Immaculate Heart of Mary, d.b.a. Claretian Fathers, Chicago, Ill. 865,787, pub. 12–17–68. Cl. 38.
Coniker Enterprises, Inc., Chicago, Ill. 865,562, pub. 12–17–68. Cl. 3.
Consolidated Electrodynamics Corp., Pasadena, Calif. 743,761, canc. Cl. 26.
Consolidated Engineering Service, Inc., Minneapolis, Minn. 743,758, canc. Cl. 24.
Consolidated Freightways Corp. of Delaware, Menlo Park, Calif. 865,679, pub. 12–17–68. Cl. 22.
Continental American Life Insurance Co., Wilmington, Del. 865,948, pub. 12–17–68. Cl. 102.
Cooper, Ben, Inc., Brooklyn, N.Y. 743,845, canc. Cl. 39.
Cooper Industries, Inc., Canfield, Ohio. 865,958, pub. 12–17–68. Cl. 106.
Cooper, William, & Nephews, Inc., Chicago, Ill. 743,685, canc. Cl. 18.
Cope & Lloyd (Overseas) Ltd., London, England. 756,713. Am. 7(d). Cl. 17.
Corn Products Co., New York, N.Y. 743,865, canc. Cl. 46.
Craddock-Terry Shoe Corp., Lynchburg, Va., from Polly Preston Shoes, Inc., New York, N.Y. 865,806, pub. 12–17–68. Cl. 39.
Cream of Wheat Corp., The, Minneapolis, Minn. 374,805. Am. 7(d). Cl. 46.
Cresca Co., Inc., New York, N.Y. 865,848, pub. 12–17–68. Cl. 46.
Crimmins, James C., Philadelphia, Pa. 743,817, canc. Cl. 38.
Crossett Chemical Co., The, to Georgia-Pacific Corp., Portland, Oreg. 294,978. Am. 7(d). Cl. 1.
Cuesta Cigars, Inc., from Don Joaquin Cigars Inc., Miami, Fla. 865,628, pub. 12–17–68. Cl. 17.
Cullen-Friestedt Co., Chicago, by Federal Sign & Signal Corp., Blue Island, Ill. 198,349, 12(c) pub. 3–4–69. Cl. 23.
Cullen-Friestedt Co., Chicago, by Federal Sign & Signal Corp., Blue Island, Ill. 392,082, 12(c) pub. 3–4–69. Cl. 23.
Curtiss-Wright Corp., Princeton, N.J. 743,619, canc. Cl. 6.
Custom Mailers & Consultants, Inc., Richmond, Va. 865,934, pub. 12–17–68. Cl. 101.
Dana Corp., Toledo, Ohio. 865,757, pub. 12–17–68. Cl. 35.
Dapper-Do Co. Inc.: *See*—
Eisenach, Henrietta F.
Davis Bros. Fisheries Co., Inc., Gloucester, Mass. 442,158, canc. Cl. 46.
Dayco Corp., Dayton, Ohio. 743,794, canc. Cl. 32.
Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. 865,575, pub. 12–17–68. Cl. 6.
DeJur-Amsco Corp., Long Island City, N.Y. 865,770, pub. 9–24–68. Cl. 36.
Delgado, Ralph, Long Island City, N.Y. 865,597, pub. 12–17–68. Cl. 12.
Delicious Foods Co., Grand Island, Nebr. 865,883, pub. 12–17–68. Cl. 46.
Delta-Visier G.m.b.H., Dianastrasse, Germany. 865,584, pub. 12–17–68. Cl. 9.
Dembski, Anthony: *See*—
Christian Time Co.
Denning Mfg. Co., Joliet, Ill. 743,652, canc. Cl. 13.
Desert Product, Inc., Holtville, Calif. 865,888–9, pub. 12–17–68. Cl. 46.
Dial-A-Lite Co., Bartlesville, Okla. 865,668, pub. 12–17–68. Cl. 21.
Dill Mfg. Co., The, to Eaton Yale & Towne Inc., Cleveland, Ohio. 509,287, ren. 3–4–69. Cl. 23.
District Photo, Inc., Beltsville, Md. 865,937, pub. 12–17–68. Multiple Class (Classes 101 and 106).
Donnelley, Reuben H., Corp., The, New York, N.Y. 865,940, pub. 12–17–68. Cl. 101.
Donruss Co., The, Memphis, Tenn. 865,886, pub. 12–17–68. Cl. 46.
Dowst Mfg. Co., to Strombecker Corp., Chicago, Ill. 505,201, ren. 3–4–69. Cl. 22.
Drackett Co., The, Cincinnati, Ohio. 865,736, pub. 12–17–68. Cl. 29.
Dri Mark Products, Inc., Mount Vernon, N.Y. 865,682, pub. 12–17–68. Cl. 22.
Dual Parking Meter Co., The, Canton, Ohio, to Rockwell Mfg. Co., Pittsburgh, Pa. 441,470, ren. 3–4–69. Cl. 26.
Dumont Packing Co., Victor, Calif. 865,866–7, pub. 12–17–68. Cl. 46.
Duo Chem Corp., Westfield, Mass. 865,912, pub. 12–17–68. Cl. 52.
Durable International, Inc., Long Island City, N.Y. 865,780, pub. 12–17–68. Cl. 37.
Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. 865,544, pub. 9–17–68. Cl. 1.
ESB Inc., Philadelphia, Pa. 865,672, pub. 12–17–68. Cl. 21.
Earl Ad Co.: *See*—
Wisemiller, Earl A.
Eaton Mfg. Co., Cleveland, Ohio. 743,918, canc. Cl. 21.
Eaton Yale & Towne Inc.: *See*—
Dill Mfg. Co., The.
Eisenach, Henrietta F., Saginaw, to Dapper-Do Co. Inc., Bridgeport, Mich. 441,427, ren. 3–4–69. Cl. 39.
Eldon Industries, Inc., Hawthorne, Calif. 865,686, pub. 12–17–68. Cl. 22.
Electro-Craft Corp., Hopkins, Minn. 865,698, pub. 12–17–68. Cl. 23.
Electromite Corp., Santa Ana, Calif. 865,657, pub. 12–17–68. Cl. 21.
Electronic Calculating Service, Inc., Los Angeles, Calif. 865,924, pub. 12–17–68. Cl. 100.
El Ranchito Citrus Association, Rivera, to Central Valley Citrus & Packing Co., Lindsay, Calif. 508,515–16, ren. 3–4–69. Cl. 46.
Enro Shirt Co., Inc., The, Louisville, Ky. 865,815, pub. 12–17–68. Cl. 39.
Environmental Planning Associates, Inc., Salina, Kans. 865,919, pub. 12–17–68. Cl. 100.
Excel Corp., Elkhart, Ind. 865,569, pub. 12–17–68. Cl. 5.
Fabri-Tek Inc., Minneapolis, Minn. 865,721, pub. 12–17–68. Cl. 26.
Fabri-Tek Inc., Minneapolis, Minn. 865,800, pub. 12–17–68. Cl. 38.
Factor, Max, d.b.a. Max Factor & Co., Los Angeles, to Max Factor & Co., Hollywood, Calif. 250,507, ren. 3–4–69. Cl. 6.
Factor, Max, & Co.: *See*—
Factor, Max.
Fairchild Hiller Corp., Germantown, Md. 865,648, pub. 12–17–68. Cl. 19.

Fairmont Foods Co., Omaha, Nebr. 865,881–2, pub. 12–17–68. Cl. 46.
Falls City Brewing Co., Inc., Louisville, Ky. 503,629, ren. 3–4–69. Cl. 48.
Famariss Oil & Refining Co., Hobbs, N. Mex. 865,616, pub. 12–17–68. Cl. 15.
Fanny Farmer Candy Shops, Inc., Rochester, N.Y. 126,844. Am. 7(d). Cl. 46.
Farrand Optical Co., Inc., New York, N.Y. 865,719, pub. 12–17–68. Cl. 26.
Fawn Corp., Howe, Ind. 865,635, pub. 12–17–68. Cl. 19.
Federal Sign & Signal Corp.: *See*—
Cullen-Friestedt Co.
Fenton Mfg. Corp., Gardena, Calif. 865,642, pub. 12–17–68. Cl. 19.
Fieldcrest Mills, Inc., Eden, N.C. 865,830, pub. 12–17–68. Cl. 42.
Fielding, Diantha, Santa Monica, Calif. 865,824, pub. 12–17–68. Cl. 40.
Filmcraft-Chicago, Chicago, Ill. 865,549, pub. 12–17–68. Cl. 1.
Fishman, Louis, & Co., Inc., Chicago, Ill. 865,760, pub. 12–17–68, Cl. 35.
Fiske Bros. Refining Co., Newark, N.J. 865,617–18, pub. 12–17–68. Cl. 15.
Flambeaux Publishing Co., Inc., New Orleans, La. 865,785–6, pub. 12–17–68. Cl. 38.
Flex-O-Lite Division: *See*—
General Steel Industries, Inc.
Florig Equipment Co., Inc., Conshohocken, Pa. 865,641, pub. 12–17–68, Cl. 19.
Flying Tiger Line Inc., The, Burbank, Calif. 736,563, canc. Cl. 105.
Food Fair Properties, Inc., Philadelphia, Pa. 865,791, pub. 12–17–68. Cl. 38.
Ford Motor Co., Dearborn, Mich. 251,383, ren. 3–4–69. Cl. 35.
Ford Motor Co., Dearborn, Mich. 252,216, ren. 3–4–69. Cl. 19.
Foreign Vintages, Inc., New York, N.Y. 865,894, pub. 12–17–68. Cl. 48.
Foster Wheeler Corp., Livingston, N.J. 865,921, pub. 12–17–68. Multiple Class (Classes 100 and 103).
Friel, S. E. W., Queenstown, Md. 509,914, ren. 3–4–69. Cl. 46.
Fruehauf Corp., Detroit, Mich., from Pacific Coast Engineering Co., Alameda, Calif. 865,634, pub. 12–17–68. Cl. 19.
Fruehauf Corp., Detroit, Mich., from Pacific Coast Engineering Co., Alameda, Calif. 865,694–5, pub. 12–17–68. Cl. 23.
Fuji Jyukogyo Kabushiki Kaisha, Tokyo, Japan. 865,646, pub. 12–17–68. Cl. 19.
Fyanes Corp., Chicago, Ill. 865,680, pub. 12–17–68. Cl. 22.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 865,579, pub. 12–17–68. Cl. 6.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 865,961–2, pub. 12–17–68. Cl. 107.
Gail Leather Products, Inc., New York, N.Y. 743,781, canc. Cl. 29.
Gamemasters, Inc., Port Chester, N.Y. 865,683, pub. 12–17–68. Cl. 22.
Garber's Travel Service, Inc., Brookline, Mass. 733,570, canc. Cl. 105.
Garelick Bros. Farms, Inc., Franklin, Mass. 865,845, pub. 10–17–67. Cl. 46.
Garrett Corp., The, Los Angeles, Calif. 865,596, pub. 12–17–68. Cl. 12.
Gauss Electrophysics, Inc., Santa Monica, Calif. 865,769, pub. 8–29–67. Cl. 36.
Geigy Chemical Corp., Ardsley, N.Y. 865,834, pub. 12–17–68. Cl. 44.
Gem, Inc., Byhalia, Miss. 865,911, pub. 12–17–68. Cl. 51.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Dynamics Corp., d.b.a. Stuart Oxygen Co., Chicago, Ill. 743,676, canc. Cl. 18.
General Electronic Laboratories, Inc., Cambridge, Mass. 743,762, canc. Cl. 26.
General Foods Corp., White Plains, N.Y. 865,838–40, pub. 12–17–68. Cl. 45.
General Norit Co., Ltd.: *See*—
N.V. Algemeene Norit Maatschappij.
General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. 865,902, pub. 12–17–68. Cl. 50.
General Tire & Rubber Co., The, Akron, Ohio. 865,600, pub. 12–17–68. Cl. 12.
Genesco Inc., Nashville, Tenn. 865,808, pub. 12–17–68. Cl. 39.
Gerberich-Payne Shoe Co., Mount Joy, Pa. 865,967. Cl. 39.
Gerisch, R. F., Co.: *See*—
Gerisch, Rudolph F.
Gerisch, Rudolph F., d.b.a. R. F. Gerisch Co., Lyons, Ill. 865,692, pub. 12–17–68. Cl. 23.
Germain's Inc., Los Angeles, Calif. 743,636, canc. Cl. 10.
"Gets-It" Inc., Chicago, Ill., to Plough, Inc., Memphis, Tenn. 250,241, ren. 3–4–69. Cl. 18.
Giannini Controls Corp., Duarte, Calif. 743,766–7, canc. Cl. 26.
Gillette Co., The, Boston, Mass. 865,690, pub. 5–23–67. Cl. 23.
Girard Trust Bank, Philadelphia, Pa. 865,945, pub. 12–17–68. Cl. 102.
Girton Mfg. Co., Inc., Millville, Pa. 743,650, canc. Cl. 13.
Glaser Bros., San Francisco, Calif. 865,622, pub. 12–17–68. Cl. 17.
Glaxo-Allenburys (Canada) Ltd.: *See*—
Allen & Hanburys, Ltd.
Gleason, Jackie, d.b.a. Jaglea Music Co., New York, N.Y. 865,960, pub. 12–17–68. Cl. 107.
Glenmore Distilleries Co., Louisville, Ky. 865,898, pub. 12–17–68. Cl. 49.
Glenwood Range Co., d.b.a. Sunray Stove Co., Delaware, Ohio. 865,750, pub. 12–17–68. Cl. 34.
Goldman Pressing Machine Corp.: *See*—
Prestopress Corp. of America.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 507,923, ren. 3–4–69. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 865,754–6, pub. 12–17–68. Cl. 35.
Gorham Mfg. Co., to Textron Inc., Providence, R.I. 506,607–9, ren. 3–4–69. Cl. 28.
Gould & Scammon, Inc., Auburn, Maine. 743,831, canc. Cl. 39.
Grace, W. R., & Co., New York, N.Y. 865,779, pub. 12–17–68. Cl. 37.
Grace, W. R., & Co., New York, N.Y. 865,874, pub. 12–17–68. Cl. 46.
Graflex, Inc., Rochester, N.Y. 865,952, pub. 12–17–68. Cl. 103.
Graphic Electronics, Inc., La Salle, Ill. 865,656, pub. 12–17–68. Cl. 21.
Gray's Groves, Inc., d.b.a. Gray's Orange Barn, Lady Lake, Fla. 865,853, pub. 12–17–68. Cl. 46.
Gray's Orange Barn: *See*—
Gray's Groves, Inc.
Greetings Unlimited Inc., St. Paul, Minn. 743,909, canc. Cl. 101.
Gretsch, Fred, Co., Inc., The, Brooklyn, N.Y. 865,772, pub. 12–17–68. Cl. 36.
Grunwald-Marx, Inc., Los Angeles, Calif. 743,842, canc. Cl. 39.
Guerlain, Inc., New York, N.Y. 865,907, pub. 12–17–68. Cl. 51.
Gulf Fertilizer Co., The, Tampa, Fla. 743,637, canc. Cl. 10.
Gulf Oil Corp., Pittsburgh, Pa. 865,582, pub. 12–17–68. Cl. 9.
Haffenreffer & Co., Inc., Boston, Mass. 865,895, pub. 12–17–68. Cl. 48.
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 865,812, pub. 12–17–68. Cl. 39.
Halo Sales Corp., San Francisco, Calif. 743,726, canc. Cl. 22.
Hansen's, Chr., Laboratory, Inc., Milwaukee, Wis. 865,877, pub. 12–17–68. Cl. 46.
Harrisons (London) Ltd., London, England. 865,847, pub. 12–17–68. Cl. 46.
Hartz Mountain Products Corp., New York, N.Y. 865,565, pub. 12–17–68. Cl. 3.
Harvey, Fred: *See*—
Harvey, Fred, Inc.
Harvey, Fred, Inc., from Fred Harvey, Chicago, Ill. 865,926, pub. 12–10–68. Cl. 100.
Hat Corp. of America: *See*—
Knox Hat Co., Inc.
Hat Corp. of America, New York, N.Y. 506,283, ren. 3–4–69. Cl. 39.
Healthways, Los Angeles, Calif. 865,581, pub. 12–17–68. Cl. 9.
Hearst Corp., The, New York, N.Y. 865,798, pub. 12–17–68. Cl. 38.
Hendershot, John A., Jr., d.b.a. Unit Liner Co., Wewoka, Okla. 865,560, pub. 12–17–68. Cl. 2.
Hepburn & Ross Ltd., Kelvinbridge, Glasgow, Scotland. 865,896, pub. 12–17–68. Cl. 49.
Herbst Shoe Mfg. Co., Milwaukee, Wis. 865,712, pub. 12–17–68. Cl. 26.
Hercules Inc.: *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 506,105, ren. 3–4–69. Cl. 38.
Herter's, Inc., Waseca, Minn. 865,655, pub. 12–17–68. Cl. 21.
Hickey-Freeman Co., Inc., Rochester, N.Y. 865,823, pub. 12–17–68. Cl. 39.
Himmel-Landy Mfg. Co., Inc., Hialeah, Fla. 743,822, canc. Cl. 39.
Hi-Press Air Conditioning of America, Inc., New York, N.Y. 743,799, canc. Cl. 34.
Holloway, E. R., Ltd., Lavenham, Suffolk, England. 865,905, pub. 12–17–68. Cl. 51.
Houbigant, Inc., New York, N.Y. 865,906, pub. 12–17–68. Cl. 51.
House of Bauer, The, d.b.a. Bauer's, Lincoln, Nebr., to C. J. Patterson Co., Kansas City, Mo. 508,102, ren. 3–4–69. Cl. 46.
House of Ceramics, Inc., Memphis, Tenn. 865,546, pub. 12–17–68. Cl. 1.
House of Windsor, Inc., Windsor, Pa. 865,623, pub. 12–17–68. Cl. 17.
House of Worsted-Tex, Inc.: *See*—
Cohen, Goldman & Co. Inc.
House-Autry Mills, Inc., Newton Grove, from Autry Bros. Milling Co., Inc., Autryville, N.C. 865,968. Cl. 46.
Household Paper Products Co., to E. Kretzschmer, d.b.a. Key Products Co., Detroit, Mich. 504,828, ren. 3–4–69. Cl. 2.
Hub Airlines, Inc., Fort Wayne, Ind. 865,955, pub. 12–17–68. Cl. 105.
Hughes Tool Co., Houston, Tex. 865,950, pub. 12–17–68. Cl. 103.
Hungry Dutchman Restaurants, Inc., The, Denver, Colo. 865,920, pub. 12–17–68. Cl. 100.
Hunt Oil Co., Dallas, Tex. 865,859, pub. 12–17–68. Cl. 46.
Illinois Tool Works Inc.: *See*—
Ackerman-Johnson Co.
Imperial Metal Industries (Kynoch) Ltd., Birmingham, England. 865,583, pub. 12–17–68. Cl. 9.
Inland Steel Co., Chicago, Ill. 505,019, ren. 3–4–69. Cl. 12.
International Electro-Magnetics, Inc., Palatine, Ill. 865,923, pub. 12–17–68. Multiple Class (Classes 100 and 103).
International Food Plaza Inc., Phoenix, Ariz. 865,922, pub. 12–17–68. Cl. 100.
International Maritime Supplies Co. Ltd., Geneva, Switzerland. 865,841, pub. 5–14–68. Cl. 46.

International Speedi-Sleeve Ltd., d.b.a. Speedi-Sleeve International, Burnaby, British Columbia, Canada. 865,709, pub. 12–17–68. Cl. 23.
Iroquois Popcorn Co., Inc., Chicago, Ill. 865,561, pub. 12–17–68. Multiple Class (Classes 2 and 46).
Ishimoto Trading Co., Los Angeles, Calif. 865,664, pub. 12–17–68. Cl. 21.
Ivanhoe Citrus Association: *See*— Ivanhoe Mutual Orange Association.
Ivanhoe Mutual Orange Association, to Ivanhoe Citrus Association, Ivanhoe, Calif. 509,375, ren. 3–4–69. Cl. 46.
Jaglea Music Co.: *See*— Gleason, Jackie.
Jamestown Paint & Varnish Co., Jamestown, Pa. 743,672, canc. Cl. 16.
Jefferson Electric Co., Bellwood, Ill. 865,659, pub. 12–17–68. Cl. 21.
Jegco Inc., Oakland, Calif. 865,585, pub. 12–17–68. Multiple Class (Classes 1 and 10).
Joaquin, Don, Cigars Inc.: *See*— Cuesta Cigars, Inc.
Julianelli: *See*— Julianelli, Mabel.
Julianelli, Mabel, d.b.a. Julianelli, New York, N.Y. 865,818, pub. 12–17–68. Cl. 39.
Kaiser Aluminum & Chemical Corp.: *See*— Mexico Refractories Co.
Kalk, J. Howard, Armonk, N.Y. 743,792, canc. Cl. 32.
Kaye, Ellen, Laboratories, Inc., St. Paul, Minn. 865,904, pub. 12–17–68. Cl. 51.
Kelco Co., San Diego, Calif. 865,849, pub. 12–17–68. Cl. 46.
Kelling Nut Co., The, to The Kelling Nut Co., Chicago, Ill. 504,773, ren. 3–4–69. Cl. 46.
Kellogg Co., Battle Creek, Mich. 865,869, pub. 12–17–68. Cl. 46.
Kelly, Douglas & Co., Ltd., Burnaby, British Columbia, Canada. 865,868, pub. 12–17–68. Cl. 46.
Kennedy Sinclaire, Inc., Montclair, N.J. 865,795, pub. 12–17–68. Cl. 38.
Key Products Co.: *See*— Household Paper Products Co.
Kimball Piano & Organ Co., Jasper, Ind. 854,919, cor. Cl. 36.
Kimberly-Clark Corp., Neenah, Wis. 743,810, canc. Cl. 37.
King Kullen Grocery Co. Inc., Westbury, N.Y. 743,863, canc. Cl. 46.
King Publications, San Francisco, Calif. 510,472, ren. 3–4–69. Cl. 38.
Knoll Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 865,630, pub. 12–17–68. Cl. 18.
Knox Hat Co., Inc., to Hat Corp. of America, New York, N.Y. 252,025, ren. 3–4–69. Cl. 39.
Kohl, Otto A., d.b.a. Cedar Rapids Molasses Processing Co., Cedar Rapids, Iowa. 865,857–8, pub. 12–17–68. Cl. 46.
Kohner Bros., Inc., East Paterson, N.J. 865,685, pub. 12–17–68. Cl. 22.
Komar Corp. of America, The, Redwood City, Calif. 743,646, canc. Cl. 12.
Koscot Interplanetary, Inc., Orlando, Fla. 865,908, pub. 12–17–68. Cl. 51.
Kretzschmer, Elmer: *See*— Household Paper Products Co.
Krone, Burt, Co., Springfield, Mo. 729,657, canc. Cl. 18.
Krueger Mfg. Co., Inc., Tucson, Ariz. 865,747, pub. 12–17–68. Cl. 34.
Kyle, William S., d.b.a. National Chemical Laboratories Co., Chapel Hill, N.C. 743,629, canc. Cl. 6.
Lafayette Radio Electronics Corp., Syosset, N.Y. 865,652, pub. 12–17–68. Multiple Class (Classes 21, 26, and 36).
Lake Superior Pulp & Paper Inc., Chicago, Ill. 865,552–4, pub. 12–17–68. Cl. 1.
La Marche, Austin W., Des Plaines, Ill. 506,559, ren. 3–4–69. Cl. 21.
Langley Alloys Ltd., Buckinghamsire, England. 865,614, pub. 12–17–68. Cl. 14.
Larus & Brother Co.: *See*— Larus & Brother Co., Inc.
Larus & Brother Co., Inc., to Larus & Brother Co., Richmond, Va. 509,436, ren. 3–4–69. Cl. 17.
Latest Trends, Inc., Rutherford, N.J. 865,805, pub. 12–17–68. Cl. 39.
Lawter Chemicals, Inc., Chicago, Ill. 865,592, pub. 12–17–68. Cl. 11.
Le Blond, R. K., Machine Tool Co., The, Cincinnati, Ohio. 865,704, pub. 12–17–68. Cl. 23.
Ledex, Inc.: *See*— Leland, G. H., Inc.
Lee, Simpson, Paper Co., Vicksburg, Mich. 865,774, pub. 12–17–68. Cl. 37.
Leffingwell Chemical Co., Whittier, Calif. 743,617, canc. Cl. 5.
Leland, G. H., Inc., to Ledex, Inc., Dayton, Ohio. 504,841, ren. 3–4–69. Cl. 21.
Lenco Spring Inc., Worcester, Mass. 743,692, canc. Cl. 19.
Leslie Mfg. Co., San Marcos, Calif. 865,667, pub. 12–17–68. Cl. 21.
Lewis Research Laboratories, Inc., Englewood, N.J. 865,570, pub. 1–26–65. Cl. 6.
Lindsay Groves, Inc., Lindsay, Calif. 865,846, pub. 12–17–68. Cl. 46.
Lindy Pen Co., Inc., North Hollywood, Calif. 865,776–7, pub. 12–17–68. Cl. 37.
Listo Products Ltd., Vancouver, British Columbia, Canada. 865,701, pub. 12–17–68. Cl. 23.
Litton Business Systems, Inc., from Monroe International, Inc., Orange, N.J. 865,604, pub. 12–17–68. Multiple Class (Classes 13 and 37).
Llewellyn Brothers, Inc., d.b.a. Llewellyn Bros., Inc., Wilkes-Barre, Pa. 865,935, pub. 12–17–68. Cl. 101.
Loewengart & Co., Inc., New York, N.Y. 865,969. Cl. 50.
Loft Candy Corp.: *See*— Loft, Inc.
Loft Candy Corp., Long Island City, N.Y. 440,332, ren. 3–4–69. Cl. 46.
Loft, Inc., New York, to Loft Candy Corp., Long Island City, N.Y. 238,074, ren. 3–4–69. Cl. 46.
Londontown Mfg. Co., The, Baltimore, Md. 743,839, canc. Cl. 39.
Lorillard, P., Co., New York, N.Y. 503,931, ren. 3–4–69. Cl. 17.
Luft, George W., Co., Inc., The, Long Island City, N.Y., to The George W. Luft Co., Inc., Carlstadt, N.J. 251,751, ren. 3–4–69. Cl. 51.
Luminator, Inc., from Luminator-Harrison, Inc., Chicago, Ill. 865,651, pub. 12–17–68. Cl. 21.
Luminator-Harrison, Inc.: *See*— Luminator, Inc.
Mal-Len Corp., Long Beach, N.Y. 865,878, pub. 12–17–68. Cl. 46.
Malone, E. B., Corp., The, Hialeah, Fla. 865,742, pub. 2–14–67. Cl. 32.
Manufacture D'Horlogerie Rayville S.A. Montres Blancpain (Rayville Watch Mfg. Co. Ltd., Blancpain Watches), Villeret, Switzerland. 865,732, pub. 12–17–68. Cl. 27.
Marfleet Refining Co. Ltd.: *See*— British Cod Liver Oils (Hull & Grimsby) Ltd.
Marone, Umberto, Naples, Italy. 865,797, pub. 12–17–68. Cl. 38.
Marshall Industries, San Marino, Calif. 865,649, pub. 9–20–66. Cl. 21.
Mason & Mason, Inc., Chicago, Ill. 505,901, ren. 3–4–69. Cl. 45.
Master-Craft Corp., Kalamazoo, Mich. 865,773, pub. 12–17–68. Cl. 37.
Mattress Warehouse, Inc., Bronx, N.Y. 865,744, pub. 12–17–68. Cl. 32.
Mautz Paint & Varnish Co., Madison, Wis. 743,670, canc. Cl. 16.
Mawa Metallwarenfabrik Wagner G.m.b.H. & Co. KG., Pfaffenhofen, Ulm, Germany. 865,903, pub. 12–17–68. Cl. 50.
Mechanical Products Co.: *See*— Abert, Jack C.
Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. 865,892, pub. 12–17–68. Cl. 47.
Mediterranean Wines: *See*— Mediterranean Importing Co., Inc.
Meeter, Hugh J., d.b.a. Hugh J. Meeter Co., Grand Rapids, Mich. 743,656, canc. Cl. 13.
Meeter, Hugh J., Co.: *See*— Meeter, Hugh J.
Mem Co., New York, N.Y., to Mem Co., Inc., Northvale, N.J. 507,670, ren. 3–4–69. Cl. 52.
Mem Co., Inc.: *See*— Mem Co.
Metal & Thermit Corp., Woodbridge, N.J. 743,648, canc. Cl. 12.
Metalcraft Products Co., Inc., Philadelphia, Pa. 743,700, canc. Cl. 21.
Metropolitan Greetings, Inc., Everett, Mass. 865,793, pub. 12–17–68. Cl. 38.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 505,062, ren. 3–4–69. Cl. 12.
Micro Communications, Inc., Manchester, N.H. 865,662, pub. 12–17–68. Cl. 21.
Microphase Corp., Cos Cob, Conn. 865,666, pub. 12–17–68. Cl. 21.
Micro-Tol Engineering Corp., Dale Summit, Pa. 865,720, pub. 12–17–68. Cl. 26.
Mid America Distributors, Inc., Springfield, Mo. 865,605, pub. 12–17–68. Cl. 13.
Midland-Ross Corp., Cleveland, Ohio. 865,953, pub. 12–17–68. Cl. 103.
Millers Casualty Insurance Co. of Texas, The, The Millers Mutual Fire Insurance Co. of Texas, The Millers Life Insurance Co. of Texas, d.b.a. Millers Group, Fort Worth, Tex. 865,944, pub. 12–17–68. Cl. 102.
Millers Group: *See*— Millers Casualty Insurance Co. of Texas, The, The Millers Mutual Fire Insurance Co. of Texas, The Millers Life Insurance Co. of Texas.
Millersville Mfg. Co., Goodlettsville, Tenn. 865,738, pub. 12–17–68. Cl. 31.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 865,613, pub. 12–17–68. Cl. 13.
Missimers, Inc., Glendale, Calif. 865,601, pub. 12–17–68. Cl. 13.
Mr. Bidet Corp., North Bergen, N.J. 865,607, pub. 7–16–68. Cl. 13.
Mister Trio Uniforms Inc., New York, N.Y. 865,821–2, pub. 12–17–68. Cl. 39.
Modish Imports, Inc., Brooklyn, N.Y. 865,825, pub. 12–17–68. Cl. 40.
Moffett, C. J., Medicine Co., to C. J. Moffett Medicine Co., New York, N.Y. 509,727, ren. 3–4–69. Cl. 18.
Molex Products Co., Downers Grove, Ill. 865,663, pub. 12–17–68. Cl. 21.
Monroe International, Inc.: *See*— Litton Business Systems, Inc.
Morris, Philip, Inc., New York, N.Y. 865,627, pub. 12–17–68. Cl. 17.
Mortell, J. W., Co., Kankakee, Ill. 507,568. Am. 7(d). Cl. 12.
Mueller, V., & Co.: *See*— American Hospital Supply Corp.
Multiplex Co., St. Louis, Mo. 865,739, pub. 12–17–68. Cl. 31.
Murray Co. of Texas, Inc., Dallas, Tex. 865,693, pub. 12–17–68. Cl. 23.
N.K.R. Precision Mfg. Corp., Harriman, N.Y. 865,611, pub. 12–17–68. Cl. 13.

N.V. Algemeene Norit Maatschappij, d.b.a. General Norit Co., Ltd., Amsterdam, Netherlands, and Jacksonville, Fla., by Norit N.V., Amsterdam, Netherlands. 435,640, 12(c) pub. 3–4–69. Cl. 18.
Nail-Tone, Inc., Miami, Fla. 743,729, canc. Cl. 22.
Nakat Packing Corp., The, New York, N.Y. 504,092, ren. 3–4–69. Cl. 46.
Napko Corp., Houston, Tex. 865,619, pub. 12–17–68. Cl. 16.
Nast, John E., Fort Lauderdale, Fla. 865,643, pub. 12–17–68. Cl. 19.
National Alliance of Businessmen, Washington, D.C. 865,942, pub. 12–17–68. Cl. 101.
National Chemical Laboratories Co.: *See*— Kyle, William S.
National Licorice Co., Brooklyn, N.Y. 865,879, pub. 12–17–68. Cl. 46.
National Semiconductor Corp., Santa Clara, Calif. 865,665, pub. 12–17–68. Cl. 21.
National Wax Co., Skokie, Ill. 865,545, pub. 12–17–68. Cl. 1.
Natone Co., Santa Monica, Calif. 743,898, canc. Cl. 51.
Nattermann, A., & Cie, Koln-Braunsfeld, Germany. 743,682, canc. Cl. 18.
Nekoosa-Edwards Paper Co., Port Edwards, Wis. 865,778, pub. 12–17–68. Cl. 37.
New Jersey Zinc Co., The, to The New Jersey Zinc Co., New York, N.Y. 509,771, ren. 3–4–69. Cl. 6.
New Products Corp., Clearfield, Utah. 865,900, pub. 12–17–68. Cl. 50.
New York Girl Coat Co., Inc., New York, N.Y. 510,325, ren. 3–4–69. Cl. 39.
Niles Rolling Mill Co., The, Niles, to Sharon Steel Corp., Hubbard Township, Ohio. 505,765, ren. 3–4–69. Cl. 14.
Noble, Manlius W., d.b.a. Noble Oil Products, Jacksonville, Fla. 865,577, pub. 12–17–68. Cl. 6.
Noble Oil Products: *See*— Noble, Manlius W.
Norit N.V.: *See*— N.V. Algemeene Norit Maatschappij.
Nor-Lake, Inc., Hudson, Wis. 865,740, pub. 12–17–68. Cl. 31.
Northern Electric Co. Ltd., Montreal, Quebec, Canada. 865,661, pub. 8–13–68. Cl. 21.
Nuclide Corp., State College, Pa. 865,714, pub. 12–17–68. Cl. 26.
Nukem Products Corp., Buffalo, N.Y. 743,641, canc. Cl. 12.
Occidental Petroleum Corp., Los Angeles, Calif. 865,586–8, pub. 12–17–68. Cl. 10.
Occumed Corp., Cranbury, N.J. 743,677, canc. Cl. 18.
Oliver Corp., Chicago, Ill. 865,965. Cl. 23.
Olsten Corp., The, from W. Olsten, New York, N.Y. 865,931, pub. 12–17–68. Cl. 101.
Olsten, William: *See*— Olsten Corp., The.
Omsi/Kit, Inc., from Oregon Museum of Science & Industry, Portland, Oreg. 865,715–16, pub. 12–17–68. Cl. 26.
Oregon Museum of Science & Industry: *See*— Omsi/Kit, Inc.
Orkin Exterminating Co., Inc., Atlanta, Ga. 865,954, pub. 12–17–68. Cl. 103.
Ozarka Water Co., Los Angeles, Calif. 865,741, pub. 12–17–68. Cl. 31.
Pacific Coast Engineering Co.: *See*— Fruehauf Corp.
Package Builders, Inc., Shrewsbury, Mass. 865,594, pub. 12–17–68. Cl. 12.
Pak-All Products, Inc.: *See*— Union Camp Corp.
Pappagallo, Inc., New York, N.Y. 865,820, pub. 12–17–68. Cl. 39.
Parke, Davis & Co., Detroit, Mich. 254,956, ren. 3–4–69. Cl. 18.
Parkington, J. R., & Co. Ltd., London, England. 252,325, ren. 3–4–69. Cl. 47.
Parkington, J. R., & Co. Ltd., London, England. 254,585, ren. 3–4–69. Cl. 47.
Patterson, C. J., Co.: *See*— House of Bauer, The.
Peavey Co., Minneapolis, Minn. 865,863–5, pub. 12–17–68. Cl. 46.
Pendleton Woolen Mills: *See*— Washougal Woolen Mills.
Penetred Corp., Marshfield, Wis. 865,758–9, pub. 12–17–68. Cl. 35.
Pennsalt Chemicals Corp., Philadelphia, Pa. 865,718, pub. 12–17–68. Cl. 26.
Penrod Mfg. Co., Inc., Ellenville, N.Y. 743,830, canc. Cl. 39.
PepsiCo, Inc., New York, N.Y. 865,563, pub. 12–17–68. Cl. 3.
Peuchen, Wilfred S., Wilmington, Del. 743,797, canc. Cl. 34.
Pflueger Corp., Akron, Ohio. 865,674, pub. 12–17–68. Cl. 22.
Philco-Ford Corp., Philadelphia, Pa. 865,660, pub. 12–17–68. Cl. 21.
Plantation Fried Chicken Corp., New Orleans, La. 865,871, pub. 12–17–68. Cl. 46.
Plough, Inc.: *See*— "Gets-It" Inc.
Pollak Feather Corp., New York, N.Y. 865,804, pub. 7–9–68. Cl. 39.
Polyastics Corp., Croydon, Pa. 865,621, pub. 12–17–68. Cl. 16.
Potpourri For Men, Inc., Beechhurst, N.Y. 743,843, canc. Cl. 39.
Powell, Wm., Co., The, Cincinnati, Ohio. 441,285, ren. 3–4–69. Cl. 13.
Precious Metals Research Works, Inc., Brooklyn, N.Y. 865,833, pub. 12–17–68. Cl. 44.
Precision Paper Tube Co., Wheeling, Ill. 865,964. Cl. 21.
Precision Products Corp., Chicopee, Mass. 743,884, canc. Cl. 50.
Premium Corp. of America, Inc., Minneapolis, Minn. 865,829, pub. 12–17–68. Cl. 42.
Preston, Polly, Shoes, Inc.: *See*— Craddock-Terry Shoe Corp.
Prestopress Corp. of America, Brooklyn, to Goldman Pressing Machine Corp., New York, N.Y. 508,552, ren. 3–4–69. Cl. 24.
Procter & Gamble Co., The, Cincinnati, Ohio. 743,903, canc. Cl. 52.
Products Engineering Corp., Los Angeles, Calif. 865,844, pub. 12–17–68. Cl. 46.
Protective Group, The, Minneapolis, Minn. 865,946–7, pub. 12–17–68. Cl. 102.
Punch-Lok Co., to Punch-Lok Co., Chicago, Ill. 507,530, ren. 3–4–69. Cl. 23.
Purex Corp., Ltd., Lakewood, Calif. 738,016, canc. Cl. 52.
Pyro-Serv Instruments, Inc., North Arlington, N.J. 865,723, pub. 12–17–68. Cl. 26.
Quaker Oats Co., The, Chicago, Ill. 865,885, pub. 12–17–68. Cl. 46.
Quant's, Mary, Ginger Group Ltd., London, England. 865,802, pub. 7–9–68. Cl. 39.
R-W Industries, Inc., Barberton, Ohio. 865,638, pub. 12–17–68. Cl. 19.
Rabidou, Arthur G., East Windsor, Conn. 743,722, canc. Cl. 21.
Radio Shack: *See*— Tandy Corp.
Rainbow Crafts, Inc., Cincinnati, Ohio. 865,689, pub. 12–17–68. Cl. 22.
Raypak Co., Inc., South El Monte, Calif. 865,727, pub. 12–17–68. Cl. 26.
Rebcats: *See*— Brown, Richard E.
Redcor Corp., Canoga Park, Calif. 865,650, pub. 3–12–68. Multiple Class (Classes 21 and 26).
Reese Finer Foods, Inc., Chicago, Ill. 865,884, pub. 12–17–68. Cl. 46.
Reibman, Morris, & Sons, Inc., Seattle, Wash. 865,733, pub. 12–17–68. Cl. 28.
Rembrandt Tobacco Corp., (Overseas), Ltd., Zurich, Switzerland. 865,624–5, pub. 12–17–68. Cl. 17.
Rerebaz, Inc., McKee City, N.J. 865,925, pub. 12–17–68. Cl. 100.
Rexall Drug & Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 865,559, pub. 12–17–68. Cl. 2.
Rich Products Corp., from Rich Products Corp., Buffalo, N.Y. 865,842, pub. 1–2–68. Cl. 46.
Richardson Chemical Products Co., Milwaukee, Wis. 865,913, pub. 12–17–68. Cl. 52.
Robertshaw-Fulton Controls Co., Richmond, Va. 726,716, canc. Cl. 26.
Robinson Executive Search & Counsulting Associates: *See*— Robinson, John F.
Robinson, John F., d.b.a. Robinson Executive Search & Consulting Associates, Cleveland, Ohio. 865,938, pub. 12–17–68. Cl. 101.
Rockwell Mfg. Co.: *See*— Dual Parking Meter Co., The.
Roller Process Corp., New York, N.Y. 865,827, pub. 12–17–68. Cl. 42.
Rose Brand Corp., Brooklyn, N.Y. 865,850, pub. 12–17–68. Cl. 46.
Rothmans of Pall Mall Ltd., Zurich, Switzerland. 865,626, pub. 12–17–68. Cl. 17.
Royal Zenith Corp., New York, N.Y. 865,725, pub. 12–17–68. Cl. 26.
Roycemore, Inc., Brooklyn, N.Y. 865,836, pub. 12–17–68. Cl. 44.
Ruth-Anne Woodcrafts: *See*— Tharpe, Harry K.
Sachs, Paul, Originals Co., St. Louis, Mo. 743,835, canc. Cl. 39.
Sapperstein, G.: *See*— Sapperstein, Gerald C.
Sapperstein, Gerald C., d.b.a. G. Sapperstein, Glenside, Pa. 743,661, canc. Cl. 13.
Scarne, John, to John Scarne Games, Inc., North Bergen, N.J. 439,846, ren. 3–4–69. Cl. 22.
Scarne, John, Games, Inc.: *See*— Scarne, John.
Schaeren, Mido G., & Co. S.A., Bienne, Switzerland. 865,731, pub. 12–17–68. Cl. 27.
Schenley Industries, Inc., New York, N.Y. 865,890, pub. 12–17–68. Cl. 47.
Schenley Industries, Inc., New York, N.Y. 865,897, pub. 12–17–68. Cl. 49.
Scientific Placement, Inc., Houston, Tex. 852,931. Am. 7(d). Cl. 101.
Scott, Foresman & Co., Glenview, Ill. 865,676, pub. 12–17–68. Cl. 22.
Sears, Roebuck & Co.: *See*— Simmons Co.
Sears, Roebuck & Co., Chicago, Ill. 865,691, pub. 2–14–67. Cl. 23.
Sears, Roebuck & Co., Chicago, Ill. 865,811, pub. 12–17–68. Cl. 39.
Seaton, Wilson E., d.b.a. Catfish King, Atlanta, Ga. 743,867, canc. Cl. 46.
Shadows-Out Mirror Co.: *See*— Barnes, Eugene.
Sharon Steel Corp.: *See*— Niles Rolling Mill Co., The.
Shell Oil Co., New York, N.Y. 865,547, pub. 12–17–68. Cl. 1.
Shenango China, Inc., New Castle, Pa. 743,907, canc. Cl. 100.
Sierra Engineering Co., Sierra Madre, Calif. 865,835, pub. 12–17–68. Cl. 44.
Silver Foods Co.: *See*— Silverstein, Ben.

Silvercote Products, Inc., Elkhart, Ind. 505,707, ren. 3–4–69. Cl. 12.
Silverstein, Ben, d.b.a. Silver Foods Co., Wilkes-Barre, Pa. 865,873, pub. 12–17–68. Cl. 46.
Simmons Co., New York, N.Y., to Sears, Roebuck & Co., Chicago, Ill. 506,990, ren. 3–4–69. Cl. 32.
Simmons Co., New York, N.Y. 865,743, pub. 2–14–67. Cl. 32.
16 Magazine, Inc., New York, N.Y. 865,796, pub. 12–17–68. Cl. 38.
Ski-Bob, Inc., Bridgeport, Conn. 865,673, pub. 12–17–68. Cl. 22.
Sky Land Photo Service: *See*—
Skyland Studios, Inc.
Skyland Studios, Inc., d.b.a. Sky Land Photo Service, Asheville, N.C. 865,957, pub. 12–17–68. Cl. 106.
Slifer Mfg. Co., Inc., Humboldt, Iowa. 865,705, pub. 12–17–68. Multiple Class (Classes 23 and 52).
Smedley, John, Derby, England. 20,906, canc. Cl. 39.
Smith, A. O., Corp., Milwaukee, Wis. 865,748, pub. 12–17–68. Cl. 34.
Societa Metallurgica Italiana S.p.A. Florence, Italy. 865,753, pub. 12–17–68. Cl. 34.
Societe des Accumulateurs Fixes et de Traction, Romainville, Seine, France. 743,708, canc. Cl. 21.
Solvay Process Co., The, Solvay to Allied Chemical Corp., New York, N.Y. 251,430, ren. 3–4–69. Cl. 6.
Space Conditioning, Inc., Harrisonburg, Va. 865,749, pub. 12–17–68. Cl. 34.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 507,647, ren. 3–4–69. Cl. 22.
Speedi-Sleeve International: *See*—
International Speedi-Sleeve Ltd.
Spencer Gifts Retail Stores, Inc., Atlantic City, N.J. 865,939, pub. 12–17–68. Cl. 101.
Spiratone, Inc., Flushing, N.Y. 865,728, pub. 12–17–68. Cl. 26.
Spra-White Chemical Co., Inc., Cedar Rapids, Iowa. 743,917, canc. Cl. 16.
Sprayon Products, Inc., Bedford Heights, Ohio. 743,906, canc. Cl. 52.
Spring Crest Co., La Habra, Calif. 865,574, pub. 12–17–68. Cl. 6.
Staley, A. E., Mfg. Co., Decatur, Ill. 509,986, ren. 3–4–69. Cl. 6.
Staley, A. E., Mfg. Co., Decatur, Ill. 510,353, ren. 3–4–69. Cl. 5.
Staley, A. E., Mfg. Co., Decatur, Ill. 865,631, pub. 8–6–68. Cl. 18.
Standard Screw Co., Bellwood, Ill. 865,606, pub. 12–17–68. Cl. 13.
Steel Drum Packaging & Accessories, Inc., Independence, Ohio. 865,609, pub. 12–17–68. Cl. 13.
Stenographic Machines, Inc., Skokie, Ill. 865,784, pub. 12–17–68. Cl. 38.
Sterling Drug Inc., New York, N.Y. 865,568, pub. 12–17–68. Cl. 4.
Stetson, John B., Co., Philadelphia, Pa. 865,819, pub. 12–17–68. Cl. 39.
Stolper Industries, Inc., Menomonee Falls, Wis. 865,644, pub. 12–17–68. Cl. 19.
Strombecker Corp.: *See*—
Dowst Mfg. Co.
Stuart Oxygen Co.: *See*—
General Dynamics Corp.
Sun Chemical Corp., New York, N.Y. 509,721, ren. 3–4–69. Cl. 11.
Sun Chemical Corp., New York, N.Y. 732,335, canc. Cl. 11.
Sun Chemical Corp., New York, N.Y. 743,671, canc. Cl. 16.
Sunray Stove Co.: *See*—
Glenwood Range Co.
Super Valu Stores, Inc., Hopkins, Minn. 865,854–6, pub. 12–17–68. Cl. 46.
Superior Foods, Inc., Dallas, Tex. 865,843, pub. 8–8–67. Cl. 46.
Supra Color Inc., Minneapolis, Minn. 865,956, pub. 12–17–68. Cl. 106.
Synthetics Finishing Corp., Philadelphia, Pa. 865,970. Cl. 106.
Syroco: *See*—
Rexall Drug & Chemical Co.
Tailored Woman, Inc., The, New York, N.Y. 743,824, canc. Cl. 39.
Tandy Corp., d.b.a. Radio Shack, Boston, Mass. 865,669–70, pub. 12–17–68. Cl. 21.
Tappan Co., The, Mansfield, Ohio. 865,752, pub. 12–17–68. Cl. 34.
Tennant, G. H., Co., Minneapolis, Minn. 865,672, pub. 12–17–68. Cl. 6.
Tesa S.A., Vaud, Switzerland. 865,722, pub. 12–17–68. Cl. 26.
Textron Inc.: *See*—
Gorham Mfg. Co.
Textron, Inc., Providence, R.I. 851,275, cor. Cl. 12.
Textube Corp., Stamford, Conn. 865,708, pub. 12–17–68. Cl. 23.
Tharpe, Harry K., d.b.a. Ruth-Anne Woodcrafts, Apex, N.C. 865,558, pub. 12–17–68. Cl. 2.
Thomas & Betts Co., The, Elizabeth, N.J. 743,732, canc. Cl. 23.
Thomas & Betts Co., The, Elizabeth, N.J. 865,608, pub. 10–29–68. Cl. 13.
Ticket Reservation Systems, Inc., New York, N.Y. 865,941, pub. 12–17–68. Cl. 101.
Tim & Co., New York, to Cluett, Peabody & Co., Inc., Troy, N.Y. 70,977, ren. 3–4–69. Cl. 39.
Tingsryds Bryggeri Aktiebolag, Tingsryd, Sweden. 865,837, pub. 12–17–68. Cl. 45.
Todman, Howard F., Rye, N.Y. 743,730, canc. Cl. 22.
Tomsett Corp., Rochester, N.Y. 865,717, pub. 12–17–68. Cl. 26.
Torkelson, F. C., Co., Salt Lake City, Utah. 865,918, pub. 12–17–68. Multiple Class (Classes 100 and 103).
Toscony Fabrics, Inc.: *See*—
Toscony, Inc.
Toscony, Inc., d.b.a. Toscony Fabrics, Inc., Passaic, N.J. 743,848, canc. Cl. 42.
Touch Inc., Albany, N.Y. 865,899, pub. 12–17–68. Cl. 50.
Transcopy, Inc., Newton, N.J. 743,763, canc. Cl. 26.
Tura, Inc., Great Neck, N.Y. 865,745, pub. 12–17–68. Cl. 32.
T-Vlon, Inc., Oklahoma City, Okla. 865,951, pub. 12–17–68. Cl. 103.
Tylon Mfg. Corp., Dallas, Tex. 743,633, canc. Cl. 7.
Tyson & Van, Inc., Myrtle Beach, S.C. 865,593, pub. 12–17–68. Cl. 12.
UMC Industries, Inc., St. Louis, Mo. 865,703, pub. 12–17–68. Cl. 23.
Union Camp Corp., New York, N.Y., from Pak-All Products, Inc., Providence, R.I. 865,557, pub. 12–17–68. Cl. 2.
Union Fork & Hoe Co., The, Columbus, Ohio. 865,707, pub. 12–17–68. Cl. 23.
Uniroyal, Inc., New York, N.Y. 865,548, pub. 12–17–68. Cl. 1.
Unit Liner Co.: *See*—
Hendershot, John A., Jr.
United Box & Lumber Co., Newark, N.J. 743,609, canc. Cl. 2.
United States Steel Corp., Pittsburgh, Pa. 865,799, pub. 12–17–68. Cl. 38.
Universal Container Corp., St. Charles, Mo. 743,605, canc. Cl. 2.
Universal Motor Co., Oshkosh, Wis. 261,627. Am. 7(d). Cl. 23.
Valtronic Corp., The, Bronx, N.Y. 865,671, pub. 12–17–68. Cl. 21.
Vanity Fair Paper Mills, Inc., Plattsburgh, N.Y. 743,610, canc. Cl. 2.
Verticel Co., The, Englewood, Colo. 865,595, pub. 12–17–68. Cl. 12.
Victory Diamond Tool Co., Hanover, N.J. 865,700, pub. 12–17–68. Cl. 23.
Vidaire Electronics Mfg. Corp., Freeport, N.Y. 865,566, pub. 11–5–68. Cl. 21.
Visual Graphics Corp., New York, N.Y. 865,789, pub. 12–17–68. Cl. 38.
Visual Graphics Corp., New York, N.Y. 865,792, pub. 12–17–68. Cl. 38.
Vlisco Textieldrukkerijen N.V., Helmond, Netherlands. 865,826, pub. 12–17–68. Cl. 42.
Wagner, August, Breweries, Inc., Columbus, Ohio. 504,562, ren. 3–4–69. Cl. 48.
Wajay Bakery, Inc., Miami, Fla. 865,872, pub. 12–17–68. Cl. 46.
Walker, B. B., Shoe Co., Asheboro, N.C. 865,814, pub. 12–17–68. Cl. 39.
Walker, B. B., Shoe Co., Asheboro, N.C. 865,816, pub. 12–17–68. Cl. 39.
Wallace & Tiernan Inc., Belleville, N.J. 743,689, canc. Cl. 18.
Wallace & Tiernan Inc., East Orange, N.J. 865,862, pub. 12–17–68. Cl. 46.
Washougal Woolen Mills, Washougal, Wash., to Pendleton Woolen Mills, Portland, Oreg. 507,039, ren. 3–4–69. Cl. 42.
Wembley, Inc., New Orleans, La. 865,809, pub. 12–17–68. Cl. 39.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 743,598, canc. Cl. 1.
Wester Bros.: *See*—
Wester, Herbert.
Wester, Herbert, d.b.a. Wester Bros., New York, N.Y. 507,922, ren. 3–4–69. Cl. 44.
Western Alfalfa Corp., Kansas City, Mo. 865,880, pub. 12–17–68. Cl. 46.
Western Electric Co., Inc., by Western Electric Co., Inc., New York, N.Y. 249,185, 12(c) pub. 3–4–69. Cl. 38.
Western Progress, Inc., Mountain View, Calif. 865,639, pub. 12–17–68. Cl. 19.
Wham-O-Mfg. Co., San Gabriel, Calif. 865,687–8, pub. 12–17–68. Cl. 22.
White Laboratories, Inc., Kenilworth, N.J. 743,684, canc. Cl. 18.
Whiting Milk Co. Inc., Charlestown, Mass. 865,870, pub. 12–17–68. Cl. 46.
Whitman Publishing Co., Racine, Wis. 865,788, pub. 12–17–68. Cl. 38.
Wilson Jones Co., Niles, Ill. 865,775, pub. 12–17–68. Cl. 37.
Wilson Jones Co., Niles, Ill. 865,783, pub. 12–17–68. Cl. 37.
Windsor Mfg. Co. of Clifton, N.J., Clifton, N.J. 743,731, canc. Cl. 22.
Wirecrafters, Inc., Towson, Md. 735,286, canc. Cl. 23.
Wisconsin State Barber & Beauty Culture Association, Stevens Point, Wis. 865,790, pub. 12–17–68. Cl. 38.
Wisemiller, Earl A., d.b.a. Earl Ad Co., Chicago, Ill. 865,677, pub. 12–17–68. Cl. 22.
Witra KG, Klaus Gobel, Trier, Biewer, Germany. 865,599, pub. 12–17–68. Cl. 12.
Wolff Products Co., New York, N.Y. 865,556, pub. 12–17–68. Cl. 2.
Wood, John, Co.: *See*—
Bennett Pumps Corp., The.
Woodard, Viviane, Corp., Panorama City, Calif. 743,890–1, canc. Cl. 51.
Wurlitzer Co., The, Chicago, Ill. 865,930, pub. 12–17–68. Cl. 101.
Xerocenter, Inc., Philadelphia, Pa. 865,943, pub. 12–17–68. Cl. 101.
Yardley of London, Inc., Totowa, N.J. 865,910, pub. 12–17–68. Cl. 51.
Yoshida Kogyo K.K., Tokyo, Japan. 865,610, pub. 12–17–68. Cl. 13.
Zenith Radio Corp., Chicago, Ill. 865,603, pub. 12–17–68. Multiple Class (Classes 13 and 23).
Zenith Radio Corp., Chicago, Ill. 865,746, pub. 12–17–68. Cl. 33.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 11, 1969 Volume 860 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1969

Examiner affirmed	134
Examiner affirmed in part	17
Examiner reversed	37
Total	188

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,057,896, R. C. Schlicht and H. D. Kluge, HYPERBASIC SULFONATES, decided Feb. 12, 1968, Interference No. 94,376, claim 5.

Patent No. 3,117,307, J. A. W. Davie, INFORMATION STORAGE APPARATUS, decided Jan. 2, 1969, Interference No. 95,339, claims 1 and 3.

Patent No. 3,117,754, K. H. Morganstern, VEHICLE IDENTIFICATION SYSTEM, decided Jan. 3, 1969, Interference No. 95,936, claims 1, 2, 3, 6, 7, 9 and 10.

Patent No. 3,128,840, A. M. Barrett, Jr., RANDOM CONTROL FOR POWER-DRIVEN UNIT, decided Jan. 7, 1969, Interference No. 96,202, claim 15.

Patent No. 3,232,710, P. Rieckmann, H. G. Rey and E. Haack, INDICATOR AND METHOD FOR MANUFACTURING THE SAME, decided Oct. 30, 1968, Interference No. 95,899, claims 1, 2, 4, 9, 10, 11 and 13.

Patent No. 3,247,055, E. E. Gilbert, INSECT CHEMOSTERILANT, decided Nov. 20, 1968, Interference No. 96,214, claims 1, 2, 3, 5, 6, 7, 8, 9 and 10.

Patent No. 3,247,258, D. J. Anderson, METHYL-β-HYDROXYALKYL SULFOXIDES, decided Oct. 21, 1968, Interference No. 95,835, claim 3.

Patent No. 3,281,483, H. A. Benesi and I. Dvoretzky, DISPROPORTIONATION OF ALKYL AROMATIC HYDROCARBONS IN THE PRESENCE OF HYDROGEN MORDENITE, decided Dec. 31, 1968, Interference No. 96,253, claims 1 and 3.

Patent No. 3,299,004, A. Hartmann and P. Kresse, PROCESS FOR THE MANUFACTURE OF LINEAR POLYESTERS WITH METAL IMIDE SALT CATALYSTS, decided Nov. 21, 1968, Interference No. 96,402, claims 1, 2 and 3.

Patent No. 3,313,789, H. Naarmann and E. G. Kastning, PRODUCTION OF ETHYLENE VINYL TERTIARY ALCOHOL COPOLYMERS, decided Jan. 3, 1969, Interference No. 96,198, claims 1, 2 and 3.

Patent No. 3,326,609, C. R. Auten and H. H. Langdon, FIBER DISTRIBUTING SYSTEM, decided Dec. 30, 1968, Interference No. 96,186, claims 3 and 4.

Patent No. 3,335,356, E. C. Rhyne, Jr., CONTROL CIRCUIT FOR POWER RECTIFYING SYSTEMS, decided Jan. 2, 1969, Interference No. 96,111, claims 1, 2, 3, 4, 5, 6, 7 and 8.

Lapsed Patents

The following patents have lapsed under the provisions of 35 U.S.C. 151 for failure of payment of remaining balances of issue fees due therein.

3,280,669 issued Oct. 25, 1966
3,283,927 issued Nov. 8, 1966
3,287,694 issued Nov. 22, 1966
3,312,445 issued Apr. 4, 1967
3,337,980 issued Aug. 29, 1967
3,350,743 issued Nov. 7, 1967

Disclaimers

3,335,356.—*Earl C. Rhyne, Jr.*, Millis, Mass. CONTROL CIRCUIT FOR POWER RECTIFYING SYSTEMS. Patent dated Aug. 8, 1967. Disclaimer filed Oct. 3, 1968, by the inventor; the assignee, *Sola Basic Industries, Inc.*, assenting.

Hereby enters this disclaimer to claims 1–8 of said patent.

3,398,141.—*Makhluf J. Haddadin* and *Costas H. Issidorides*, Beirut, Lebanon. QUINOXALINE-DI-N-OXIDES. Patent dated Aug. 20, 1968. Disclaimer filed Jan. 27, 1969, by the assignee, *Research Corporation*.

Hereby enters this disclaimer to claim 7 of said patent.

3,399,376.—*Venerio J. Rigolini*, Brooklyn, N.Y. PHOTOGRAPHIC APPARATUS. Patent dated Aug. 27, 1968. Disclaimer filed Nov. 29, 1968, by the assignee, *Whitehouse Products, Inc.*

Hereby enters this disclaimer to claims 5 and 6 of said patent.

3,418,411.—*Donald G. Fawkes*, Aurora, Ill. METHOD OF FORMING A VALVE SEAT STRUCTURE. Patent dated Dec. 24, 1968. Disclaimer filed July 5, 1968, by the assignee, *Henry Pratt Company*.

Hereby enters this disclaimer to the terminal portion of the patent subsequent to Feb. 13, 1984.

New Applications Received During December 1968

Patents	8001
Designs	441
Plant Patents	5
Reissues	40
Total	8487

Issue—March 11, 1969

Patents	1300	No. 3,431,560 to No.	3,432,859, incl.
Designs	49	No. 213,490 to No.	213,538, incl.
Plant Patents	2	No. 2,870 to No.	2,871, incl.
Reissues	6	No. 26,540 to No.	26,545, incl.
Total	1357		

Certificates of Correction for the Issue of Mar. 11, 1969

3,246,266	3,341,609	3,359,541
3,249,308	3,342,356	3,359,831
3,281,654	3,343,930	3,360,083
3,285,679	3,349,004	3,360,600
3,287,213	3,350,275	3,360,655
3,288,760	3,350,651	3,360,754
3,310,108	3,351,586	3,361,849
3,318,029	3,352,014	3,362,236
3,319,678	3,352,218	3,363,240
3,325,190	3,352,854	3,363,571
3,332,896	3,356,668	3,364,458
3,332,961	3,356,737	3,364,827
3,333,527	3,357,816	3,365,341
3,336,630	3,357,967	3,393,673
3,336,636	3,358,221	3,400,038
	3,358,516	

Proposed Front Page Patent Format

Request for Comments

The Patent Office proposes the adoption of an improved format for the front page of the patent document designed to incorporate the most pertinent information on a single page in an arrangement most suitable for efficient and effective utilization. The new format shall involve no change in the preparation or filing of an application by applicant.

As shown in the accompanying illustration, the information to be included comprises, when applicable, the following data elements: (The bracketed numbers relate to an international data element code.)

[11] Patent number
[45] Date patented
[21] Application number
[22] Filing date
[72] Inventor(s) (name and address)
[73] Assignee(s) (name and address)
Priority ([31] date, [33] country and [32] number)
[54] Title of invention
[52] U.S. classification (original and cross-references)
[51] International classification (one or more)
[50] Field of Search
[56] References cited and their classifications
Examiners' name(s)
Exemplary figure(s) of the drawing
Abstract of the disclosure
Exemplary claim(s) (if space permits)

Availability of the front page as a separate publication could bridge the gap which presently exists between the OFFICIAL GAZETTE announcement and the patent document. The proposed format is also intended for utilization as a "first-line" searching expedient.

The new front page would be printed by computer photocomposition in conjunction with the Patent Office program for establishing a computer supported library of patent documents in machinable form. Only those patents which are printed by computer photocomposition will include a front page format of the type proposed. It is anticipated that this program will begin in June 1969 with a small portion of the weekly patent issue followed by a rapid build-up thereafter. During the transition period, the remaining patents will be printed by the conventional method in the current format. In the first year of operation, about 50% or 35,000 of the allowed applications would be converted to data bases and printed by computer photocomposition. Expectations are that the total patent issue would be processed in this manner by July 1971. It is presently contemplated that any additional issue fee for the new front page would be disregarded as provided under 35 U.S.C. 151.

All persons who desire to present their views, objections, recommendations in connection with the proposed format are invited to do so by forwarding the same to the Commissioner of Patents, Washington, D.C., 20230, on or before April 15, 1969. No hearing will be scheduled.

Jan. 17, 1969. EDWARD J. BRENNER,
Commissioner of Patents.

(Format on next page.)

[19] United States Patent [11] 3,339,457

[45] Patented Sept. 5, 1967
[21] Application No. 465,394
[22] Filed June 21, 1965
[72] Inventor: L. Pun, Geneva, Switzerland
[73] Assignee: Brevets Aero-Mecaniques S.A., Geneva, Switzerland a Society of Switzerland
[31] Priority: June 26, 1964, Aug. 18, 1964 Luxembourg Nos. 46,404 and 46,787

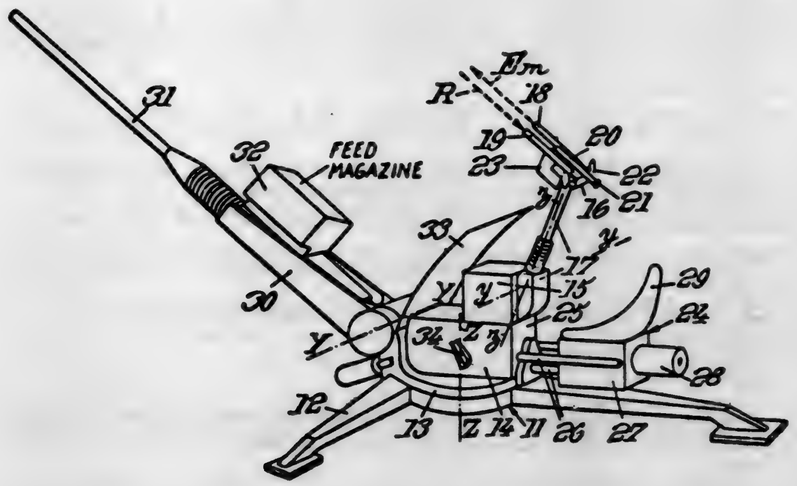
[52] U.S. Cl. 89/41, 235/61.5
[51] Int. Cl. F41g 5/00
[58] Field of Search 89/41, 235/61.5

[56] References Cited

2,710,720	U.S.	6/1955	235/61.5
2,922,572	U.S.	1/1960	235/61.5
2,977,049	U.S.	3/1961	235/61.5 X

Primary Examiner—B. A. Borchelt
Assistant Examiner—W. C. Roch

[54] **FIRE CONTROL SYSTEMS**



ABSTRACT

The angular coordinates of a target are determined continuously whereas the distance thereof is determined at regular time intervals. The angular coordinates of the gun are calculated from said angular coordinates of the target, said distance, the duration of said intervals and the firing tables, the time of flight of the projectile being calculated by an algorithm, repetitive, but without iteration, from an estimated time of flight and said duration. The target is preferably followed by a laser rangefinder.

CLAIM

2. A fire control system for directing a gun toward a target which comprises, in combination,

means for determining substantially in a continuous manner the bearing and the site of said target,
means for determining the distance of the target from the gun at regular time intervals, and
means for calculating the angular coordinates to be given to said gun so that a projectile fired therefrom normally reaches said target, from said angular coordinates of the target, the distance of the target from the gun, the duration of said time intervals and the indications of firing tables giving, for said distance, the time of flight of the projectile and the elevation angle to be given to the gun, the calculated time of flight of the projectile being determined, by an algorithm, repetitive, but without iteration, from an estimated approximate time of flight of the projectile and from the duration of said time intervals.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 24, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-30-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	12-15-66
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*5-05-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	11-07-66
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4-03-67
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	2-09-67
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-10-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	11-08-66
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-10-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-16-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-23-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-07-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-02-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-19-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-07-67

Total number of pending applications (excluding Designs)	186,870
Total number of Design applications pending	3,053

Expiration of patents: The patents within the range of numbers indicated below expire during March 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 600, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,587,576 to 2,590,832, inclusive
Plant Patents	Numbers 1,077 to 1,080, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JAMES M. DENNY AND SVEN A. CARLSSON

No. 7998. Decided June 27, 1968

[55 CCPA 1397; — F.2d 1020; 158 USPQ 292]

1. PATENTABILITY—REFERENCE.

"The question, of course, is whether there is a substantial basis for the Board's finding of fact. *In re Kunzmann*, 51 CCPA 927, 326 F.2d 424, 140 USPQ 235 (1964). It seems clear to us that there is. The reference is valid for what it fairly conveys to one of ordinary skill in the art. *In re Aller*, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955). We think a fair reading of the quoted passages leads to the Board's conclusion."

2. SAME—PARTICULAR SUBJECT MATTER—"BUILDING CONSTRUCTION."

The refusal of certain claims in an application entitled "Building Construction," as unpatentable over the prior art, is affirmed.

AFFIRMED.

Harness, Dickey & Pierce (*E. R. Casselman*, of counsel) for appellants.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH and ALMOND, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals [1] affirming the Examiner's final rejection of claims 20 and 21 in appellants' application Serial No. 258,813, filed February 15, 1963, entitled "Building Construction." Claims 13 and 15, the only other claims in the case, have been allowed.

The invention is a building wall construction in which inner and outer skin panels of metal or other materials are held together by metal studs, the cleats of which interfit with flanges on the edges of the panels.

The panels are relatively narrow, 5″ to 8″, preferably made of sheet aluminum, have inwardly turned longitudinal edge flanges and are held together with coextensive generally C-shaped cleats. A pair of cleats, to connect a pair of outer panels and a pair of inner panels, are connected by a metal web which determines the spacing between the inner and outer walls, the space later being filled with some insulating material, concrete, or the like.

The crux of the invention is said to lie in the fact that the cleats extend along the entire length of the panels so that the cleats help to bear the load of the roof. Claim 20 gives an idea of the nature of the invention and reads as follows:

> 20. A building construction of the type having
> a foundation,
> an upright wall structure supported by said foundation, and
> a roof on and supported by load bearing parts of said wall structure, said wall structure comprising
> a plurality of skin panels extending the full height of the wall, having
> reversely bent longitudinal edge portions arranged in edgewise butting relation forming spaced inner and outer wall portions with the joints between

[1] Consisting of Keely, Examiner-in-Chief, and Andrews and Bendett, Acting Examiners-in-Chief, opinion by Bendett.

the outer wall panels being opposite corresponding joints between inner wall panels,
studs of generally I-shaped cross-sectional configuration adapted to hold said butting panels together and to opposite corresponding butting panels, said studs including
spaced inner and outer cleats each including
a medial flange interconnected with a pair of opposed channel members, said flange and channel members extending the full wall height,
said channel members interlocking said reversely bent panel edge portions extending laterally of said medial flange from one edge thereof and connected thereto,
rigid web members interconnecting the medial flanges of the inner and outer cleats at opposed joints,
means between said roof structure and said walls spanning the inner and outer wall portion and extending over a plurality of studs, said last-mentioned means carrying said roof structure and bearing endwise on said walls, whereby to transfer the roof load jointly through said studs and said panels at said joints to said foundation.

The following references were relied on:

Schwartz, 2,815,832, Dec. 10, 1957.
Brown (British), 414,677, Aug. 7, 1934.

Brown discloses a wall construction generally similar to appellants' except that the studs which support the panels are of a different design. Schwartz discloses studs made, as appellants are, of cleats and a web.

The Examiner and Board agreed that it would be obvious under 35 U.S.C. 103 to change the design of the studs in Brown's structure to be like those of Schwartz. Appellants do not dispute this aspect of the rejection. Appellants argue only that the structure thus created would not meet their claims. Appellants contend that the crucial facet of their invention, the extension of the cleats along the entire length of the wall panels, is lacking in Brown and, of course, not made obvious by Schwartz.

The issue before us, then, is limited to whether Brown discloses cleats which share the load-bearing with the panels, i.e., whether the Brown cleats extend the length of the panels.

The drawing in the Brown patent is unclear. The Board, however, pointed to the following passages from the Brown specification to support its view that the cleats are coextensive with the panels:

According to my present invention, I construct the walls and interior partitions of the building of airtight hollow vertical panels each comprising two lengths of sheet metal forming face members flanged and internally lipped along their longer vertical edges, said *face members* being *spaced and maintained parallel by flanged sheet metal transverse members of corresponding length.*

* * * * * * *

A wall partition or door construction in accordance with my invention comprises sets of standardized sheet metal elements assembled to form abutting cavity panels each set comprising a pair of face members inwardly flanged along their longitudinal margins and maintained spaced and in parallel relationship by interposed perpendicular interlocking members which carry *C-shaped strips* engaging with, and *throughout the length of, inturned lips* on the abutting flanges of contiguous face members, said interlocking connections lying wholly within said panels.

* * * * * * *

Referring to the said drawings, in the example therein illustrated, the exterior walls are constructed of vertical airtight cavity panels each comprising two lengths of sheet metal forming face members a, a^1 the vertical edges of which are flanged at b, b^1 and internally lipped at c, c^1, said *face members* being *spaced and maintained parallel by sheet metal end members d of corresponding length*, the vertical edges of which are flanged at e. * * * *The strips f, f*[1] serve to *seal and* also to *connect abutting panels* together *being adapted to engage the lips c, c*[1] *throughout the length of the same.*

* * * * * * *

I claim * * *:

1. A wall, partition or door construction comprising sets of standardized sheet metal elements assembled to form abutting cavity panels each set comprising a pair of face members inwardly flanged along their longitudinal margins and maintained spaced and in parallel relationship by interposed perpendicular interlocking members which carry *C-shaped strips* engaging with, and *throughout the length of inturned lips* on the abutting flanges of contiguous face members, said interlocking connections lying wholly within said panels. [Emphasis added.]

Appellants argue, in their turn, that nothing quoted *necessarily* requires the conclusion reached by the Board. "A corresponding length," appellants urge, may mean no more than a fit length or a suitable length. "Flanged along their longitudinal margins," in appellants' view, may very well mean intermittently flanged and so drain the Board's meaning from "throughout the length of * * * inturned lips in the abutting flanges."

[1] The question, of course, is whether there is a substantial basis for the Board's finding of fact. *In re Kunzmann*, 51 CCPA 927, 326 F.2d 424, 140 USPQ 235 (1964). It seems clear to us that there is. The reference is valid for what it fairly conveys to one of ordinary skill in the art. *In re Aller*, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955). We think a fair reading of the quoted passages leads to the Board's conclusion.

Appellants also argue that Brown's provision for a bituminous seal atop his panels would be ineffective or impractical if the cleats extend the full length of the panels. The Solicitor replies that it would be quite effective and practical to. Further, in the Solicitor's opinion, it strains credulity to suppose that a professional builder would do other than extend the cleats.

Appellants' argument, which in the end comes to a *bare assertion* of impracticality,[2] does not detract from the support the *evidence* of record provides for the Board's conclusion. **[2]** The decision of the Board, therefore, is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

We face here another in the long series of decisions by a Board consisting of but one duly appointed examiner-in-chief. While I remain in the minority on the issue of the legality of the decisions rendered such boards, see *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967), I feel, for the reasons expressed in my dissent therein, that the continued practice of hearing appeals before boards of appeal so constituted is fundamentally wrong. Not only does this practice seem to have become a continuing practice in the Patent Office, but it is here indulged in apparently without regard to the limitations inherent in the statutory exception in 35 U.S.C. 7. I say "apparently" because there is no record support here showing a compliance with the terms of the statutory exception in section 7. Even if we adopt

[2] Brown discloses, at the top of his panels, a layer of bitumen enclosed between supporting plates and sealing plates. Appellants argue that the supporting plates must overlie the cleats, it being impractical to fit them snugly to the internal form of the wall if the cleats extend to the very top of the panels. Appellants do not elaborate on the impracticality. We, of course, give no weight to the mere allegation.

the interpretation of this section which was relied upon by the majority in *Wiechert*, the present record is silent either as to the need for the creation of such a board or as to the qualifications of its members who appear on this record simply as "acting examiners-in-chief."

Perhaps the time has come for a reappraisal of what now seems to have become an established practice in appointing such boards. The legislative history of 35 U.S.C. 7, referred to at length in my dissent in *Wiechert*, shows that the enactment of paragraph 2 of that section was brought about by the need for permitting flexibility in administrative action to meet what was then an emergency situation due to the large number of appeals then pending within the Patent Office. It is clear that the enactment of this provision was to meet a particular situation rather than to establish a new practice,[3] the continuation of which in practical effect can be but to arrogate to the Commissioner the authority of the President to appoint and of the Senate to advise and consent as to the appointment of those who are to be examiners-in-chief. The practical effect of the present practice also is to abrogate the statutory limit of 35 U.S.C. 3 as to the number of examiners-in-chief who may be so appointed.

I doubt that Congress intended that 35 U.S.C. 7 should be productive of such practical results.

[3] See my dissent in *Wiechert* wherein it is pointed out: The second paragraph of section 7 is a newer provision and states an exception to the requirements of section 3. It concerns the appointment under special circumstances of acting examiners-in-chief without requiring Presidential appointment and Senate confirmation. Instead, such acting examiners-in-chief are to be designated by the Commissioner under the therein specially stated circumstances. This exception in par. 2 of section 7 thus gives the Commissioner limited authority to name acting examiners-in-chief and limits the use he may make of them in designating particular panels of the Board of Appeals. It becomes necessary, therefore, to examine the history and background of this second paragraph of section 7 to determine whether Congress intended the exception therein stated to take precedence over and change the long standing general plan of independent appellate review we find clearly stated in paragraph 1 of section 7.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

3,300,576, Hendrix, Markham, Hunnicutt, AERIAL CABLE SPACER AND TIE APPARATUS, **filed** Oct. 15, 1968, D.C. Del. (Wilmington), Doc. 3620, *Hendrix Wire and Cable Corp. v. United States Ceramic Tile Co., Inc.*

3,301,040, Levy, Herk, Stahl and Lawrey, AUTOMATIC FRACTION COLLECTING SYSTEM FOR VAPOR PHASE CHROMATOGRAPHY, **filed** Oct. 3, 1968, D.C.N.J. (Newark), Doc. 1009–68, *Eugene J. Levy et al. v. Varian Associates.*

3,305,273, J. Kilborne, MINING APPARATUS SUPPORTING AND DRIVING CONSTRUCTION, **filed** Oct. 17, 1968, D.C., N.D. W. Va. (Fairmont), Doc. C–68–10–C, *Jeffery Galion Inc. v. Joy Manufacturing Company.*

3,312,124, Meir and Wolfsburg, STEERING-WHEEL ASSEMBLY FOR AUTOMOTIVE VEHICLES, **filed** Oct. 3, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1880, *Kamei-Autokomfort and Superior Industries, Inc. v. Western Auto Stores, Inc.*

3,312,305, L. S. Waun, FOLDING SCAFFOLD, **filed** Dec. 20, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2177, *Hutchins Company Inc. v. Badger Manufacturing Corporation et al.* Consent judgment, patent valid and owned by plaintiff; defendants have infringed. Plaintiff hereby forever releases defendants and their customers and representatives of all claims for past infringement; defendants permanently enjoined, Sept. 16, 1968.

3,315,041, S. O. Sampson, TRACK SELECTION CONTROL MEANS FOR MAGNETIC SIGNAL RECORDING AND REPRODUCING SYSTEMS, **filed** May 8, 1967, D.C., S.D.N.Y., Doc. 67–C–1818, *Robot Education Systems, Inc. v. Radio Corporation of America.* Judgment against the plaintiffs Robot Education Systems, Inc. and Sidney O. Sampson, Oct. 28, 1968. Same, **filed** Oct. 14, 1968, D.C., S.D.N.Y., Doc. 68–C–4051, *Sidney O. Sampson v. Ampex Corporation.*

3,318,589, H. C. Herp, Jr., DESUPERHEATER, **filed** Oct. 8, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68C–1024, *RDM Corporation v. American Machine & Foundry Corp.*

3,327,416, D. D. Sanford, TRANSPARENT HOLDER FOR PACKING SLIPS AND INVOICES, **filed** Sept. 13, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49949, *Visual King International, Inc. v. Central Bag & Supply Co., Inc.*

3,330,182, Gerber and Webster, DEVICE FOR EXPOSING DISCRETE PORTIONS OF A PHOTOSENSITIVE SURFACE TO A VARIABLE INTENSITY LIGHT BEAM, **filed** Oct. 25, 1968, D.C., S.D. Ohio (Cincinnati), Doc. 6893, *The Gerber Scientific Instrument Co. v. Baldwin-Kongsberg Company.*

3,343,848, A. F. Barnes, BEET TOPPING UNIT, **filed** Sept. 26, 1968, D.C. Colo. (Denver), Doc. C–1100, *Production Engineering and Manufacturing, Inc. v. Andrew F. Barnes.*

3,349,645, E. R. Silvey, SAW CHAIN GRINDING MACHINE, **filed** Oct. 18, 1968, D.C. Oreg. (Portland), Doc. C–68–594, *Katherine A. Silvey and Elmer R. Silvey v. Nielsen Corporation and Leo Nielsen.*

3,358,897, F. L. Christensen, ELECTRIC LEAD WIRE BONDING TOOLS, **filed** Aug. 20, 1968, D.C. Mass. (Boston), Doc. 68–763–J, *Micro-Swiss, Inc. v. Tempress Research Co.*

3,363,422, L. A. Turzillo, METHOD AND APPARATUS FOR ANCHORING A TIE-DOWN BAR IN AN EARTH SITUS, **filed** Sept. 9, 1968, D.C., N.D. Ohio (Cleveland), Doc. C–68–671, *Lee Turzillo Contracting Company, Inc .v. Intrusion Prepakt, Inc., Prepakt Concrete Company.*

3,368,147, O. W. Graham. BASIC SEDIMENT AND WATER MONITOR UTILIZING ONE PLATE OF A CONDENSER FOR MOUNTING A HOUSING FOR COMPONENTS OF A CAPACITANCE MEASURING CIRCUIT, **filed** Oct. 23, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–883, *Combustion Engineering, Inc. v. Odex Controls, Inc.*

3,368,932, Weill, Woods and Solomon, APPARATUS FOR LAMINATING TWO FABRICS TO FOAM IN ONE SINGLE OPERATION, **filed** Oct. 21, 1968, D.C., S.D.N.Y., Doc. 68–C–4155, *Flame Laminating Machines Corp. v. Allen Knitting Mills, Inc.*

3,371,828, N. E. Elsas, TURNING APPARATUS, **filed** July 3, 1968, D.C., N.D. Ga. (Atlanta), Doc. 11944, *Nemo Industries, Inc. and Sunbrand Corporation v. Cutters Exchange of Georgia, Inc.*

3,377,223, Clausen and Zweig, COMPOSITE WOOD VENEER AND MEANS FOR PRODUCING SAME, **filed** Sept. 19, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50000, *Simpson Timber Company v. Diamond National Corporation.*

3,379,534, H. Gablinger, PREPARATION OF A LOW DEXTRIN BEER BY USING AMYLOGLUCOSIDASE, **filed** July 22, 1968, D.C., S.D. Ohio (Columbus), Doc. 68–241, *Amylase A.G. v. August Wagner Breweries Inc.*

3,381,332, Jerila and Fremstad, SELF-LATCHING HINGE; **3,381,333,** T. T. T. Jerila, SELF-LATCHING MECHANISM FOR HINGES, **filed** June 21, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1028–PH, *Ajax Hardware Manufacturing Corp. v. Broadmore Mobile Homes, Inc.* Plaintiff's dismissal and order dismissing this action without prejudice, Sept. 16, 1968.

3,381,333. (See 3,381,332.)

3,384,564, Ornstein and Davis, ELECTROPHORETIC PROCESS FOR SIMULTANEOUSLY SEPARATING AND CONCENTRATING PARTICLES, **filed** Sept. 20, 1968, D.C., S.D.N.Y., Doc. 68–C–3784, *Buchler Instrument Inc. v. Mount Sinai Hospital Research Foundation, Inc.*

3,386,192, R. P. Fornaciari, EQUIPMENT FOR FEEDING LAUNDRY TO FLATWORK IRONER, **filed** Oct. 10, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1693–IH, *Ray P. Fornaciari v. The Biltmore Hotel Co., Neil Snedicor.*

3,387,147, J. A. Radwan, MUSCLE STIMULATING PULSE GENERATOR, **filed** Oct. 8, 1968, D.C., S.D.N.Y., Doc. 68–C–3955, *Dynatone Electronics Corporation v. Equality Products, Inc.*

3,387,666, G. R. Hadfield, FREEING, SEVERING AND ROLLING UP SOD, **filed** Oct. 4, 1968, D.C. Minn. (St. Paul), Doc. 3–68C–267, *Glen R. Hadfield v. Ryan Equipment Co.*

3,390,755, D. L. Stacy, COAL LOADER, **filed** Oct. 16, 1968, D.C., W.D. Va. (Abingdon), Doc. 68–C–100–A, *Paul Elswick, Epling's Manufacturing Co., Inc., and Mescher Manufacturing Co., Inc. v. David L. Stacy.*

3,402,961, L. V. Larson, COMBINATION STABILIZING AND SHOCK ABSORBING DEVICE FOR CAMPER VEHICLES, **filed** Oct. 4, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1662–AAH, *Loren V. Larson, doing business as Rush Welding & Mfg. Co. v. Donald B. Bowen, doing business as Camper Heaven.* **Same, filed** Oct. 9, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1687–AAH, *Donald B. Bowen v. Loren V. Larson, doing business as Rush Welding & Mfg. Co.* **Same, filed** Oct. 25, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1771–AAH, *Loren V. Larson, doing business as Rush Welding & Mfg. Co. v. Kirkby Co.*

3,404,068, L. M. Batistoni, COMPOSITION FOR COMPACTING SOIL, **filed** Oct. 25, 1968, D.C. Ariz. (Phoenix), Doc. C–6884–Phx., *The Larutan Corporation v. Enzymatic Products, Inc., Robert W. West et al.*

3,404,306, R. G. Johnson, TRAVEL-WAVE TUBE FOCUSING FIELD STRAIGHTENER, **filed** Oct. 29, 1968, D.C., N.D. Ga. (Atlanta), Doc. 12186, *Hercules Incorporated v. Pennsalt Chemicals Corporation.* **Same, filed** Oct. 29, 1968, D.C., N.D. Ga. (Atlanta), Doc. 12187, *Hercules Incorporated v. Drew Chemical Company.* **Same, filed** Oct. 29, 1968, D.C., N.D. Ga. (Atlanta), Doc. 12188, *Hercules Incorporated v. Nopco Chemical Co., Inc.*

REISSUES

MARCH 11, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

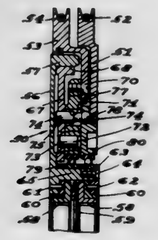
26,540

BI-DIRECTIONAL NO-BACK DRIVE DEVICE

Ilmars Kalns, Taylor, Mich., assignor to Formsprag Company, Warren, Mich., a corporation of Michigan

Original No. 3,335,831, dated Aug. 15, 1967, Ser. No. 503,381, Oct. 23, 1965. Application for reissue Nov. 21, 1967, Ser. No. 689,738

U.S. Cl. 192—8 **26 Claims**
Int. Cl. F16d *57/10, 67/00;* **B60t** *7/12*



A bi-directional no back drive device, in one embodiment, consisting of a fixed brake drum and dual brake shoes disengaged from the brake drum by drive pins and wedgeable into engagement with the drum by pivotable pins connected to the output. The driven pins are caused to move in a non-rotative path during the braking phase of operation. Other embodiments include a rotatable rather than fixed brake drum, a single drive wedging member to replace the pivotable pins, and a dual input to replace the single drive source.

26,541

STABLE AQUEOUS GLYCOL SOLUTION OF TETRACYCLINE ALUMINUM CALCIUM GLUCONATE COMPLEX HAVING A pH OF ABOUT 7.5 TO 9

Edward Grant Remmers, Ridgewood, and George Madison Sieger, Montvale, N.J., and William Charles Barringer, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original No. 3,159,542, dated Dec. 1, 1964, Ser. No. 248,231, Dec. 31, 1962. Application for reissue Sept. 29, 1966, Ser. No. 589,163

U.S. Cl. 424—227 **5 Claims**
Int. Cl. A61k *27/00;* **C07c** *103/19*

1. A stable liquid composition of tetracycline, suitable for parenteral administration, comprising as a vehicle an aqueous solution containing from 30 to 80 percent of a physiologically acceptable glycol, said vehicle having dissolved therein [from 10 to 125 mg./ml. of a] tetracycline aluminum calcium gluconate complex, *containing 10 to 125 mg./ml. of tetracycline,* and said composition having a pH of about 7.5 to 9.

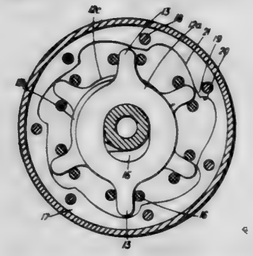
26,542

DEVICE FOR LIMITING THE SPEED OF ROTATION OF A BODY

Jakhin Boas Popper, Kiryat Motzkin, Israel, assignor to The State of Israel, Ministry of Defense, Hakirya, Tel Aviv, Israel

Original No. 3,149,702, dated Sept. 22, 1964, Ser. No. 239,996, Nov. 26, 1962. Application for reissue Aug. 30, 1965, Ser. No. 483,622
Claims priority, application Israel, Nov. 26, 1961, 16,378

U.S. Cl. 188—185 **14 Claims**
Int. Cl. B60t *1/100*



1. A speed limiting device for limiting the speed of rotation of a body adapted to rotate about an axis under the influence of an applied torque and comprising at least one braking member mounted for free sliding movement in a transverse direction with respect to said axis and an abutment bearing member, one of said members being adapted to rotate with said body and the other of said members being secured against rotation and being adapted to be struck by said one member during its rotation, whereby the braking member is constrained to slide in said transverse direction.

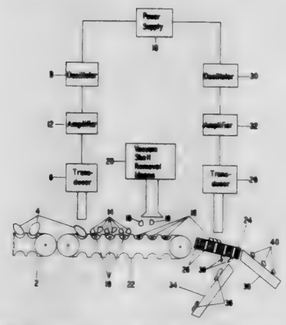
26,543

METHOD AND APPARATUS FOR BREAKING AND SEPARATING EGGS

Clement T. Beeson, Jr., deceased, late of Tulsa, Okla., by M'Lou Beeson, administratrix, Tulsa, Okla., and Willard T. Russell and Willis E. Webb, Tulsa, Okla.; said Russell and said Webb assignors to said M'Lou Beeson

Original No. 3,207,198, dated Sept. 21, 1965, Ser. No. 319,068, Oct. 25, 1963. Application for reissue Sept. 7, 1967, Ser. No. 669,985

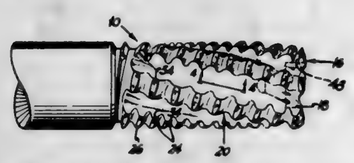
U.S. Cl. 146—221 **21 Claims**
Int. Cl. A23l *1/32;* **A47j** *43/14*



A procedure for opening eggs and separating the whites

from the yolks by the use of beams of radiated energy, including both a method and the apparatus for practicing the method.

26,544
CUTTING TOOL
Edwin C. Castor, Sr., 12768 Argyle, Southgate, Mich. 48192
Original No. 3,117,366, dated Jan. 14, 1964, Ser. No. 93,376, Mar. 6, 1961. Application for reissue Mar. 28, 1968, Ser. No. 719,789
U.S. Cl. 29—103 **1 Claim**
Int. Cl. B26d *1/36*



A cutting tool which has a plurality of parallel helical flutes defining cutting teeth on the surface of the tool. The tool further includes a helical groove of the opposite hand and of shorter lead to define spaced chip-breaking grooves in each of the helical flutes.

26,545
CONCRETE CONTAINING POROUS AGGREGATES
Robert J. Albert, Brookline, Mass. (% Eastern Fireproofing, Inc., 100 Foundry St., Wakefield, Mass. 01880)
No Drawing. Original No. 3,133,729, dated May 19, 1964, Ser. No. 201,239, June 11, 1962, which is a continuation of application Ser. No. 777,608, Dec. 2, 1958. Application for reissue May 4, 1966, Ser. No. 552,671
U.S. Cl. 259—147 **15 Claims**
Int. Cl. B28c *5/06;* **C04b** *7/00*

A method of treating porous lightweight aggregate and permitting curing of a concrete mix wherein the aggregate is subject to a vacuum and the interior voids of the aggregate are filled with water. The aggregate is mixed with cement and mixing water and permitted to evaporate to cause a slow moist curing of the concrete mix from the inside out. The concrete mix contains a porous lightweight aggregate having all voids filled with an incompressible liquid.

PLANT PATENTS

GRANTED MARCH 11, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,870
CARNATION PLANT
Pasquale Mercuri, 189 Post Road, and George Mercury, 260 Landham Road, both of Sudbury, Mass. 01776
Filed Apr. 27, 1967, Ser. No. 634,393
U.S. Cl. Plt.—70 **1 Claim**
Int. Cl. A01h *5/02*

1. A new and distinct variety of carnation plant as herein disclosed, characterized as to novelty by a white, quilled petal structure.

2,871
CARNATION PLANT
Pasquale Mercuri, 189 Post Road, and George Mercury, 260 Landham Road, both of Sudbury, Mass. 01776
Filed Apr. 27, 1967, Ser. No. 634,394
U.S. Cl. Plt.—73 **1 Claim**
Int. Cl. A01h *5/02*

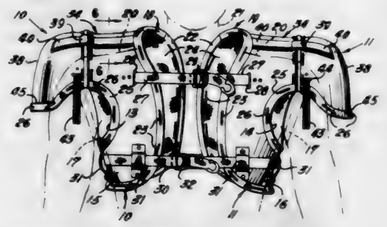
1. A new and distinct variety of carnation plant as herein disclosed, characterized as to novelty by a red quilled petal structure.

PATENTS

GRANTED MARCH 11, 1969

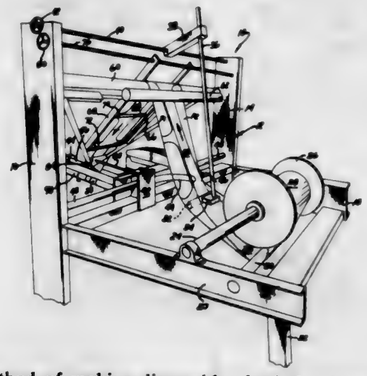
GENERAL AND MECHANICAL

3,431,560
SHOULDER GUARD FOR FOOTBALL PLAYERS
Russell A. Austin, Lubbock, Tex., assignor of fifteen percent to Bill A. Davis and John Denzil Bevers, both of the County of Lubbock, Tex., comprising the partnership of Davis & Bevers
Filed Mar. 16, 1967, Ser. No. 623,703
U.S. Cl. 2—2 **2 Claims**
Int. Cl. A41d *13/00*



The invention generally comprises a semi-rigid protective covering for the breast, back and shoulders of players engaged in the game of football, or similar sports, and in its preferred form consists of a pair of like body members, the shoulder portions of which are substantially inverted U-shaped in transverse section and having caps or epaulets hingedly connected thereto, the inner rims of which conformably abutting the outer rims of the body members in their normal positions while overreaching the wearer's shoulders.

3,431,561
METHOD OF MAKING A CAP
Raymond J. Hummel and Horst Ruhl, Grand Rapids, Mich., assignors to H & H Plastics Mfg. Co., Grand Rapids, Mich., a corporation of Illinois
Filed July 26, 1965, Ser. No. 474,575
U.S. Cl. 2—192 **1 Claim**
Int. Cl. A42c *1/00;* **B31b** *1/00*



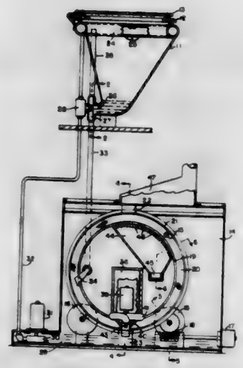
A method of making disposable plastic headwear caps having reinforcing side flaps, from plastic web stock involving the steps of continuously folding up the edge portions of a tensioned, flexible, thermoplastic web while pulling it, then folding the web along its centerline so that the edge fold flaps are on the outside, and finally melt severing the fold web along its length into elongated sections and fusing the severed edges, forming a plurality of like plastic caps.

3,431,562
REMOVABLE MATERNITY INSERT PANELS
Elsie Natalie Souders, 214 Brush Creek Blvd., Apt. 3–W, Kansas City, Mo. 64112
Filed Dec. 27, 1966, Ser. No. 604,812
U.S. Cl. 2—221 **1 Claim**
Int. Cl. A41d *1/14*



The waistband size of nonaltered wearing apparel may be modified by use of elasticized insert panels fixedly attached to an elasticized waistband. The modifying is accomplished by removing the original waistband, opening the side seams a preselected distance, sewing each insert panel to each side portion of said open seam, and stitching the elasticized waistband around the upper portion of the apparel.

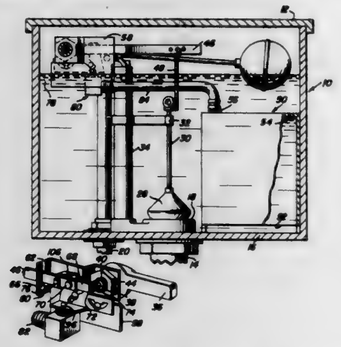
3,431,563
TOILET UTILIZING OIL AS A FLUSHING AGENT
Anthony Rascov, 4303 Tobasco Road, Cincinnati, Ohio 45244
Filed Dec. 22, 1966, Ser. No. 604,060
U.S. Cl. 4—1 **9 Claims**
Int. Cl. A47k *17/00, 11/02;* **E03d** *11/00*



1. A toilet comprising;
(a) a toilet bowl,
(b) a housing below said toilet bowl,
(c) oil employed as a flushing agent retained in said housing,

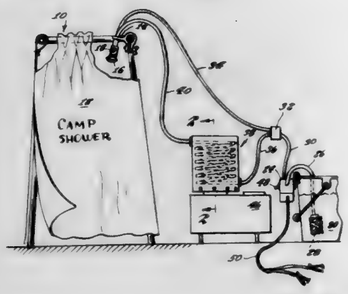
(d) a pressure pump for raising said oil into said toilet bowl,
(e) an impeller in the base of said toilet to disintegrate the solids and discharge the mass into a separating unit, and
(f) said separating unit separating the oil, solids and fluid.

3,431,564
WATER SAVING DEVICE FOR WATER CLOSETS
Evan D. Davies, 8641 SW. 16th Court, Fort Lauderdale, Fla. 33314
Filed Apr. 3, 1967, Ser. No. 628,103
U.S. Cl. 4—40 **10 Claims**
Int. Cl. E03d *1/22, 1/34, 5/02*



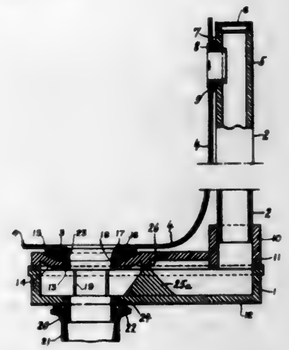
An attachment for a water closet tank consisting of a reserve tank to be disposed in and displace water within the main tank and which has its lower end communicated with the bottom of the main tank below the low water level therein and which is closed at its upper end, the upper end of the reserve tank including vent air passage means with air valve means associated therewith selectively operable by the valve actuator of the main tank in a manner such that water my be discharged from the main tank and retained within the reserve tank or the upper portion of the reserve tank may be vented to the ambient atmosphere upon the opening of the outlet valve of the main tank whereby water from the reserve tank will also flow out of the outlet for the main tank.

3,431,565
PORTABLE SHOWER
Robert R. Nelson, Rolls, Mo. (842 E. Estate Blvd., Charleston, S.C. 29407)
Filed Mar. 14, 1966, Ser. No. 534,088
U.S. Cl. 4—154 **1 Claim**
Int. Cl. A44k *3/22;* **F24H** *1/06*



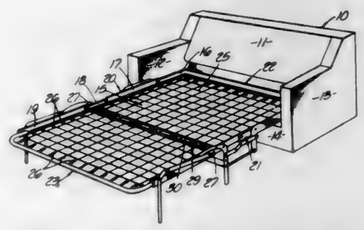
A portable shower including a shower spray head at one end of a pair of hoses, connected at their opposite ends to a junction, one of the hoses being intercepted by a heating coil below an inverted hood placed over a stove, and the junction being connected by another hose through an electric pump to a cold water source.

3,431,566
DRAINAGE AND OVERFLOW DEVICE FOR CONNECTION TO A BASIN
Heinrich Feldhege, Hahndorf, Goslar, Germany, assignor to Adolf Lamprecht K.G. Stanz- und Emaillierwerke, Hahndorf, Goslar, Germany
Filed Apr. 11, 1967, Ser. No. 629,965
Claims priority, application Germany, Apr. 19, 1966, L 53,372
U.S. Cl. 4—198 **15 Claims**
Int. Cl. E03c *1/24*



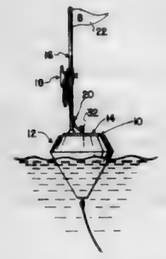
An overflow vessel is inserted onto a laterally slotted drainage pipe, the slots being situated within the inserted overflow vessel. The overflow vessel is of a size such that it extends for coupling with an overflow downpipe descending vertically from the overflow of the basin. The flow cross-section of the vessel increases uniformly and constantly from the cross-section of the downpipe to that of the slots in the drainage pipe.

3,431,567
MEANS FOR ANCHORING FLEXIBLE FABRICS IN SOFA-BEDS
Melvin P. Spitz, Beverly Hills, Chester H. Sharp, Arcadia, and John W. Sproule, Tustin, Calif., assignors to Bedline, Inc., Bell Gardens, Calif., a corporation of California
Filed May 15, 1967, Ser. No. 638,402
U.S. Cl. 5—51 **2 Claims**
Int. Cl. A47c *17/00, 17/04*



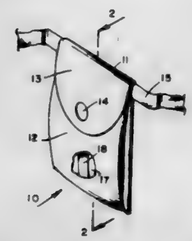
Means for anchoring by means of linking members, the forward end of the flexible fabric of a seat forming section of a foldable bed-frame of a sofa-bed, when the seat forming section is in a seat forming position, the linking member comprising a flexible metal strap which can be secured at its ends into a loop with one end of the loop extending around a transverse frame member of an adjacent connected frame section at the front of the seat forming section, and with the other end of the loop extending around a part of the adjacent flexible fabric. The strap ends are respectively formed with a triangular slot at one end, and a T-shaped tongue portion at the other end, which can be interlockingly engaged when the ends are brought into juxtaposition.

3,431,568
MOORING DEVICE
Paul R. Brown, Barrington, Ill., assignor to Seal Basin Marine Company, Chicago, Ill., a corporation of Illinois
Filed May 17, 1966, Ser. No. 550,721
U.S. Cl. 9—8 **1 Claim**
Int. Cl. B63b *21/52, 51/02, 21/04*



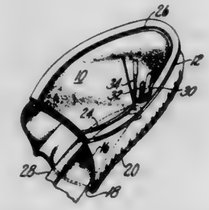
A mooring buoy having a mooring line secured thereto. An upright pole fixed to the upper portion of the buoy. A cleat releasably attached to the upright pole for selectively positioning the cleat along the length of the upright pole. Said cleat being adapted to releasably support a portion of the mooring line above the buoy.

3,431,569
DAY-NIGHT WATER MARKER
Merrill D. Gerke, Imperial Beach, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 14, 1967, Ser. No. 624,118
U.S. Cl. 9—311 **2 Claims**
Int. Cl. B63c *9/20, 9/00;* **B65d** *85/70*



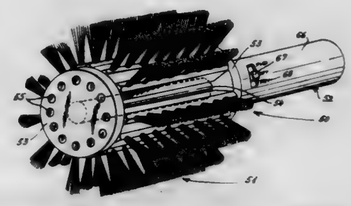
A device for disseminating dyes, pigments, chemiluminescent formulations and the like for use as an emergency target signal and day-night sea marker. The device comprises a waterproof envelope having sealed inside a perforated plastic packet which holds a water permeable receptacle containing the marker material. The packet is provided with a float and is fastened to the inside of the envelope by a length of flexible tether. The envelope has a flap with a reinforced fingerhole for ease in opening. In operation, a finger is inserted in the fingerhole, some pressure is exerted which rips open the sealed envelope dropping the packet into the water. The float causes the packet to rise to the surface or to float and as the receptacle dissolves its contents are dispersed through the perforations in the covering of the packet onto the water.

3,431,570
METHODS OF MAKING WELTED AND OUTSOLED TRUE MOCCASINS
Arthur J. Murphy, Saugus, Mass., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Apr. 11, 1967, Ser. No. 630,112
U.S. Cl. 12—142 **3 Claims**
Int. Cl. A43d *44/00;* **A43b** *3/14, 13/18*



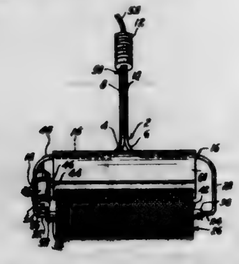
A true moccasin having a welt secured by a seam which passes through the tread portion of the vamp and an outsole secured to the outer margin of the welt and in which the welt is joined to a central flexible filler and temporarily attached to the tread surface of the vamp prior to the permanent securement by the seam penetrating the welt and the vamp.

3,431,571
ROTARY DRIVEN HAIRBRUSH
Donald Edward Kraus, 620 Spring St., Washington, Ill. 61571
Filed Oct. 26, 1966, Ser. No. 589,675
U.S. Cl. 15—23 **5 Claims**
Int. Cl. A47b *13/04, 7/10, 9/10*



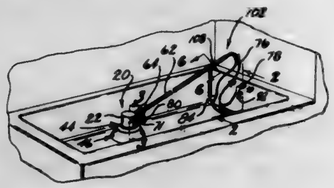
A rotary motor driven hairbrush having bristles which are disposed at an angle relative to a radial direction so that they may produce a more gentle stroking action of the hair being brushed thereby giving a better sheen to the hair, or so that they may prevent engaging or catching of the hair when being brushed. Means is provided for changing the angle of the bristles from a clockwise position to a counterclockwise position and vice-versa. The brush is powered by a motor activated by batteries contained within the brush handle.

3,431,572
MECHANICAL SCOURING DEVICE
Fred Bennett, 1608 Philadelphia Road, Joppa, Md. 21085
Filed Mar. 23, 1965, Ser. No. 442,007
U.S. Cl. 15—93 4 Claims
Int. Cl. B23d *79/04*; A47d *11/00*



A device for mechanically scouring, or scraping, cooking grills and other surfaces, comprising a circumferentially continuous scouring sleeve made of open mesh screen material mounted in tight engagement on an expandable core member. The core member is detachably mounted in a frame, the latter carrying a motor connected to the core to rotate the core and the scouring sleeve carried thereon. When the rotating scouring sleeve is engaged with a surface, at least one of the warp and weft of the sleeve is effective to scour by scraping the said surface.

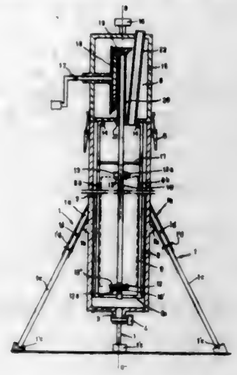
3,431,573
PRESSURIZED-WATER-OPERATED CLEANING APPARATUS
Richard L. Frandsen, San Bernardino, Calif. (434 S. 2nd St., Barstow, Calif. 92311)
Filed June 27, 1966, Ser. No. 560,719
U.S. Cl. 15—98 9 Claims
Int. Cl. A47l *11/282*; G03d *1/08*



A water pressure operated cleaning apparatus including a hydraulic motor driving a rotor which is removably provided with a cleaning applicator means, such as a sponge, for cleaning bathtubs, etc. The motor and cleaning means are carried by a housing at the forward end of a longitudinal handle means in a movable manner which allows the sponge to clean all surfaces of a bathtub, etc. Pressurized water flow is controlled by a reciprocating valve which cuts off the outflow conduit simultaneously as it diverts inflow from motor to spray nozzle.

3,431,574
APPARATUS FOR WASHING AND SCRUBBING PAINT ROLLERS
Pierre Mathieu, Rochefort-sur-mer, France (17 Ave. de Villiere, Paris XVII, France)
Filed July 28, 1966, Ser. No. 568,499
Claims priority, application France, July 28, 1965, 26,365; Apr. 14, 1966, 57,546
U.S. Cl. 15—104.92 4 Claims
Int. Cl. B08b *1/00*; D06f *3/00, 5/00*

This disclosure concerns an apparatus for washing paint rollers and combines a control head containing a mechanism for driving the roller and mounted in an elongated cylindrical body in which the roller to be cleaned can be readily introduced and gripped by a gripping mechanism connected to the driving mechanism,



which makes the roller turn around its longitudinal axis inside the body which envelops it while it is washed in succesion by two liquids and scrubbed by a helical spring means.

3,431,575
LONG-HANDLED BRUSH
Andreas Petersen, 13 Gustrower Weg, 2000 Hamburg 73, Germany
Filed Mar. 20, 1968, Ser. No. 714,618
Claims priority, application Germany, Mar. 22, 1967, P 41,704
U.S. Cl. 15—176 3 Claims
Int. Cl. B25g *3/12*



A long-handled brush wherein the handle is provided with an enlarged profiled portion at the end opposite the grip portion and an intermediate portion of narrower cross section. The brush body is formed with a profiled retaining groove and forms a wedge-fit engagement with the similarly shaped cross section of the enlarged profiled portion of the handle. The handle may be provided with a clamping ring movably mounted on the intermediate portion.

3,431,576
ATTACHMENT DEVICE FOR MOPS AND THE LIKE
Theron V. Moss, 3175 Falmouth Road, Shaker Heights, Ohio 44120, and Austin Thomas Dalhart, Bay Village, Ohio; said Dalhart assignor to said Moss
Filed Jan. 5, 1966, Ser. No. 518,813
U.S. Cl. 15—229 12 Claims
Int. Cl. A47l *13/23*

An attachment device for mops and the like which includes an elongated member having a pair of generally

semi-cylindrical sections and an intermediate strap section. The strap section is adapted to be folded about a bundle



of mop cords. The device also includes a collar adapted for connection to the elongated member.

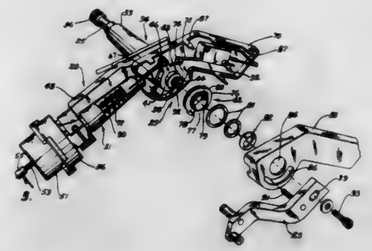
3,431,577
WIPER HOUSING DEVICE
Semen B. Minsky, 199 Newman St., Metuchen, N.J. 08840
Filed Feb. 27, 1968, Ser. No. 708,602
U.S. Cl. 15—250.04 10 Claims
Int. Cl. B60s *1/52, 1/40*



The present invention relates to a wiper blade housing in which an elongated fluid chamber is provided. A multiplicity of piston bores communicates with the fluid chamber. Each bore has a piston rod which is connected to a wiper blade holding member, to which is releasably mounted a wiper blade. The fluid pressure in the fluid chamber is evenly distributed over each of the multiplicity of piston arrangements so that the pressure exerted on the wiper blade is even along its entire length so that the wiper blade has a constant downward evenly distributed pressure throughout its length. The wiper blades are releasably secured in the holding elements by means of at least one elongated resilient element, the wiper blades being replaceable.

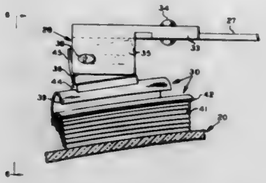
3,431,578
WINDSHIELD WIPER SYSTEM FOR AUTOMOTIVE VEHICLES
Edwin F. Clemett, Jr., Detroit, Mich., assignor, by mesne assignments, to McCord Corporation, Detroit, Mich., a corporation of Maine
Filed Feb. 15, 1967, Ser. No. 616,220
U.S. Cl. 15—250.12 7 Claims
Int. Cl. B60s *1/06*

A vehicle windshield clearing system in which the wiper blade may be continuously operated at variable speeds or operated intermittently through a complete wiping cycle with a dwell period of variable duration between wiping cycles, wherein a pneumatic time delay unit and a combination timing and actuating unit for



controlling the wiper blade for intermittent operation are carried on the wiper pivot shaft housing in operative association with the wiper pivot shaft and power drive therefor.

3,431,579
WINDSHIELD WIPER ARM AND BLADE ASSEMBLY
Fred A. Krohm, Chicago, Ill., and George W. Rieckenberg, St. Paul, Minn., assignors to The Anderson Company, a corporation of Indiana
Continuation-in-part of applications Ser. No. 540,040, Oct. 12, 1955, and Ser. No. 558,724, Jan. 12, 1956. This application Sept. 22, 1966, Ser. No. 582,201
U.S. Cl. 15—250.32 19 Claims
Int. Cl. A47l *1/00*; B60s *1/02*

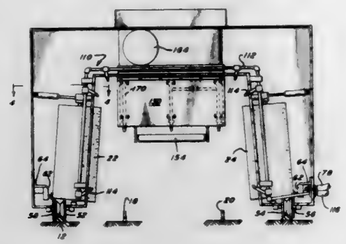


When wiping windshields of appreciable varying curvature and varying vertical inclination, commonly referred to as "wrap-around" windshields, the wiping element or squeegee of the windshield wiper blade should be maintained in correct or normal attitude to the windshield surface so that the wiping edge of the wiping element lies at the proper angle for optimum wiping. Such action is provided by a windshield wiper blade and wiper arm, which applies pressure to the wiper blade, the blade being connected to the wiper arm by a hinge or pivot, the axis of the pivot being oblique to the longitudinal axis of the blade and lying in a plane substantially normal or perpendicular to the direction of the wiping pressure applied to the blade by the arm.

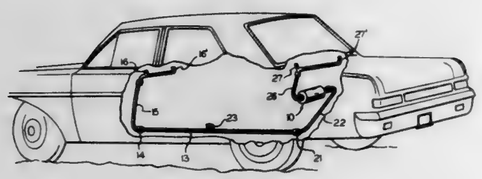
3,431,580
VEHICLE WASHING APPARATUS
John F. Cirino, Churchville, and Charles Brenner, Overbrook Hills, Pa., assignors to Mr. Robot, Inc., Bala-Cynwyd, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 364,987, May 5, 1964. This application Oct. 26, 1964, Ser. No. 406,516
U.S. Cl. 15—302 5 Claims
Int. Cl. B60s *3/04*

An automatic car washing apparatus which reciprocates relative to a stationary vehicle along the length thereof

for automatically washing and drying the vehicle. A movable manifold is provided above the vehicle and includes air blast means and wash liquid spray means. The manifold chamber is pivotally mounted and changes its elevation in accord with sensing means which contact the upper surfaces of the vehicle, thus keeping the exit of the manifold in relatively close relationship to the varying height upper surfaces of the vehicle.



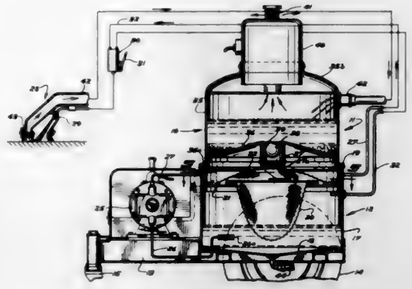
3,431,581
COMBINATION VACUUM CLEANER AND DEFROSTER DEVICE
Carl H. Booth, 2956 S. 60th St., Milwaukee, Wis. 53219
Continuation-in-part of application Ser. No. 457,376, May 20, 1965. This application May 19, 1966, Ser. No. 554,631
U.S. Cl. 15—313 **1 Claim**
Int. Cl. A47l *5/38;* **B60s** *1/54, 1/64*



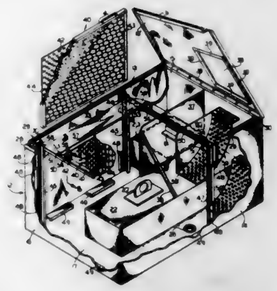
A combination vacuum cleaner, ash tray cleaner, air refresher and window defroster for the use in motor vehicles wherein the suction side of an electrical motor driven air pump is coupled to ash trays in the passenger portion of the vehicle and the pressure side is coupled to vents near windows in the passenger portion of the vehicle to provide a defrosting function. Means are provided for filtering and heating the air as it is pumped.

3,431,582
CLEANING DEVICE
Dale L. Grave, 1250 Queensland Lane N., Wayzata, Minn. 55391
Filed May 5, 1966, Ser. No. 547,867
U.S. Cl. 15—321 **2 Claims**
Int. Cl. A47l *5/32, 7/00, 9/20*

This invention relates to cleaning equipment and particularly to a cleaning device utilizing both high pressure water as the cleaning element and a vacuum pick up for picking up the water sprayed onto the surface to be cleaned and the accompanying dirt. The unit includes a reservoir system for providing clean useable water and a vacuum return system which includes a used water reservoir for storing the water picked up by the vacuum, separating the majority of dirt therefrom with means for controlling the return of the water from the vacuum delivery reservoir to the water reservoir. The means for returning the water from the vacuum delivery portion to the water reservoir portion includes a free floating valve member.



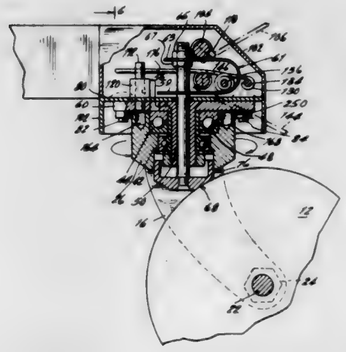
3,431,583
SOUND ATTENUATOR FOR VACUUM-TYPE DEBRIS COLLECTOR
Ben Daneman, Milwaukee, Wis., assignor to Central Engineering Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 4, 1966, Ser. No. 547,622
U.S. Cl. 15—326 **9 Claims**
Int. Cl. A47l *7/08, 9/10;* **E01h** *1/08*



A sound attenuator for a vacuum-type debris collector blower, including an attenuator box which has walls and an inlet opening for the blower's exhaust duct and an outlet opening, sound-absorbent, air-pervious material contained in acoustical panels removably mounted in the proximity of but spaced from box walls for attenuating sound and filtering dirt and water from the blower's exhaust air, and baffles (including a perforated baffle adjacent the outlet opening) for directing the circuitous flow of the air generally through the box and the sound-absorbent material to the outlet opening.

3,431,584
CASTER BRAKE ASSEMBLY
Louis Maslow, Huntsville Road, Dallas, Pa. 18612
Continuation-in-part of application Ser. No. 611,650, Jan. 25, 1967. This application Mar. 17, 1967, Ser. No. 624,099
U.S. Cl. 16—35 **9 Claims**
Int. Cl. B60b *33/06*

This invention and this disclosure are directed to a new and unique caster assembly. More particularly, this invention and this disclosure are directed to a caster assembly and brakes thereon which serve to brake the caster in two ways, i.e. restrain swivel action and preclude wheel revolution. This disclosure further relates to a mechanism which facilitates the braking actions which is responsive to actuating means located remote from the caster wheel itself and which actuates a spring type mechanism whereby the swivel brake and/or the forward movement brake arrests swivel or forward movement. The caster assembly and particularly the brake mechanism do not entail the protusion or projection of parts radially outward from the caster wheel which represent a hazard in schools, hospitals and other institutions where casters are often employed as a means for facilitating the movement of carts,



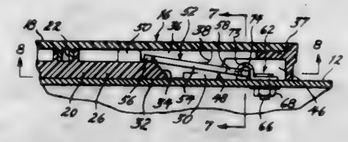
furniture and the like. The caster assembly of my invention is characterized by permitting removal of the caster wheel without dislodging or removing the caster brake mechanism and other mechanisms in their entirety. Another feature of the invention and this disclosure resides in a brake means for the caster assembly which does not depend upon a specific wheel alignment or position for its operation. Another features resides in a swivel brake. The inventions reside in the employment of resilient spring means which are actuated by a rod having a partial recess or the like to which a lever is affixed. The respective braking means are responsive to the spring means.

3,431,585
TRACK SUPPORTS
Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Feb. 27, 1967, Ser. No. 618,791
U.S. Cl. 16—94 **8 Claims**
Int. Cl. E05d *13/02;* **E04g** *17/18*



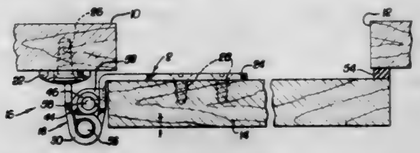
This invention relates generally to support brackets and couplings for track. More particularly, this invention relates to track support brackets and couplings including rail assemblies for positioning connector nuts for engagement with set screws or support rods.

3,431,586
HIDEAWAY HANDLE WITH I-SHAPED LINK
George W. Bush, Haddonfield, N.J., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey
Filed Dec. 12, 1966, Ser. No. 601,144
U.S. Cl. 16—115 **6 Claims**
Int. Cl. E05b *5/00;* **A47b** *95/02;* **B65d** *25/28*



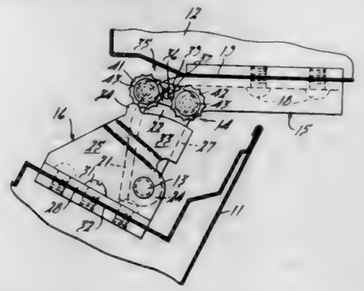
A collapsible handle for a carrying case employing I-shaped links each having a shank which extends through the bottom of the handle and cross members at the ends thereof, one cross member being slidable longitudinally in the handle and the other cross member being hinged to the carrying case around a transverse axis whereby in the collapsed non-carrying position against the case, the links and hinge members are completely concealed.

3,431,587
HINGE HAVING SELF-CLOSING FEATURE
John Bereznak, Tujunga, Calif., assignor to Jaybee Manufacturing Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 12, 1967, Ser. No. 608,936
U.S. Cl. 16—145 **5 Claims**
Int. Cl. E05d *11/10;* **E05f** *1/08, 1/12*



A self-closing hinge structure having a pair of leaves. A spring rod having ends engaging knuckle parts of one of the leaves and having a central portion anchored to the other of the leaves. The ends of the spring rod exerting contact forces on the knuckle parts tending to close the hinge leaves.

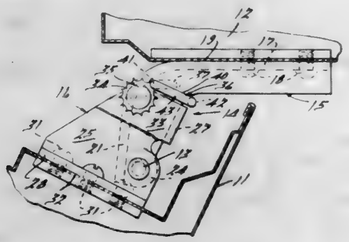
3,431,588
INTEGRATED HINGE AND DOOR CHECK ASSEMBLY
Stuart M. Frey, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 25, 1967, Ser. No. 633,608
U.S. Cl. 16—145 **2 Claims**
Int. Cl. E05d *11/10;* **E05f** *1/12*



An integrated hinge and door check assembly for a vehicle door in which the door checking and hold open

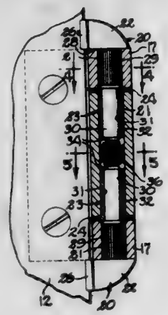
feature is obtained through the interference of an abutment movable in a predetermined path with roller elements carried on one end of a torsion member, the abutment being movable relative to the roller elements as the door is swung to opened and closed positions. Upon sufficient force being exerted to swing the door, the abutment member engages the roller elements causing deflection of the torsion member and permitting the rollers to be overridden by the movable abutment.

3,431,589
INTEGRATED HINGE AND DOOR CHECK ASSEMBLY
Stuart M. Frey, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 5, 1967, Ser. No. 628,575
U.S. Cl. 16—145 **2 Claims**
Int. Cl. E05d *11/54*



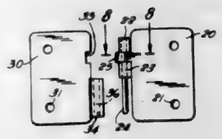
An integrated hinge and door check assembly for a vehicle door in which the door checking and hold open feature is obtained through the interference of a torsion member with a roller element movable in a predetermined path, the torsion member and roller element being movable relative to one another as the door is swung to opened and closed positions. Upon sufficient force being exerted on the door to swing the latter in an opening or closing direction, the torsion member when engaged by the roller is deflected and overriden by the latter.

3,431,590
HINGE
Lloyd L. Anderson, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut.
Filed Dec. 19, 1966, Ser. No. 603,060
U.S. Cl. 16—168 **4 Claims**
Int. Cl. E05d *5/10, 9/00, 15/00*



A hinge in which a metallic knuckle on one leaf is interleaved between two metallic knuckles on the other leaf. Non-metallic cylindrical bushings are inserted into the ends of the middle knuckle and circular flanges are formed on the outer ends of the bushings to prevent metal-to-metal contact between the knuckles. A pivot pin is inserted through each outer knuckle and projects into the adjacent bushing. In order to prevent a build-up of static electricity, an electrical connection is established between the two hinge leaves and this is accomplished by a spring disposed within the middle knuckle and abutting the inner ends of the pivot pins.

3,431,591
SELECTIVELY RELEASABLE ENGAGEABLE SEPARABLE-LEAF HINGE
Stephen Betso, Brooklyn, N.Y., assignor to A. Ludwig & Co., Inc., New York, N.Y., a corporation of New York
Filed June 5, 1967, Ser. No. 643,607
U.S. Cl. 16—171 **8 Claims**
Int. Cl. E05d *7/10*



The invention is a separable hinge unit having a pair of hinge leaves one having along its hingeably engaging side a sleeve having an engaging pintle rigidly affixed in it and with its part usually exposed to be swingably in a pintle-bearing on the other leaf, and selectively operable locking means which enable having the leaves in locked inter-engaged relation for use of the closure.

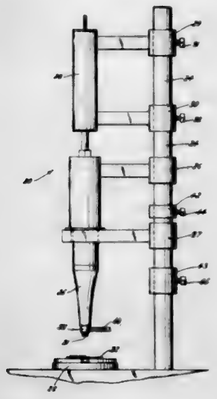
3,431,592
HINGE DEVICE
Desiderio Kovacs, Milan, Italy, assignor to Fulvio Bracco, Milan, Italy
Filed Feb. 7, 1966, Ser. No. 525,649
Claims priority, application Italy, Mar. 17, 1965, 5,833/65
U.S. Cl. 16—178 **8 Claims**
Int. Cl. E05d *1/04, 11/06*



This invention relates in general to hinge construction and in particular to a new and useful hinge formed with interengageable parts.

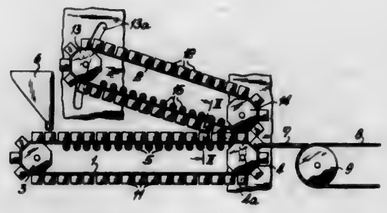
3,431,593
ULTRASONIC HINGE SINKING APPARATUS
Charles P. Miller, Providence, R.I., assignor to Univis, Inc., a corporation of Ohio
Filed Dec. 29, 1966, Ser. No. 605,781
U.S. Cl. 18—1 **12 Claims**
Int. Cl. B25b *11/00*

Apparatus for ultrasonically sinking metal hinges into a plastic frame. A supporting structure is provided which has an ultrasonic vibrating horn movably mounted thereon. Vibrating means are connected to the horn for vibrating the horn and means are provided to move the vibrating horn with respect to the supporting structure. A tip is mounted on the horn so as to substantially synchronously vibrate with the horn and has an opening therethrough to receive a hinge to be sunk. There are means in the tip to prevent the hinge mounted thereon from



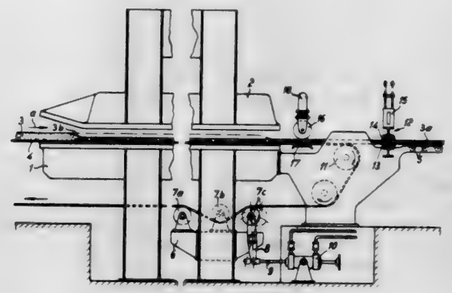
twisting during vibration to thereby prevent parts of the hinge to shear from contact with the tip. Also, means are provided to mount a frame to receive a hinge when the hinge is moved with the horn into contact therewith so that the ultrasonic substantially synchronous vibration of the hinge, horn and tip causes the portion of the frame adjacent to the hinge to reach its melting point, thereby allowing the hinge to be sunk within the frame.

3,431,594
APPARATUS FOR MAKING CARBON LAMELLAE, CARBON DISCS, CARBON SHEETS AND THE LIKE
Hermann Schenck and Werner Wenzel, Aachen, Germany, assignors to L. & C. Steinmuller G.m.b.H., Gummersbach, Rhineland, Germany
Filed May 5, 1965, Ser. No. 453,465
U.S. Cl. 18—4 **6 Claims**
Int. Cl. B29c *15/00;* **B28b** *5/02*



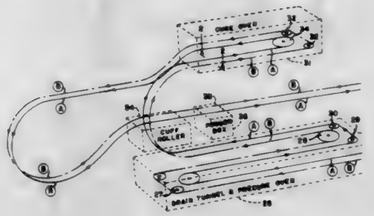
Apparatus for compacting material such as coal dust and coal slag and mixtures thereof and the like, while forming the material into lamellae in which two conveyor belts are arranged to run in converging relation so material deposited therebetween will be compacted and at least one belt has laterally spaced longitudinal ribs upstanding therefrom so as to divide the material as it is being compacted into the desired lamellae.

3,431,595
PRESSES FOR THE PRODUCTION OF CHIPBOARD
Hans Plum, Werner Feldges and Helmut Enger, Krefeld, Germany, and Hans Grefen, Waregem, Belgium, assignors to Niederrheinische Maschinenfabrik Becker & Van Hullen, Krefeld, Germany
Filed Mar. 23, 1966, Ser. No. 542,177
Claims priority, application Germany, Mar. 26, 1965, N 26,462
U.S. Cl. 18—4 **3 Claims**
Int. Cl. B29j *5/04*



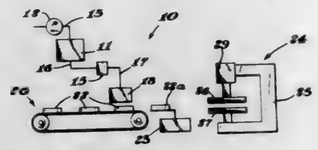
A press adapted for pressing and heating of a loose mat of material to form compact board. The press comprises a movable top press platen and a fixed lower press platen, a conveyor belt running over the lower press platen, means for pressing the board after it has left the conveyor, a loading device over which the finished board and conveyor slide, and a loading roller displaceable vertically above the board.

3,431,596
DIP MOLDING APPARATUS—DOUBLE CONVEYOR
Anthony F. Rodrigues, Santa Clara County, and Roy W. Eaton, Campbell, Calif., assignors to Becton, Dickinson of California, Inc., Los Gatos, Calif., a corporation of California
Filed Mar. 27, 1967, Ser. No. 626,274
U.S. Cl. 18—4 **4 Claims**
Int. Cl. B29c *13/00*



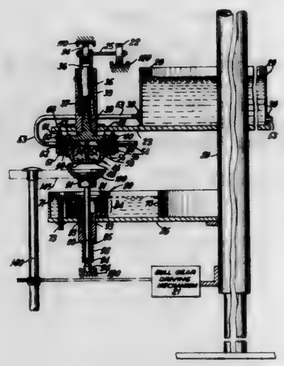
A dip molding apparatus employs two parallel independently driven conveyors with respective series of molds thereon passing simultaneously through a series of processing stations to provide increased capacity. At certain stations the two conveyors are separated so that the respective series of molds are treated separately and at other stations the conveyors are relatively close together and the respective series of molds are treated simultaneously. At stations requiring access to the molds of both series from a side, the respective series of molds of the two conveyors are offset with respect to the length of the path to allow such access.

3,431,597
APPARATUS FOR DISPENSING VISCOUS MATERIALS INTO MOLDS
Robert M. Nowak and William K. Glesner, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,640
U.S. Cl. 18—5 **7 Claims**
Int. Cl. B29b *5/04;* **B67d** *3/00*



A dispensing apparatus of the non-drip variety for dispensing predetermined quantities of a viscous resin employs a nozzle having a number of discharge openings which have a total cross-sectional area of at least 75 percent of the inlet area of the nozzle.

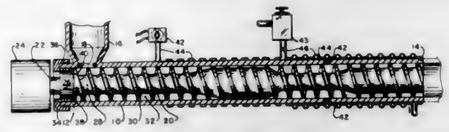
3,431,598
MACHINE ORGANIZATION FOR MANUFACTURING TARGET DISCS
Raymond Paul Lueddeke and Louis Lueddeke, Scotch Plains, N.J., assignors to Eastern Target Company, Inc., Scotch Plains, N.J., a corporation of New Jersey
Filed July 20, 1966, Ser. No. 566,614
U.S. Cl. 18—5 **13 Claims**
Int. Cl. B29c *5/04*



A machine for manufacturing cast target discs employs a plurality of mating male and female die assemblies, positively retracted ejector rods cooperating with a star wheel to collect the formed discs, and improved fill and cooling apparatus to permit continuous fabrication of such discs at a relatively rapid rate.

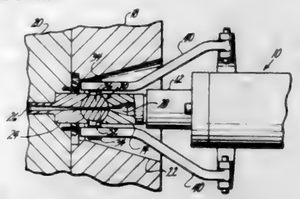
3,431,599
EXTRUSION METHOD AND APPARATUS
Clement V. Fogelberg, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Dec. 4, 1964, Ser. No. 415,999
U.S. Cl. 18—12 **3 Claims**
Int. Cl. B29f *3/08*

1. An extruder screw having a plurality of functional sections along its length, including a feeding section having a length of between about 33% and 36% of the length of said screw and a flight depth of between about 12% and 15% of its outside flight diameter, a first metering section having a length of between about 15% and 19% of the length of said screw and a flight depth of between about 3% and 5% of its outside flight diameter, a venting section having a length of between about 15% and 19%



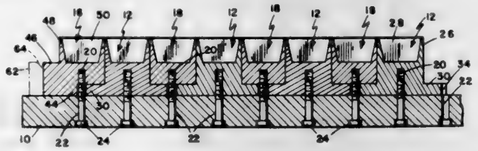
of the length of said screw and a flight depth of between about 13% and 16% of its outside flight diameter, and a second metering section having a length of between about 15% and 19% of the length of said screw and a flight depth of between about 5% and 8% of its outside flight diameter said screw having at least one partial obstruction located in at least one of the more constricted sections of the screw.

3,431,600
NOZZLE SHUT-OFF VALVE FOR PLASTIC INJECTION MOLDING MACHINE
Calvin P. Bullard, East Longmeadow, Mass., and David E. Luginbuhl, Rockville, Conn., assignors, by mesne assignments, to Universal American Corporation (formerly Robfre Manufacturing Corporation), a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,429
U.S. Cl. 18—30 **6 Claims**
Int. Cl. B29f *1/00*



A nozzle valve disposed outside the nozzle and which is normally rotatably supported by and between the end of the nozzle and the mold sprue structure for movement between open and closed positions by a fluid motor, but which can be moved to an inoperative position and rested there without removal from the molding machine when a nozzle valve is not needed.

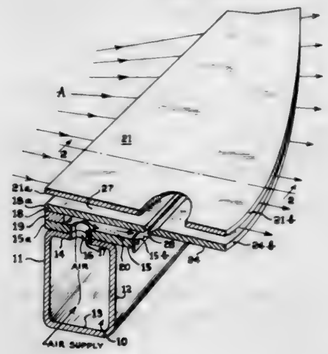
3,431,601
MODULAR DIE
Willis L. Lipscomb, 2208 Willow St., San Diego, Calif. 92106
Filed Dec. 5, 1966, Ser. No. 599,138
U.S. Cl. 18—44 **7 Claims**
Int. Cl. B29c *1/06*



The modular die utilizes a plurality of shaped die elements of a minimum number of different types which can be interfitted in a specific pattern to build up a forming or molding die of any required overall size in which

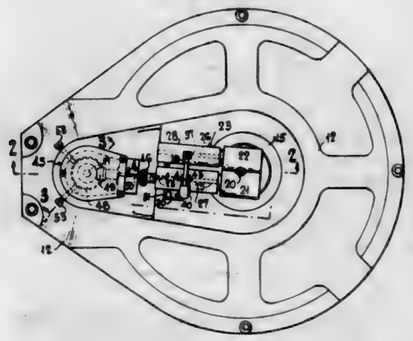
the elements can be arranged to provide the formed article with a uniform, repetitive or even random pattern.

3,431,602
TOW SPREADING DEVICE
David W. Appel, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,794
U.S. Cl. 19—66 **7 Claims**
Int. Cl. D01g *9/08*



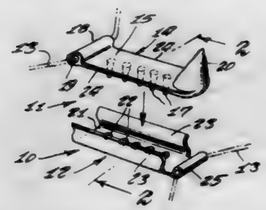
A pneumatic spreader for spreading filamentary tow having an arc shaped air discharge orifice discharging at an acute angle into a tow carrying passage for providing a fan shaped current of air traveling to the outlet end of the tow carrying passage.

3,431,603
VIBRATION DAMPING DRIVE ASSEMBLY FOR TEXTILE CALENDER ROLLS
Bryant W. Gossett, Gastonia, N.C., assignor to Gossett Machine Works, Inc., Gastonia, N.C., a corporation of North Carolina
Filed July 17, 1967, Ser. No. 653,792
U.S. Cl. 19—159 **5 Claims**
Int. Cl. D04h *11/00*



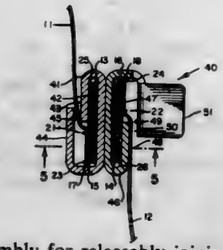
A drive assembly for calender fiber feed rolls wherein a flexible coupling insulates the fiber, as it passes between the rolls, from the shock and vibration resulting from shaft misalignment and from sudden speed variations at the source of power.

3,431,604
OVERSHOE FASTENERS
George G. Everts, 704 W. Lincoln, Madison, Kans. 66860
Filed Dec. 26, 1967, Ser. No. 702,150
U.S. Cl. 24—68 **3 Claims**
Int. Cl. A43c *11/00*



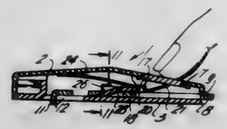
An improved clasp construction for overshoes which will not open accidentally even when walking in deep mud or water, yet it can be easily opened when desired, the clasp including a male and female member which interlock together.

3,431,605
CLOSURE ASSEMBLY
Russell Hasslinger, Wyckoff, N.J., assignor to American Velcro, Inc., a corporation of New Hampshire
Filed Apr. 3, 1967, Ser. No. 627,814
U.S. Cl. 24—205.12 **6 Claims**
Int. Cl. A44b *19/22, 19/00*



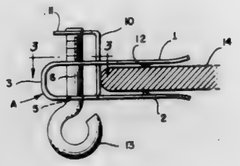
A closure assembly for releasably joining and separating strips of tape provided with hook type hooking elements and loop type hooking elements including a closure member having guide portions for the tapes, means for joining the tapes and means for separating the tapes.

3,431,606
SAFETY BELT BUCKLE
George H. Jantzen, New York, N.Y., assignor to M. Steinthal & Company Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 7, 1967, Ser. No. 621,313
U.S. Cl. 24—230 **10 Claims**
Int. Cl. A44b *11/25*



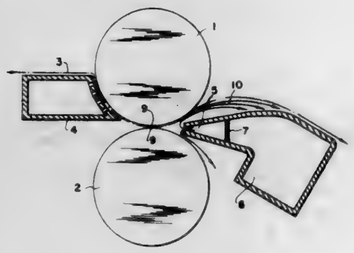
A safety belt buckle of the push button type in which a single locking component is pivotably connected to the load bearing walls of the buckle base plate. The push button is at one end of the locking component and detents are at the other end and on the opposite side of the pivot axis. Spring urges the pushbutton away from the base plate and the detents towards the base plate.

3,431,607
UTILITY CLIP
George A. Tinnerman, 17864 Beach Road, Lakewood, Ohio 44107
Filed Feb. 9, 1968, Ser. No. 704,387
U.S. Cl. 24—243 5 Claims
Int. Cl. F16l 3/08



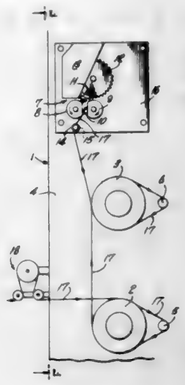
A sheet metal clip for securing articles, such as wires, to a flange of a beam is formed of two parallel legs connected by a bight portion with a shank passing through openings in the legs adjacent said bight. The opening in one of the legs and the shank have threaded engagement to advance the shank on rotation. The legs are slotted from their free ends toward the openings, the other of the legs having a portion from the slot bent parallel to the shank and extending through the slot in said one of the legs, the end then being bent transversely into axial alignment with said openings to form an abutment for said shank. The opposite end of the shank is formed to engage an article as a wire or cable.

3,431,608
APPARATUS FOR COMPACTING FIBROUS WEBS
Franz Reiners, Lambertshof, Post Berg, Erkelenz-Land, Germany, assignor to A. Monforts Maschinenfabrik, Monchen-Gladbach, Germany, a corporation of Germany
Filed July 14, 1966, Ser. No. 565,173
Claims priority, application Germany, July 17, 1965, M 66,004
U.S. Cl. 26—18.6 2 Claims
Int. Cl. D06c 21/00



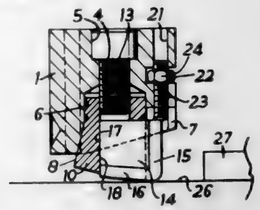
Apparatus for compacting a fibrous material web including two rolls defining a compacting gap, and an elongated nozzle of uniform cross section extending parallel to the roll axes and directed toward the gap discharge and end to provide a pressurized fluid cushion supporting a web issuing from the gap. A container supplies pressurized fluid to the nozzle and has a volume compared to the nozzle volume that affords substantially constant fluid pressure distribution along the entire nozzle length. A device is located in the container upstream of the nozzle for maintaining constant the pressure of fluid issuing from the nozzle.

3,431,609
APPARATUS FOR PROCESSING YARN
Fred B. Satterwhite, Williamsburg, Va., assignor, by mesne assignments, to The Klinger Manufacturing Company, Limited, London, England, a corporation of Great Britain
Filed Oct. 19, 1966, Ser. No. 587,845
U.S. Cl. 28—1 2 Claims
Int. Cl. D02g 3/00



A method of crimping a single strand of yarn in which the yarn is passed around a roller, then conveyed from the roller to the nip of a pair of feed rollers for feeding the strand into a crimper, and, in said conveying, the strand is deviated from the straight path between the roller and the nip so that the strand engages one of the feed rollers substantially tangentially prior to entering the nip.

3,431,610
BOBBIN STRIPPER
Stanley Rose, Aylesbury, England, assignor to Aylesbury Automation Limited, Aylesbury, England, a company of Great Britain
Filed Feb. 14, 1967, Ser. No. 615,970
Claims priority, application Great Britain, Feb. 17, 1966, 7,045/66
U.S. Cl. 28—19 9 Claims
Int. Cl. D03d 45/58

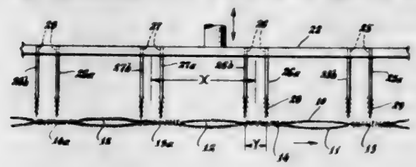


A device for stripping waste yarn from a bobbin in which a cutter is mounted for longitudinal movement relative to the bobbin, the cutter having guide means for engaging the bobbin to maintain the blade a fixed distance from the bobbin surface to ensure complete stripping without damaging the bobbin surface.

3,431,611
METHOD FOR FORMING NONWOVEN ELECTRIC BLANKET SHELLS
John C. Rentz, Asheboro, N.C., assignor to General Electric Company, a corporation of New York
Filed Sept. 16, 1966, Ser. No. 580,051
U.S. Cl. 28—72.2 7 Claims
Int. Cl. D04h 18/00

A method of joining two webs or layers of fabric to produce a shell with spaced channels to subsequently

receive heating wires or similar thermal transfer means including the steps of: (1) positioning the layers in face to face relationship; (2) reciprocating needles through



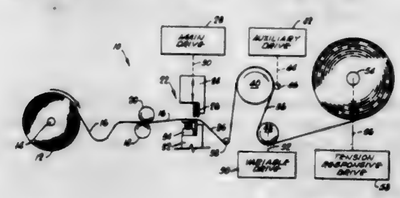
both layers along spaced bands to join the layers while defining open channels between the bands; and (3) removing laminated layers from the reciprocating needles.

3,431,612
PROCESS OF FORMING JACKETED PROJECTILES
Julius Darigo, Trumbull, Rex E. Dickey, Huntington, and David S. Reed, Shelton, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed May 5, 1967, Ser. No. 636,495
U.S. Cl. 29—1.23 8 Claims
Int. Cl. B22d 19/00; B21k 21/06



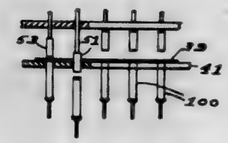
A method of making a small arms jacketed projectile by electrodepositing a deformable metal jacket over a softer deformable projectile core and then forming the plated projectile to its final dimensions. A modification of the process calls for forming grooves on the projectile core prior to plating so that upon plating, the grooves are filled with electrodeposited material to facilitate mushrooming of the plated projectile.

3,431,613
SHEET MATERIAL FORMING MACHINE
Eric O. Acker, Sr., Eric O. Acker, Jr., and Ronald W. Acker, Oklahoma City, Okla., assignors to Acker Industries, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Apr. 17, 1967, Ser. No. 631,501
U.S. Cl. 29—6.2 18 Claims
Int. Cl. B21d 31/02, 31/04



An apparatus for the expansion of sheet material which operates upon sheet stock as it is continually fed to a vertically movable slitting bar which makes a series of diagonally off-set slits across the sheet material; thereafter, the slitted sheet material is stretched at a controlled rate and a tension responsive wind-up mechanism is employed for finally rolling up the open-mesh material at uniform winding force.

3,431,614
METHOD FOR MANUFACTURING AN ELECTRODE
William J. Hallauer, Dearborn Heights, and Bill L. Potts, Grosse Pointe Woods, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application Oct. 21, 1965, Ser. No. 499,255, now Patent No. 3,356,882, dated Dec. 5, 1967. Divided and this application June 19, 1967, Ser. No. 646,863
U.S. Cl. 29—25.12 3 Claims
Int. Cl. H01t 21/02, 13/20



A method for manufacturing an electrode having a metal core, a tubular metal sheath encompassing said core for a substantial portion of its length, and a metal cap centrally abutting said core and peripherally abutting said sheath, said method comprising forming a substantially continuous ring-like weld of one end of said sheath with a metal sheet material of which said cap is to be formed, and recovering the resultant capped electrode by shearing the metal sheet material within the perimeter of said weld from the sheet material external to said perimeter.

3,431,615
REFRACTORY METAL DIFFUSION BONDING
Marold Weston Hagadorn and Bruce R. Johnston, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,573
U.S. Cl. 29—25.14 2 Claims
Int. Cl. B23k 31/02; H01j 9/00

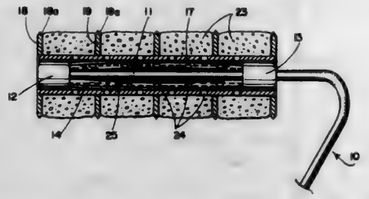


A process for diffusion bonding refractory metals including the steps of contacting the refractory metals, surrounding the contact area with a layer of iron, and heating the metals to interdiffuse the iron metal into the refractory metals.

3,431,616
WALLPAPER REMOVING ROLLER
Kenneth D. Lewis, Tarzana, Calif., assignor, by mesne assignments, to Perf-A-Roller Company, Inc., a corporation of California
Filed Dec. 19, 1966, Ser. No. 602,648
U.S. Cl. 29—121 1 Claim
Int. Cl. B21b 31/08, 27/02; B60b 11/04

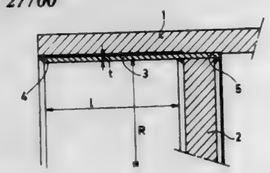
Removing wallpaper from plaster or dry-wall surfaces normally involves the use of a steamer or the like to moisten the wallpaper sufficiently to enable it to be

scraped or peeled from the surface. The present invention provides a roller dimensioned to be used with a conventional paint roller type supporting frame such that the roller itself may be rolled along wallpaper to be removed. The roller includes a central elongated tubular member supporting a plurality of discs having sharp points on their



peripheries. Between the discs there is provided sponge material such that hot water may be absorbed in the sponge material. The roller is then simply rolled along the wallpaper surface. The sharp points of the discs perforate the wallpaper, and water from the sponge is forced through the small perforations to soak the underside of the wallpaper thereby facilitating its removal.

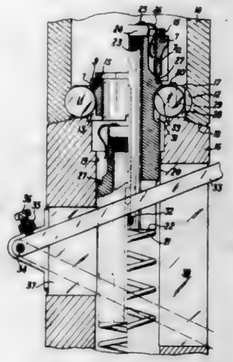
3,431,617
CYLINDRICAL DRUM
Jan van der Hilst, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,726
Claims priority, application Netherlands, July 22, 1965, 6509476
U.S. Cl. 29—123 **3 Claims**
Int. Cl. B21b *27/00*



A rotatable drum such as a drum for magnetic recording substantially free from barrelling of its cylindrical surface when rotated at high speed. This is accomplished by securing the hubs of the drum to the cylindrical portion by means of an intermediate auxiliary cylinder having a specific length, thickness and physical characteristics related to the characteristics of the materials of the drum cylinder and of the auxiliary cylinder.

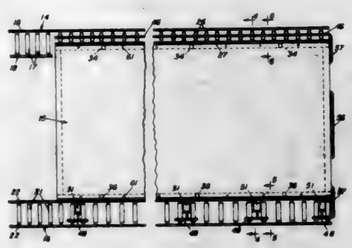
3,431,618
DEVICE FOR ASSEMBLING A NUCLEAR FUEL ELEMENT SUPPORT INSIDE AN ANNULAR SLEEVE
Francois Le Coz, Issy-les-Moulineaux, René Mombazet, Arpajon, and Noël Raynaud, Fontenay-aux-Roses, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Mar. 14, 1966, Ser. No. 533,887
Claims priority, application France, Mar. 30, 1965, 11,187
U.S. Cl. 29—200 **6 Claims**
Int. Cl. B23p *19/04*

1. Device for assembling a nuclear fuel element support within an annular sleeve, said support being made up of a bracket having a generally cylindrical shape on which the base of the fuel element rests and at least three discs which are uniformly spaced around the axis of the fuel element an engaged on the one hand in a toric groove formed in the internal surface of the sleeve and on the other hand in recesses formed in the cylindrical support bracket, said discs being held in position under the action of the pressure which is exerted on said support bracket by the weight of the fuel element, characterized in that it comprises a cylindrical hollow body over which the lower end of the annular sleeve is adapted to engage to a partial extent, a moving plunger which is guided axially within said hollow body and within said sleeve and the head of which carries the cylindrical support bracket by means of blade springs, the hollow body



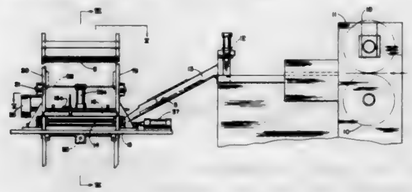
being provided at the upper end which penetrates into the sleeve with slots for the positioning of the discs which are held in position by means of other blade springs opposite to the toric groove of the sleeve, said discs being adapted to cooperate with an inclined ramp formed in the plunger in such a manner that the downward displacement of said plunger initiates the engagement of the discs on the one hand in the groove of the sleeve and on the other hand in the recesses of the cylindrical support bracket so as to free said bracket from the plunger head.

3,431,619
APPARATUS FOR MAKING WALL PANEL FRAMES
Grayson Hunter Bowers, Jr., 231 E. Patrick St., Frederick, Md. 21701
Filed July 27, 1966, Ser. No. 568,280
U.S. Cl. 29—200 **5 Claims**
Int. Cl. B23p *19/00*



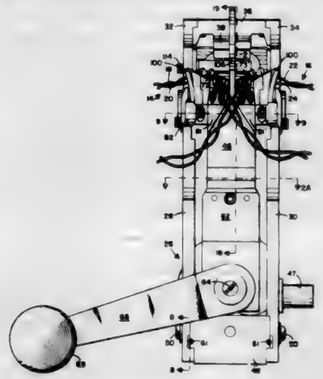
A table supported between two conveyors with its upper surface generally in the plane of the conveyors. Frame elements for a wall panel arranged on the table are supported in a common plane and while clamped in such as assembled relationship the frame elements are secured to each other. The table may be lowered whereby the panel frame is supported on the conveyors for movement from the apparatus.

3,431,620
APPARATUS FOR ASSEMBLY OF TUBE AND CENTER RADIATOR CORES
Richard E. Carlson, Jamestown, N.Y., assignor to Blackstone Corporation, a corporation of New York
Filed July 19, 1966, Ser. No. 566,297
U.S. Cl. 29—202 **8 Claims**
Int. Cl. B23p *19/04*



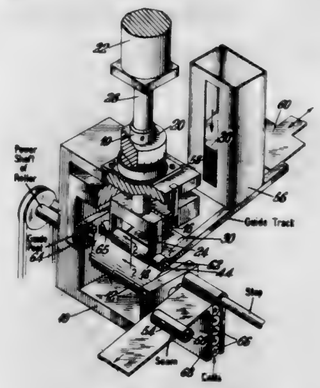
An apparatus is provided for automatically assembling tube and center radiator cores comprising a means for successively delivering a formed length of separator, guide means receiving the separator and resiliently holding the same, a pusher means advancing each separator into the guide means, a magazine means delivering at least two side-by-side tubes onto each length of separator and means in the guide means maintaining said tubes spaced from each other on the separator.

3,431,621
APPARATUS FOR CONNECTING CORRESPONDING WIRES OF PAIRS OF WIRES TO EACH OTHER
Grey Manning Gurley, Clearwater, Fla., and William Roderick Over, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 22, 1967, Ser. No. 625,096
U.S. Cl. 29—203 **14 Claims**
Int. Cl. H01r *43/04;* **B21f** *15/06*



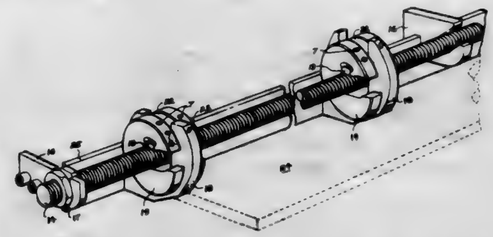
Apparatus for trimming and connecting the corresponding wires of two pairs of conductors has two side-by-side crimping anvils and two side-by-side crimping dies which are movable towards and away from the anvils. Dies are opposed to, and face, the anvils as in conventional connector crimping tools; however, dies can be rotated about a transverse axis and oriented such that they are positioned laterally of the path of movement of the dies relatively towards the anvils. This lateral pivotal movement of the dies positions them such that the corresponding wires of the pairs of wires which are to be connected to each other can be located in the dies by the operator stationed in front of the apparatus. During pivoting movement of the dies and subsequent rectilinear movement of the dies towards the anvils, the ends of the wires are crimped and the corresponding wires of the two pairs are connected to each other by means of connectors crimped by the apparatus onto the wires.

3,431,622
APPARATUS FOR FORMING METAL
Helmut K. Amthor, Rocky River, and Alfred L. Conte, North Olmsted, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 383,608, July 20, 1964. This application Oct. 16, 1967, Ser. No. 675,714
U.S. Cl. 29—204 **7 Claims**
Int. Cl. H01m *1/02;* **B21d** *5/14*



A tubular metal object is formed with a spring-like engaging capability by initially imparting thereto a degree of curvature corresponding to a diameter smaller than the diameter to which the object is ultimately formed, thereby enabling tight engagement by the object of a tubular item having a diameter equivalent to the ultimate diameter of the tubular object. This is accomplished by apparatus comprising a member having smaller-diameter and larger-diameter cylindrical surface portions and a resilient roller. The metal is first passed between the smaller-diameter portion and the resilient roller, and subsequently around the larger-diameter portion.

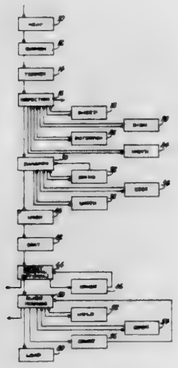
3,431,623
SLOTTED LOCKING FERRULE
Gerard Gaston Frans Smeets, 140 Cornwall Heights, Brampton, Ontario, Canada
Filed May 3, 1967, Ser. No. 635,789
U.S. Cl. 29—240 **6 Claims**
Int. Cl. B23p *19/04*



The invention concerns an internally threaded ferrule device which can be threaded along a shaft. The ferrule is slotted in one side so that it can be laterally moved into threaded contact position onto a threaded shaft. The slotted side of the ferrule is partially closed by a spring biased locking member which provides snap-on action of the ferule and then spring biased thread contact between the ferrule and the shaft. The spring biased locking member can be fixed in position to prevent inadvertent re-

moval of the ferrule or if sufficient pressure is applied between the locking member and the threaded shaft the ferrule can be locked against turning or threading along the shaft. In another form of the invention use is not made of threads and the ferrule can be slid along the shaft and locked in the desired position by the locking member.

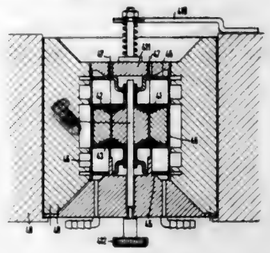
3,431,624
STRIP INSPECTION SYSTEM
James Brennan Pickel, Jamaica Plain, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,843
U.S. Cl. 29—407 **23 Claims**
Int. Cl. B23q *17/00;* **B23p** *25/00*



0.0015 inch gauge strip steel stock for razor blades is slit to 0.19 inch width; subjected in sequence to a hardening temperature of 2000° F., a quenching temperature of —90° F. and a tempering temperature of 600° F.; inspected for sweep, dish, distortion and width characteristics; an edge of the strip is sharpened (the width of the blade and the quality of the edge being sensed during the sharpening operation); the sharpened edge of the blade is coated; and the strip is then separated into blade lengths. Detected defects are synchronously magnetically marked on the blade strip at the inspection stations and all blade lengths are sensed with a Hall effect device. Whenever a magnetic mark is detected, the blade length is discarded.

3,431,625
METHOD FOR THE PRECISE ASSEMBLY OF APPARATUS
Horst Schenk, Erlangen, Karl-Georg Günther, Boxdorf, near Nuremberg, and Wilhelm Kälb, Muhlbach, near Bad Neustadt, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Nov. 10, 1965, Ser. No. 507,131
Claims priority, application Germany, Feb. 20, 1965, S 95,567
U.S. Cl. 29—421 **2 Claims**
Int. Cl. B21h *1/12;* **B21d** *53/00*

Method of assembling rotary electrical machines with individual components for holding the machine stator and rotor together wherein the individual components have rough tolerances but require precise tolerances at their junctions in the assembled apparatus includes the steps of relatively fixedly positioning with a supporting structure the components in their proper geometric relationship when they are finally assembled, inserting the structure supporting the components into a high capacity forming machine, subjecting the position components supported by the structure to the action of the machine so as to deform and join the components with precise



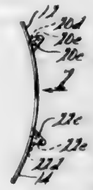
junction tolerances therebetween in the final assembly, and thereafter removing the supporting structure.

3,431,626
METHOD OF MAKING A RACKET FRAME
William C. Carlton, Fitches Finchingfield, Essex, England
Filed June 13, 1966, Ser. No. 557,159
U.S. Cl. 29—423 **8 Claims**
Int. Cl. B23p *17/00;* **A63b** *49/10*



A method of making a frame for rackets, such as badminton, squash and tennis rackets, comprising inserting a strip of plastics material (which may be nylon) or a metal member, into a metal tube which is to form the main body of the frame. The plastics strip has spaced holes properly positioned to be concentric with the flanged apertures that are to be formed in the walls of the metal tube. The inner metal member likewise is provided with spaced holes. The assembly is bent into a loop, small holes are made in the walls of the metal tube, then the metal surroundng said small holes is punched and bent to make larger apertures with inturned flanges that are suitable for stringing. These flanges project within the holes in the plastic strip or in the inner metal member. The plastics strip or the inner metal member acts as a female die during said punching and bending. The metal tube is then hardened by a heat treatment. Heat removes the plastics strip from the interior of the metal tube, but the inner metal member remains within the metal tube.

3,431,627
METHOD OF FORMING A BRAKE BAND
Bruce G. Fields, Kokomo, Ind., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,801
U.S. Cl. 29—423 **8 Claims**
Int. Cl. B23p *17/00*



A method of forming a split circular brake or friction band in which the lugs on each end portion of the band, rather than being formed as separate forged pieces, are provided by ridges formed by the material of the band itself; each ridge is formed by locally deforming the related end portion to form a hollow bulge or bubble raised from the radially outer face of the end portion and thereafter squeezing the circumferentially spaced walls of the bulge together to form a fold of double wall thickness projecting radially outwardly from the end portion.

3,431,628
METHOD OF ASSEMBLING A BILLIARD CUE
Raphael W. Miller, 1406 W. Franklin St., Jackson, Mich. 49203, and Harold J. Worst, 4331 Curwood St., Grand Rapids, Mich. 49508
Original application June 7, 1963, Ser. No. 286,323, now Patent No. 3,269,730, dated Aug. 30, 1966. Divided and this application May 16, 1966, Ser. No. 550,534
U.S. Cl. 29—450 **2 Claims**
Int. Cl. B21d *39/04;* **A63d** *15/08*



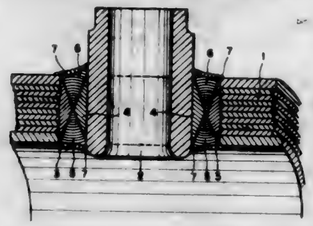
The invention pertains to a method of assembling billiard cues, and particularly relates to the method of assemblying a tubular resilient handgrip to the billiard cue in a manner which produces a most attractive assembly.

3,431,629
JOINING ALUMINUM
Philip T. Stroup, New Kensington, and James R. Terrill, Natrona Heights, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed June 24, 1966, Ser. No. 560,053
U.S. Cl. 29—471.1 **5 Claims**
Int. Cl. B23k *31/02*

A method of joining by brazing aluminum members by first applying thereto a small amount of flux immersion depositable from an aqueous bath containing about 1½% to about 15% flux and by brazing in an atmosphere having a dew point of 40° F. or lower. The brazed joints exhibit very little detectable flux residue.

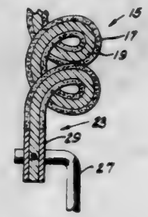
3,431,630
METHOD OF FIXING PIPE BASE IN MULTILAYER CONTAINER
Hideo Sagara and Yasuhiro Iwasaki, Hiroshima-shi. Tsutomu Ohe, Hiroshima-ken, and Tomoyuki Mashimo, Hiroshima-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 8, 1964, Ser. No. 416,741
U.S. Cl. 29—480 **5 Claims**
Int. Cl. B23k *9/02, 35/34*

A process of attaching a pipe base to a multilayer container for use in a reaction apparatus for high pressure gas is comprised of the steps of forming a hole through the layers of the multilayer container, inserting the pipe base into the hole in the container and fusion welding the pipe base to all of the layers of the container employing a welding electrode of a softer material than the material used in forming both the pipe and the multilayers of the container. In forming the weld between the container and the pipe a weld deposit is formed on all the layers of the container having a beveled appearance in cross section, a similar weld is disposed on the end of the pipe base to be secured into the container, and the weld deposits on each are secured together by another weld deposit for securely attaching the pipe base to the container. Another step of the process comprises heating the inner circumference of the pipe base attached to the container for heat treatment of the welded attachment. Alternatively, the end of the pipe base may be expanded into the hole after the welded deposit has been formed.



In another arrangement for forming the hole in the container, after the hole is formed through all the layers, a weld metal of a softer material than the material forming the layers of the container is deposited on the layers and then an outward force is exerted against the inner surface of the container for forcing the surface of the container around the hole outwardly.

3,431,631
REFRACTORY METAL DIFFUSION BONDING
Marold Weston Hagadorn and Donald R. Kerstetter, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,574
U.S. Cl. 29—498 **4 Claims**
Int. Cl. B23k *31/02;* **H01j** *9/00*

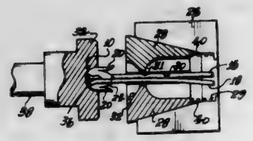


A refractory metal diffusion bonding process includes the steps of attaching a sheath of iron metal to a refractory metal, contacting the sheath and a second metal, applying heat and pressure to melt the sheath and interdiffuse the iron into the refractory and second metal, and removing the heat and pressure to cause solidification of the iron.

3,431,632
METHOD AND APPARATUS FOR CONNECTING THE ENDS OF FLEXIBLE OR RESILIENT STRINGS TO TUBULAR ELEMENTS HAVING CLOSED ENDS
George H. Wright, Pico Rivera, Calif., assignor to Reiner Industries, Inc., Pico Rivera, Calif., a corporation of California
Filed June 17, 1963, Ser. No. 288,361
U.S. Cl. 29—520 **4 Claims**
Int. Cl. B21d *39/00;* **B23p** *11/00*

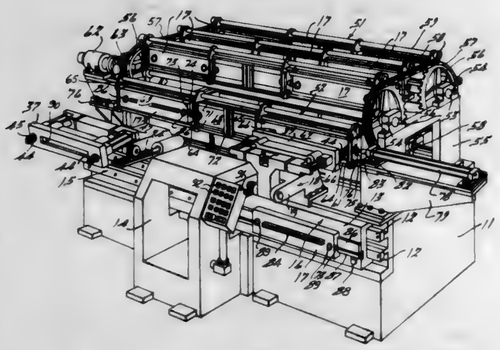
This invention relates to a method and apparatus for connecting the ends of flexible or resilient strings to

tubular elements having closed ends. The invention is characterized in that the connections are affected by the relative longitudinal movement of a spherical die block toward a semi-spherical die cavity, the tubular receptacle being placed in the die block with its open gripping ends extending toward said die cavity, and, the ends of said resilient string extending through an open-



ing in the die cavity and into said receptacle, whereby said longitudinal movement causes simultaneous and equal turning in of said gripping ends into contact with said string to form a connection. It is characteristic of the procedures and apparatus of this invention that excess string length is fed back through the opening in the die cavity rather than trapped within the tubular element as the connection is made.

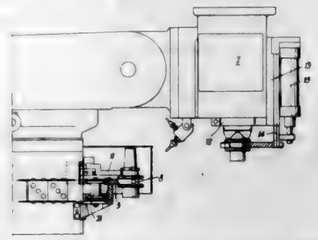
3,431,633
BROACHING APPARATUS HAVING AUTOMATIC TOOL-CHANGING MEANS
James K. Fulks, Detroit, Mich., assignor to Colonial Broach & Machine Company, Warren, Mich., a corporation of Delaware
Filed Dec. 5, 1966, Ser. No. 599,113
U.S. Cl. 29—568 **5 Claims**
Int. Cl. B23d *37/00*



A method and an apparatus for performing a broaching operation on a workpiece by serially applying broach sections to the workpiece. The broach sections successively are removed from a storage area, clamped to a support which is advanced past the workpiece to effectuate a partial broaching operation and returned to the storage area.

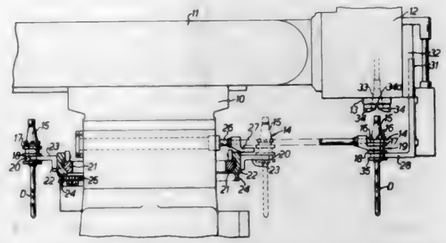
3,431,634
MACHINE TOOLS
Victor Horace Balding, Beavers Woods, Ringland Road, Taverham, Norwich, Norfolk, England
Filed Jan. 16, 1967, Ser. No. 609,583
Claims priority, application Great Britain, Jan. 17, 1966, 2,043/66, 2,044/66
U.S. Cl. 29—568 **10 Claims**
Int. Cl. B23q *3/155*

A machine tool having rotary tools of various size or function carried in a closed path about a vertical support column of the machine and hydraulically operated



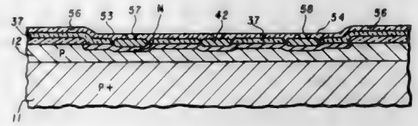
rams for transferring selected tools through horizontal and vertical paths to and from the machine work head.

3,431,635
TOOL ENGAGING DEVICE
Victor Horace Balding, Beavers Woods, Ringland Road, Taverham, Norwich, Norfolk, England
Filed Mar. 7, 1967, Ser. No. 621,288
Claims priority, application Great Britain, Mar. 8, 1966, 10,117/66
U.S. Cl. 29—568 **8 Claims**
Int. Cl. B23q *39/02*



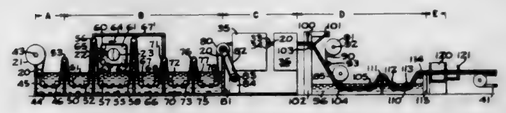
The working tools of a machine tool are each mounted in an arbor and the arbors are arranged to be brought selectively and successively as required into axial alignment with and below the spindle quill of the machine on to a plate support. The plate support and with it the selected tool are then raised so that the top of the arbor enters into a recess in the quill, where it is held by the plate for the working operation. The arbor and spindle nose have co-acting drive means.

3,431,636
METHOD OF MAKING DIFFUSED SEMICONDUCTOR DEVICES
Doyle S. Granberry and Robert L. McCallp, Dallas, and Byron K. Lovelace, Austin, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,682
U.S. Cl. 29—578 **12 Claims**
Int. Cl. H01l *7/00;* **B01j** *17/00*



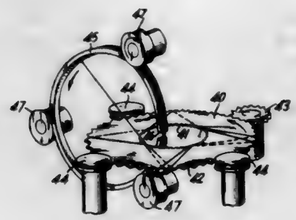
Process for producing a planar passivated germanium semiconductor device by a series of masking and etching steps, including deposition of a silicon oxide layer on the surface of a germanium wafer, accompanied by appropriate application of conductivity type determining impurities, and also including formation of a germanium oxide passivating layer intermediate the germanium surface and the deposited silicon oxide layer.

3,431,637
METHOD OF PACKAGING MICROELECTRONIC DEVICES
Edward A. Caracciolo, Santa Clara, Calif., assignor, by mesne assignments, to Philco-Ford Corporation, a corporation of Delaware
Original application Dec. 30, 1963, Ser. No. 334,332. Divided and this application Aug. 1, 1966, Ser. No. 581,407
U.S. Cl. 29—588 **4 Claims**
Int. Cl. B01j *17/00;* **H01l** *1/10, 5/02*



A packaged electronic device includes a body of insulating material having a cavity formed therein, and through which body extends a plurality of conductor leads. Lead portions extending into the cavity are in direct contact, through solder bonds, with a semiconductor device disposed within the cavity. A cover sealed to the body completes the package. The package is assembled by forming meltable prominences over the terminal areas of a plurality of semiconductor devices and forming recesses in a series of package units for exposing conductor lead arrays embedded in the respective package units. The devices respectively are disposed in individual recesses of the package units with the meltable prominences in direct contacting engagement with associated conductor lead arrays. The prominences are melted to bond the semicondcutor devices directly to the associated lead arrays, and the recesses are covered to seal the devices within the package units. The package units are then separated to form individual units of packaged devices.

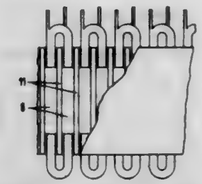
3,431,638
METHOD OF MANUFACTURING TOROIDALLY WOUND DISC ARMATURES
Robert Page Burr, Huntington, N.Y., assignor to Circuit Research Company, Glen Cove, N.Y., a corporation of New York
Filed May 9, 1966, Ser. No. 548,459
U.S. Cl. 29—598 **14 Claims**
Int. Cl. H02k *15/08;* **B65h** *81/02*



1. A method of making an armature for a disc type electrical machine having a multipole stator, comprising:
mounting a mandrel in the shape of an annulus for controlled rotation about its axis;
toroidally winding insulated wire about said mandrel to provide successive turns of the armature winding;
controlling the angular speed of said toroidal winding and the angular speed of said mandrel

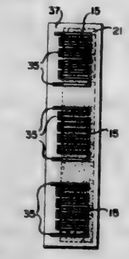
to have successive radially extending portions of the armature winding spaced approximately in accordance with the spacing between adjacent pole centers of the stator for the machine; and
to have the winding distributed substantially uniformly over the surface of the mandrel,
continuing winding until returning to the starting point; and
connecting the beginning of said winding to the end thereof to provide a multi-turn closed armature winding.

3,431,639
METHOD OF PRODUCING SLOT WINDINGS FOR ELECTRICAL MACHINES
Carl Reimer and Hans Pörsch, Nuremburg, Germany, assignors to Siemens Aktiengesellschaft, Berlin-Siemensstadt, Germany
Filed Apr. 29, 1965, Ser. No. 451,887
Claims priority, application Germany, Apr. 30, 1964, S 90,854
U.S. Cl. 29—605 **5 Claims**
Int. Cl. H01f *7/06;* **H02k** *15/00*



Method of producing multi-layer slot windings with insulating jackets bonded by plastic material for electrical machines includes the steps of winding conductors into multi-layer flat coils disposed substantially in a single plane and conjointly winding respective separating insulating sheets of plastic material between the respective layers and covering by the sheets all sides of the individual conductors in the merger zones between slot portions and end-turn portion thereof; widening the opening of the coil to an extent greater than ultimately required; pressing an insulating envelope upon the slot portion of each multi-layer coil; narrowing the widened opening of the coil to the required ultimate width; then hardening the envelopes of a multiplicity of enveloped coils simultaneously in a platen press; and thereafter shaping the end turns of the coils to the ultimate shape of the machine winding.

3,431,640
METHOD FOR ADJUSTING THIN FILM RESISTORS
Ivar F. Larsson, Oakland, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 4, 1966, Ser. No. 531,999
U.S. Cl. 29—620 **8 Claims**
Int. Cl. H01c *9/00, 17/00*



This invention relates to a method for adjusting the resistance of thin film resistors to bring them within tolerance by coating a non-conducting substrate with a uniform film of resistive material, removing all of said

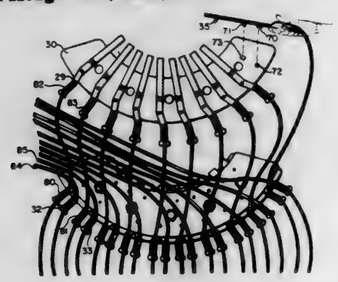
resistive material except for a pattern of continuous conductive lines, determining the amount of the resistance of the lines within tolerance, coating the determined amount of the resistive material with a protective coating and shorting out the exposed portion of the resistive material by coating with a good conductor.

3,431,641
METHOD OF MANUFACTURING ELECTRICAL CONNECTORS
Eugene G. Freehauf and William P. Dugan, Ontario, Calif., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,469
U.S. Cl. 29—625 10 Claims
Int. Cl. H05k *3/20, 3/30*



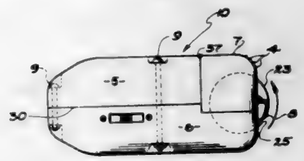
A method of making integral conductor paths and through-hole tube-like elements (unitubes) in a single-layer and multi-layer positioner boards on which components are to be mounted. Temporary backing material is applied to the board or boards having at least one circuit thereon; the desired circuit path or paths is formed on the boards; holes are formed through the assembly in desired locations; the holes are through-plated along with at least certain of the circuits; and finally the backing material is stripped away along with a portion of the plating to leave through-hole tube-like elements extending from the positioner board or boards and integral with the desired circuits therein.

3,431,642
METHOD FOR FABRICATING A PREWIRED TERMINAL BLOCK
Eugene R. Bold, Elmhurst, Peter D. Krebs, Melrose Park, and Patrick E. McKeon, Hinsdale, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,301
U.S. Cl. 29—629 3 Claims
Int. Cl. H02g *15/00*; H01b *13/00*



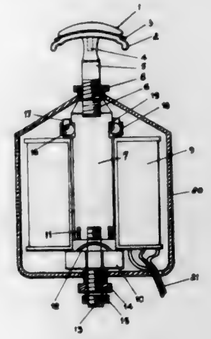
The method of terminating multiple conductors of arcuate bank cards of telephone switches in a terminal block having terminal receiving apertures extending within the block in parallel spaced relationship, wherein a plurality of terminals are temporarily attached to a dummy card, similar in shape to the bank card, in a substantially radial array. The dummy card is then positioned in spaced relation to the first of the bank cards, and the multiple conductors are successively machine-fastened to respective terminals of the bank cards including the dummy card. The temporarily attached terminals are then removed from the dummy card and inserted into the receiving apertures of the terminal block.

3,431,643
ELECTRIC SAFETY RAZOR
Joseph S. Mikell, 12336 El Oro Way, Granada Hills, Calif. 91344
Filed June 9, 1967, Ser. No. 645,049
U.S. Cl. 30—42 1 Claim
Int. Cl. B26b *19/28, 21/24, 19/16*



An electric razor having a rotary cylinder cutting head including an internal fixed blade holding means rotatable therewith wherein injection of a new blade ejects a used blade from an internal position in the rotary head.

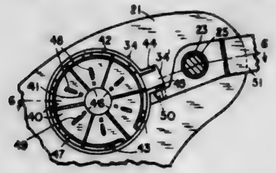
3,431,644
ELECTRICALLY OPERATED SAFETY RAZOR
Helene Suzanne Thuillier, nee Bonnefon, Place Danton, Bois d'Arcy, France
Continuation of application Ser. No. 503,200, Oct. 23, 1965. This application May 10, 1967, Ser. No. 637,887
Claims priority, application France, Nov. 12, 1964, 994,567
U.S. Cl. 30—45 2 Claims
Int. Cl. B26b *19/28, 19/38, 19/02*



An electrically operated safety razor wherein the shaving head assembly consisting of a blade guard and cap between which a safety razor is positioned is subjected to rapid small amplitude vibrations in a direction perpendicular to the cutting edge of the blade. This motion achieves a massaging effect on the skin of the user and deflects the skin and hair bristles toward the cutting edge so that cutting is effected as the shaving head is moved along the user's face.

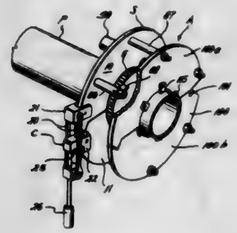
3,431,645
ELECTRICIAN'S TOOL FOR REMOVING INSULATION FROM WIRES
Alfred H. Powell, Bridgeport, Wash. (19321 108th Ave. NE., Bothell, Wash. 98011)
Filed May 29, 1967, Ser. No. 642,096
U.S. Cl. 30—90.6 3 Claims
Int. Cl. B21f *13/00*; B26b *27/00*; H02g *1/12*

Comprises a handle, a blade rigid with the handle and having a hook shaped slitting tip, two guide plates supported by the blade and spaced from opposite sides of the blade, insulation stripping means attached to one



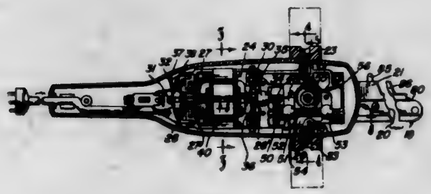
guide plate, a tube to guide wire to the stripping means, and wire cutting and bending means.

3,431,646
PIPE CUTTING AND BEVELING APPARATUS
James L. Young, P.O. Box 35137, Houston, Tex. 77035
Filed Mar. 24, 1967, Ser. No. 625,763
U.S. Cl. 30—97 7 Claims
Int. Cl. B23d *21/10*; B26d *3/16*



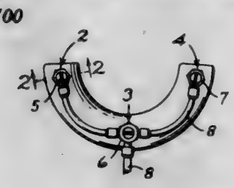
A pipe cutting and beveling apparatus having a rotatable cutter head for supporting a cutting element therewith during rotation for cutting an annular groove in a pipe and to form same with a bevel for subsequent welding; such cutter head being adapted to be opened for release from the pipe and for mounting at any part of the pipe.

3,431,647
HEDGE TRIMMER
William H. Scott, Glen Ellyn, Ill., assignor to Portable Electric Tool, Inc., a corporation of Illinois
Filed Apr. 18, 1966, Ser. No. 543,372
U.S. Cl. 30—210 9 Claims
Int. Cl. B26b *15/00*



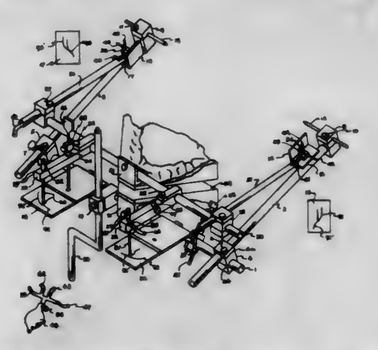
A hedge trimmer is provided with a double insulated housing such that the blade is insulated from the motor and from the user. The motor is also double insulated from the user. The hedge trimmer has the motor and transmission assembled in a unitized fashion such that the unit can be removed from the housing for repairs and inspections. The transmission includes a clutch means that prevents overloads and shock loads from being transmitted from the blade to the motor. The power train from the motor to the clutch means includes a shaft with a novel end bearing mounting for absorbing axial thrust loads.

3,431,648
METHOD OF MAKING DENTAL IMPRESSIONS
Milo V. Kubalek, deceased, late of Medford, Oreg., by Florence J. Kubalek, executrix, 907 S. Oakdale Ave., Medford, Oreg. 97501
Filed July 28, 1967, Ser. No. 656,943
U.S. Cl. 32—17 2 Claims
Int. Cl. A61c *9/00*



The method of making a dental impression involving the sequential steps of (a) formulating a liquid chemically setting material into an essentially liquid consistency; (b) lodging a quantity of said material in a tray and applying said impression material face to face with an oral surface area to be reproduced; (c) reducing the air pressure to a predetermined subatmospheric level in said tray by withdrawing air from between the interfaces of the area to be reproduced and the surface of the impression material; and (d) maintaining said material in contact with said area until the impression material is chemically set at the attained subatmospheric pressure.

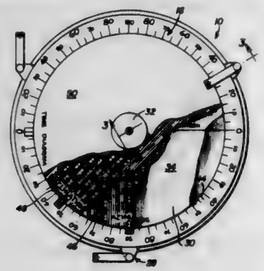
3,431,649
DENTAL FACE BOW
Niles F. Guichet, 320 Olympia Place, Anaheim, Calif. 92806
Filed Feb. 28, 1964, Ser. No. 348,013
U.S. Cl. 32—20 8 Claims
Int. Cl. A61c *9/00*; G09d *9/00*



1. A dental face bow comprising a clutch for receiving an intaglio mold of a patient's teeth centrally mounted on a cross bar; first and second side rods attached at one of their ends to opposite ends of said cross bar by clamping means that permit rotation of said side rods about their own longitudinal axis and about the axis of said cross bar; lock means to rigidly secure said side rods to said cross bar; hinge axis centering pins attached to each of said side rods at the other of their said ends by clamping means that permit rotation of each of said pins about the axis of its side rod and that permit lateral movement of said pins; lock means to rigidly secure said pins to said side rods; anterior tracing pads attached to the right

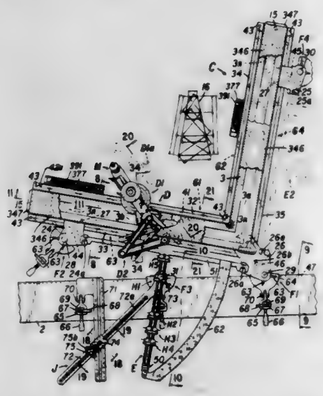
and left of said cross bar and posterior tracing pads on each of said side rods near said opposite ends.

3,431,650
NAVIGATIONAL PLOTTING AND CALCULATING DEVICE
Albert C. De Mattia, 5290 Newport Ave., Detroit, Mich. 48213
Filed June 10, 1966, Ser. No. 556,605
U.S. Cl. 33—1 **8 Claims**
Int. Cl. G01c *21/20*



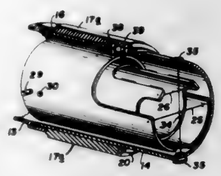
A graphical method of geographically locating points on the surface of the earth from optically sighted and published data on one or more celestial bodies by plotting different views of each celestial body on altitude or azimuth, declination and time diagrams by orthographic projection means. The latitude and longitude angles of the point from which sightings are taken is geographically determined from the angular position of the declination diagram and the projection of the celestial body on the time diagram.

3,431,651
DRAFTING MACHINE
Phillip Graham, 2825 Glenmore Ave., Pittsburgh, Pa. 15216
Continuation-in-part of application Ser. No. 517,232, Dec. 29, 1965. This application June 28, 1967, Ser. No. 649,646
U.S. Cl. 33—18 **44 Claims**
Int. Cl. B43l *13/00*



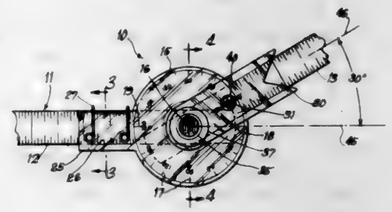
The drafting machine has a carriage which supports a semi-automatic selective marker, a selective automatic scale and a swivel arm that carries and allows the marker to sweep over a large area without shifting the square. The swivel arm includes a pantograph that coacts with templates that are attached to the square.

3,431,652
RANGEFINDER AND AUTOMATIC RETICLE SETTER
James M. Leatherwood, Rte. 1, Box 120, Stephenville, Tex. 76401
Filed Sept. 21, 1966, Ser. No. 580,989
U.S. Cl. 33—50 **3 Claims**
Int. Cl. F41g *1/38*



Two integral cam faces on the inside of a scale ring manually adjustable around the barrel of a telescopic sight are engaged by followers which elevate and vertically space two horizontal cross hairs pivotally mounted in the barrel. When the hairs have been so separated as to bracket a standard height target seen through the sight, the lower hair is automatically at the proper elevation to be aimed at that target at the range then indicated on the scale ring. The ring is made readily removable and replaceable by rings with cam surfaces designed for other target sizes.

3,431,653
PROTRACTOR FOR A FOLDING RULE
Thomas J. Mudon, 2427 167th St., Hammond, Ind. 46323
Filed Apr. 11, 1968, Ser. No. 720,568
U.S. Cl. 33—105 **7 Claims**
Int. Cl. G01b *3/06*

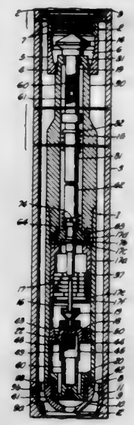


A protractor having two arms pivotally attached to each other with one arm detachably mountable on one segment of a folding rule, the one arm having a protractor scale about the pivotal joint. The other arm measures the angle between the extended longitudinal axis of the one segment and the longitudinal axis of an adjacent segment, thereby converting the folding rule into a combination protractor-rule.

3,431,654
SIGNALLING ORIENTATION INDICATOR
Robert L. Alder, Pasadena, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,221
U.S. Cl. 33—205 **14 Claims**
Int. Cl. E21b *47/02;* **E21** *47/022*

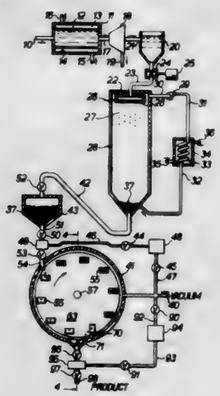
A signalling orientation indicator which includes a gravity responsive pendulum or ball engageable with

angularly spaced stepped stops to control the number of drilling fluid signals produced as an indication of the



angular disposition of the drill string relative to the low side of the well bore.

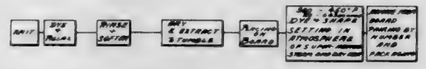
3,431,655
FREEZE DRYING
Kenneth M. Grover, Pound Ridge, and Neophytos Ganiaris, Riverdale, N.Y., assignors to Struthers Scientific and International Corporation, a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,677
Claims priority, application Great Britain, June 17, 1966, 27,112/66
U.S. Cl. 34—5 **10 Claims**
Int. Cl. A23f *1/06;* **A23c** *1/06;* **A23l** *3/36*



A comestible liquid or the like is introduced as particles into the top of a column having a flow of a refrigerated gas therein to freeze the particles and form prills which are collected and freeze dried.

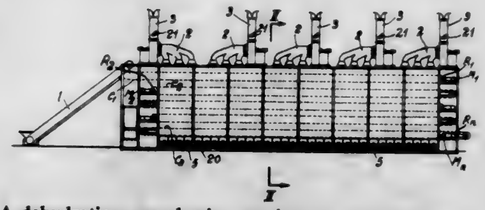
3,431,656
PROCESS AND APPARATUS FOR FINISHING OF HOSE
Roy L. Luckenbach, Asheboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,134
U.S. Cl. 34—12 **13 Claims**
Int. Cl. F26b *7/00*

A process of and apparatus for treating and finishing hose after knitting which involves the elimination of preboarding hose and includes the setting of dye and the setting of shape and length of hose on boards simultaneously by subjecting the hose while dry to a treating zone in which the temperature of the zone has been elevated to a predetermined temperature and in which super-heated steam is discharged into the treating zone at a predeter-



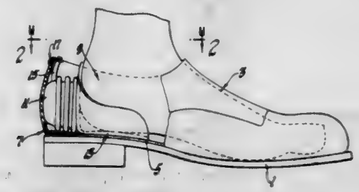
mined temperature directly on the hose. The hose are subjected to the super-heated steam for a predetermined length of time and are then removed from the treating zone and taken off of the boards and paired either manually or automatically by number rather than size and shape.

3,431,657
DEHYDRATION OVEN HAVING CONTINUOUS CONVEYORS
Adrien Lucien Dufour, 17 bis Cours du Parc, Dijon, Cote-d'Or, France
Filed Mar. 3, 1967, Ser. No. 620,423
Claims priority, application France, Mar. 28, 1966, 54,146; July 22, 1966, 70,555
U.S. Cl. 34—209 **7 Claims**
Int. Cl. F26b *21/10, 21/08*



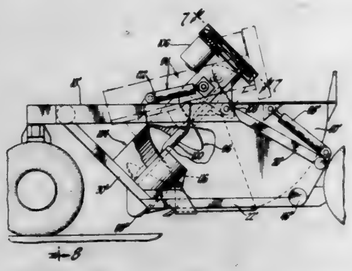
A dehydration oven having continuous conveyors comprising heating elements mounted between the outgoing and return sides of each conveyor, the heating elements of a first portion of each conveyor being supplied with steam through a first circuit while the heating elements of a second portion of said conveyor are supplied with steam through a second circuit independent of said first circuit, the control devices for each of said circuits and each of said elements being independent, whereby the temperature, the humidity content and the air circulation can be regulated at every point of the oven.

3,431,658
SHOE WITH FIT ADJUSTMENT MEANS
John J. Finn, 60 E. 32nd St., Chicago, Ill. 60616
Filed Feb. 27, 1967, Ser. No. 618,643
U.S. Cl. 36—58.5 **4 Claims**
Int. Cl. A43b *23/28*



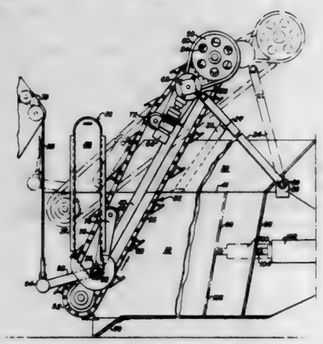
Oversized boots and shoes are made to accommodate different foot sizes or growing feet by an invention comprising filling the empty space between the counter of the shoe and the wearer's heel with an expandable bellows.

3,431,659
SELF-LOADING SCRAPER BOWL
William H. Elger, Eastlake, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,663
U.S. Cl. 37—4 2 Claims
Int. Cl. E02f *3/62, 3/85*; B60p *1/40*



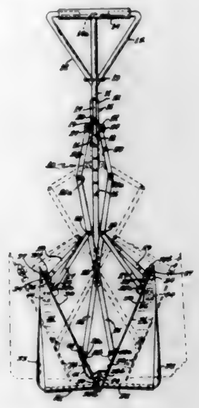
A scraper bowl movable between a dig and carry position and having a pair of side walls, a floor portion and a rear wall portion extending between the side walls for retaining earth material. A transverse cutting blade is located forwardly of the floor portion and a pair of counter-rotating screw devices are located in the bowl for moving earth material toward the rear wall portion. The screw devices are located adjacent to the cutting blade and supported for rotation about substantially parallel axes extending longitudinally of the bowl.

3,431,660
EARTH SCRAPER WITH SLIDING VERTICAL ELEVATOR GUIDE MEANS
Guy E. Keith, Calvin L. Turner, and Max F. Marsh, Casper, Wyo., assignors to Western Oil Tool & Manufacturing Company, Inc., Casper, Wyo., a corporation of Delaware
Continuation-in-part of application Ser. No. 475,606, July 28, 1965. This application Sept. 2, 1966, Ser. No. 577,051
U.S. Cl. 37—8 8 Claims
Int. Cl. E02f *3/64, 3/82*; B60p *1/28*



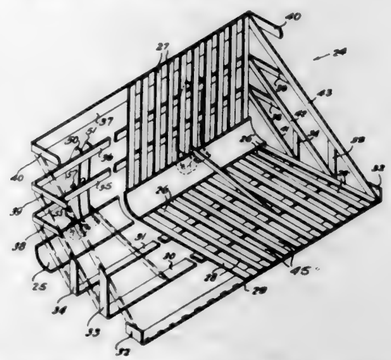
Portable earth scraper with an open mouth bowl and ejector means for ejecting the contents of the bowl through said open mouth, has a conveyor mounted to be pivotally raised above the scraper bowl clearing the mouth for easy ejecting of the bowl contents, and the forward end of the scraper has vertical guide means which constrain its movement to a vertical path in raising the conveyor to avoid possible interference during lifting motion of the conveyor and with the rearward extending portions of the tractor.

3,431,661
SNOW PLOW WITH LATERALLY EXPANSIBLE FIXED ANGLE PLOW PORTIONS
Bert M. Carlson, 3959 40th Ave., S., Minneapolis, Minn. 55406
Filed May 19, 1966, Ser. No. 551,424
U.S. Cl. 37—46 6 Claims
Int. Cl. E01h *5/02, 5/06, 5/12*



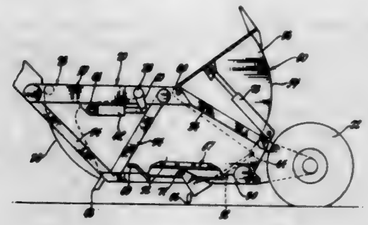
A snow plow having a pair of adjustable plow portions movable by linkage means from a first, closed position wherein the forward edges thereof converge at a V-point to a second, expanded position for plowing wide paths. The angle which the plow portions define with the direction of movement of the plow remains the same in said first and second positions.

3,431,662
SNOW REMOVING BASKET FOR TRACTOR
Marcus J. Bles, % M. J. Bles Construction Co., McLean, Va. 22101
Filed Jan. 28, 1966, Ser. No. 523,771
U.S. Cl. 37—118 2 Claims
Int. Cl. E02f *3/30, 3/40*; E01h *5/06*



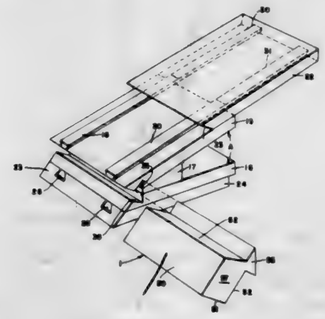
A snow-removing basket for use as a tractor scoop, said basket being formed from a plurality of elongated metal strips of uniform cross-section, said strips being curved intermediate their length to form a horizontal bottom and a vertical back wall of said scoop; a plurality of spaced metal strips crossing the strips of said bottom and secured thereto, each of said strips being vertically upward at each end to partially define side walls; a plurality of spaced metal strips crossing said back wall strips and secured thereto, said strips being bent at each end to extend horizontally to partially define side walls; a plurality of spaced, diagonally extending metal strips in each side wall, each of said strips being secured to the endmost strips of said bottom and of said back wall and each of said strips being secured to the extremities of certain of said bottom cross strips and said back wall cross strips to define triangular side walls, the bends in said bottom and back wall cross strips being sufficiently resilient to permit flexing of said side walls toward and from each other to facilitate the gathering and discharge of snow.

3,431,663
EJECTOR FOR SCRAPER BOWL
William H. Elger Eastlake, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,583
U.S. Cl. 37—129 4 Claims
Int. Cl. E02f *3/64, 3/82, 3/86*



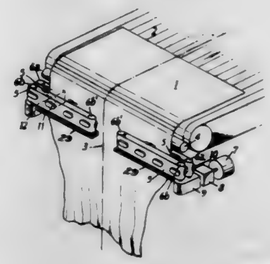
An ejector for a scraper bowl having a transportable bowl frame that includes transversely spaced and longitudinally extending side walls. The ejector has a back wall section supported for pivotal movement about a fixed horizontal axis located above the cutting edge, and a front floor section between the side walls with the rear thereof hingedly connected to the back wall section. Guide means support the forward end of the floor section for movement along the side walls whereby raising the back wall section about its fixed pivotal axis causes the floor section to be drawn rearwardly to discharge the load in the bowl.

3,431,664
BUCKET TOOTH FOR EXCAVATING EQUIPMENT
Lester W. Creager, Star Route, Koleen, Ind. 47439
Filed Oct. 25, 1965, Ser. No. 505,166
U.S. Cl. 37—142 3 Claims
Int. Cl. E02f *3/64*



A readily replaceable tooth assembly for excavating buckets wherein the tooth portion is provided with a dovetail for slidable insertion into a complementary dovetail receiving groove formed in the converging ends of two angled base members whereby the whole assembly can be locked in place by a single weld.

3,431,665
SHEET SPREADING DEVICE
Henry John Weir, "The Yetts," Sedbury, Chepstow, Monmouthshire, England
Filed July 12, 1967, Ser. No. 652,947
Claims priority, application Great Britain, Aug. 2, 1966, 34,687/66
U.S. Cl. 38—143 8 Claims
Int. Cl. D06f *67/04*; D02g *1/00*; D06c *3/00*



For use in a laundry a device for spreading sheets as they are fed to an ironer. Two pairs of endless contra-rotating bands are positioned one on either side of the centre line of the sheet as it is drawn forwards, the bands engaging one side of the sheet between each pair and drawing the sides outwardly from the centre. The inner runs of the bands which engage the sheet are reciprocated towards and away from each other periodically to engage and release the sheet periodically.

3,431,666
ELECTRIC SIGN LETTER CONSTRUCTIONS
William Bank, 3025 Ocean Ave., Brooklyn, N.Y. 11235
Filed June 27, 1966, Ser. No. 560,436
U.S. Cl. 40—135 6 Claims
Int. Cl. G09f *13/00*

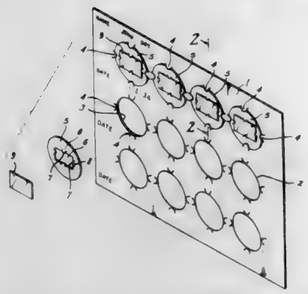


The sign letter structure is a laminate of identical letter-forms, comprising a rear layer of transparent, yellowish plastic, a front layer of translucent, ribbed plastic, an intermediate layer of transparent, reddish plastic, and important is a layer of substantially opaque material which may be a paint coating on the front surface of the intermediate layer. Said auxiliary or coating layer covers only part of the intermediate layer, so as to expose a letter of the main form. The intermediate layer and its coating have holes also determining said letter.

3,431,667
X-RAY FILM MOUNT
Richard M. Woods, Woods Bldg., Baytown, Tex. 77520
Filed June 7, 1965, Ser. No. 461,853
U.S. Cl. 40—158 5 Claims
Int. Cl. G09f *1/10*

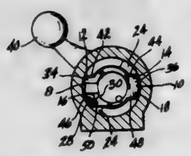
1. In an X-ray film mount, a card, punch-out portions of partial perforations for forming circular windows non-

transparent in said mount, outwardly extendable ears adjacent the periphery of said windows, circular discs having rectangular openings therein mountable over said



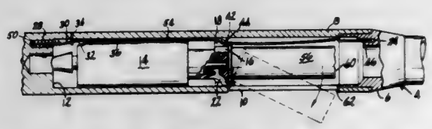
windows and maintained in position by said ears, said discs having means for maintaining a film therein in position to be viewed through said windows.

3,431,668
FIREARM RECEIVER AND BOLT WITH COOPERATING GUIDE MEANS
Robert J. Creamer, East Haven, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 22, 1967, Ser. No. 648,004
U.S. Cl. 42—16 2 Claims
Int. Cl. F41c 7/00, 11/00



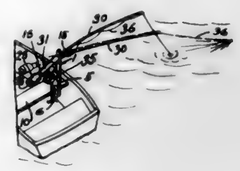
A firearm of the type wherein a bolt having opposed guide lugs is mounted in a receiver having internal guide grooves. One of the guide grooves is interrupted by an ejection port. Guide means are positioned in the receiver below the interrupted guide groove to mate with guide means on the bolt to properly guide the bolt during movement.

3,431,669
FIREARM EJECTOR
Edward L. Morrow, Fairfield, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Feb. 25, 1966, Ser. No. 530,145
U.S. Cl. 42—25 10 Claims
Int. Cl. F41c 15/00



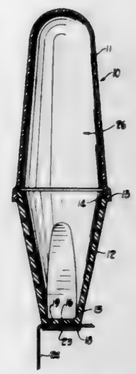
This application discloses an ejector for a firearm comprising an elongated leaf spring ejector which is mounted for limited axial movement in the receiver of the firearm opposite the ejection port. The ejector is spring biased toward the cartridge receiving chamber.

3,431,670
COMBINATION FISHING POLE AND REEL HOLDER
Lawrence M. Harpham, 9014 E. Fairview Ave., San Gabriel, Calif. 91776
Filed Sept. 9, 1966, Ser. No. 578,315
U.S. Cl. 43—21.2 1 Claim
Int. Cl. A01k 97/10



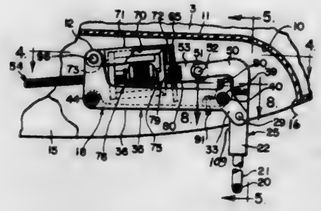
The fishing pole and reel holder includes a support post adapted to be mounted vertically on a supporting object such as a boat seat or in the ground and which support post is provided with a laterally offset U-shaped fulcrum member at one end. A lever is pivoted at one end to the support post adjacent the fulcrum member while the opposite end of the lever is provided with a laterally offset socket member in alignment with the fulcrum member. The fishing pole has its butt end received in the socket member and a remaining length carried in the fulcrum member with the reel positioned between the fulcrum member and the socket.

3,431,671
CASTING BOBBER
Emil H. Orenick and Emil J. Orenick, both of 9011 W. Moreland Road, Parma, Ohio 44129
Filed Aug. 9, 1967, Ser. No. 659,367
U.S. Cl. 43—44.87 1 Claim
Int. Cl. A01k 43/00



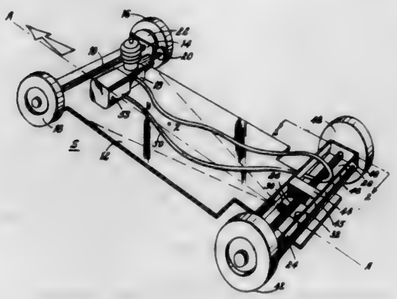
A casting bobber for fishlines is fabricated in two sections searably joined in watertight engagement to provide a compartment for holding ballast, when desired. One of said sections has an integrally formed and hinged fishline engaging means, including a seat portion with a slot therein and a latch portion hinged at one edge of the seat portion and having a rib thereon to engage the slot. The latch portion also has means on the side opposite the hinge to releasably engage said one section in a clamping arrangement. The bobber may be either immovably attached to the fishline, or frictionally engaged therewith for slidable adjustment between various positions.

3,431,672
MODEL AIRCRAFT RETRACTABLE LANDING GEAR
Ralph N. Andrae, 5821 W. Henderson, Chicago, Ill. 60634, and Theodore G. Camis, Jr., 8931 N. Moody Ave., Morton Grove, Ill. 60053
Filed Aug. 27, 1965, Ser. No. 483,161
U.S. Cl. 46—78 7 Claims
Int. Cl. A63h 27/02



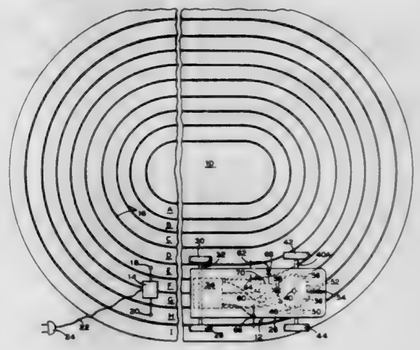
A model aircraft retractible landing gear having a frame pivotally supporting a wheel-carrying strut, a screw pivoted to the strut, a nut threaded on the screw, a motor housing pivotally supported on the frame and rotatably mounting the nut, and gearing driven by the motor for rotating the nut. Rotation of the nut retracts and extends the screw which pivots the wheel-carrying strut to extended and retracted positions.

3,431,673
TOY VEHICLE WITH SELF-STEERING MECHANISM
Richard Alan Hanmer, San Anselmo, Calif., assignor to The Lazy Eight (∞) Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 2, 1966, Ser. No. 591,642
U.S. Cl. 46—208 9 Claims
Int. Cl. A63h 17/42, 17/26



1. A toy automotive vehicle comprising
a pair of unsprung front wheels rigidly directed for generally straight ahead movement, at least one front wheel being driven,
a motor for driving said front wheel,
an unsprung non-driven rear wheel unit rigidly directed for straight ahead movement and mounted for rocking movement about a single longitudinal axis of the vehicle, the location of said rear wheel unit being positioned with respect to the centroid of the vehicle and the location of the front wheels so that the load on each of said front wheels is substantially equal during movement of the vehicle along a travel surface, said weight distribution being substantially independent of the instantaneous angular position of the rear wheel unit about said axis.

3,431,674
ELECTRIC TOY VEHICLE AND TRACK THEREFOR
Lewis Arnow, 33 Bull St., Newport, R.I. 02840
Filed Feb. 21, 1966, Ser. No. 529,091
U.S. Cl. 46—244 11 Claims
Int. Cl. A63h 30/02, 33/26; B61b 13/00



A model electric motor propelled toy and a model raceway over which the toy may be directed; the raceway having conductive track portions in insulative relationship to each other and the toy having depending contacts for engaging the track portion and passing current to the toy motor, together with power input means for selective connection with selective care of the track elements to energise the motor and to provide for steering of the toy.

Such a toy may be, for example, a model car track or raceway. Model car tracks or raceways have become popular during the past few years. However, presently available raceway systems are basically only extensions of the model train concept wherein the cars, as the trains, are confined to a specific one dimensional path by means of restraining rails, slots or other mechanical guides. Such a concept has only limited realism for model car operation because the only control exercisable is the regulation of the speed of the models.

3,431,675
RECLAIMING SALINE SOILS
David E. Moore, Tulsa, Okla. (Box 351, Palacios, Tex. 77465)
No Drawing. Filed Mar. 10, 1965, Ser. No. 429,115
U.S. Cl. 47—58 2 Claims
Int. Cl. A01b 79/02

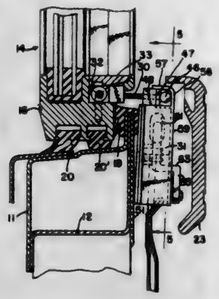
Process for reclaiming soils high in mineral content which comprises contacting said soils with aqueous solutions of micro-organisms produced by a digestion treatment of animal excrement in water to elute micro-organisms therefrom followed by a series of micro-organisms propagation-dilution steps.

3,431,676
METHOD AND COMPOSITION FOR THE TREATMENT OF FRUIT TREES
Leo Addin, Rte. 1, Box 2, Hopland, Calif. 95449
No Drawing. Filed Apr. 11, 1966, Ser. No. 541,515
U.S. Cl. 47—58 2 Claims
Int. Cl. A01m 5/00

A seasonal treatment for trees, shrubs, and fruit trees stricken with pear decline is described in which a mild soap solution is applied to the soil surrounding the base of the tree and washed into the soil surrounding the root structure with an excess of water to remove insecticide

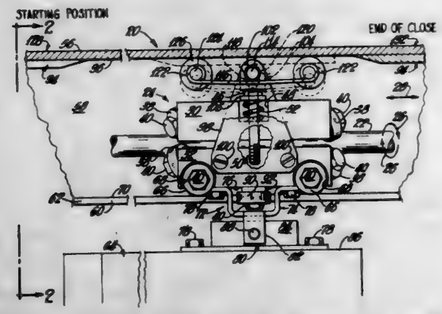
and other spray residues. Subsequently, up to 4 pounds of a solution containing 20 to 40% by weight of dry milk protein, a .02 to .04% trace of an amino acid, and a balance of water or preferably whey are applied to the plant for nourishment and promotion of growth.

3,431,677
SASH RELEASE MECHANISM
Yale W. Ehret, 1819 Grant St., Elkhart, Ind. 46514, and Harry Zoltok, 790 South Drive, Winnipeg, Manitoba, Canada
Filed Oct. 12, 1967, Ser. No. 674,850
U.S. Cl. 49—141 9 Claims
Int. Cl. E05c *15/02*; E05b *65/10*



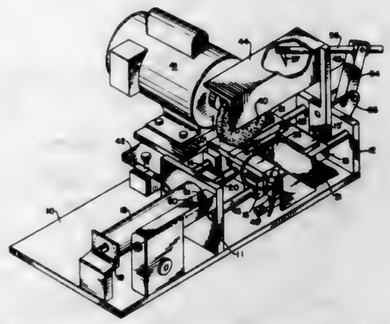
A secondary release mechanism for an escape sash in a bus or other vehicle wherein the sash is mounted in the wall opening so as to pivot outwardly on hinges located at the top edge and is normally held closed by a locking bar pivoted on the frame in which the sash is mounted and having hooks which engage keepers on the lower edge of the sash, the release mechanism including a pull cord operated lock on the sash mounting frame and a cable having one end connected to the sash and the other end releasably connected to the lock, the cable connection with the sash limiting the movement of the sash to a predetermined, partially open position when the sash is released by the locking bar and a further manual operation being required to disconnect the cable and permit the sash to swing free for maximum opening.

3,431,678
POSITION RESPONSIVE ACTUATOR
Guy E. Stuart, Jr., and Barry F. De Vine, Owosso, Mich., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 17, 1966, Ser. No. 587,270
U.S. Cl. 49—360 11 Claims
Int. Cl. E05f *11/00, 15/10, 15/02*



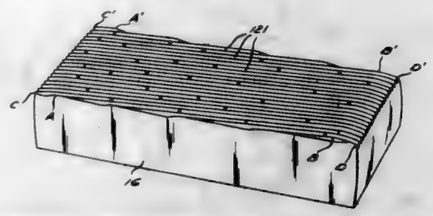
A variable-output linear actuator useful, e.g., in door opening and closing mechanisms for operating doors of buses, subway cars, commuter trains, elevators and the like. The actuator has as basic components, a shaft and a carrier through which the shaft extends and with respect to which the carrier is frictionally engaged through skewed rollers allowing relative movement by sliding in a linear path or by rotation in a spiral path. This invention is directed to structure for varying the frictional pressure of carrier on the shaft.

3,431,679
SKIVING APPARATUS
Laurent H. Girard, Bedford, N.H., assignor to American Velcro, Inc., a corporation of New Hampshire
Continuation-in-part of application Ser. No. 433,341, Feb. 17, 1965. This application Apr. 12, 1966, Ser. No. 542,048
U.S. Cl. 51—5 2 Claims
Int. Cl. B24b *7/00, 9/00*



Skiving apparatus is provided for moving sheet material to and from a skiving station to remove upstanding elements from an end portion of sheet material from which the elements extend. The apparatus includes cutting means for severing an unskived end portion of the sheet material that is held during skiving and automatic means are provided for moving the cutting means from a position out of the path of travel of the fastening means to a position in the path of travel of the fastening means to sever the unskived end portion of the sheet material. This automatic means for movement of the cutting means includes switch means operatively connected with the means for moving the cutting means which switch means is mounted for actuation by reciprocal movement of the fastening means to bring the cutting means into the path of travel of the sheet material following skiving and out of the path of travel following cutting of the end portion.

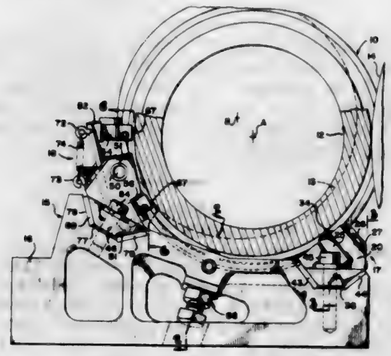
3,431,680
APPARATUS FOR FORMING THREAD ROLLING DIES
Harry W. Fox, Cleveland, Ohio, assignor to Pratt & Whitney, Inc., Cleveland, Ohio, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,640
U.S. Cl. 51—94 11 Claims
Int. Cl. B24b *47/02*; B23c *3/28, 3/32*



Apparatus for forming thread rolling dies having curved relief portions on the ends which blend into the central

section along a line perpendicular to the longitudinal axis of the die block. The apparatus incorporates a work holding device provided with a base plate rigidly mounted on the reciprocating carriage of a grinding machine. A lift plate is mounted on the base plate by a first cam means operable to raise one end or the other of the lift plate in response to the reciprocation of the carriage. An indexing plate is pivoted on the lift plate so that it can be rotatably indexed about a vertical axis to the desired helix angle. A tipping cradle is mounted on the indexing plate by a second cam means operable to laterally tip the cradle in timed relation to the operation of the first cam means.

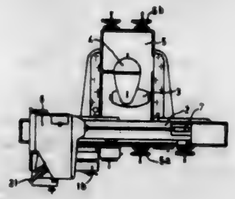
3,431,681
WORK SUPPORT SHOE ASSEMBLY
William P. Flohr, Jr., Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed July 23, 1965, Ser. No. 474,416
U.S. Cl. 51—103 15 Claims
Int. Cl. B24b *5/18, 5/00, 29/00*



The disclosure relates to a grinding machine which is similar to a conventional shoe-type centerless grinder. A workpiece is rotated by a magnetic chuck and radially supported by peripherally spaced shoes with the center of the work in offset relation to the center of a face plate so that the rotating force applied by the face plate to the workpiece holds the workpiece in firm engagement with the supporting shoes. The angle of the surface of the workpiece varies from rough size to finished size. In order to accommodate this change in angle and to provide proper support to the workpiece throughout the grinding operation, the supporting shoes are pivotally mounted on a base member so that they maintain contact across the face of the surface being ground for all angles bteween that of the rough workpiece and that of the finished workpiece.

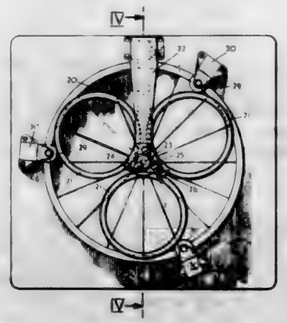
3,431,682
MACHINE FOR GRINDING TOOLS WITH A HELICAL CUT
Robert Habib, 36 Quai Gustave Ador, Geneva, Switzerland
Filed May 27, 1966, Ser. No. 553,461
Claims priority, application Switzerland, May 31, 1965, 7,507/65
U.S. Cl. 51—123 7 Claims
Int. Cl. B24b *3/42, 5/16*

This disclosure concerns a machine for grinding a tool with a helical cutting edge which includes a wheel head adapted to receive a grinding wheel, the tool holder table subjected to an alternating to and fro movement, a headstock having a spindle and a tail-stock mounted on the table and adapted to receive the tool to be ground therebetween, a device for angularly driving the spindle of the head-stock arranged in a manner that the tool effects, with respect to the wheel, a helical movement such that the wheel remains always in contact with the surface to be ground during grinding, and a device permitting the relative position of the wheel and the tool to be varied progressively in a manner to be able to achieve this grinding automatically by successive stages and wherein the device for angularly driving the spindle has at least one rectilinear cam inclined with respect to the axis of the spindle at an angle corresponding to the slope of the helical generatrix of the tool to be ground, at least one feeler in contact with the cam and a servomotor angularly



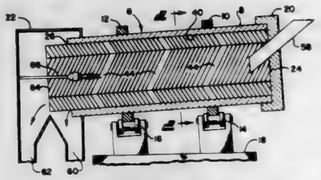
driving the spindle of the head-stock as a function of the relative displacement of the cam and the feeler perpendicular to the axis, when either the cam or the feeler is driven in direction of the axis, the machine having also a first slider adapted to be moved perpendicularly to the reference axis, a traversing screw engaged with this slider, a second slider kinematically connected to the screw and carrying the cam, means permitting the first slider to be displaced by a definite amount in one direction, when the table reaches one of its end positions, and in the opposite direction, when the table returns to its other end position, and means for angularly driving the screw in a predetermined direction to displace the said second slider in a manner corresponding to the variation desired for the relative position of the wheel and the tool.

3,431,683
LAPPING MACHINE HAVING WEAR RING POSITIONING MEANS
Ronald Frederick Wright, Flixton, Urmston, England, assignor to Flexibox Limited, Manchester, England, a British company
Filed Feb. 17, 1966, Ser. No. 528,313
Claims priority, application Great Britain, Feb. 18, 1965, 6,996/65
U.S. Cl. 51—129 6 Claims
Int. Cl. B24b *5/00, 29/00*



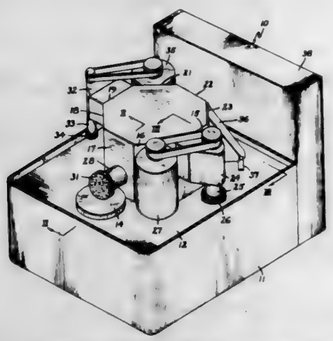
A lapping machine comprising a lapping plate adapted to carry a wear ring or rings. Control means are provided adjacent the centre of the plate and independently of the drive of the plate to vary the radial position of the wear rings.

3,431,684
ROTARY ABRADING DEVICE
Thomas E. Bam, Cleveland Heights, Ohio, assignor to McDowell-Wellman Engineering Co., a corporation of Ohio
Filed Oct. 27, 1966, Ser. No. 589,967
U.S. Cl. 51—164 6 Claims
Int. Cl. B24b *31/02, 1/00*; B02c *17/00*



There is provided an apparatus for abrading particles and including a drum rotatable about its axis, which axis is inclined to the horizontal, and having disposed within the drum and secured thereto for rotation therewith a plurality of grate surfaces forming a polygon within the drum, which grate surfaces are at least coextensive with the drum and preferably extend beyond the drum, and means for introducing particulate matter at the upper end of the drum, and means at the discharge or lower end of the drum for separating fines and abraded particles.

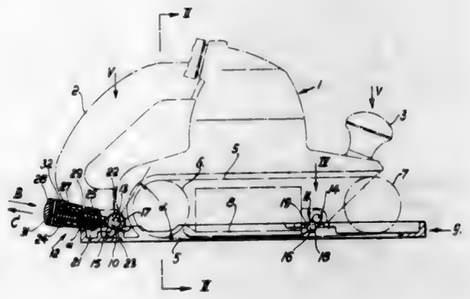
3,431,685
GRINDING HIGH-TEMPERATURE ALLOYS
Robert S. Hahn, Northboro, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 445,298
U.S. Cl. 51—166 5 Claims
Int. Cl. B24b *41/00, 7/00, 9/00*



This invention relates to the grinding of high-temperature metals and, more particularly, to a machine for removing stock from a workpiece by the abrasion process at an unusual rate by operation in a restricted range of force intensities.

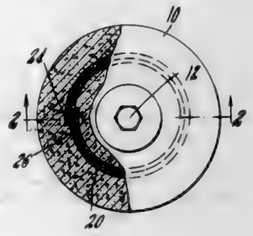
3,431,686
HAND-OPERATED, BELT-TYPE SANDING DEVICE FOR WOODWORKING
Otto Bergler, Lomersheim, near Muhlacker, Germany, assignor to Eugen Lutz KG., Maschinenfabrik, Muhlacker-Lomersheim, a corporation of Germany
Filed Apr. 25, 1966, Ser. No. 545,060
Claims priority, application Germany, Apr. 24, 1965, L 50,559
U.S. Cl. 51—170 18 Claims
Int. Cl. B24b *23/00*

A hand-operated belt sanding machine comprising a housing having a driving motor and a pair of sanding belt rollers rotatably supported thereon with at least one of the rollers being drivingly connected to the motor. A sanding belt is supported on and extends between the belt rollers. A sanding belt pressure plate is mounted on the housing in a fixed position relative to the belt rollers. A guide frame surrounds the active portion of the sanding belt and is connected to the housing by a parallelogram



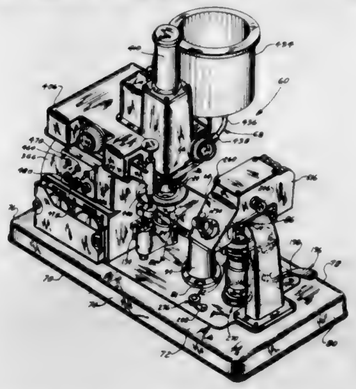
linkage for permitting relative movement between the guide frame and the pressure plate while maintaining the guide frame substantially parallel to the pressure plate. Adjustment means coact between the housing and the guide frame for adjusting the height of the pressure plate relative to the guide frame.

3,431,687
REINFORCED ARTICLE
Herbert C. Fischer and Herbert C. Fischer, Jr., both of 3 Sawyer Road, Wellesley, Mass. 02181
Original application Aug. 10, 1964, Ser. No. 388,416, now Patent No. 3,208,838, dated Sept. 28, 1965. Divided and this application June 16, 1965, Ser. No. 464,309
U.S. Cl. 51—206 17 Claims
Int. Cl. B24d *5/00, 7/00*; B32b *31/00*



A stressed reinforced article disclosed in the specific form of a grinding wheel having a central axis of rotation, the wheel being formed of abrasive grains bonded together with a plastic material and having integrally bonded reinforcing means imbedded in the wheel. The reinforcing means comprises strands each composed of a multiplicity of glass-like fibers impregnated with an adherent coating compatible with and having a high coefficient of contraction relatively to that of the plastic material of the wheel. It is shown in the form of a tape generally annularly positioned in a curved path around the axis of the wheel, either entirely within the wheel or imbedded in the wheel surface, maintaining the wheel portion within the tape in compressed condition, or, alternatively, the form of an open mesh fabric imbedded in the wheel positioned generally perpendicularly with respect to the wheel axis, providing a grinding wheel reinforced with a substantial proportion of stressed glass-like fibers.

3,431,688
METHOD FOR PROCESSING OF OPHTHALMIC LENS
Milo O. Rudd and Alexander M. Woronoff, Fort Lauderdale, Fla., assignors to Univis, Inc., Fort Lauderdale, Fla., a corporation of Ohio
Filed Feb. 4, 1965, Ser. No. 430,315
U.S. Cl. 51—284 13 Claims
Int. Cl. B24b *19/00*; B22d *19/00*



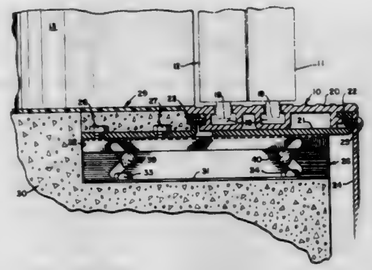
A method and apparatus is provided for producing an ophthalmic lens according to prescribed dimensional relations. A semi-finish lens blank is initially supported and the desired location of the ultimate mechanical center of the finished lens and of the ultimate optical center of the finished lens is determined. Molding dies are positioned on the blank such that the axes of the dies contain the ultimate mechanical center and ultimate optical center previously determined and located. The dies are adjusted about their axes relative to the supported blank in accordance with the prescribed cylinder axis. Molding material is introduced between the dies for adherence to the finished surface of the semi-finished blank for forming a plug in one molding operation having a mechanical center reference surface and an optical center reference surface. At the same time, an index is formed on the plug relative to the ultimate horizontal alignment of the finished lens. Following setting of the molding material, the dies are removed. The prescribed optical surface is then formed on the unfinished side of the lens blank with reference to the optical center reference surface on the plug. The final edge contour of the finished lens is formed with reference to the mechanical center surface and horizontal alignment index on the plug.

3,431,689
SCOURING PAD
Herbert W. Schnabel, Alliance, Ohio, assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,446
U.S. Cl. 51—400 5 Claims
Int. Cl. B24d *11/00*



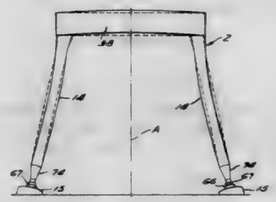
Scouring and cleaning pads in the form of a flexible porous pouch with the matrix of the pouch being substantially filled with macroscopic particles of a cleansing material such as soap, the particles of cleansing material being substantially encapsulated by a flexible elastomer so as to provide a controlled release of the cleansing material when the pads are used in the presence of water.

3,431,690
ADJUSTABLE SUPPORT
Ernst Halpern, Plainview, N.Y., assignor to Williamsburg Steel Products Company, Brooklyn, N.Y., a corporation of New York
Filed May 4, 1966, Ser. No. 547,612
U.S. Cl. 52—204 3 Claims
Int. Cl. E04d *15/06*



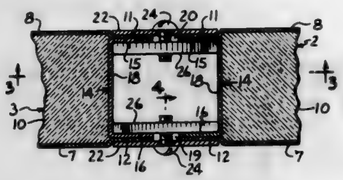
An adjustable sill support is formed from two angle shaped members provided with slots which are oppositely inclined with respect to the longitudinal axis of the angle support member. A bracket, fixed to the adjustable support, includes means to retain the sill.

3,431,691
APPARATUS AND METHOD FOR SUPPORTING VESSELS
Melvin J. Greaves, Cleveland, and Tage Werner, Rocky River, Ohio, assignors to Arthur G. McKee & Company, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 520,945
U.S. Cl. 52—223 10 Claims
Int. Cl. E04c *3/30*; E04g *21/12*; C21b *7/00*



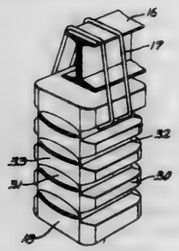
Supporting structure for supporting an upright vessel comprising transversely extending means adapted to support the vessel, outwardly inclined legs supporting the supporting means, the legs being prestressed prior to loading said supporting means by having the lower end in each of the legs positioned so it is displaced outwardly essentially in a direction and by an amount that the lower end of the leg would move if the supporting structure was subjected to a load corresponding to the vessel so that the legs are deflected when the supporting structure is unloaded and undeflected when loaded, means being provided for restraining the lower end of each of said legs against appreciable lateral movement. A method of constructing a supporting structure for an upright vessel in which the legs are deflected as indicated above to prestress them before loading.

3,431,692
BUILDING CONSTRUCTION
Carl R. Freeman, 1237 W. 47th St., Chicago, Ill. 60609
Filed Dec. 5, 1966, Ser. No. 599,174
U.S. Cl. 52—467 4 Claims
Int. Cl. E04c 1/34, 1/10



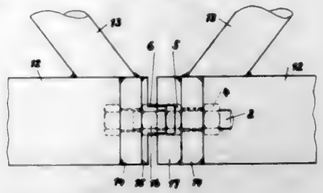
1. In a building construction, a pair of building wall sections each comprising spaced upstanding panels and insulating means filling the space between the panels, an upstanding column secured to each wall section and having flanges respectively flush against the inside surfaces of said panels and a web running transversely of the upstanding panels and column flanges, each column constituting part of an end of a wall section and forming an end closure for the wall section and retaining the insulating material therein, the end of one wall section being adjacent but spaced from the end of the other wall section to leave gaps between the ends of the wall sections at the opposite sides thereof and with the webs being spaced apart a distance greater than the widths of said gaps, and means forming a rigid connection between said ends of the wall sections and between the columns; said means comprising a unitary batten spanning each gap and each being in rigid engagement with an outwardly presented surface of each upstanding member, threaded fasteners projecting through each batten and the adjacent gap, and nuts on the inside of each wall section adjacent to each gap and being retained against rotation by engagement with said webs as the fasteners are tightened to draw each said batten against the adjacent flanges and clamp those flanges and the adjacent upstanding panels between the nuts and the battens, each nut having a width that is less than the width of the gap and a length that is greater than the distance between said webs so that the nuts may be threaded onto the fasteners and oriented to pass through said gaps and then rotated a fraction of a revolution by said fasteners until the nuts abut said webs.

3,431,693
HANGER STRUCTURE
Roger C. Stephens, Hamburg, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,129
U.S. Cl. 52—485 2 Claims
Int. Cl. E06b 3/64; E04b 5/52



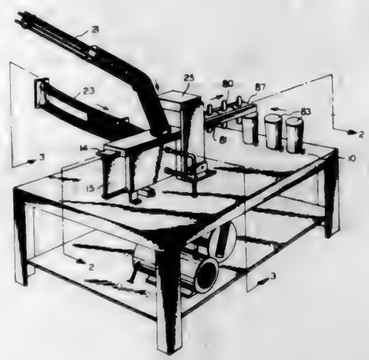
The disclosure concerns use of a hanger element made of a single length of wire rod bent to form a support for refractory anchors.

3,431,694
RHOMBIC GIRDER
Emil Mauritz Hunnebeck, Obsteig, Tyrol, Austria, assignor to Hunnebeck Aktiengesellschaft, Zug, Switzerland, a corporation of Switzerland
Filed Mar. 10, 1966, Ser. No. 533,287
Claims priority, application Germany, Mar. 12, 1965, H 51,402
U.S. Cl. 52—695 7 Claims
Int. Cl. E04c 3/02, 3/30; E04h 12/00



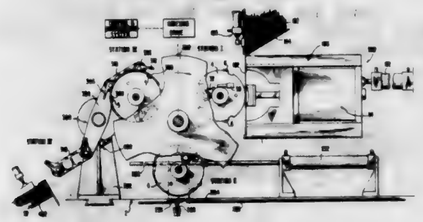
A rhombic girder having a plurality of individual parts, which comprises an upper boom and a lower boom and a rhombic framework disposed between the upper boom and the lower boom. Each of the booms includes a plurality of individual parts abutting each other. One of the parts of the lower boom is provided at its end with a pin having an outer face extending parallel to the longitudinal axis of the lower boom. Another of the parts of the lower boom adjacent to the one of the parts provided with a recess disposed opposite the pin and has an outer face disposed complementary to the outer face of the pin, so that cross-forces of one of the lower booms are transmitted to another of the lower booms. Clamping means holding together the lower booms in the longitudinal direction, and distancing holders of variable length connecting together pressure-fast the lower booms.

3,431,695
APPARATUS AND PROCESS FOR PRODUCING FROZEN CONFECTION PACKAGES WITH SPOON PROJECTING THROUGH LID
Roy Earling and Frank J. Scheuerman, Baltimore, Md., assignors of thirty-three and one-third percent to Harold W. Bentham, Baltimore, Md.
Filed Dec. 22, 1966, Ser. No. 603,997
U.S. Cl. 53—15 9 Claims
Int. Cl. B65b 61/00; B68b 5/02, 3/22



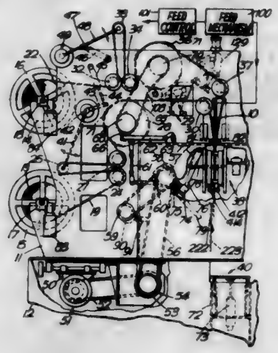
An apparatus having a gravity slide for feeding a continuous supply of lids and spoons, a slide for synchronously feeding a single lid and single spoon to an assembly head which positions the handle of the spoon in perpendicular relationship with the underside of the lid, a solenoid powered striking means to strike the spoon at the tip of its bowl to drive it through the lid and a capping head which applies a downward pressure to place the lid/spoon on a container of liquid confection which can then be frozen.

3,431,696
METHOD AND APPARATUS FOR PACKAGING PLIANT, ELONGATE ARTICLES
Charles Horberg, Jr., Northbrook, Ill., assignor to Paramount Textile Machinery Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 27, 1966, Ser. No. 589,881
U.S. Cl. 53—24 21 Claims
Int. Cl. B65b 61/20, 63/04, 43/30



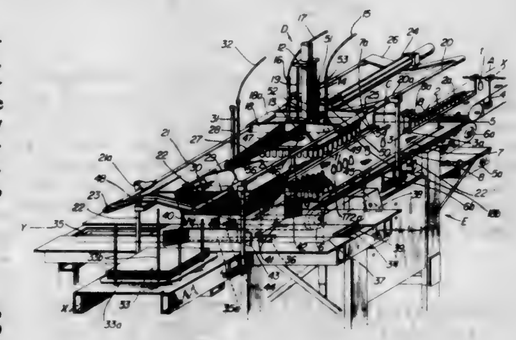
A system which is intended for wrapping a pliant elongated article about a deformable, generally flat, backing. The backing is wrapped circumferentially about a peripheral portion of a circular spindle. Then the pliant article is wound circumferentially about the spindle exteriorly of the backing. The backing and the pliant article are withdrawn concurrently from the spindle in an axial direction. Finally the backing with the pliant article wound about it, is restored to a flat configuration.

3,431,697
PACKAGING OF PHONOGRAPH RECORDS
Alan Phillipson, Basil Harry Royston Spiller, Robin Smith, and Harry Cheesman, London, England, assignors to Decca Limited, London, England, a British company
Filed Aug. 9, 1965, Ser. No. 478,072
Claims priority, application Great Britain, Aug. 13, 1964, 33,059/64
U.S. Cl. 53—51 11 Claims
Int. Cl. B65b 57/04, 51/30, 9/12



An apparatus for packaging phonograph records in paper bags with holes in the sides of the bags so that the record label on each side of the record can be clearly seen. The records are fed one by one to an operating position between two elongate strips of paper which have formed in them holes about the size of a record label, at intervals slightly greater apart than the width of the record. When in the operating position a pair of heat sealing dies heat seal the strips together to form a bag containing the record and subsequently the strips are traversed a distance equal to that between successive holes so that the apparatus is then ready to form the next bag containing a record. In order to ensure proper formation of the bags synchronously driven embossed capstans engage the holes in the strips to control the longitudinal position of the strips, the capstans being driven in synchronism with the traversing apparatus for the strips. Additional control means for the longitudinal position of the strips are provided by a photocell arrangement which senses the variation of a position of a hole in a strip from a datum when the strip is stationary and increases or reduces back tension on the respective strip.

3,431,698
ARTICLE HANDLING MACHINE
Louis Bathellier, Orleans, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Feb. 11, 1966, Ser. No. 526,843
Claims priority, application France, Feb. 17, 1965, 5,963
U.S. Cl. 53—61 4 Claims
Int. Cl. B65b 57/10, 35/38, 43/42

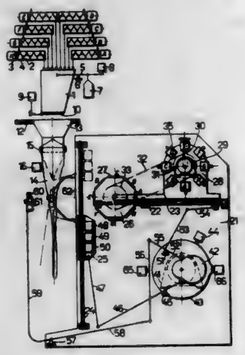


Apparatus for automatically accumulating a predetermined number of containers such as bottles or cans, arranged in regular contacting quincunx relation and collectively defining a rectangle of side-by-side longitudinal files and transverse rows. Accumulation is effected by advancing the containers in single file, on and along a conveyor, arresting the motion of the initial ones of the containers by contact with a fixed bar extending transversely over and across the conveyor to form a transverse row filling the space between two laterally spaced parallel guide bars extending rearwardly from the respective ends of the transverse bar. In response to completion of accumulation of the final transverse row of the rectangle, the accumulated containers forming the rectangle are picked up as a unit by a suction head, conveyed to a position over a packing carton, lowered into the carton and there released. The cycle is repeated so that successive layers are deposited until the carton is filled.

3,431,699
APPARATUS FOR MARKING AND FILLING SACKS
Paul Eppenberger, Amriswil, Thurgau, Switzerland, assignor to Gebruder Buhler, Uzwil, Saint Gall, Switzerland
Filed May 18, 1966, Ser. No. 553,581
U.S. Cl. 53—67 15 Claims
Int. Cl. B65b 57/06, 61/26

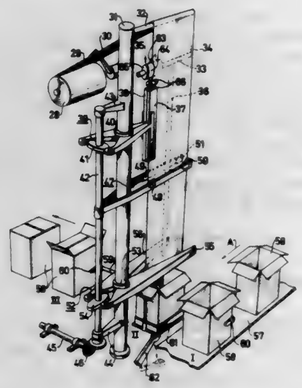
Apparatus for marking and filling sacks includes a marking and filling station having a metering hopper, means transporting empty sacks to a position beneath the

hopper, a plurality of compartments each containing a different material to be sacked and feeding means each associated with a respective compartment. The apparatus also includes automatic control means for selectively activating a feeding device, deactivating the latter after a number of metered charges of the same material have been sacked, and then activating another selected feeding



device. Means are provided to discharge each charge of material from the hopper into the sack suspended beneath the hopper, and a sack marking device is provided in the filling station to mark the sack with identifying information. A control means connects the marking device with the selected feeding device and effects sack marking actuation of the marking device before the suspended empty sack is filled with a charge.

3,431,700
APPARATUS FOR MANUFACTURING STERILE PACKAGES STARTING FROM A FLATTENED TUBE HAVING A STERILIZED INNER SURFACE
Gad Anders Rausing and Harry Sigvard Valdemar Järund, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Jan. 25, 1966, Ser. No. 522,943
Claims priority, application Switzerland, Feb. 19, 1965, 2,343/65
U.S. Cl. 53—182 **6 Claims**
Int. Cl. B65b *9/12, 51/30*



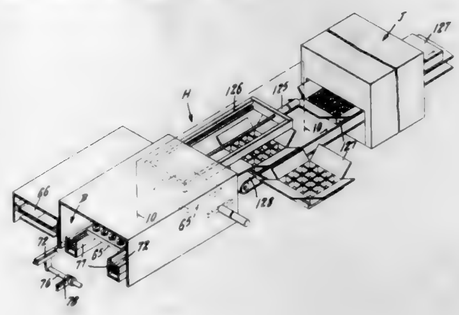
Apparatus for making and filling containers with a fluent material in a sterile manner comprises pre-formed continuous flattened tubing of a thermoplastic material having its inner surface in a sterile condition which is fed past a slitting knife to open up a narrow slit at one side edge of the tube to receive a filling pipe. This filling pipe is surrounded by a porous body from which a disinfectant emanates, the slit-open edges of the tubing continuously wipe opposite surfaces of the porous body to maintain the desired sterility characteristic, and the edges of the tubing are immediately resealed after passing the filling pipe and its surrounding porous body.

3,431,701
ARTICLE-WRAPPING MACHINE
Ysmail C. Vargas, 2421 E. Walnut St., Orange, Calif. 92667
Filed Apr. 27, 1965, Ser. No. 451,270
U.S. Cl. 53—209 **8 Claims**
Int. Cl. B65b *11/54, 49/12, 41/00*



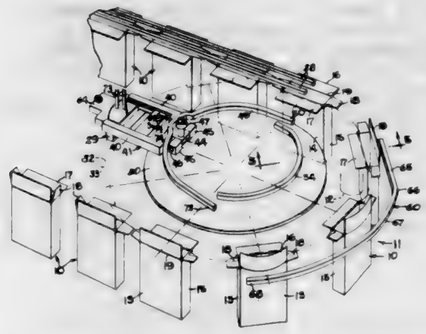
The apparatus relates to wrapping items such as stacks of tortillas, in which an endless conveyor belt carries a plurality of rotatably mounted food stuffs supporting cups which are automatically caused to rotate as the particular cup passes through a wrapping housing located on the frame of the apparatus. A supply of wrapping material having a free end extending over said belt and cups is positioned to receive a stack of tortillas on each cup. Knives sever the wrapping material between each adjacent cup, and there is provided in the wrapping housing a frustro-conical upper portion with an in-turned lip which causes the wrapping material to be wrapped around the stack of tortillas as the cup is being rotated. The wrapped package is then smoothed, flattened and heat sealed.

3,431,702
MACHINE FOR HANDLING AND TREATING ARTICLES IN GROUPS
Harold Ernest Spaulding, Belle Mead, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,630
U.S. Cl. 53—281 **16 Claims**
Int. Cl. B65b *5/08, 35/30, 7/16*



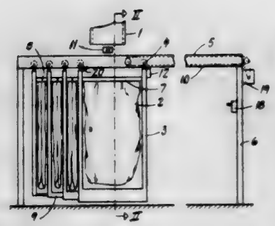
In a system for handling groups of articles so that a work function may be performed simultaneously upon each article in the group, a plurality of articles are loaded into a matrix, and the latter is moved into position within a working station. The plurality of articles in said matrix are worked on substantially simultaneously so that more time may be allowed to work on each article or the overall production rate may be increased as compared to working only on a single article at a time.

3,431,703
MACHINE FOR FILLING CARTONS
William N. Miller, Rockford, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,935
U.S. Cl. 53—381 **7 Claims**
Int. Cl. B65b *43/26, 5/02, 1/02*



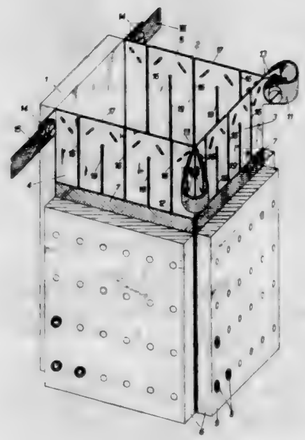
A machine for depositing a quantity of product into the open upper ends of flexible walled cartons with upstanding hinged closure flaps as the cartons are advanced along a predetermined path into a filling station. The machine includes a plurality of spouts each comprising a pair of separable shells which are inserted downwardly into one of the cartons as the latter approaches the filling station. Before the carton is filled, one of the shells is moved bodily away from the other shell in a sidewise path to bow the adjacent carton wall outwardly and to spread the carton widely for filling without folding the hinged closure flap from its upstanding position and without tearing the carton.

3,431,704
SUPPORTING AND MOVING DEVICE FOR REFUSE SACKS
Egon Gunnar Smedlund, Litorinavagen 69, Halmstad, Sweden
Filed Apr. 20, 1967, Ser. No. 632,430
U.S. Cl. 53—384 **7 Claims**
Int. Cl. B65b *67/12, 57/00*



A multiple sack holder for refuse collection bags or sacks in which a number of the sacks are suspended in separate telescopic frames, which frames are hung by rollers in the horizontal beams of a supporting frame. The sacks are reinforced at their mouths by means of collapsible rims and clamping means not only holds the rims at the top edge of each sack but such means also serves as a means for coupling together the rims of adjacent sacks. The sacks move along the supporting beams, one after another, to filling position and by means of a photocell circuit-actuated drive means, a filled sack is removed from its filling position below a refuse chute and another sack is brought to an open position under the chute.

3,431,705
PACKAGING MACHINES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Mar. 3, 1966, Ser. No. 531,614
Claims priority, application Great Britain, Mar. 13, 1965, 10,746/65
U.S. Cl. 53—388 **5 Claims**
Int. Cl. B65b *51/00*

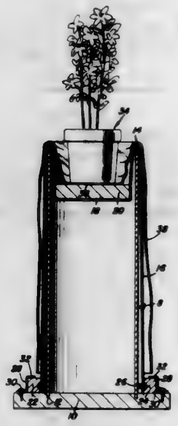


A packaging machine is disclosed which comprises a guide passage for packets wrapped in wrapping material. The guide passage is formed by walls, at least a portion of at least one of the walls being of electrically conductive material for heating said wall portions electrically, so that the wrapping material, during movement of a packet through the guide passage, is contacted and heated by the wall portion. The wall portion has slots or other perforations arranged to increase the electric resistance of the wall portion. Additional slots or perforations are provided at the marginal regions of the wall portion to suitably influence the current distribution in said marginal portions in order to obtain a substantially uniform heating effect.

3,431,706
FLORAL SACKER
Matthew A. Stuck, Menasha, Wis., assignor to Modern Manufacturing Company, Inc., Menasha, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 380,895, July 7, 1964. This application Nov. 8, 1966, Ser. No. 603,073
U.S. Cl. 53—390 **14 Claims**
Int. Cl. B65b *67/00*

1. An apparatus for sacking an article within a protective bag, comprising a base, a tube mounted on the base, a

flexible member mounted for movement within said tube and having a first end located within the tube and having a second end located outside the tube and having a central portion extending over an end of said tube, one of the ends of said flexible member being engaged with a protective



bag, means connected to the first end of said flexible member for supporting an article to be sacked, and means for moving the flexible member vertically within the tube with vertical movement of said flexible member serving to insert the article within the bag.

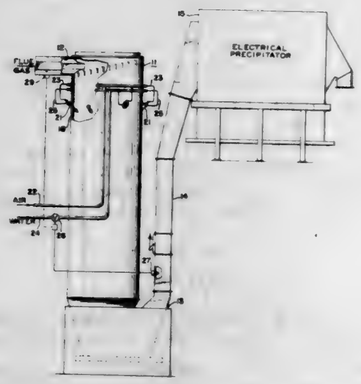
3,431,707

METHOD IN OPERATING CONDITIONING TOWERS FOR FURNACE FUMES CONTAINING DUST TO BE RECOVERED BY MEANS OF ELECTROSTATIC PRECIPITATORS

Bengt Berg, Nacka, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Apr. 5, 1967, Ser. No. 628,666
Claims priority, application Sweden, Apr. 7, 1966, 4,841/66

U.S. Cl. 55—20 **4 Claims**
Int. Cl. B01d *47/06*



A method for controlling the water spray in conditioning towers for dust-laden furnace fumes or flue gas so as to minimize the wetting of the tower walls by the moistened dust when the load, i.e., the quantity and temperature of the flowing fumes, varies. At decreased loads, the spray is regulated to provide smaller droplets injected at higher speeds so as to provide a shorter evaporation path at a lower gas speed. The method uses a separate gaseous atomizing medium, such as compressed air, into which the water is fed to produce a spray in the tower, and when the load is reduced, the atomizing medium is maintained constant while the water injection is reduced. The reduction in load is sensed by the wet bulb temperature in the outlet and/or inlet of the conditioning tower.

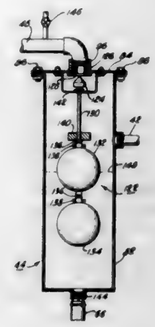
3,431,708

VACUUM LINE CLOSURE METHOD AND DEVICE FOR SEPARATION CHAMBERS IN GROUND-WATER PUMPING SYSTEMS

Edward J. Moore, Morris Township, N.J., assignor to Moretrench Corporation, Rockaway, N.J.

Continuation-in-part of application Ser. No. 586,862, Oct. 14, 1966. This application Apr. 25, 1967, Ser. No. 633,612

U.S. Cl. 55—55 **9 Claims**
Int. Cl. B01d *19/00*



A gas vacuum pump is connected to the second of two series connected gas-liquid separation chambers. The connection to the vacuum pump is closed by a float valve whose dimensions and weight are set so that the valve closes when the water level in the chamber rises above a predetermined danger level, and opens when the gas pressure in the chamber increases at a relatively low rate and the water level recedes to a safe level. However, when the gas pressure level in the chamber increases at a relatively high rate, thus indicating a major malfunction in the pumping system, the valve will not re-open until it is manually actuated, even if the water drops to a safe level.

3,431,709

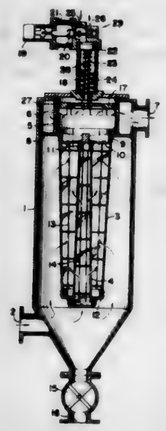
DUST COLLECTOR

Shunpei Kawanami, Naka-gun, Kanagawa-ken, Japan, assignor to Kabushiki Kaisha Sanko Seisakusho, Kanagawa-ken, Japan

Filed Sept. 25, 1967, Ser. No. 670,284

U.S. Cl. 55—302 **3 Claims**
Int. Cl. B01d *29/24, 29/38, 33/08*

A dust blowing device intended for blowing off dust accumulated on the filtering medium, such as wool felt, comprises a first set of piston and cylinder means designed for producing an air blast on the filtering medium and located on top of the same in the passage of filtered air and a second set of piston and cylinder means located on top of the first set and having its piston connected to that of the first set so as to actuate the latter by action of compressed air supplied through a magnet controlled valve connected to the second set. A sealing means of flexible



material having a number of fins allowing for irregularities is provided between the piston and the cylinder of the first set.

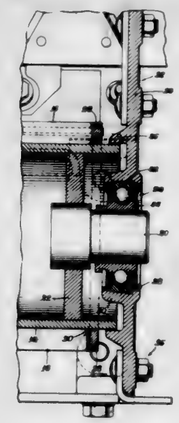
3,431,710

HAY CONDITIONER ROLL ARRANGEMENT

Edward J. Johnston, La Grange, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 25, 1966, Ser. No. 522,892

U.S. Cl. 56—1 **1 Claim**
Int. Cl. A01d



A hay conditioner having a roller with helical ribs, rings interconnecting the ends of the ribs and connected to a cylindrical roller body inwardly of the ends thereof, a support plate at each end of the roller with an annular flange surrounding the adjacent end of the body in a close fitting sliding fit, a shaft stub projecting from each end of the roller having a mounting at one end within the roller body, an annulus on each plate projecting into the adjacent end of the roller, and a bearing mounted in the annulus journaling the adjacent stub shaft, the annulus and annular flange being in radial alignment.

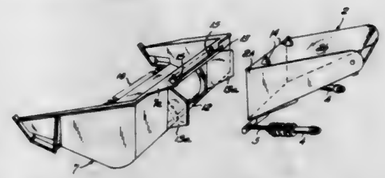
3,431,711

ALIGNING DEVICE FOR ATTACHMENTS OF AGRICULTURAL MACHINES AND THE LIKE

Reinhold Claas, August-Claas-Strasse 64, Harsewinkel, Germany

Filed Feb. 23, 1966, Ser. No. 529,383
Claims priority, application Netherlands, Feb. 22, 1965, 6502216

U.S. Cl. 56—21 **14 Claims**
Int. Cl. A01d *41/10, 41/12*



An agricultural machine having a mobile unit and a second unit to be coupled with the mobile unit, in which the units are provided with cooperating aligning means for aligning the units with each other prior to actual coupling upon movement of the mobile unit towards the second unit and with cooperating coupling means for automatically coupling the units to each other in response to alignment thereof.

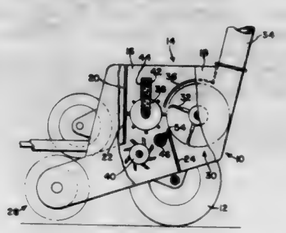
3,431,712

ENSILAGE HARVESTER

Bernhard Pröbsting, Zweibrucken, Germany, assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Feb. 5, 1968, Ser. No. 702,972
Claims priority, application Germany, Feb. 15, 1967, D 52,279

U.S. Cl. 56—23 **6 Claims**
Int. Cl. A01d *43/00, 55/18;* **B02c** *11/04*



An ensilage harvester having a transverse cylinder-type cutterhead and a forward crop pickup device, which removes the crop from the field and delivers it rearwardly to a pair of feed rolls, which feed the crop rearwardly to the cutterhead over a transverse shear bar. A relatively small smooth feed roll is disposed immediately forward of the shear bar, the forward edge of which serves as a stripper for the smooth feed roll. The smooth feed roll is adjustable with the shear bar so that the stripping function of the shear bar is unaffected when the shear bar is adjusted.

3,431,713

CROP HARVESTING AND DEWATERING MACHINE

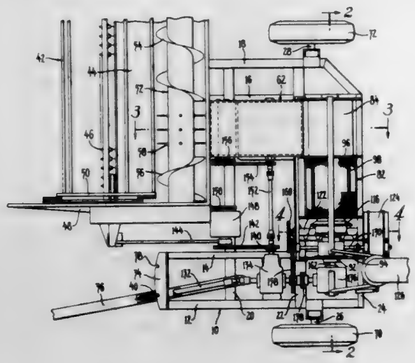
Alexander H. Mark and David R. Knicely, Livonia, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.

Filed Oct. 5, 1966, Ser. No. 584,556

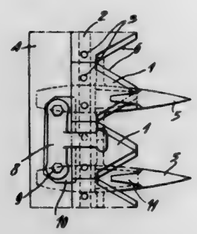
U.S. Cl. 56—23 **5 Claims**
Int. Cl. A01d *43/00, 35/00;* **B30b** *9/14*

1. A forage crop harvesting machine comprising a wheeled chassis frame, a crop cutting and conveying unit mounted on the fore part of the frame having a crop dis-

charge passage, conveying means for propelling crop through the discharge passage, a crop chopper mounted on the frame to receive and chop crop delivered through the discharge passage, a dewatering device comprising a rotary screw type press mounted on the frame to receive chopped crop directly from the chopper, the device having a forage discharge passage at the end opposite the chopper, a forage blower mounted on the frame, means for transferring forage discharged from the dewatering device to the forage blower, a power input shaft and drive means between the power input shaft and the cutting and conveying unit, the chopper, the dewatering device and the blower.

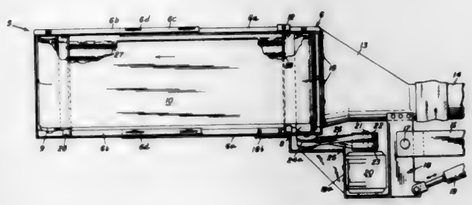


3,431,714
CUTTER BAR
Jacques Bouet, Tourcoing, Nord, France, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 23, 1965, Ser. No. 509,326
Claims priority, application France, Nov. 25, 1964, 996,301
U.S. Cl. 56—296 **15 Claims**
Int. Cl. A01d *55/02, 55/10*



A cutter bar mower having a support bar and mounted thereon seriatim disposed knife guards alternately spaced above and below said bar in lateral disposition and defining a space therebetween and the knife guards defining upper and lower cutting edges respectively adjacent said space, a reciprocating cutter comprising a plurality of laterally related coplanar knife sections having cutting edges, and said cutter constrained and reciprocated between the knife guard space wherein the cutting edges of the knife guards and the reciprocating cutter coact to produce a crop severing shear; and during the shear simultaneously produce oppositely acting forces upon the knife sections to preclude either upward or downward movement of the knife sections from their respective cooperating knife guards.

3,431,715
FRUIT HARVESTING HEAD
Eddie M. Jones, Jr., Fort Pierce, Fla., assignor to Mech-Pick, Inc., Fort Pierce, Fla., a corporation of Florida
Filed Mar. 3, 1967, Ser. No. 620,394
U.S. Cl. 56—328 **9 Claims**
Int. Cl. A01g *19/08*



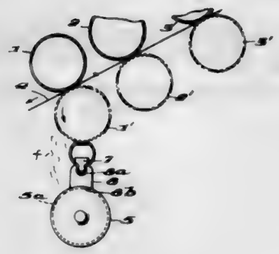
The invention is directed to a fruit picking head having a pair of opposed endless belts with adjacent runs diverging upwardly in V-shaped formation and with said adjacent runs moving in opposite directions at different speeds so as to rotate and detach the fruit from the tree.

3,431,716
PROCESS FOR PRODUCING A CRIMPED MULTIFILAMENT YARN
Johan J. Mertens, Rozendaal, Gelderland, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,360
Claims priority, application Netherlands, Oct. 16, 1964, 6412050
U.S. Cl. 57—34 **10 Claims**
Int. Cl. D01h *13/26;* **D02g** *3/02;* **D02j** *13/00*



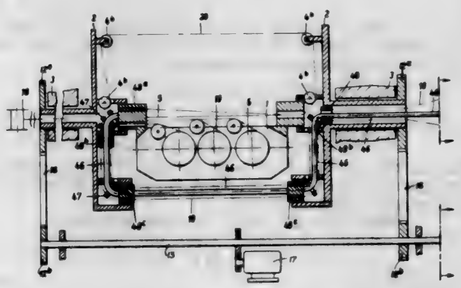
Process and apparatus for manufacturing multifilament yarn having a low elasticity and an attractive and uniform crimp. The invention is directed to a continuous treatment process wherein yarn is successively heat-set while temporarily in a state of high twist, allowed to relax and then passed to a stabilization zone while in the twisted state, with the temperature of the stabilization zone increasing linearly from the point of the yarn's entry into the zone and to the point of yarn exit from the zone.

3,431,717
SUCTION FLUTE MOUNTED WIPER DEVICE FOR DRAFTING ROLLS
William W. Avera, Winston-Salem, N.C., assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Sept. 12, 1966, Ser. No. 578,829
U.S. Cl. 57—34.5 **3 Claims**
Int. Cl. D01h *11/00*



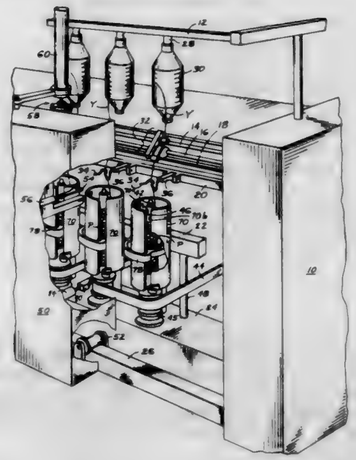
A device for wiping off the surface of drafting rolls on textile machines comprises a two part snap-in support structure composed of interfitting male and female members between which a wiper sleeve of the same length as the support structure is frictionally clamped. The support structure together with the wiper sleeve is mounted on a suction flute positioned adjacent the rolls to pneumatically remove loose lint and other fly material in the air.

3,431,718
METHOD AND MACHINES FOR TWISTING TOGETHER STRANDS OF MATERIAL
Wilhelm Hofrichter, Bramsche, near Osnabruck, Germany, assignor to E. Vornbaumen & Co., Iburg, near Osnabruck, Germany
Filed Feb. 11, 1965, Ser. No. 431,807
Claims priority, application Germany, Feb. 18, 1964, V 25,423; Mar. 14, 1964, V 25,609; Jan. 28, 1965, V 27,634, V 27,635
U.S. Cl. 57—59 **6 Claims**
Int. Cl. D01h *7/02;* **D07b** *3/02;* **D02g**



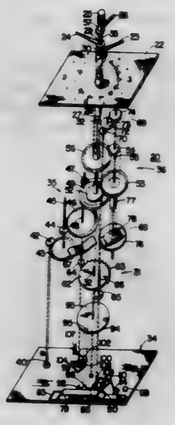
Strands of material are led from a stationary real carrier in a reverse axial direction, then rotated and twisted as a group with a reel carrier support and finally led in the forward axial direction into a twisting head rotating with the same rotational sense as the carrier support, but at twice its rotational speed. The strands exiting from the twisting head enter a compression die where twisting of the strands is accomplished. The strands experience no intertwisting and no net intratwisting in their passage from the reel carrier to the compression die.

3,431,719
APPARATUS FOR PROCESSING YARN
Charles C. Bell, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 26, 1967, Ser. No. 656,158
U.S. Cl. 57—108 **36 Claims**
Int. Cl. D01h *13/04, 7/52, 13/26*



Apparatus for controlling ballooning of yarn being twisted and wound on a textile machine having ring and traveler means. The take-up package is surrounded by a tube which is operative to permit servicing of the yarn traveler within said tube. Alternately, the tube may be removed automatically to expose the traveler for servicing, or the ring and traveler may be automatically displaced beyond the confines of the tube for servicing.

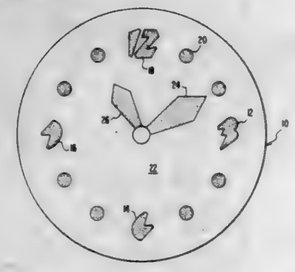
3,431,720
DUAL SCALE INTERVAL TIMER
William J. Ehner, Louisville, Ky., and Gerhard K. Losert, Morrison, Ill., assignors to General Electric Company, a corporation of New York
Filed Mar. 10, 1966, Ser. No. 533,354
U.S. Cl. 58—22.9 **8 Claims**
Int. Cl. G04f *3/02*



A dual scale interval timer having a dial with first and second sequentially arranged time scales thereon. A rotatable time indicating member is provided having a sector gear of predetermined angular extent connected

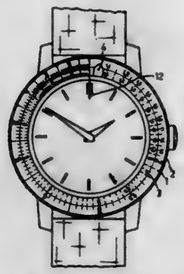
thereto, the time indicating member and sector gear being manually rotatable in one direction from a zero time setting at the end of the second scale to a selected timed interval setting. First and second driving pinions are provided arranged to be successively meshed, one at a time, with the sector gear to drive the time indicating member from the selected timed interval setting to the zero time setting in a direction opposite the one direction so as to measure the selected timed interval, the first pinion being in mesh and the second pinion being out of mesh with the sector gear at the selected timed interval setting. A synchronous motor is coupled by a gear train to the driving pinions to drive them at first and second predetermined speeds, respectively. The first driving pinion initially drives the sector gear and the time indicating member from the selected timed interval setting on the first time scale at the first predetermined speed to the starting end of the second time scale at which point the second pinion moves into mesh and the first pinion moves out of mesh with the sector gear.

3,431,721
TIMEPIECE
James R. Slaugh, Manheim, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 609,607, Jan. 16, 1967. This application June 20, 1967, Ser. No. 647,434
U.S. Cl. 58—127 **9 Claims**
Int. Cl. G04b *19/12*



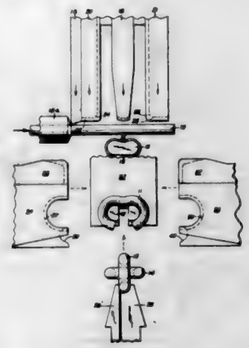
This invention relates to timepieces and more particularly to timepieces such as watches having dials which are readable under all light conditions.

3,431,722
TIMEPIECE CASE
Peter Haas, Tenero, Switzerland, assignor to Sindace S.A., Locarno, Switzerland, a company of Switzerland
Filed July 27, 1967, Ser. No. 656,591
U.S. Cl. 58—152 **8 Claims**
Int. Cl. G04b *47/06, 37/12*



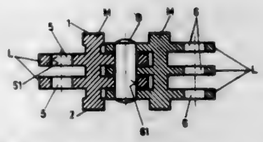
Timepiece case having outside its crystal two concentric graduated bezels rotatably mounted on the case by means of a spring housed in two annular grooves, one made in the bezel the other made in the case in such a way that the two bezels can turn independently one of the other for the purpose of making slide rule calculations and wherein one of the annular grooves of the case cooperating with the outer bezel is disposed at least partially under the inner bezel.

3,431,723
CHAIN MAKING MACHINES
Wilhelm Wattler, Gottesweg 10, Cologne-Zollstock, Germany
Continuation-in-part of application Ser. No. 101,573, Apr. 7, 1961. This application July 17, 1964, Ser. No. 383,483
Claims priority, application Germany, Apr. 14, 1960, M 45,008
U.S. Cl. 59—25 **6 Claims**
Int. Cl. B21l *1/04*



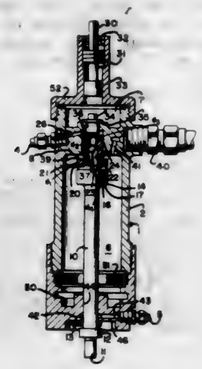
A chain making machine wherein a cut piece of wire is bent downwardly about a grooved mandrel by means of grooved bending irons, while the bight of the wire is held in a concavity in the grooved mandrel by a clamping member. The bending irons move to a position beyond the grooved mandrel to bring the ends of the wire into parallelism, then withdraw. Side irons then move inwardly to bend the ends of the wires toward each other. Both the bending irons and the side irons are provided with grooves at the ends and sides adjacent the grooved mandrel. The grooves of each of the bending irons and side irons merge on an arch or smooth curve, and provide a space in excess of the diameter of the wire so that no stress other than bending stresses can be applied to the wire. Means is provided to move the link to an assembly mandrel where the link is closed by grooved die means onto a previously formed link.

3,431,724
ONE-PIECE CHAIN LINK
Herbert Steuer, Bad Homburg vor der Hohe, Germany, assignor to Reimers-Getriebe A.G., Zug, Switzerland, a corporation of Switzerland
Filed July 27, 1966, Ser. No. 568,167
Claims priority, application Germany, July 29, 1965, R 41,192
U.S. Cl. 59—35 **6 Claims**
Int. Cl. B21l *17/00*



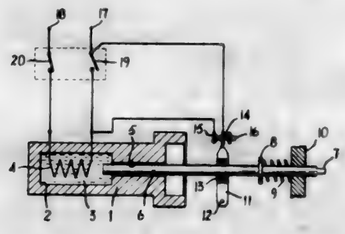
A one-piece link for an endless chain adapted to run between pairs of conical pulley discs in an infinitely variable transmission has a central friction-transmitting part provided with a hard wear-resistant surface. The link has side bars with bores therein adapted to receive pins passing through the bore and through bores in the side bars of other links. The side bars of adjacent interconnected links are stretched beyond the stretch-strain limit of the material to such an extent that the bores will be in alignment.

3,431,725
HIGH ENERGY RATE ACTUATOR
Hsin Sheng Chen, Somerset, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 1, 1967, Ser. No. 613,259
U.S. Cl. 60—1 **13 Claims**
Int. Cl. F15b *13/04, 15/17*



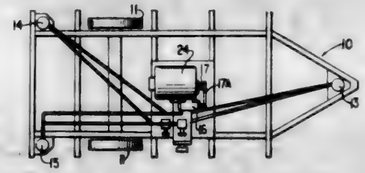
A high energy rate actuator which moves a ram at high speed to deliver an impact to a workpiece. A chamber filled with liquid is pressurized and a seal is formed between a triggering piston and the ram. The seal is broken and the liquid under pressure acts on the ram to impel it forward at high speed. The device may be preloaded to a varying degree by means of a hydraulic loading spring to vary the speed and impacting energy of the ram.

3,431,726
SERVOMOTOR
Kristian Iversen, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed June 28, 1967, Ser. No. 649,568
Claims priority, application Germany, July 2, 1966, D 50,456
U.S. Cl. 60—23 **6 Claims**
Int. Cl. F03g *7/06;* **F15b** *11/10, 13/044*



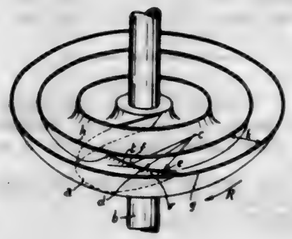
A servomotor having a piston actuated by a pressure fluid and restored by a spring. An electrical control circuit controls application of the pressure fluid to the piston and is opened and closed by a switch operable under control of the piston or other switches. The switch controlled by the piston has a movable contact mounted on a pivoted lever rocked by the piston through a friction coupling effectively maintaining the piston at one selected position, of many possible positions, intermediate two possible ultimate terminal positions thereof.

3,431,727
JACK ARRANGEMENT FOR TRAILERS
Eugene V. Grumman, 1337 Burr St., Fairfield, Conn. 06430
Continuation-in-part of application Ser. No. 504,974, Oct. 24, 1965. This application Jan. 18, 1968, Ser. No. 698,884
U.S. Cl. 60—52 **9 Claims**
Int. Cl. F15b *13/06;* **B60s** *9/10*



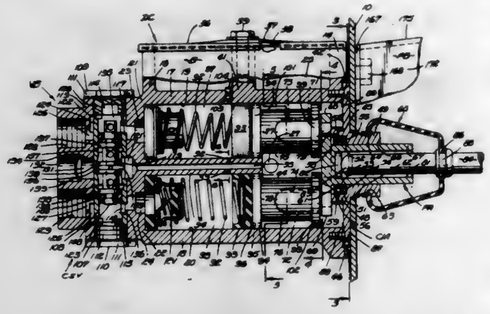
A jack arrangement for supporting a trailer, the jacks being operated by supplying fluid pressure thereto, the fluid pressure being controlled by a rotary cylinder in which the piston of a pump reciprocates and means are provided to compensate for surge, overpressure, and cavitation effects; also, a means for sensing level can be included.

3,431,728
HYDRODYNAMIC TRANSMMISSION DEVICES
Alexandre Bezimensky, 39 Rue de Boulainvilliers, Paris, France
Filed Oct. 23, 1967, Ser. No. 677,146
Claims priority, application France, Oct. 29, 1966, 82,111
U.S. Cl. 60—54 **5 Claims**
Int. Cl. F16d *33/00*



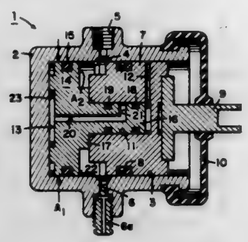
Hydrodynamic transmission device such as a coupler or a torque converter, which comprises a pump and a turbine of the vane type arranged to constitute a toroidal fluid circuit, characterised in that the configuration of the leading edge of the turbine vanes is obtained from the fictitious sheet formed by the vectors representing a mean fluid stream issuing from the pump and taken under different angles of attack of the turbine for the range of relative velocities of the turbine with respect to a normal given pump driving velocity, said configuration being furthermore obtained by causing said sheet to revolve about the mean vector to bring same in the plane of the inlet opening of the turbine, the edge of said sheet then representing the configuration of the leading edge.

3,431,729
DUAL MASTER BRAKE CYLINDER WITH WARNING SIGNAL SYSTEM
Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn Heights, Mountain Lake Park, Md. 21550
Filed Dec. 5, 1966, Ser. No. 599,200
U.S. Cl. 60—54.5 21 Claims
Int. Cl. F15b 7/00; B60t 11/10, 15/46



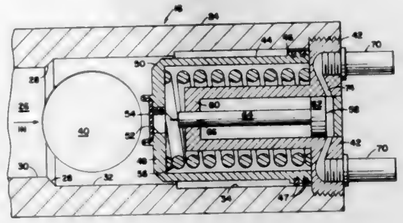
7. In combination with a dual master brake cylinder for actuating vehicular front and rear wheel brake cylinders via separate fluid-transmitting lines, respectively, normally under a predetermined residual pressure: a fluid-compensating valve device operatively communicating with said fluid lines, said valve device having a valve element movable under a pressure differential created by loss of fluid from one or the other of said fluid lines, within a fluid compensating range defined substantially by two opposing extremes; switch mechanism having interposition with respect to an energizable electric circuit and provided with an element normally disposed in open-contact condition when said valve element is movably positioned within its compensating range short of said extremes, and actuatable to closed-contact condition; an energizable signaling element in said circuit and controllable by said switch element; and a pair of spaced control portions on said valve element selectively engageable with said switch element to effect actuation thereof to closed-contact condition to energize said signaling element upon said valve element moving to one or the other of its extremes as a function of said pressure differential existing in said fluid lines, and thereby indicating that one or the other of said fluid lines is losing fluid.

3,431,730
ADJUSTING MECHANISM
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 604,061
U.S. Cl. 60—54.6 17 Claims
Int. Cl. F15b 15/08; F16d 65/72



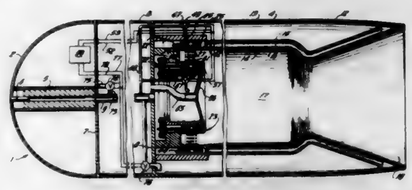
A hydraulic adjusting mechanism for maintaining a predetermined distance between a brake shoe and a brake drum which is provided with an expansible trapped pressure fluid chamber that is supplied additional pressure fluid as the brake lining wears, and the pressure fluid in the expanded chamber serves as a fluid stop to limit the return movement of the brake shoe away from the brake drum to the predetermined distance. The supply of the additional pressure fluid to the expansible chamber is controlled by a valve member which has opposed fluid pressure areas to provide positive movement thereof toward an adjusted position to trap the additional pressure fluid in the expansible chamber and the valve member opens a bypass passage upon the expansion of the chamber beyond a predetermined amount to limit the amount of adjustment of the brake shoe.

3,431,731
POPPET VALVE DEVICE
DeLacy F. Ferris, Van Nuys, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 27, 1967, Ser. No. 671,166
U.S. Cl. 60—225 7 Claims
Int. Cl. F02k 9/06, 3/00; F16k 13/04



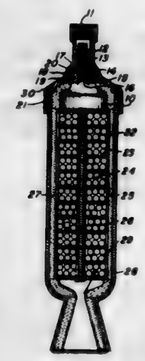
A spring-loaded poppet valve formed in its seating portion with a central opening closed by a rupturable diaphragm secured thereto. The poppet valve is responsive to fluid pressure conditions in the manifold for moving the same to an open position. A diaphragm punch disposed in coaxial alignment with the rupturable diaphragm is actuated by squib means to rupture the diaphragm thereby establishing a balanced condition and allowing the spring to move the poppet to a closed position. Damping is provided by an annular damping cavity and by restrictive flow through the diaphragm passage.

3,431,732
CONTROL FOR BIPROPELLANTS IN ROCKET ENGINE
Joseph J. Lovingham, Madison, and Henry J. Sossong, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 611,028
U.S. Cl. 60—247 12 Claims
Int. Cl. F02k 9/02; F16k 3/02



In a system for controlling flow of liquids, and especially bipropellants to the combustion chamber of a rocket engine, a value having a slide to cover and uncover successive ports and a flexible sleeve controlled by motive fluid to cover and uncover ports underlying the slide for varying periods to produce continuous and/or intermittent pulses of flow.

3,431,733
TWO-STEP ROCKET PROPELLANT INJECTION SYSTEM
Joseph T. Hamrick, 6364 Jae Valley Road SE., Roanoke, Va. 24014
Filed July 5, 1966, Ser. No. 562,904
U.S. Cl. 60—258 1 Claim
Int. Cl. F02k 9/02; F02g 3/00



The invention consists of a combination monopropellant injector and catalyst bed system which initially restricts the monopropellant flow to the catalyst bed chamber allowing a gradual build up of temperature and pressure due to decomposition of the monopropellant. Once adequate pressure is generated an annular valve piston is actuated which permits normal rated flow to the chamber.

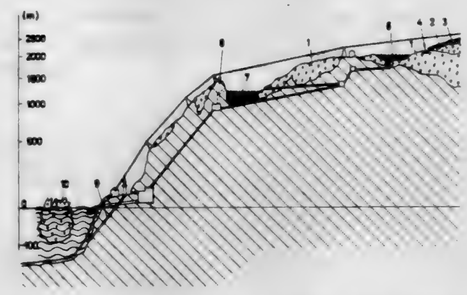
3,431,734
TOTALLY OR PARTIALLY PREFABRICATED STRUCTURE BAR-DAM FOR THE PROTECTION OF HARBORS
Giuseppe Vattuone, 11 Via Rovereto, Rome, Italy
Filed Aug. 22, 1966, Ser. No. 573,927
Claims priority, application Italy, June 13, 1966, 13,465/66
U.S. Cl. 61—4 9 Claims
Int. Cl. E02b 3/04



A harbor protecting bar-dam comprising a cellular structure adapted for resting on the sea bottom, and provided with an upper wave resolution surface carrying a plurality of spaced resistance elements. The wave resolution surface is inclined so as to extend upwards from an immersed point located at the outer end to a point above the level of the sea at its inner end.

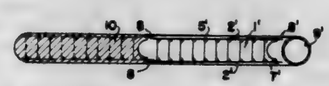
3,431,735
POWERPLANTS AND WATER SUPPLY SYSTEM THEREFOR WITHIN THE ETERNAL ICE
Hans Stauber, Witikonerstrasse 65, Zurich, Switzerland
Filed Oct. 5, 1964, Ser. No. 401,595
Claims priority, application Germany, Oct. 9, 1963, St 21,164
U.S. Cl. 61—19 14 Claims
Int. Cl. E02b 9/00, 3/00; E03b 1/00

1. A method of developing and erecting a powerplant and a system for collecting the water for the operation of said plant within the area of the eternal ice of glaciers, comprising the steps of forming a water-containing reservoir in the eternal ice, extending a gravity pressure conduit from said reservoir to said plant located at a lower level than said reservoir, and forming in the surface of the ice within an area above said reservoir a system of shallow channels for collecting the water from melted



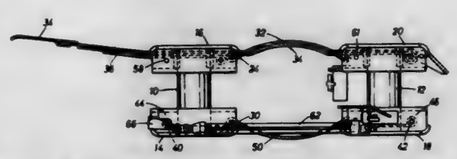
ice and snow and establishing a gravity flow within said channels for conducting said water of said system to said reservoir, said reservoir and said channels being deepened and enlarged during the warmer season by heat from solar radiation, by the erosion by the flow of water, and by the heat transfer from said water, thereby increasing the flow of water conducted to said reservoir.

3,431,736
METHOD OF CONSTRUCTING UNDERGROUND CONCRETE WALLS
Shinhachiro Ueda, Hyogo-ken, Japan
Filed Feb. 6, 1967, Ser. No. 614,253
Claims priority, application Japan, Feb. 12, 1966, 41/8,236
U.S. Cl. 61—35 8 Claims
Int. Cl. E02d 5/10; E04b 1/16; E04g 21/12



A method of constructing a continuous reinforced concrete underground wall structure in an excavated trench filled with a bentonite solution used to support the trench wall, wherein a reinforcement basket having a partition at one end is placed in said trench, and the concrete is filled from the bottom displacing the bentonite solution, the partition serving as a means for sealing the vertical side walls of the trench.

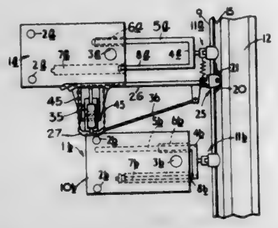
3,431,737
HYDRAULIC ROOF SUPPORTS
Lewis Robert Bower, Hillstown, near Chesterfield, England, assignor to A. G. Wild & Co. Limited, Sheffield, England, a British company
Filed Feb. 14, 1967, Ser. No. 615,988
U.S. Cl. 61—45 4 Claims
Int. Cl. E21d 15/44



An advancing mine roof support having a pair of hydraulic chocks joined by spring steel strips at floor and roof level, the strips bowed downwardly and upwardly

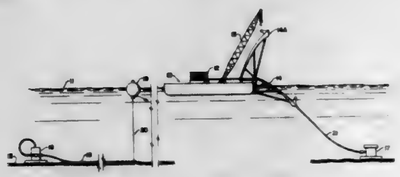
respectively and held in the chocks by pins, some of the strips extending beyond one of the chocks and connected by a plate to form a support in advance of said one chock.

3,431,738
ROOF SUPPORTING SYSTEMS FOR MINE WORKINGS
Karl Maria Groetschel, 44 Stolzestrasse, 463 Bochum, Germany
Filed June 6, 1967, Ser. No. 643,976
U.S. Cl. 61—45 **10 Claims**
Int. Cl. E21d *23/04*



This invention relates to a roof supporting system which includes a plurality of laterally spaced self-advancing roof supports each having a base, a plurality of power-operated props thereon and a roof engaging superstructure carried by the props, and guiding devices disposed between successive ones of the roof supports and engaging same by laterally presented guide faces of effective length to control the direction of advancement of the supports in contact therewith, a laterally extending anchorage member disposed in advance of the supports and guiding devices, and connecting each of the guiding devices and optionally the supports to the anchorage member, such connection means having a body affording a laterally extending guide passageway through which the anchorage member extends, and retaining means acting between the anchorage member and the body and comprising pawl and ratchet means, friction gripping means or a manually releasable clamping means arranged to provide for free movement of the anchorage member in a lateral direction being that in which the floor of the mine working slopes downwardly while preventing movement of the guiding devices and any supports connected to the anchorage member in the same direction.

3,431,739
METHOD FOR LAYING UNDERWATER PIPELINE
Thomas W. G. Richardson, Houston, Tex., Glenn D. Johnson, Downey, Calif., and Dean P. Hemphill, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,601
U.S. Cl. 61—72.3 **8 Claims**
Int. Cl. B63b *35/04;* **F16l** *1/00;* **E02f** *9/06*



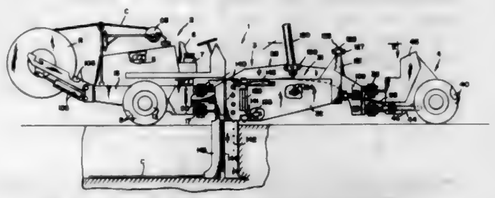
A method of laying an underwater pipeline between two fixed facilities in which pipeline segments are laid from each facility along the floor of a body of water toward the other facility, until they approximately meet, after which the two pipelines are joined at the water surface and the resultant "loop" formed by the connected pipelines is laid onto the water floor by pivoting the "loop" to one side.

3,431,740
SUBMARINE CONDUIT AND METHOD OF LAYING THE SAME
Jacques Edouard Lamy, Fontenay-aux-Roses, France, assignor to Societe d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara S.E.G.A.N.S., Paris, France, a French body corporate
Filed Nov. 10, 1966, Ser. No. 593,472
Claims priority, application France, Nov. 10, 1965, 37,900
U.S. Cl. 61—72.4 **6 Claims**
Int. Cl. B63b *35/04;* **F16l** *1/00*



Method for laying relatively heavy conduits on a bed underlying a body of water, such as the sea bed, the conduit having the buoyancy comprising a relatively heavy cable on said bed, said cable having a rear part on an assembly site and a forward part remote from said assembly site and located at a point in the direction of which said conduit is intended to extend from said assembly site. On that site, rolling devices are fixed on said conduit in spaced relation to each other, while said cable is interposed between said rolling devices and said conduit. In that manner, the rolling devices can roll along said cable by effecting a traction on the forward end of said conduit in the direction of the forward part of the cable so that the conduit is guided by said cable as it is being laid. In one embodiment, scrapers are drawn along said cable fixed between a traction cable and the end of the conduit, so as to form a trench wherein the cable and the conduit are laid.

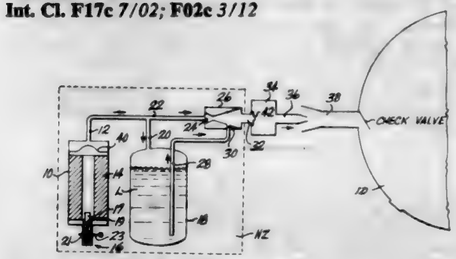
3,431,741
ARTICULATED VEHICLE
Frank R. Kinnan, Camas Valley, Oreg., assignor to Henkels and McCoy, Inc., Blue Bell, Pa., a corporation of Pennsylvania
Filed Sept. 26, 1966, Ser. No. 581,888
U.S. Cl. 61—72.6 **4 Claims**
Int. Cl. E02f *5/00;* **B63b** *35/04;* **F16l** *1/00*



The present disclosure concerns a wheel supported vehicle having forward, center and rear sections with each section being pivotally connected with its adjacent section for steering movement about the connection. An earth working instrument is disclosed in the form of a cable plow apparatus carried by the vehicle's center section and may be advantageously deployed because of the articulated nature of the vehicle. The wheels of the vehicle

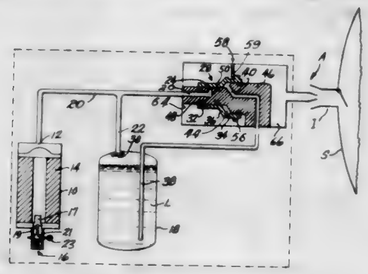
are shown to be powered by drive components which include a drive line extending intermediate the forward and rear sections.

3,431,742
GENERATION OF COOL WORKING FLUIDS
Charles J. Green, Vashon Island, Wash., assignor to Rocket Research Corp., Seattle, Wash., a corporation of Washington
Filed Jan. 9, 1967, Ser. No. 608,152
U.S. Cl. 62—52 **37 Claims**
Int. Cl. F17c *7/02;* **F02c** *3/12*



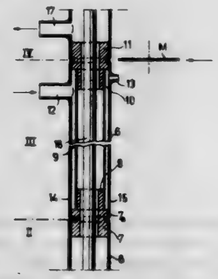
(1) Generating a cool working fluid by generating hot gases under pressure (by combustion or catalytic decomposition of a fuel, or by a bipropellant reaction) using a portion of such gases to pressure feed a liquified gas from its storage chamber into a mixing chamber, delivering the remainder of the hot gases into the mixing chamber, delaying the hot gases and the liquid in the mixing chamber long enough for the hot gases to provide the heat of vaporization for, and cause the vaporization of the liquid; (2) using as the liquid water or liquified air, liquified carbon dioxide, or a liquified, fluorinated hydrocarbon type refrigerant (e.g. Freon 22); (3) preheating the fuel and liquid to minimize problems associated with variations in ambient temperature; (4) regulating the temperature, pressure and flow rate of the generated fluid by choice of hot gas generation rate; (5) controlling the hot gas generation to cause a progressive increase in pressure of the generated fluid; and (6) entraining ambient air into the generated fluid and using the resulting mixture for inflating bags, life rafts, escape slides, etc.

3,431,743
GENERATION OF COOL WORKING FLUIDS
Charles J. Green, Vashion Island, Wash., assignor to Rocket Research Corporation, Seattle, Wash., a corporation of Washington
Continuation-in-part of application Ser. No. 608,152, Jan. 9, 1967. This application Nov. 7, 1967, Ser. No. 682,730
U.S. Cl. 62—52 **19 Claims**
Int. Cl. F17c *9/02, 7/02*



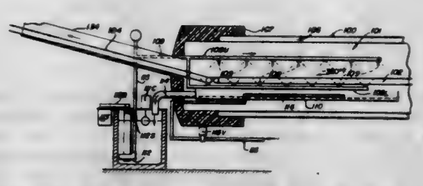
Generating hot gases under pressure, using a portion of such gases to pressure feed a liquid from its storage chamber to a mixing chamber, directing the remainder of the hot gases into counterflowing mixing contact with the liquid substantially as they both enter the mixing chamber, delaying the hot gases and liquid in the mixing chamber long enough for the hot gases to provide the heat of vaporization for, and cause the vaporization of, the liquid. A sleeve valve member initially closing the passageway leading from the hot gas generator to the mixing chamber, such valve member including a piston portion subjected to the first flow of cold liquid from the storage chamber, with such liquid opening the sleeve valve.

3,431,744
PUMP FOR LIQUEFIED GASES
Robert Veilex, Paris, and Pierre Parquet, Rueil-Malmaison, France, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,139
Claims priority, application France, Oct. 11, 1965, 34,515
U.S. Cl. 62—55 **7 Claims**
Int. Cl. F17b *7/02;* **F25d** *17/00*



A pump apparatus for circulating a fluid such as liquefied gas between a container and a system outside the container, the pump having a housing part immersible into the container, the housing defining a first tubular chamber through which a piston and rod move reciprocally and through which fluid is discharged from the container, a second outer chamber surrounding the first chamber with fluid returned to the container via the second chamber and thereby cooling the adjacent first chamber, and an envelope housing surrounding an upper part of the pump outside the container, with provision for vapor of the liquefied gas to flow from the container and the second chamber into the envelope to further cool the pump.

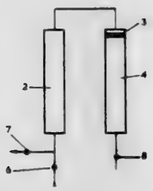
3,431,745
LIQUID NITROGEN FLASH FREEZING
John D. Harper, Elgin, Frederick Breyer, Highland Park, and Richard C. Wagner, Clarendon Hills, Ill., assignors to Integral Process Systems, Inc., a corporation of Illinois
Filed Sept. 15, 1965, Ser. No. 487,359
U.S. Cl. 62—63 **26 Claims**
Int. Cl. F25d *13/06, 17/02, 17/06*



Cryogenic flash freezing apparatus is disclosed having vacuum insulated outer and inner shells defining a main process chamber equipped with a downstream pressure fed cryogenic liquid spray discharge system having nozzles

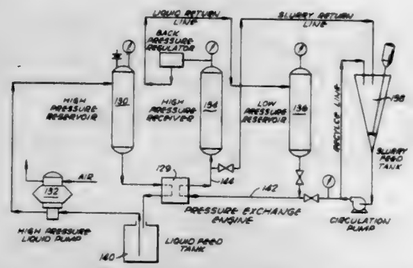
above and below the article path and spanning about ⅓ of the length of the chamber and equipped with an upstream high velocity gas circulation system acting along the remainder of the process chamber. The liquid spray discharge impinges on the articles at a mass flow rate greater than the mass rate of liquid vaporization and the excess liquid is collected, repressurized and resprayed. Make-up liquid is added directly within the chamber. All external connections are made through separately insulated end spools on the shells.

3,431,746
PULSE TUBE REFRIGERATION PROCESS
Thomas J. Webster, Ashford, and Michael E. Garrett, Addlestone, England, assignors to The British Oxygen Company Limited, a British company
Filed Feb. 14, 1967, Ser. No. 615,972
Claims priority, application Great Britain, Feb. 21, 1966, 7,543/66
U.S. Cl. 62—86 **2 Claims**
Int. Cl. F25b *9/00*



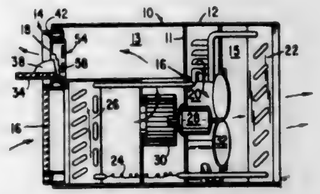
Pulse tube refrigeration process in which, in each operational cycle, warm compressed gas is displaced from the warm end of the tube by adjacent cooler gas at constant pressure. During each operational cycle an inlet valve is opened to admit compressed gas into a regenerator, a discharge valve is then opened to allow compressed gas to be displaced from the warm end of the tube, whereupon the inlet and discharge valves are closed and an outlet valve opened to permit discharge of gas returned through the regenerator.

3,431,747
ENGINE FOR EXCHANGING ENERGY BETWEEN HIGH AND LOW PRESSURE SYSTEMS
Hadi T. Hashemi, P.O. Box 2594, and Jerry L. Lott 725 Schulze St., both of Norman, Okla. 73069
Filed Dec. 1, 1966, Ser. No. 598,423
U.S. Cl. 62—123 **14 Claims**
Int. Cl. F04b *1/22;* **C02b** *1/12;* **F15b** *3/00*



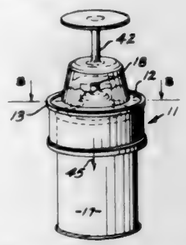
An engine for efficiently transferring energy from a fluid at a relatively high pressure to a fluid at a relatively low pressure, particularly where such fluids are solid-liquid slurries such as those used in freeze crystallization systems. The engine includes a movable member which has one or more bores therethrough, and which moves relatively to an adjacent stationary member having at least one pair of fluid inlet passageways and one pair of fluid discharge passageways therethrough opening in one or more surfaces of the stationary member which are in juxtaposition to one or more surfaces of the movable member. The openings to each of the bores through the movable member and the openings of the passageways through the stationary member are positioned in their respective surfaces so that during movement of the movable member by a suitable driving shaft, the openings at the ends of each of the bores are, in alternating sequence, brought, at one time, into concurrent registry with an inlet passageway opening at one end of the respective bore and a discharge passageway opening at the other end of the respective bore, and then, at a different time, are brought into concurrent registry with a discharge passageway opening and an inlet passageway opening at the reversed or opposite ends of each bore. A free moving piston is freely movable in each bore under the impress of fluid pressure and divides each bore into two chambers.

3,431,748
DOOR MOUNTING FOR A ROOM AIR CONDITIONER DISCHARGE OPENING
Theodore S. Bolton, Fayetteville, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,148
U.S. Cl. 62—262 **4 Claims**
Int. Cl. F24f *13/06*



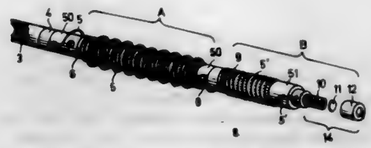
A room air conditioner in which a door covers a discharge opening, the mounting arrangement for the door permitting the door to open part way in response to fan pressure, thus preventing the conditioner being operated with the door closed which might cause icing of the evaporator coil; the mounting arrangement further allows the door to be moved manually toward fully open position. A two part molded guide vane assembly positioned rearwardly of the door is provided to control the direction of the air flow in conjunction with the door.

3,431,749
DEVICE FOR FROSTING COCKTAIL GLASSES
William E. Bounds, 1205 Pine Ave., and Elmer S. Morris, 207 S. Poinsettia Ave., both of Manhattan Beach, Calif. 90266
Filed Mar. 17, 1966, Ser. No. 535,081
U.S. Cl. 62—293 **6 Claims**
Int. Cl. F25d *3/10, 3/12, 17/02*



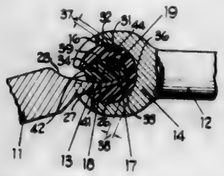
A platform-actuator assembly fits over the top of a conventional spray can filled with a cooling liquid such as Freon or carbon dioxide. The platform-actuator assembly is held on the can so that it has freedom of motion along the longitudinal axis of the can. When a cocktail glass is placed on the platform unit of the platform-actuator assembly and pressed downwardly the spray nozzle of the can is actuated and a spray dispenser directs spray from the can outwardly against the rim of the glass.

3,431,750
GAS-EXPANSION REFRIGERATOR
Marcel LeFranc, Fourqueux, France, assignor to North American Philips Company Inc., New York, N.Y., a corporation of New York
Filed Nov. 7, 1966, Ser. No. 592,507
Claims priority, application France, Dec. 2, 1965, 40,592
U.S. Cl. 62—514 **7 Claims**
Int. Cl. F25j *1/00, 5/00*



A gas-expansion refrigerator for use with pressurized gas has a thermally-insulated housing containing first and second tubes through which pressurized gas flows and is discharged through their respective first and second expansion valves. Gas discharged from one tube counterflows in heat-exchange relationship with both tubes precooling the gas therein, and gas discharged from the second tube counterflows in heat-exchange relationship with the second tube cooling the gas therein, such that the gas expands to a lower temperature from the second valve than from the first valve.

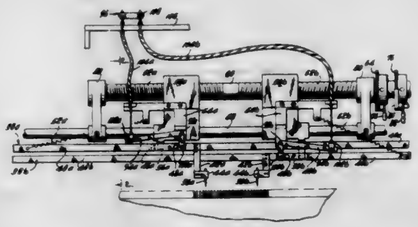
3,431,751
ANTI-BACKLASH UNIVERSAL JOINT
Raymond E. Stokely, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 14, 1967, Ser. No. 667,684
U.S. Cl. 64—7 **5 Claims**
Int. Cl. F16d *3/76;* **F16c** *11/06;* **F16b** *7/00*



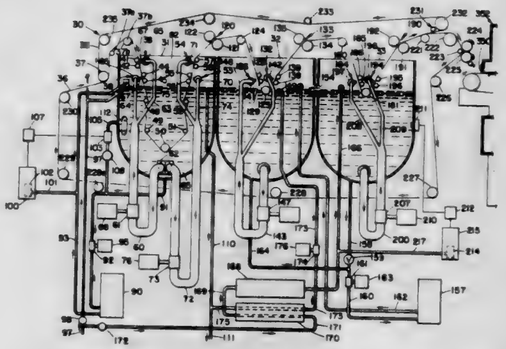
An anti-backlash universal joint is provided with a spring biased wedge block which simultaneously urges a tang projecting from one rotary member into engagement with a channel in a bushing while expanding the bushing into engagement with a cylindrical socket in the other rotary member thus continuously compensating for wear of the rubbing surfaces.

3,431,752
CABLE KNITTING METHOD AND APPARATUS
Ishmael Crawford, Fort Lauderdale, Fla., assignor to Colebrook Mills, Inc., Hialeah, Fla., a corporation of Delaware
Filed Aug. 12, 1966, Ser. No. 572,144
U.S. Cl. 66—96 **17 Claims**
Int. Cl. D04b *15/04*

A cable knitting method and apparatus. A series of loops are transposed from an initial series of at least four wales to other wales while at least two of these loops are displaced across different numbers of wales, respectively, in a manner leaving a non-central wale empty of loops, so that on one side of the empty wale there is at least one more loop-occupied wale than on the opposite side. The cable points are shifted along lateral strokes equal to a distance of one, two, and three wales, and the shifting means for shifting the points includes one mechanism for carrying out strokes of one and two wales, while a second mechanism is provided for carrying out an additional stroke of one wale which when added to the stroke of the two wales provides the stroke of three wales.



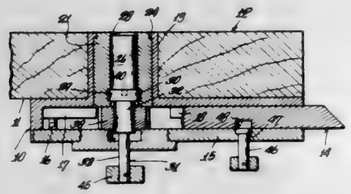
3,431,753
APPARATUS FOR CLEANING SOILED MATERIALS
John D. Glenn and Owen G. Robbins, Dallas, Warren C. Schwemer, Arlington, and Joseph R. Silverman, Dallas, Tex., assignors, by mesne assignments, to Jet Stream Products, Inc., Reno, Nev., a corporation of Nevada
Filed May 18, 1964, Ser. No. 368,038
U.S. Cl. 68—9 **3 Claims**
Int. Cl. D06f *31/00, 41/00*



1. An apparatus for washing soiled material including; a wash tank; a plurality of rinse tanks; a pair of foraminous belt means for moving soiled materials in a flat condition therebetween sequentially through said wash tank and said rinse tanks; a pair of nozzle means disposed on opposite sides of said belt means and above a liquid in each of said tanks; means for circulating a wash liquid from said wash tank to the pair of nozzle means associated with the wash tank for directing vertically spaced substantially horizontal jet streams of wash liquid to opposite sides of the material prior to its movement into the wash liquid in said wash tank, each of said rinse tanks having means for circulating a rinse liquid from each rinse tank to the nozzle means associated with each rinse tank for directing vertically spaced substantially horizontal jet streams of rinse liquid to opposite sides of the material; means for removing liquids from the material prior to the movement of the material from each of said tanks, said liquid removing means compris-

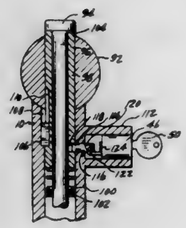
ing a pair of wringer rollers between which the belt means moves, said rollers compressing the material carried thereby; and stripper means for separating the material from said belt means after said belt means move said material past the liquid removing means of the last of said rinse tanks, one of said stripper means comprising roller means over which one of said belt means moves, said roller means having means extendable through openings of said foraminous belt means and engageable with material carried by the belt means to free the material from the belt means.

3,431,754
LOCK CONSTRUCTION
Clifton B. Brumelle, 2742 Park Ave. W., Mansfield, Ohio 44906
Filed Feb. 7, 1967, Ser. No. 614,510
U.S. Cl. 70—144 **7 Claims**
Int. Cl. E05b *55/02, 9/04*



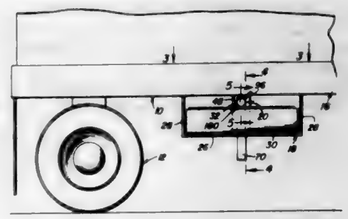
A lock construction operated from one side of an enclosure in which it is installed by means of a key in which the key-receptive portion of the mechanism may quickly be changed by substitution but only from the opposite side of the enclosure.

3,431,755
MOTOR VEHICLE LOCK
Arnold Eisenman, 18636 Cherrylawn, Detroit, Mich. 48221
Filed Feb. 16, 1967, Ser. No. 616,522
U.S. Cl. 70—181 **3 Claims**
Int. Cl. G05g *5/00;* **B60r** *25/06;* **E05b** *65/12*



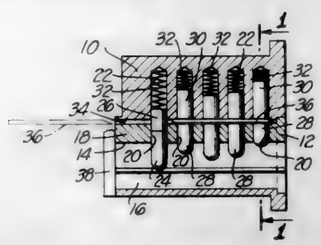
A locking mechanism for preventing the control or shift lever of a motor vehicle from being manually displaced from a latched position to an unlatched position permitting the lever to shift the transmission by angular displacement to predetermined positions. A restraining member is engaged with a portion of the lever or with the unlatching means to hold the lever in a latched position when a lock, to which the restraining member is operatively connected, is locked. When the lock is unlocked the restraining member is disengaged from the lever or from the latching means and permits the lever to be unlatched.

3,431,756
TRUCK SPARE TIRE LOCK
Louis V. Fennell, 141 Carter Lake Club, Carter Lake, Iowa
Filed Nov. 21, 1966, Ser. No. 595,818
U.S. Cl. 70—259 **11 Claims**
Int. Cl. E05b *65/12, 19/00;* **B62d** *43/00*



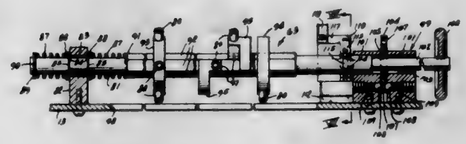
A locking mechanism including an elongated passage defining member open at one end and including a locking member disposed at the other end portion shiftable laterally of the passage between locked and unlocked positions. A latch member is disposed and enclosed within the passage for guided movement therealong between a locked position operatively associated with the locking member to prevent its movement from its locked position toward its unlocked position and an unlocked position allowing movement of the locking member to its unlocked position and a long neck key is provided and insertable into the open end of the passage and engageable with the latch member for shifting the latter between its locked and unlocked position.

3,431,757
MULTIPLE KEY LOCK HAVING CHANGE KEY MECHANISM
Hideo Hori, 2–5–2 Shimbashi Minatoku, Tokyo, Japan
Filed Aug. 29, 1967, Ser. No. 664,082
Claims priority, application Japan, Sept. 5, 1966, 41/58,221
U.S. Cl. 70—383 **15 Claims**
Int. Cl. E05b *25/00, 19/04*



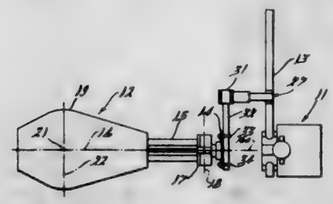
A conventional pin-type, key operated lock having a blocking needle originally positioned in a cavity in the shell adjacent the rotatable core blocking certain inoperable pins, with the shell parts thereof inoperable in the shell and free of blocking a remaining operable pin. An original master key properly positions the operable pin and the core pin parts of the inoperable pins for rotation of the core while a back key surface prevents the blocking needle from moving radially into the key slot during core rotation. A change key is functionally identical to the master key, except for a recess on its back surface receiving the blocking needle therein for removal from the core with the change key. This frees all of the pins for subsequent rotation of the core only by a properly formed final key.

3,431,758
POWER BENDING MACHINE AND CONTROL MEANS THEREFOR
Paul C. Nelson and Leon E. Rutz, Lake City, Minn., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Apr. 4, 1967, Ser. No. 628,397
U.S. Cl. 72—2 **22 Claims**
Int. Cl. B21d *55/00;* **B21j** *7/26;* **B30b** *15/00*



A power bending machine has its bending pin-mounting plate spindle directly driven reversibly by a rotary actuator hydraulic motor controlled by a manual lever through a link to rock a cross arm of a directional selector carrying trip dogs which responsively motivate a two-arm bell crank to open a normally closed control valve in the hydraulic supply circuit. A calibration index and an abutment are driven by the motor. Respective adjustable stops on a reciprocably and rotatably indexibly mounted gage bar are engageable by the abutment to shift the bar and actuate a link to rock a tripper which disengages the operational dog from the bell crank for deactivating the selector, closing the control valve, and stopping the motor.

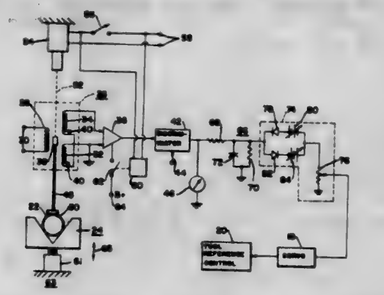
3,431,759
FORMING APPARATUS
Edward H. Kidera, Lake Villa, Ill., and Warren Kurth, Racine, and David J. Whittingham, Franksville, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,425
U.S. Cl. 72—7 **13 Claims**
Int. Cl. B21d *9/12*



A program controlled manipulator is provided with jaws to grip a pipe to be bent, position it in and remove it from a pipe bender, and has six degrees of freedom for grasping or positioning the pipe in various positions.

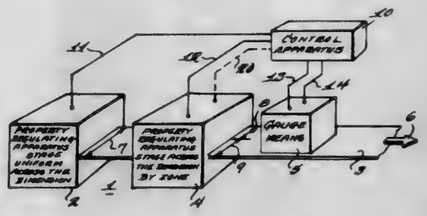
3,431,760
ANALOG MEASURING APPARATUS
Alexander E. Martens, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Aug. 24, 1966, Ser. No. 574,666
U.S. Cl. 72—9 **15 Claims**
Int. Cl. G05d *5/03;* **G06c** *29/00*

An electrical transducer receives devices to be measured having a desired dimension and variations thereabout and provides electrical signals corresponding to the measured dimension. The electrical signals are converted into direct current signal having an amplitude and polarity depending upon the dimension of the device as a function of the desired dimension. The direct current signal



is averaged to provide an output signal that varies in amplitude as a function of average dimensions over a plurality of measurements.

3,431,761
TWO-DIMENSIONAL MATERIAL PROPERTY CONTROL SYSTEM
John C. Clement, Devon, Pa., assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Mar. 25, 1964, Ser. No. 354,727
U.S. Cl. 72—9 **18 Claims**
Int. Cl. B21b *37/02, 37/14*



1. A method of maintaining a uniform property across a material dimension using apparatus having at least one control operable to vary separately the property in a zone partially across the material dimension and another control operable to vary uniformly the property across the material dimension including said zone and an adjacent zone, comprising the steps of,

measuring the property in each of said zones,

comparing the measured property in each of said zones,

adjusting only said at least one control to change the property in its respective zone to equal the property measured in said adjacent zone,

comparing the measured property in one of said zones with a property target,

adjusting said another control to change uniformly the property across the material dimension from said measured property to said target property.

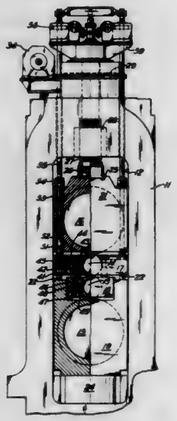
4. Control apparatus for a regulator apparatus having means for separately regulating the property in an individual zone partially across a dimension of the material and means for uniformly regulating the property across the material dimension including said individual zone and an adjacent zone, the control apparatus comprising,

gauge means for indicating the property in said individual and adjacent zones, and

control means coupled to said gauge means to compare the indicated property in said individual and adjacent zones and to initiate a control action only by said separately regulating means that changes the property in said individual zone to make the indicated property in said individual zone substantially equal to the indicated property in said ad-

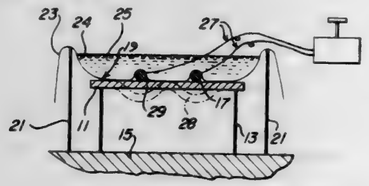
jacent zone, and to compare the indicated property in one of said individual and adjacent zones with a target property and to initiate a control action by said uniformly regulating means that changes the property uniformly across the material dimension to said target property.

3,431,762
CONSTANT GAP ROLLING MILL
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 22, 1966, Ser. No. 559,474
Claims priority, application Great Britain, July 5, 1965, 28,443/65
U.S. Cl. 72—19 **10 Claims**
Int. Cl. B21b *37/08, 31/20, 31/16*



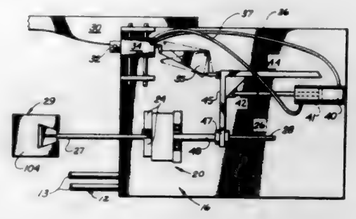
The disclosure of this invention relates to a rolling mill comprising a housing receiving a pair of work rolls with bearing chocks and backup rolls for each work roll with bearing chocks. The mill also includes a screwdown mechanism for the work rolls that engages and extends between the work roll chocks. A load reading device is located in one work roll chock for measuring a change in the rolling load between the work rolls. A separate screwdown mechanism provides for the backup rolls which engage the chocks thereof.

3,431,763
EXPLOSIVE FORMATION
Gilbert C. Whitney, Jr., Dansville, N.Y., and Joseph W. Schroeder, Clark, N.J., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,647
U.S. Cl. 72—56 **10 Claims**
Int. Cl. B21d *26/08*



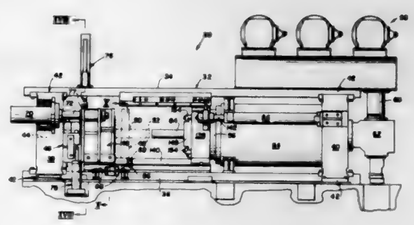
A process for the explosive formation of ductile material into predetermined shapes in which an explosive charge is placed on the ductile material and a flexible envelope is disposed over the ductile material. The flexible envelope is capable of confining a force-transmitting liquid medium.

3,431,764
TUBE TAPERING ROLLER CHUCK
Clifford F. Kennedy, Simi, and Thomas M. Shelton, Glendale, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,168
U.S. Cl. 72—78 **14 Claims**
Int. Cl. B21d *3/00, 3/04;* **B21b** *19/02*



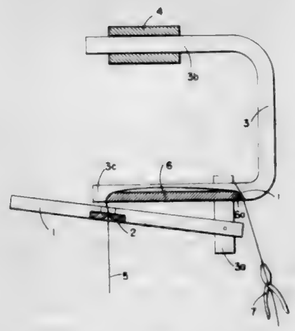
Apparatus for tapering the walls of tubes being drawn under constant tension through a plurality of adjustable roller dies whose axes are inclined to the tube axis. The dies have concavely contoured peripheries that make spiral line contact with the tube periphery during tapering.

3,431,765
HYDRAULIC EXTRUSION PRESS
Daniel L. Lombard, Youngstown, Ohio, assignor to Lombard Corporation, Youngstown, Ohio, a corporation of Ohio
Filed Oct. 14, 1964, Ser. No. 403,836
U.S. Cl. 72—255 **29 Claims**
Int. Cl. B21c *23/21, 35/04*



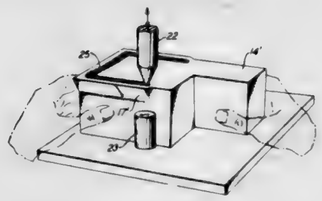
This patent discloses a hydraulic extrusion press having certain desirable features. In place of the forged steel columns that are usually used to restrain the forces separating the cylinder and the die, there are used horizontal slab members, which may be substantially unmachined to save expense, and which are keyed to vertical slab members associated with the die and the cylinder. The patent further discloses the press as having a hydraulic cylinder formed of two tubes, one nested within the other, so that it is possible to use appropriately finished heavy-walled tubing rather than a single-wall cylinder that would need to be specially manufactured. The patent further discloses means for moving the ram associated with the piston rod to a position outboard of the press, to facilitate its replacement; this means comprises a hydraulic cylinder mounted on a carriage pivoted at one end, the other end being movable along an arcuate track from an inoperative position to an operative position. The patent further discloses a billet container adjustable both horizontally and vertically about its operative position and a billet loader movable by means of a pair of coplanar arms operating in a pantograph-like fashion (so that the billet loader is held level during movement) to a position outboard of the press. To facilitate changing of the liner of the billet container, the billet container is also made movable to a position outboard of the press. Means for removing the butt and dummy block and means for changing dies are also disclosed. With the features described, there is provided a press that is versatile and convenient to use, and relatively inexpensive to manufacture.

3,431,766
DEVICE FOR DRAWING WIRE WHICH ELIMINATES CHATTER
Donald K. Deardorff, Corvallis, Oreg., assignor to the United States of America as represented by the Secretary of Interior
Filed June 15, 1966, Ser. No. 558,222
U.S. Cl. 72—285 **4 Claims**
Int. Cl. B21c *1/20, 1/34*



A wire to be drawn is held at one end by pliers. At a point spaced from this one end, the wire is held by a die which can be reciprocated. Inbetween the die and pliers, the wire lies against the cam surface of a freely pivotable cam. When said one end of the wire is held in place with the pliers and the die is moved to pull the wire in an opposing direction, the wire pulls against the cam surface and moves the cam towards a cam follower which movement results in locking the wire between the cam and follower. Further movement of the die in said opposing direction draws the wire.

3,431,767
METHOD FOR MAKING DIES
Roswald M. Peterson, 85 Weston Ave., Chatham, N.J. 07928
Filed June 24, 1966, Ser. No. 560,333
U.S. Cl. 72—327 **1 Claim**
Int. Cl. B21d *31/02*



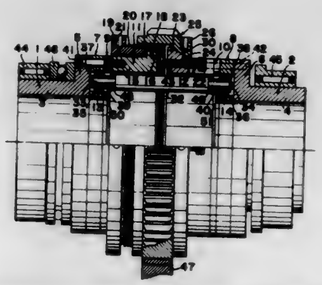
A floating punch to be removably mounted in a punch press is made by machining a die member to the desired configuration, mounting a peening tool in the ram of a high reciprocating frequency punch press, abutting a vertical surface of the die against a stop which is displaced from the axial path of the peening tool by a distance that is small with respect to the major dimensions of the die member, causing the peening tool to reciprocate and to repeatedly peen at a high frequency the upper surface of the die member, thereby deforming the upper surface at its periphery, and maintaining the vertical surface of the die member in abutment with the stop while sliding the vertical surface past the stop and rotating the die member through one rotation at an appropriate rate to cause successive deformations to overlap, thereby forming a continuous flange along the die member periphery at its upper surface.

3,431,768
STOCK FEED MECHANISM FOR FORGING MACHINES AND THE LIKE
Albert R. Kull, Beachwood, and Peter P. Rettig, Wickliffe, Ohio, assignors to The Ajax Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed July 29, 1966, Ser. No. 568,871
U.S. Cl. 72—419 **11 Claims**
Int. Cl. B21d *43/00;* **B23q** *5/22*



A stock feed mechanism for forging machines and the like which includes a reciprocating carriage which has thereon at least two pusher fingers laterally and longitudinally offset from each other with a device to shift stock from a position axially aligned with one finger to a position axially aligned with the other so that the carriage will be operative to push stock longitudinally into the machine by successive forward strokes of the carriage.

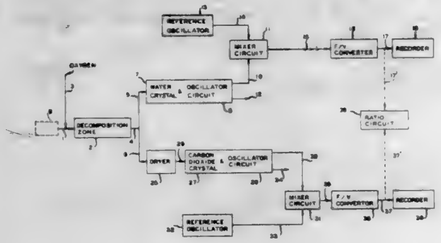
3,431,769
ADJUSTABLE DRAWING DIE
Kiyoshi Hajikano, No. 8, 3-chome, Sendagaya, Shibuya-ku, Tokyo, Japan
Filed Oct. 5, 1966, Ser. No. 584,449
Claims priority, application Japan, Oct. 8, 1965, 40/61,347
U.S. Cl. 72—468 **5 Claims**
Int. Cl. B21c *3/06;* **B21d** *3/00*



An adjustable drawing die in which a plurality of cylindrical rolls are pivotably mounted at their ends in a pair of supporting members which are rotatably and axially displaceable relative to one another, the rolls being arranged in an annular array around the axis of their supporting members to cooperatively define a surface bounding an internal die opening such that as said members are relatively displaced, the surface defined by the rolls can be varied between an initial surface which is cylindrical

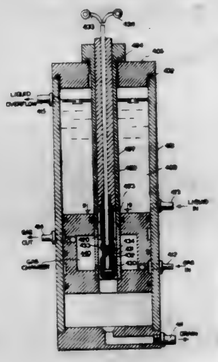
or conical and hyperboloidal surfaces with various size die openings. The support members can be locked, to in turn lock the rolls in their particular positions, and the support members can be driven in rotation thereby to rotate the rolls.

3,431,770
ANALYZER FOR DETERMINING HYDROGEN-TO-CARBON RATIO IN A MATERIAL
Richard A. Sanford and Buell O. Ayers, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,642
U.S. Cl. 73—23 3 Claims
Int. Cl. G01n *31/00*



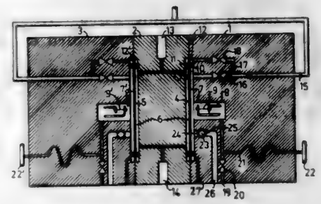
The hydrogen and carbon content of a material is determined by utilizing two separate oscillator circuits each associated with a separate piezoelectric crystal, each crystal carrying a material which is preferentially sorptive either for water or for carbon dioxide.

3,431,771
UNIVERSAL DIFFUSION-SORPTION TYPE GAS ANALYZER
Hsue C. Tsien, Livingston, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,841
U.S. Cl. 73—23 3 Claims
Int. Cl. C01n *31/06*



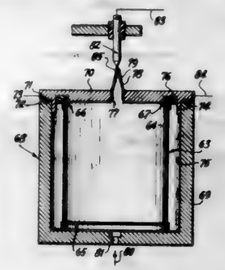
The disclosure is to an instrument used for the qualitative and quantitative detection of a gas in a mixture of various gases. The gas under test is admitted to the test device in a mixture of gases and is selectively absorbed by an absorbent after passing through a micro-porous element of accurately controlled porosity. Suitable means for measuring electrical resistance changes in the absorbent are provided whereby the proportions of the absorbable gas may be indicated.

3,431,772
METHOD AND APPARATUS FOR DETERMINING THE PERMEABILITY OF A MATERIAL
Stig Sunner, Sandby 17:10, 240 17 Sodra Sandby, and Kjell Rosengren, Mellanvangsvagen 6A, both of Lund, Sweden
Filed Aug. 8, 1966, Ser. No. 571,042
Claims priority, application Sweden, Aug. 13, 1965, 10,580/65
U.S. Cl. 73—38 8 Claims
Int. Cl. G01m *3/26*



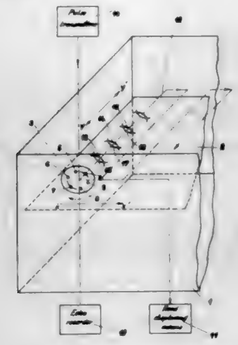
The permeability of a plastic foil is determined by establishing at least three chambers. One chamber is a reference-detector chamber and the other two chambers are a test-detector chamber and a test-gas chamber, the latter two being separated by a specimen of the foil. All three chambers are purged with a reference gas, and then the test-gas chamber is scavenged with the test gas which continuously flows therethrough during the test. In one embodiment, the reference-detector chamber is bordered by a metal foil; while in another embodiment, that latter chamber is spaced from a fourth chamber, which is filled with the test gas, by means of a foil identical to the first-mentioned foil.

3,431,773
METHOD AND APPARATUS FOR LEAK TESTING
David L. Calhoun, P.O. Box 143, Youngwood, Pa. 15697
Filed July 12, 1966, Ser. No. 564,624
U.S. Cl. 73—49.2 6 Claims
Int. Cl. G01m *3/04*



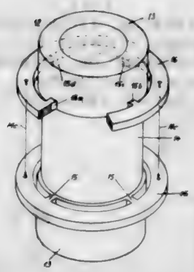
An automated testing device to rapidly test containers for leaks. Fluid under pressure is applied to the outside of the container and a defective container is detected by sensing leakage into the container. The sensing arrangement includes a closure sealed to the container and having a small opening capable of retaining an electrically conductive liquid film thereon. An electrode is positioned closely adjacent the small opening. An electrical detecting device detects changes in the conductivity of the circuit including the electrode and conductive liquid, conduction through the circuit indicating a defective or leaky container.

3,431,774
ULTRASONIC TESTING APPARATUS FOR MATERIAL IN SHEET OR FOIL
Jacques Dory, Paris, France, assignor to Realisations Ultrasoniques Limited Company, Villenoy-Les-Meaux, Seine-et-Marne, France
Filed Oct. 13, 1965, Ser. No. 495,643
Claims priority, application France, Oct. 28, 1964, 992,935
U.S. Cl. 73—67.8 5 Claims
Int. Cl. G01n *9/24*



An apparatus for ultrasonic testing of sheet material immerged in a liquid medium and including a moving rotating head which is adapted to generate a plurality of ultrasonic beams, whereby the whole surface of a large sheet may be scanned at comparatively high speed.

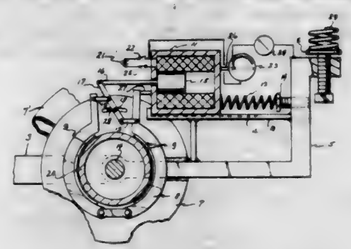
3,431,775
RESILIENT BODY FOR DYNAMOMETER
Armin Wirth, Zurich, Switzerland, assignor to Wirth, Gallo & Co., Zurich, Switzerland
Filed Sept. 19, 1966, Ser. No. 580,521
Claims priority, application Switzerland, Dec. 3, 1965, 16,759/65
U.S. Cl. 73—141 8 Claims
Int. Cl. G01l *3/00*



A dynamometer for determining compressive forces comprising a hollow resilient body having load bearing end faces is disclosed. Two distortion compensating rings spaced from each other and from the end faces are attached to the body by an even number of web members. A number of seats are provided on each ring turned toward each other for receiving measuring devices. The number of seats on each ring is half the number of webs on each ring.

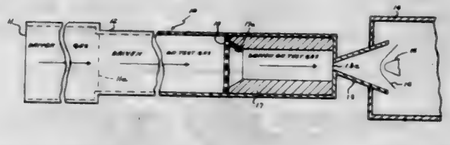
3,431,776
ROAD SURFACE TESTING DEVICE
George W. Hughes, 3405 Ennis, Houston, Tex. 77004
Filed Dec. 14, 1966, Ser. No. 601,701
U.S. Cl. 73—146 6 Claims
Int. Cl. E01c *23/01*

The invention is for the purpose of providing a means for testing the surface of a roadway, paving, or the like, with reference to the skid factor for vehicles traveling over same. The device tests the skid factor automatically upon release of the accelerator of the vehicle being tested, by applying a brake to a wheel in contact with



the road surface, and transmitting to a gauge on the dashboard the amount of pressure required to cause the wheel to slide. This indicates the condition of the road with reference to the skid factor to the driver before he applies the brakes to the vehicle wheels.

3,431,777
DEVICE TO INCREASE UNCONTAMINATED RUN TIME OF A REFLECTED SHOCK TUNNEL
Glenn D. Norfleet, Manchester, Tenn., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 22, 1967, Ser. No. 669,958
U.S. Cl. 73—147 5 Claims
Int. Cl. G01m *9/00*



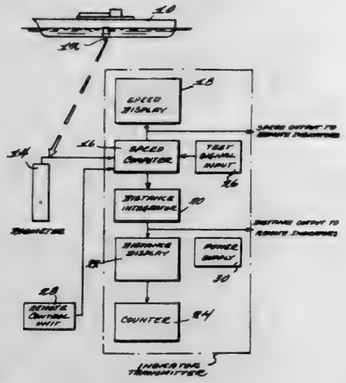
A shock tunnel driver tube containing a supply of high pressure driver gas is attached to one end of a driven tube enclosing a column of low-pressure test gas and having an exhaust opening at the other end thereof. A reflected type expansion nozzle is formed on the exhaust opening end of the driven tube and the nozzle, in turn, is incorporated in one end of a model test chamber that is adapted to support a hypersonic test model therein.

The driver and driven tubes are separated by a frangible type diaphragm that normally prevents communication between the driver and driven gases until the pressure of the driver gas reaches a predetermined high value, as a result of the operation of the tunnel, to thereby rupture the diaphragm. A combined shock-generator grid element and area reduction bushing are mounted within the driven tube and are operative to form a reflected shock wave at an intermediate location substantially upstream in the driven tube and thereby provide relatively early interaction between the reflected shock wave and the gas interface and thus delay premature contamination of the test model chamber by the driver gas.

3,431,778
VELOCITY SENSING APPARATUS
Stanley G. Lemon, William F. Eiseman, and Charles M. Donoho, Annapolis, Md., assignors to Chesapeake Instrument Corporation, Shadyside, Md.
Continuation of application Ser. No. 459,708, May 28, 1965. This application Apr. 19, 1968, Ser. No. 722,806
U.S. Cl. 73—181 14 Claims
Int. Cl. G01c *21/12*

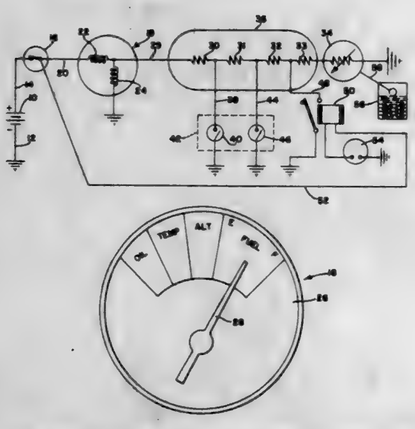
The following specification discloses apparatus for the measurement of the velocity of a fluid medium. The low level alternating current from a rodmeter, which senses

the velocity of the fluid, is voltage compared with a reference or response alternating current signal and the resulting error signal is converted in a phase comparator to a DC signal having a polarity dependent upon the phase of said error signal. The DC error signal, in conjunction with a clock pulse source, drive an up/down counter to provide a continuously updated indication of the velocity



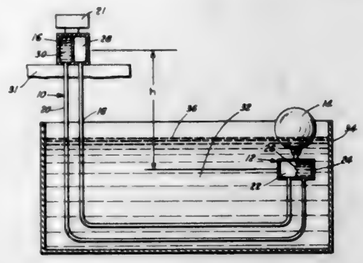
of the fluid medium. A digital-to-analog converter is provided to convert the counter output to an alternating current signal which constitutes the response signal and is fed back and compared with the signal from the rodmeter. A digital integrating apparatus is also provided to integrate speed indication of the up/down counter to provide a distance traveled or volume flow indication signal.

3,431,779
MONITORING DEVICE FOR INTERNAL COMBUSTION ENGINE
George Henry Wilken, Dubuque, Iowa, and Robert Aloyious Ginter, Potosi, Wis., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,847
U.S. Cl. 73—291 **9 Claims**
Int. Cl. G01f *23/10*



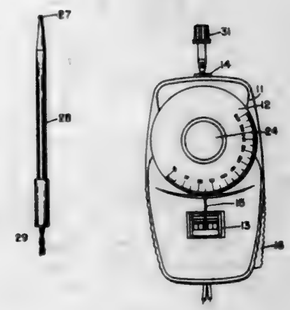
An integrated internal combustion engine monitoring system utilizing a single electrically actuated indicator responsive to circuit resistance principally varied by a plurality of switches associated with different resistors and respectively actuated by changes in different engine conditions to visually indicate said engine conditions to a vehicle operator.

3,431,780
APPARATUS FOR DETERMINING DIFFERENCES IN ELEVATION
Clifton C. Jennings, Tulsa, and William L. Lankford, Jr., Oklahoma City, Okla., assignors to The Geolograph Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Aug. 4, 1966, Ser. No. 570,224
U.S. Cl. 73—316 **4 Claims**
Int. Cl. G01f *23/06*



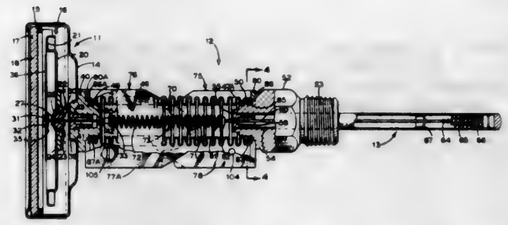
A method and apparatus for determining the difference in elevation between two relatively movable members which involves providing a first sealed liquid column of substantially constant volume connecting at its ends with said members, providing a second sealed gaseous column of substantially constant volume also connecting at its ends with said members, equalizing the pressures between the ends of the two columns at one of the members and measuring the difference of pressure between the other ends of the columns at the other of the two members thereby providing a measured difference which can be converted into a reading or indication representing the difference in elevation between the two members.

3,431,781
CLINICAL THERMOMETER
Blanton C. Wiggin, Wellesley Hills, Mass., assignor to Advanced Instruments Inc., Newton Highlands, Mass., a corporation of Massachusetts
Filed July 18, 1966, Ser. No. 565,990
U.S. Cl. 73—362 **2 Claims**
Int. Cl. G01k *5/18*



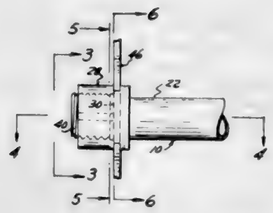
An electrical resistance thermometer having a sterilizable thermistor sensing unit which is adapted to be standardized by abrasion and thereby made interchangeable in use. A compact, casing-housed, null balance circuit is provided with a potentiometer-adjusting reading dial and an external pressure switch, to actuate and manipulate the thermometer for temperature reading while held in the hand.

3,431,782
MULTIANGLE GAUGE
William R. Brophy, Jr., Elizabeth, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,420
U.S. Cl. 73—363.9 **11 Claims**
Int. Cl. G01k *5/64*



In a tiltable dial head type gauge including a pointer and a condition-sensing device, the elongated flexible element which is employed to transmit the angular displacement of the condition-sensing device to the pointer while permitting the bending of the pointer about the condition-sensing device comprises two serially-connected but oppositely wound spring sections. The spring sections are matched to one another so that their opposite windings mutually nullify internal, torsionally-directed stresses which would cause the pointer end of the spring to rotate about the device end solely by reason of the flexible element being bent.

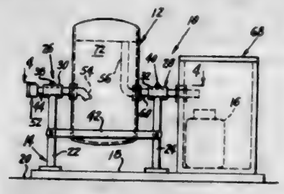
3,431,783
CHROMATOGRAPH TAPE SEPTUM INJECTION PORT
Thomas H. Radgens, 7340 Bingham, Dearborn, Mich. 48126
Filed Mar. 13, 1967, Ser. No. 622,694
U.S. Cl. 73—422 **4 Claims**
Int. Cl. G01n *1/00*



An injection port for chromatographs having a tubular stem with a continuous resilient septum tape slidably passing transversely therethrough. A plug yieldably holds the tape so as to seal the tubular stem, the plug being easily manipulated to release the tape so that it may be readily shifted in the tubular stem to re-seal the port after successive injections have rendered the tape pervious to the passage of liquid and gas.

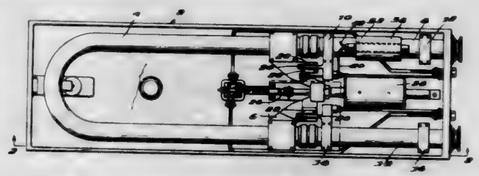
3,431,784
AUTOMATIC LIQUID SAMPLER
Mary K. Keeler, 2360 Albatross Way, Sacramento, Calif. 95815
Filed Aug. 23, 1966, Ser. No. 574,384
U.S. Cl. 73—423 **3 Claims**
Int. Cl. G01n *1/10*

A sampler for directing a small quantity of a material into a sample container is disclosed. The sampler includes a tiltable receptacle having a sample standpipe discharge to the sample container with the receptacle being caused to tilt from a filling position to a dumping position and back to a filling position by the shifting of the center of



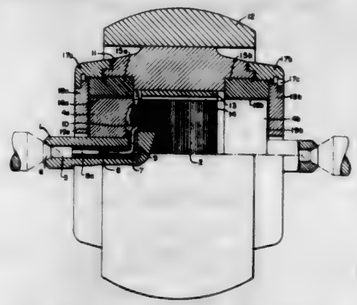
gravity caused by the filling and dumping of the receptacle.

3,431,785
TEMPERATURE COMPENSATING SYSTEM FOR DENSITY METERS
Robert G. Love, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed May 10, 1966, Ser. No. 548,902
U.S. Cl. 73—434 **10 Claims**
Int. Cl. G01n *9/06*



A density meter of the type having a U-tube mounted for pivoting movement about a horizontal axis. A force balance connected with the U-tube has a temperature compensating feature. A movable wall in a chamber applies a temperature compensating force to the balance system. The fluid in the chamber is in heat transfer relation with the fluid flowing through the U-tube and changes in temperature of the fluid being measured causes corresponding changes in pressure in the chamber, thereby varying the force transmitted to the balance system by the movable wall.

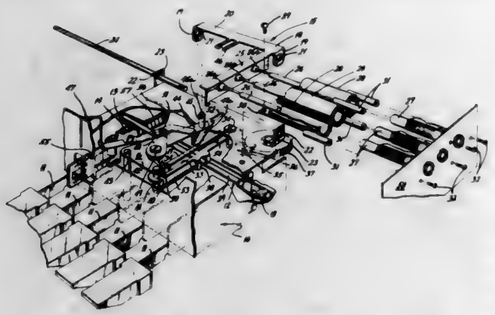
3,431,786
SYMMETRICAL GYROSCOPE
Heinz Riethmuller, Heidelberg-Kirchheim, and Dieter Thomaier, Heidelberg, Germany, assignors to Teldix Luftfahrt-Ausrustungs G.m.b.H., Heidelberg-Wieblingen, Germany
Filed Oct. 5, 1966, Ser. No. 584,389
Claims priority, application Germany, Oct. 7, 1965, T 29,538
U.S. Cl. 74—5 **7 Claims**
Int. Cl. G01c *19/02*



A gyro with an inner stator and an outer rotor. The stator has a driving component and two bearings located axially on opposite sides thereof, the outside diameter of the two bearings being equal to each other and at least

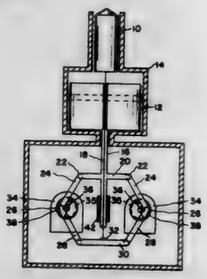
as great as the outside diameter of the driving component. The rotor has a driving component and two bearing sleeves located axially on opposite sides thereof, the inside diameter of the two sleeves being equal to each other and no greater than the inside diameter of the driving component. The two driving components are axially aligned and each stator bearing is axially aligned with a respective rotor sleeve so that two gas cushion type bearings are formed. In this way, the inside and outside diameters of the annular cylindrical gaps between the two cushions are limited by the inside and outside diameters of the annular cylindrical gap between the two driving components.

3,431,787
ELECTRONIC TUNING APPARATUS
Edward Frank, Glenolden, Del., and Ralph Bray, Philadelphia, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,563
U.S. Cl. 74—10.27 1 Claim
Int. Cl. F16h 25/18, 35/18; H03j 5/32



A releasably coupled mechanical linkage unites an electronic tuner with the purely mechanical tuner drive apparatus of an automobile pushbutton radio. The electronic tuner is of the variable permeability type, including coils, coil cores, and carriage means for the coil cores. The tuner is electronically aligned prior to being releasably coupled with its mechanical drive apparatus. The mechanical drive is operated either by pushbuttons or by a rotatable knob.

3,431,788
PISTON ROD GUIDE FOR RHOMBIC DRIVE STIRLING CYCLE APPARATUS
Frits Karel du Pré, White Plains, N.Y., assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,702
U.S. Cl. 74—44 5 Claims
Int. Cl. F16h 21/22



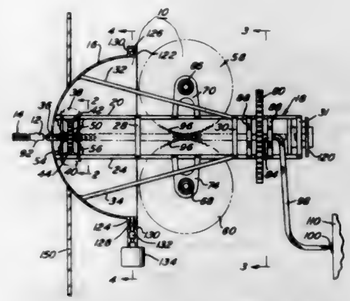
This invention provides an improved rhombic drive mechanism for apparatus such as a Stirling cycle hot gas engine. Concentric rods from the reciprocating power piston and displacer piston are connected to corresponding yokes, and the two ends of each yoke are linked by connecting rods to two separate eccentric drive motors. Balanced and synchronous operation of the drive is assured by a sleeve guide about the pistons, which eliminates the need for precision meshing gears directly interconnecting the two drive motors in the prior art.

3,431,789
DRIVE MECHANISM FOR OSCILLATING DEVICES, PARTICULARLY CONTROL RODS
Jiri Hrdina, Prague, Czechoslovakia, assignor to Ceskoslovenska Akademie ved, Prague, Czechoslovakia
Filed Mar. 29, 1967, Ser. No. 626,878
U.S. Cl. 74—54 3 Claims
Int. Cl. F16h 25/16



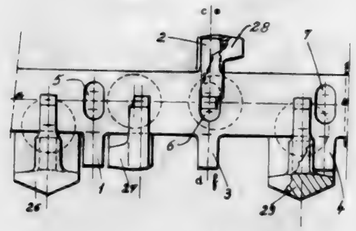
An articulated linkage mechanism adapted to impart oscillation of at least 180° to a spindle; the mechanism comprises an arm caused to oscillate about a pivot through an angle of not more than 120° whereby the imaginary axis of the spindle intersects the area swept by the oscillating arm, a lever rigidly affixed to the spindle at one end and pivotally attached to a link at the other end, said link, in turn, being pivotally secured to the freely-swinging end of the oscillating arm.

3,431,790
CONTROL MECHANISM
Leonard A. Cohen, 224 Old Lancaster Road, Merion, Pa. 19066
Filed May 10, 1966, Ser. No. 549,065
U.S. Cl. 74—471 9 Claims
Int. Cl. G05g 9/00



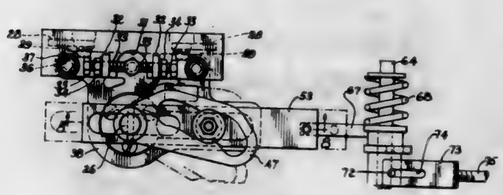
A control mechanism is disclosed for unifying multiple control by a control lever which may rotate without having any reciprocatory movement and vice versa. Also, the lever may simultaneously rotate and reciprocate. Means are provided for converting various movements of the lever, which may be at least five different modes, into proportional control functions.

3,431,791
GEAR SELECTOR AND CONTROL DEVICE FOR TRANSMISSION MECHANISMS
Pierre Labat, Suresnes, France, assignor to Societe Anonyme de Vehicules Industriels et d'Equipments Mecaniques Saviem, Suresnes, France
Filed Feb. 13, 1967, Ser. No. 615,726
Claims priority, application France, Feb. 16, 1966, 49,886
U.S. Cl. 74—473 7 Claims
Int. Cl. G05g 9/08



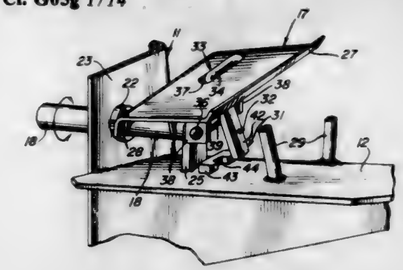
A selector and control device for shifting gears on an automotive vehicle or the like, comprising in a gear case a sliding and rotating selector member having a cylindrical body carrying integral cam means associated with sliding shafts rigid at one end with links forming a pair of slideways associated with said cams and having horns for the selector body's guiding and for locking of nonselected speeds, said selector being adapted by movements of translation to select the desired sliding shaft and by movements of rotation to shift the shaft.

3,431,792
CONTROL MEANS FOR HYDROSTATIC TRANSMISSION
Hugh Edward Smith, Kankakee, Ill., assignor to Roper Corporation, a corporation of Delaware
Filed Dec. 6, 1967, Ser. No. 688,533
U.S. Cl. 74—481 10 Claims
Int. Cl. G05g 11/00



A means for controlling the disposition of the swash plate of a hydrostatic transmission unit to control the operation of the unit. Said means includes a guide plate adjustably mounted on the transmission housing, a control bar carrying a cam roller and arranged to be moved longitudinally over the guide plate, and a cam plate fixed to the shaft of the swash plate and having a cam track engaged by the cam roller. The control bar is connected to a control lever which effects movement of the control bar thereby to effect rocking of the swash plate shaft. A clutch pedal is operatively connected to the control lever and when the clutch pedal is depressed the control lever is automatically moved to neutral position to render the transmission unit inoperative.

3,431,793
SAFETY LOCK FOR PEDAL MECHANISMS
Charlie L. Boston, Keokuk, Iowa, assignor to J. I. Case Company, a corporation of Wisconsin
Filed Oct. 6, 1966, Ser. No. 584,865
U.S. Cl. 74—512 5 Claims
Int. Cl. G05g 1/14



A safety lock for a foot-operated pedal having a treadle assembly, a portion of which extends through the pedal. The treadle operates a latch means for preventing operation of the pedal until the treadle is moved relative to the pedal. The latch means includes a block member that interengages with a locking member, which locking member is operated by the treadle to move it out of engagement to permit operation of the pedal.

3,431,794
CABLE CONTROL
Donald M. Nelson, Anaheim, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed July 1, 1966, Ser. No. 562,213
U.S. Cl. 74—529 12 Claims
Int. Cl. G05g 5/06

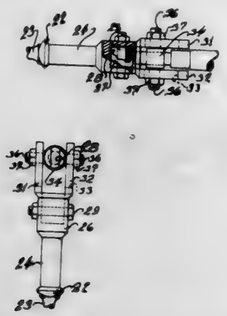


This invention relates to cable control; and more particularly to a latching and an unlatching arrangement for the control of cables that are used for lifting, pulling, or the like. The disclosed arrangement controls the cable by latching the cable at a given length, and then releasing the latch. The latching arrangement comprises a cam-like disc having (1) a peripheral shoulder, and (2) a peripheral recess; a cable bight or ring being captured in the recess to latch the cable to a predetermined cable-length, and a locking-pin abutting the shoulder of the cam to lock the cam at the latched cable length. To release the latch, the locking-pin is retracted from its abutment with the shoulder of the cam; and the capture ring is then released.

3,431,795
DISCONNECTABLE DRIVE MEANS FOR SHAFTS
Wesley H. Atkinson, P.O. Box 1184, Montgomery, Ala. 36102
Filed Apr. 27, 1967, Ser. No. 634,318
U.S. Cl. 74—545 3 Claims
Int. Cl. G05g 1/12

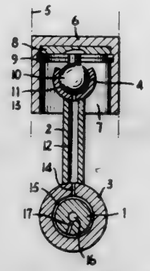
A drive for a shaft in which the shaft is provided with a tool or tool seat on one end, together with

a crank or similar member having a seat or tool cooperable with that on the end of the shaft, the crank



or similar member being selectively adapted to idle about the shaft while it is rotated by other means or to be engaged endwise with the shaft for rotating it.

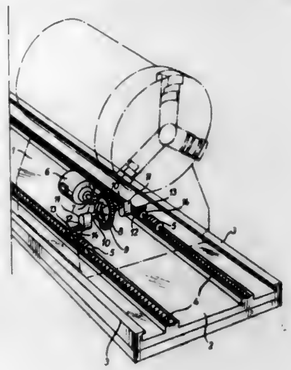
3,431,796
OPERATIVE CONNECTION BETWEEN A PISTON AND A PISTON ROD
Knud V. Valbjorn, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Oct. 21, 1966, Ser. No. 588,448
Claims priority, application Germany, Oct. 23, 1965, D 48,498
U.S. Cl. 74—587 **2 Claims**
Int. Cl. F16h *21/24*



An operative connection between a piston and piston rod in which an insert internally of the piston skirt adjacent the underside of the piston crown mounts a ball received in a socket fixed to the piston rod. The insert is a plate releasably held in the piston by a snap ring.

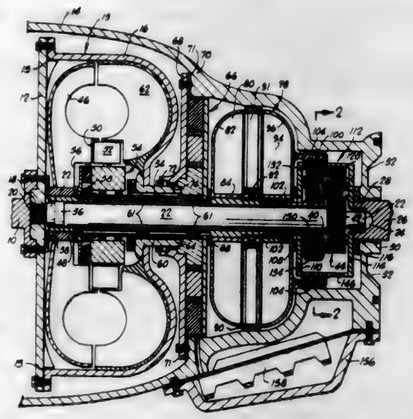
3,431,797
DEVICE FOR MOVING MACHINE TOOL COMPONENTS
Maso Galbarini and Francesco Cotta Ramusino, Milan, Italy, assignors to Innocenti Società Generale per l'Industria Metallurgica e Meccanica, Milan, Italy
Filed Apr. 12, 1967, Ser. No. 630,285
Claims priority, application Italy, Apr. 15, 1966, 9,213/66
U.S. Cl. 74—665 **3 Claims**
Int. Cl. F16h *37/06*

A machine tool having a carriage movable on a bed includes an apparatus for driving and moving the carriage from a single drive motor through two separate drive units while utilizing a power drive train including divided power paths from the drive motor to each of the drive units. The power drive train includes an epicyclic differential gear set in order that each of the drive units has power applied equally thereto. Reduction gearing sets are interposed in the power drive train between the epicyclic



differential gear set and the separate drive units. In one embodiment the drive units cooperate with a single rack on spaced portions thereof and in another embodiment the drive units cooperate with parallel spaced racks on the machine bed.

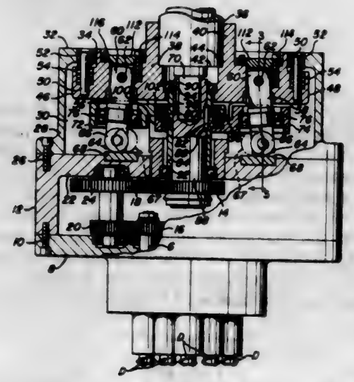
3,431,798
AUTOMATIC TRANSMISSION SYSTEM
James W. Dillard, 346 S. Oak, Ponca City, Okla. 74601, and Vernon R. Doores, 1578 E. Snider, Springfield, Mo. 65803
Filed Oct. 18, 1967, Ser. No. 676,182
U.S. Cl. 74—688 **8 Claims**
Int. Cl. F16h *47/08*



An automatic transmission system including a forward drive fluid coupling, a reverse drive fluid coupling, a gear pump for supplying fluid to the fluid couplings, a valve device for selectively controlling the direction of fluid by the pump to the couplings, and a planetary gear system. Each fluid coupling includes a pair of opposed radial vane-containing tori. In the forward drive coupling, one torus is connected to, and driven by, the crankshaft from the engine. The other torus of the forward drive coupling is connected to the engine crankshaft through the planetary gear system, the planet carrier of which is

connected to a driven shaft adapted to be connected through the automobile differential to the ground engaging wheels. Both tori of the reverse drive fluid coupling are connected to the engine crankshaft through different parts of the planetary gear system. In each fluid coupling, the two tori are made to rotate in opposite directions from each other when the coupling is substantially empty of fluid and the planet carrier is held stationary.

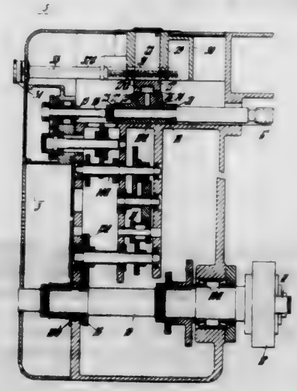
3,431,799
CHIP BREAKER
James R. Bashor, Cincinnati, Ohio, assignor to United States Drill Head Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 25, 1966, Ser. No. 552,824
U.S. Cl. 77—32.3 **12 Claims**
Int. Cl. B23b *47/22, 47/34, 39/16*



The drill head is of the multiple-spindle type, and includes chip-breaking means suited to the heavy duty service demanded as the result of drilling many holes simultaneously. The entire drill head housing with its multiplicity of spindles and drills, is yieldingly suspended bodily from the reciprocable nonrotatable drive spindle sleeve or quill, with support from a pair of laterally rockable thrust bars which depend from pivots that move with said sleeve or quill, the thrust bars having swingable ends to traverse thrust pads fixed within the head housing. The thrust bars are swung toward and from the spindle axis by means of cams rotatable with the spindle, and may be adjusted at their pivots toward and from the thrust pads to vary the extent to which the thrust bars vibrate the head housing lengthwise of the drive spindle.

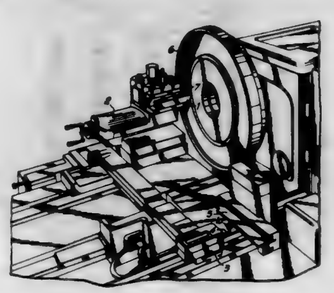
3,431,800
SCREW-CUTTING LATHES AND OTHER SCREW-CUTTING MACHINES
Albert Lucie, Johnstone, Scotland, assignor to Wickman Lang Limited, Johnstone, Renfrewshire, Scotland, a British company
Filed Apr. 15, 1966, Ser. No. 542,797
U.S. Cl. 82—5 **4 Claims**
Int. Cl. B23b *1/12, 1/00, 21/00*

A screw-cutting machine has a work spindle to which a work piece can be clamped and rotated thereby, a lead screw driven in timed relation with the work spindle, a saddle for supporting a work cutting tool the saddle having a nut member which normally engages the lead screw so that rotation of the latter imparts to the saddle and tool carried thereby a traverse movement parallel to the lead screw. The lead screw has axial extension which is journalled in a bearing which is mounted to slide axially between fixed guides. The bearing has a slot and sliding within the slot is a slide which is reciprocated by means of the saddle. The machine is further provided with an angularly adjustable channel member and a roller carried by the slide works in the channel. When the slide is



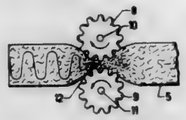
reciprocated the co-operation of the roller with the channel results in the bearing with lead screw being slid to an extent and in a direction predetermined by the angular adjustment of the channel member, such movement being transmitted to the channel member so that the traverse of the saddle is that due to the lead screw and to the axial movement imparted to the lead screw.

3,431,801
TOOL SET FOR COPYING MACHINES
Joseph Antoine Marie Stassart, Jupille-sur-Meuse, Belgium, assignor to Fabrique Nationale d'Armes de Guerre, Societe Anonyme, Herstal-lez-Liege, Belgium
Filed Mar. 7, 1967, Ser. No. 621,199
Claims priority, application Belgium, Mar. 28, 1966, 678,522
U.S. Cl. 82—14 **4 Claims**
Int. Cl. B23b *3/28;* **B23c** *5/00*



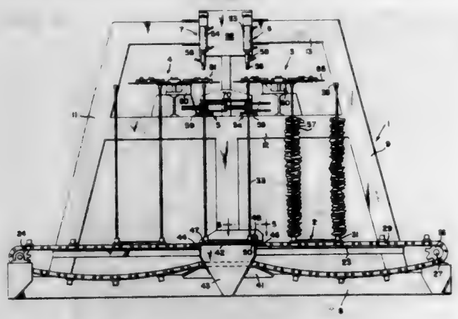
A series of tools for copying machines the diameters of which vary corresponding to a predetermined modulus and corresponding bushings the diameters of which vary in accordance with a related modulus.

3,431,802
DEVICE FOR THE MANUFACTURE OF OBJECTS OF YIELDABLY DEFORMABLE MATERIAL
Karel H. N. Schulpen, Havikiaan 17, The Hague, Netherlands
Filed Nov. 19, 1956, Ser. No. 623,210
Claims priority, application Germany, Nov. 21, 1955, S 46,425; Netherlands, Feb. 13, 1956, 204,488
U.S. Cl. 83—4 3 Claims
Int. Cl. B26d 4/00, 7/14



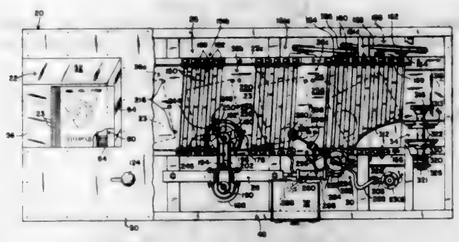
1. A device for the simultaneous formation of at least two profiled objects of yieldably deformable material from a sheet of said material, each of said objects having a profiled surface which surfaces are substantially similar to one another, said device comprising at least one pair of co-operating compressing means for compressing the said sheet therebetween, said compressing means being provided in a substantially identical way with projections and recesses, the projections and recesses of one of the co-operating means being arranged in staggered position relative to the projections and recesses of the other one of said co-operating means, a subdividing means being interposed between the co-operating compressing means and coinciding with a flat plane passing between said co-operating means for being moved relative to said block of material according to a straight line perpendicular to the direction in which the material is compressed by the said co-operating compressing means.

3,431,803
SHELL STRINGER APPARATUS
Richard F. Rawlings, 226 SW. 131st, Seattle, Wash. 98146, and George E. Austin, Houghton, Wash.; said Austin assignor to said Rawlings
Filed Sept 1, 1966, Ser. No. 576,635
U.S. Cl. 83—95 10 Claims
Int. Cl. B26d 7/06, 5/20



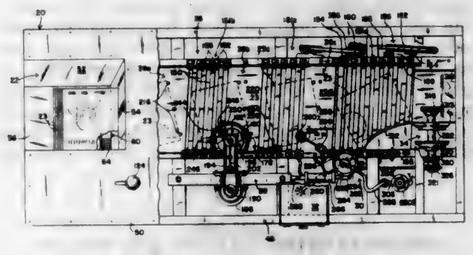
A shell-stringing device for punching a hole in individual shells and stringing the shells onto a wire which is rigidly supported during the punching operation. The individual shells are automatically conveyed to the punching position over the wire, punched and strung onto the wire.

3,431,804
MAGAZINE COUNTING AND DESTROYING APPARATUS
Burton H. Marshall, Accord, N.Y., assignor to Canyon Research Corporation, Accord, N.Y., a corporation of New York
Original application July 25, 1967, Ser. No. 655,822. Divided and this application Jan. 15, 1968, Ser. No. 697,909
U.S. Cl. 83—103 9 Claims
Int. Cl. B26d 7/06, 7/28, 7/18



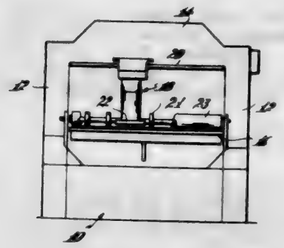
Apparatus for automatically severing and separating coupons from magazines and the like and for mutilating the magazines to make them essentially unreadable. A picker member moves the magazines from a hopper onto a conveyor which carries the magazines to stations where the coupons are cut from the magazine covers and removed and the magazines mutilated. Registers are actuated as the magazines are removed from the hopper and as the coupons are removed from the magazines to provide a count on the number of magazines processed and a check.

3,431,805
MAGAZINE COUNTING AND DESTROYING APPARATUS
Burton H. Marshall, Accord, N.Y., assignor to Canyon Research Corporation, Accord, N.Y., a corporation of New York
Continuation of application Ser. No. 655,822, July 25, 1967. This application May 8, 1968, Ser. No. 727,745
U.S. Cl. 83—103 17 Claims
Int. Cl. B26d 7/06, 7/28, 7/18



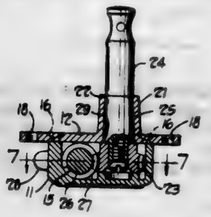
Apparatus for automatically severing and separating coupons from magazines and the like and for mutilating the magazines to make them essentially unreadable. A picker member moves the magazines from a hopper onto a conveyor which carries the magazines to stations where the coupons are cut from the magazine covers and removed and the magazines mutilated. Registers are actuated as the magazines are removed from the hopper and as the coupons are removed from the magazines to provide a count on the number of magazines processed and a check.

3,431,806
DIE-CUTTING MACHINE WITH ROTATABLE DIE-SUPPORTING PLATEN
Evald O. Peterson, Lynnfield, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass., a corporation of Delaware
Filed May 19, 1966, Ser. No. 551,423
U.S. Cl. 83—561 9 Claims
Int. Cl. B26d 5/08, 1/00, 3/00



A die-cutting machine having a work-supporting platen above which there is a beam on which is mounted a support for holding a die for movement transversely of the work-supporting platen in one direction and then the other for making a succession of cuts crosswise of the work and successive parallel rows of cuts longitudinally of the work.

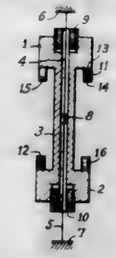
3,431,807
GUITAR MACHINE
Josephus B. Thompson, Covington, Ohio, assignor to Grover Musical Products, Inc., Cleveland, Ohio
Filed Apr. 7, 1967, Ser. No. 629,312
U.S. Cl. 84—306 2 Claims
Int. Cl. G10d 3/14



A guitar machine having novel supporting structure associated with its worm and gear elements.

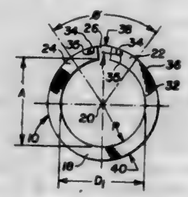
3,431,808
TORSION-OPERATED OSCILLATORS
Claude Oudet and Gérard Lallement, Besancon, France, assignors to Société Jaz S.A., Paris, France
Filed Feb. 3, 1965, Ser. No. 430,048
Claims priority, application France Feb. 3, 1964, 962,412
U.S. Cl. 84—457 13 Claims
Int. Cl. G10g 7/02; H03b 5/30

A torsion-operated tuning fork, comprising a pair of frame members joined by a wire having its two ends secured in the frame members. At least one centering tube is mounted to the wire. An oscillator is supported on the centering tube or tubes. The oscillator includes a flexible member interconnecting two oscillatory masses, at least one detector member and at least one energizing member fixed on the oscillator for imparting to the flexible member a torsion force and maintaining the



force thereon. The invention also includes an oscillator composed of a flexible member connecting a pair of oscillatory masses having in its median plane a thin disc provided with equidistant dimples spaced around its periphery.

3,431,809
EXTERNAL RETAINING RING
Nicholas D. Frailly, Massillon, Ohio, assignor to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 8, 1968, Ser. No. 720,439
U.S. Cl. 85—8.8 11 Claims
Int. Cl. B16b 21/06



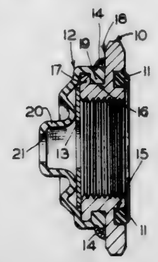
A uniform section split retaining ring comprising an arcuate middle part that is substantially circular and arcuate end parts varying outwardly from the middle part circularity such that the ring deforms circularly when expanded to pass over a shaft to insert in a groove thereon. The end parts have slots proximate the ends within the radial width for receiving a manipulating tool.

3,431,810
WOOD FASTENERS
Hugh Black, 225 41st St., Downers Grove, Ill. 60515
Filed Aug. 7, 1967, Ser. No. 658,909
U.S. Cl. 85—11 10 Claims
Int. Cl. F16b 13/02



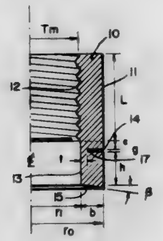
Wood fasteners having body sections comprising converging tapered peripheral resilient side walls especially adapted for use in joining plywood or compressed wood sections.

3,431,811
MOUNTING AND SEALING NUT
William A. Yonkers, Mountain Lakes, N.J., assignor to R F L Industries, Inc., Boonton, N.J., a corporation of New Jersey
Filed Dec. 6, 1966, Ser. No. 599,583
U.S. Cl. 85—32 **4 Claims**
Int. Cl. F16b *37/00, 27/00, 37/14*



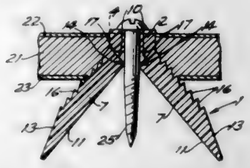
1. A mounting and sealing device comprising,
(a) a nut having parallel front, intermediate and rear faces,
(b) a radial lip formed at the front face of the nut, said lip having an outside diameter less than that of the said intermediate face,
(c) a continuous peripheral groove formed in the nut, one side wall of the groove being defined by the inner surface of said lip, and the other side wall of the groove being an extension of said intermediate face,
(d) a flexible sleeve covering the front face of the nut, said sleeve having an inwardly-directed flange disposed in the said groove, and
(e) a circumferentially continuous clamping ring positioned over said sleeve, said ring having an arcuate cross-sectional configuration extending over an arc of substantially ninety degrees, one end edge of the ring facing the intermediate face of the nut and the other end edge of the ring being embedded in the sleeve between the said lip and intermediate face of the nut.

3,431,812
FIXED FORCE LEVEL NUT
Norman C. Dahl, 40 Fern St., Lexington, Mass. 02173
Filed Jan. 30, 1968, Ser. No. 701,698
U.S. Cl. 85—62 **8 Claims**
Int. Cl. F16b *31/02*



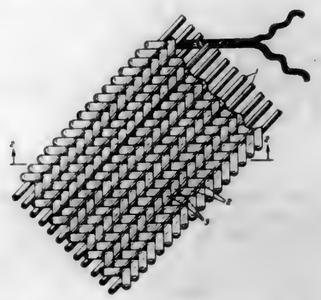
A nut which has a non-threaded portion or extension at one end thereof and an external annular groove formed on the outer peripheral wall of this extension with flowable incompressible material placed within the groove. The extension is below the threaded section and the bearing surface of this section is conical and such that the outer edge of the bearing surface first contacts the abutting surface. The bottom of the external annular groove and the internal surface of the non-threaded extension define a yielding section therebetween. When subject to a predetermined bolt force the yielding section plastically deforms inwardly, and the external groove closes extruding the flowable material therein.

3,431,813
HOLLOW WALL FASTENER
Kenneth C. Johnson, 5 Village Way, Smithtown, N.Y. 11782
Continuation-in-part of application Ser. No. 609,072, Jan. 13, 1967. This application Aug. 3, 1967, Ser. No. 658,204
U.S. Cl. 85—83 **18 Claims**
Int. Cl. F16b *13/04*



The present invention is directed to an improved fastener for a hollow wall. The fastener has a body portion with an opening therethrough and outer corners on its lower surface. Legs extend from the lower surface and are hinged and integral with the outer corners of the body portion. The legs are folded together and inserted into an opening in a hollow wall and a threaded member is then inserted into the opening of the body portion. As the threaded member moves through the opening it contacts the inner edges of the legs and spreads them apart so that they bear against the inside of the wall. The legs partially crumble the wall to hold the fastener in place and are provided with teeth to assist in this gripping action. Preferably the fastener is made of polypropylene so that continued hinging action may be obtained without danger of breakage, although the fastener may be made of other materials, such as metal.

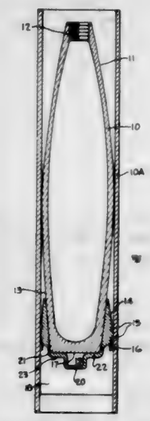
3,431,814
SOFT-FEEL, LONG-STRETCH, ELASTIC BRAID
Ernest Robert Boehm, Easthampton, Mass., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 677,892
U.S. Cl. 87—2 **5 Claims**
Int. Cl. D04c *1/06, 1/02*



A long-stretch elastic braid in which the braiding has textile fibers, which are braided along and around elastic threads, such as rubber or spandex threads, pass alternately under two or more threads from the other diagonal direction to permit a braid which can be stretched 100%

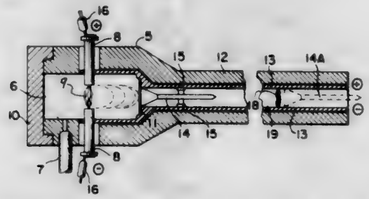
or more without breaking the textile threads, the threads being made of a special plied yarn made up with synthetic materials, such as nylon. One yarn is tightly twisted, for example about 140 twists per inch, in one direction, for example clockwise, and is then heat set, followed by untwisting in the opposite direction. The second yarn is prepared in exactly the same way but with the twist reversed, that is to say, first counterclockwise. After the yarns have been twisted, heat set, and untwisted, they are then plied together into a single yarn with a fairly low twist, for example 5 turns to the inch in either direction. The greatest stretch possible with long-stretch elastic braid is retained, but the somewhat hard feel of the ordinary long-stretch braid is replaced by a very soft, textured feel, which is desirable when the braid is to be worn in contact with the human skin.

3,431,815
DISCARDABLE ROTATING BAND
William F. Kaufmann, Jr., Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 24, 1968, Ser. No. 700,213
U.S. Cl. 89—1 **1 Claim**
Int. Cl. F41b *15/00;* **F42b** *13/16, 31/00*



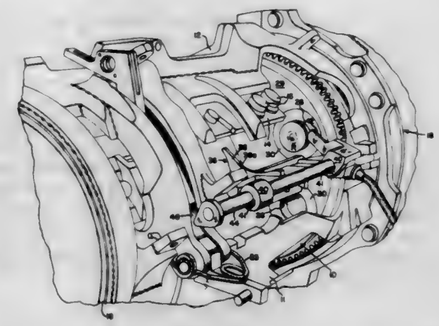
A gas operated discardable rotating band assembly for projectiles is provided with a chamber for the storage of projectile propulsion gases which separate the assembly from the projectile upon emergence of the projectile from a gun barrel.

3,431,816
MOBILE GAS-OPERATED ELECTRICALLY-ACTUATED PROJECTILE FIRING SYSTEM
John R. Dale, 2435 Ball Road, Willow Grove, Pa. 19090
Filed July 21, 1967, Ser. No. 655,242
U.S. Cl. 89—8 **3 Claims**
Int. Cl. F41f *1/00*



A small arms weapon is provided with a gun barrel having a loading or firing chamber at the rear end thereof. Projectiles are propelled through the bore of the gun barrel and into freeflight by electro-thermionic energy. An electrical energy discharge through a light gas load in the chamber behind the projectile provides an explosive force to effect initial projectile movement and acceleration. A second electrical energy discharge travels through the bore with the expanding gas and provides additional force to overcome system losses and enhance projectile acceleration.

3,431,817
ANTI-DOUBLE FEED DEVICE
William B. Walkup, Mattapoisett, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1968, Ser. No. 695,099
U.S. Cl. 89—12 **4 Claims**
Int. Cl. F41d *7/00*

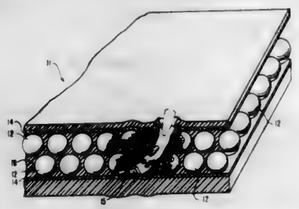


A cam-type, anti-double feed device for a high rate of fire automatic weapon having a rotor assembly supporting a plurality of barrels and a plurality of bolts slidable in tracks in the rotor periphery between a rearward clearing portion and a forward battery position, the device including a lever arm positioned to sense unextracted cartridges and mechanically actuate the gun clearing mechanism through means of a cam connected to the lever arm, so as to prevent occurrence of a double-feed with resultant weapon jamming and damage.

3,431,818
LIGHTWEIGHT PROTECTIVE ARMOR PLATE
Harry A. King, Covina, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Continuation-in-part of application Ser. No. 246,490, Dec. 21, 1962. This application Apr. 26, 1965, Ser. No. 450,657
U.S. Cl. 89—36 **11 Claims**
Int. Cl. F41h *5/04*

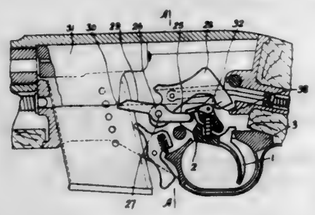
1. A lightweight armor plate for protecting an area against high energy particles, such as projectiles, by resisting the penetration thereof, said armor plate comprising
(a) a body of non-metallic, shatter-resistant material,
(b) a plurality of spherical fragmentation-inducing and energy-dissipating elements embedded in said non-metallic body so as to be rigidly held in place thereby, said spherical fragmentation-inducing and energy-dissipating elements being arranged in at least one layer and in spaced relationship with respect to each other in said body,
(c) said plurality of spherical fragmentation-inducing and energy-dissipating elements being individually shatterable in response to the impact of a high energy particle thereagainst to cause the high energy particle to be broken into fragments for dissipating the force of the high energy particle while tending to divert the path taken by the fragments of the high energy particle,

(d) layers of anti-spalling material in said body and respectively disposed forwardly and rearwardly of said spherical fragmentation-inducing and energy-dissipating elements to define confining boundaries therefor, and



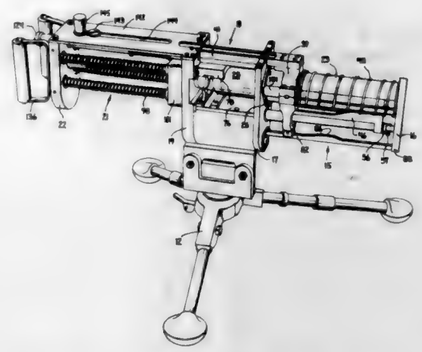
(e) said spherical fragmentation-inducing and energy-dissipating elements, said layers of anti-spalling material, and said non-metallic body cooperating to define a composite plate-like structure capable of containing the fragments of the high energy particle and fragments from said spherical fragmentation-inducing and energy-dissipating elements therewithin, wherein said layers of anti-spalling material in said body prevent the shattered portions of an individual spherical fragmentation-inducing and energy-dissipating element struck by a high energy particle from flying outwardly away from the composite plate-like structure.

3,431,819
FIRING MECHANISM FOR FIREARMS
Josef Koucky and Frantisek Koucky, Prague, Czechoslovakia, assignors to Zavody Kana Svermy, narodni podnik, Prague, Czechoslovakia, a corporation
Filed May 23, 1967, Ser. No. 640,711
Claims priority, application Czechoslovakia, May 24, 1966, PV 3,484/66
U.S. Cl. 89—145 **5 Claims**
Int. Cl. F41c *5/00*



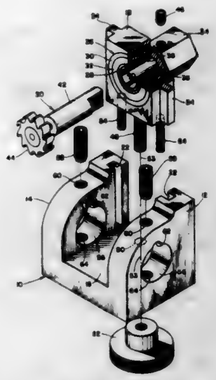
A firing mechanism for firearms in the form of relatively small-bore rifles adapted to be fired automatically upon repeated actuation of the trigger. The firearm has a pair of parallel pivots which respectively support for turning movement a trigger level and a sear lever, the sear lever having a tooth which engages a tooth of the hammer to hold the latter in its cocked position. A full lever is pivotally carried by the sear lever and extends forwardly therefrom, this pull lever having a catch tooth engaging a catch tooth of the trigger lever, and a spring means extending between the pull lever and the trigger lever to urge them apart from each other, this spring means acting through the pull lever on the sear lever to maintain the latter in engagement with the hammer so as to maintain the latter, cocked while the spring means also acts on the trigger lever to maintain the latter in engagement with a stop surface of the trigger mechanism. When the trigger is actuated by the operator in opposition to the spring means, the trigger pulls forwardly on the pull lever to displace the sear away from the hammer thus releasing the latter for firing the gun, and after the gun is fired a breech block-actuated mechanism raises the pull lever away from the trigger lever so that the sear lever can be placed by the spring means in a position to reengage with the hammer when the latter is returned to its cocked position.

3,431,820
GRENADE LAUNCHER
George M. Chinn, Harrodsburg, Ky., William P. Schnatter, Jeffersonville, Ind., and Henry F. Watson, Louisville, Ky., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 13, 1968, Ser. No. 712,637
U.S. Cl. 89—161 **6 Claims**
Int. Cl. F42b *3/02;* **F42d** *7/00*



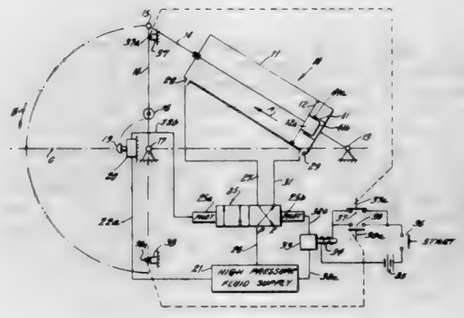
An automatic grenade launcher having a reciprocating barrel which chambers a projectile and forces said projectile against a firing pin in a bolt assembly. Upon firing, the projectile moves the barrel forwardly while simultaneously the bolt assembly moves rearwardly, thereby recocking the launcher, while movement of the reciprocating barrel indexes a rotor assembly which moves another projectile into a firing position.

3,431,821
PORTABLE WOODRUFF KEYWAY CUTTER
William Hugh McDonald, Fargo, N. Dak.
(434 Covert Court, P.O. Box 41, Ballwin, Mo. 63011)
Filed June 1, 1967, Ser. No. 643,813
U.S. Cl. 90—12 **10 Claims**
Int. Cl. B23c *1/20, 3/28*



A toothed cutter disc or wheel is rotatably carried on a slidable block guided for reciprocal movement by a U-shaped support. The support is provided with axially aligned mounting holes to accommodate the shaft that is to have cut therein a new Woodruff keyway. The mounting holes are configured so as to receive either large or small diameter shafts. Normally, the block and cutter disc or wheel are spring biased in a direction away from the shaft. However, a feed screw has one end threadedly anchored in the block and its other end projecting through the support; a knurled nut, when manually tightened, causes the biasing action of the springs to be overcome and the cutter element to thereby cut the desired new keyway.

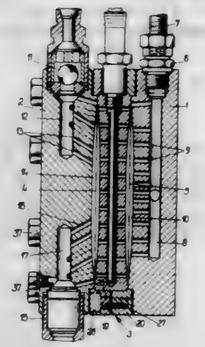
3,431,822
OVER CENTER CRANK MEANS FOR PRODUCING RECIPROCATING MOTION
Jenoe Gross, Kew Gardens, N.Y., assignor to Solidyne, Inc., Brooklyn, N.Y.
Filed Mar. 14, 1967, Ser. No. 623,111
U.S. Cl. 91—210 **10 Claims**
Int. Cl. F01b *15/04;* **F01l** *25/08;* **F15b** *15/22*



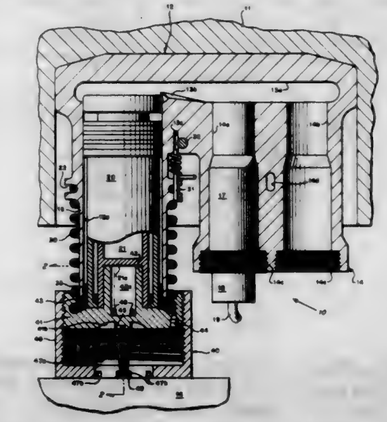
A single double acting fluid (gas or liquid) cylinder is used to drive a crank arm with reciprocating angular motion. By operating the piston through a cycle consisting of its forward and return strokes to obtain unidirectional angular motion, the crank arm is driven in one direction and for the next operating cycle of the piston the crank arm is driven in reverse direction. At the end of the forward stroke of the piston, fluid pressure to the cylinder is automatically reversed so that the piston is driven in the reverse direction for the last half of the angular journey, yet crank arm motion continues in the same direction since one end of the cylinder moves about a fixed pivot while the other end is connected through the piston rod to the moving end of the crank arm.

3,431,823
DIAPHRAGM ASSEMBLY FOR A DIAPHRAGM PUMP
Franz Orlita, 10 Max-Eyth-Str., 63 Giessen (Lahn), Germany
Filed Dec. 15, 1966, Ser. No. 601,980
Claims priority, application Germany, Dec. 16, 1965, O 11,327
U.S. Cl. 92—79 **8 Claims**
Int. Cl. F15b *21/04;* **F01b** *25/26, 31/12*

A diaphragm assembly for a diaphragm pump having a support member and a pair of axially aligned ring members disposed at opposite ends of the support member. Diaphragm members are disposed between the axial ends of the support member and the opposing faces on the ring members. Screws are provided for securing the ring members together to thereby clamp the diaphragms between the axial ends of the support member and the opposing faces on the ring members. This construction defines a unitary, flexible walled chamber which is insertable as a unit into the pump body of a diaphragm pump.

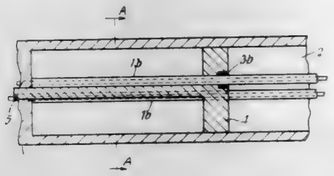


3,431,824
EJECTOR ASSEMBLY WITH LOCKABLE STORE-ENGAGING PRESSER FOOT
Carl A. Damm, Upper Black Eddy, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 31, 1967, Ser. No. 657,738
U.S. Cl. 92—132 **10 Claims**
Int. Cl. F01b *31/00, 9/00;* **F41f** *5/02*



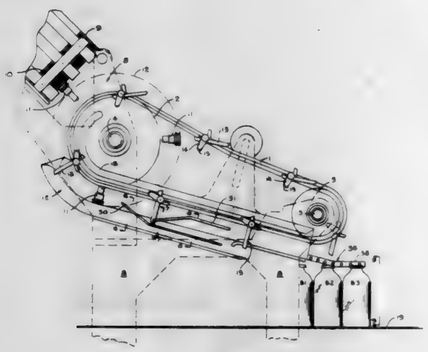
A pyrotechnically actuatable ejector device for separating stores from store releasing racks including an integrally cast casing having pyrotechnic cartridge receiving chambers and a telescoping piston receiving chamber interconnected by a combustion chamber and including a piston carried, spring retracted, presser foot assembly which is adjustable for positioning adjacent a store suspended from the rack. A spring element is connected to a relatively non-rotatable portion of the presser foot assembly, extends through a threadably received presser foot and is urged by spring force into a radial groove formed in the store adjacent surface of the presser foot to prevent further rotation of the presser foot.

3,431,825
HIGH PRESSURE DEVICE
John Crawley, Durham County, and Alan Saunders, Alistair Milne, and William Henry Campbell, Northumberland, England, assignors to Vickers Limited, London, England, a British company
Filed Oct. 11, 1966, Ser. No. 585,957
Claims priority, application Great Britain, Oct. 13, 1965, 43,496/65
U.S. Cl. 92—165 **2 Claims**
Int. Cl. F15b *15/14, 15/26*



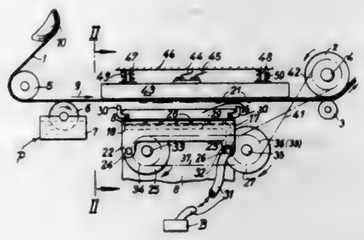
A high pressure device is disclosed having ram rod support means. Three types of supports are shown: hydraulically operable finger rams; relatively movable annular bushes; and plural support rods.

3,431,826
MACHINE AND METHOD FOR FOLDING AN INSERT
Hermond G. Gentry, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Mar. 27, 1967, Ser. No. 626,044
U.S. Cl. 93—1 **6 Claims**
Int. Cl. B31d *5/04;* **B31b** *1/36*



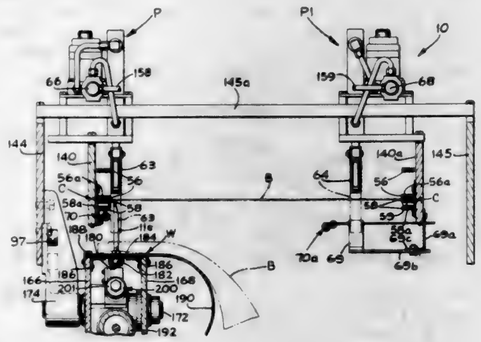
The machine and method as disclosed herein comprises an endless conveyor disposed adjacent a hopper containing a plurality of inserts together with a feeder mechanism arranged to withdraw the inserts from a hopper and to place them under control of the conveyor. As the inserts are moved along the working reach of the conveyor, they encounter a guide groove and main positioning means along which they are slidably moved. A fixed main tab folding guide is disposed alongside said positioning means and is configured so as to engage an elongated tab forming a part of the insert and to fold the tab out of the plane of the insert. Auxiliary positioning means is also disposed adjacent the main positioning means but on the opposite surface of the insert and an auxiliary tab folding guide is disposed on the same side of the insert as is the auxiliary positioning means and is arranged to engage and fold one or more auxiliary tabs out of the plane of the insert.

3,431,827
APPARATUS FOR PRODUCING AND APPLYING TEAR STRIPS
Gunter Wahle, Reinbek, and Heinz-Christen Lorenzen, Hamburg, Germany, assignors to Hauni Werke, Korber & Co., K.G., Bergedorf, Germany
Filed July 14, 1967, Ser. No. 653,526
Claims priority, application Great Britain, July 26, 1966, 33,596/66
U.S. Cl. 93—1 **14 Claims**
Int. Cl. B31d *1/00;* **B23d** *25/08*



Tear strips are severed from the leading end of a continuously advancing tape by a stationary but adjustable cutter and a second cutter which performs a continuous translatory movement in an endless path and is provided with suction ducts to hold freshly formed strips during travel from the cutting station to a transfer station at which the strips are applied to a travelling web of wrapping material or to a suction belt which completes the delivery of strips to the web. A magazine collects tape upstream of the cutting station and discharges suitable lengths of tape into the range of the cutters while the second cutter travels from the transfer station back to the cutting station.

3,431,828
BAG STACKER
Donald C. Crawford, Mountain View, and Veikko K. Viitanen, San Jose, Calif., and John D. Hoffman, Green Bay, Wis., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 488,037
U.S. Cl. 93—13 **34 Claims**
Int. Cl. B31b *21/14, 1/62*



Apparatus is disclosed for automatically providing a stack of thin, extremely flexible articles, such as bags made of cellophane, polyethylene, or the like, such as bags

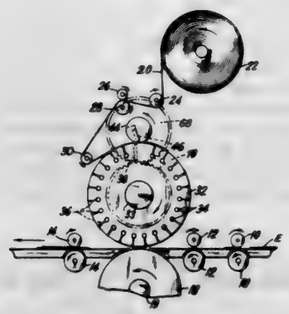
destined to receive loaves of bread. In the broader aspects of the invention, other materials such as sheets of paper can be stacked.

3,431,829
METHODS OF MAKING BAGS
Ralph C. Goodwin, Wayzata, Minn., assignor to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri
Original application Sept. 22, 1964, Ser. No. 398,315, now Patent No. 3,262,634, dated July 26, 1966. Divided and this application Apr. 1, 1966, Ser. No. 539,441
U.S. Cl. 93—35 **10 Claims**
Int. Cl. B31b *49/04*



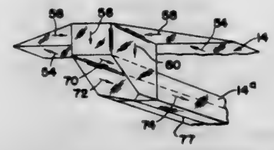
Methods of making plastic valve bags of a type in which the valve is constituted by a slit extending inward from an edge of the bag and a plastic closure strap for the slit, so arranged that a filling spout may be inserted through the slit, the strap serving to close the slit after the bag has been filled and the spout withdrawn, involving heatsealing of the strap to the bag walls after cutting of the slit, without sealing together the bag walls.

3,431,830
ENVELOPE PATCH CUTTING AND COLLATING APPARATUS
Milton A. Stovall, Altoona, Pa., assignor to F. L. Smithe Machine Company, Inc., Duncansville, Pa., a corporation of New York
Filed July 25, 1967, Ser. No. 655,860
U.S. Cl. 93—61 **11 Claims**
Int. Cl. B31b *1/82, 1/24, 1/14*



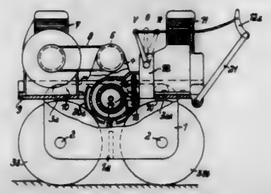
In an envelope making machine two coacting, rotary knives having the same angular velocity but different peripheral speeds shearingly cut a patch from a moving web of window material. The mounting arrangement permits only shearing engagement between the knives. The cut patch is removably secured to a vacuum drum that supports one of the knives. Rotation of the vacuum drum causes delivery of the patch thereon to one of a plurality of moving envelope blanks carried by receiving means in the form of a vacuum cylinder, a linearly moving belt or other suitable means. The patch is adhesively secured over the window opening in the envelope blank at the common tangent of the vacuum drum and the receiving means.

3,431,831
PACKAGE ASSEMBLY FILM FOLDING COLLAR
Robert W. McGill, Stow, and Walter D. Hardee, Akron, Ohio, assignors to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Filed Jan. 3, 1967, Ser. No. 607,024
U.S. Cl. 93—82 **10 Claims**
Int. Cl. B31b *1/42;* **B65b** *9/12*



An apparatus for folding and for facilitating the folding of a sheet of film into a continuous envelope around one or more abutted rows of objects, such as cans, is disclosed. It has movable bottom plates and movable guide or fold bars to facilitate threading the film into initial engagement therewith after which folding action is automatically obtained as the film is pulled through the apparatus.

3,431,832
STEERABLE, SELF-PROPELLED VIBRATORY ROLLING MACHINE
Josef Johann Lang, 18 Birkenstrasse, 8018 Nettelkofen, near Grafing, Germany
Filed Mar. 21, 1967, Ser. No. 624,762
Claims priority, application Germany, Apr. 4, 1966, F 48,854
U.S. Cl. 94—50 **7 Claims**
Int. Cl. E01c *19/26, 19/28*

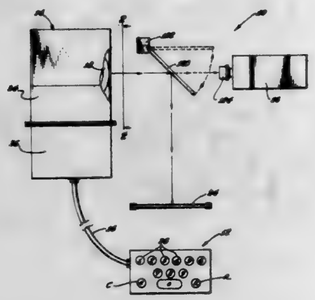


A road or ground-rolling machine in which the rollers are divided up into side-by-side elements which can be selectively driven in groups for steering the machine. The machine is equipped with means for vibrating the rollers, and these means are driven independently of the propulsion of the machine.

3,431,833
DATA PROCESSING APPARATUS
Loren R. Wilson, Rolling Hills, Calif., assignor to The Magnavox Company, Torrance, Calif., a corporation of Delaware
Continuation of application Ser. No. 128,236, July 31, 1961. This application July 28, 1965, Ser. No. 482,016
U.S. Cl. 95—12 **5 Claims**
Int. Cl. G03b *29/00*

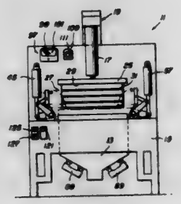
A keyboard actuated system for obtaining a projection on a screen of a plurality of indications represented by

the actuation of the keys on the keyboard including a plurality of solenoids which are actuated by the different keys to control detents. The detents in turn control the rotation of indicator wheels. The wheels have indications



which are disposed adjacent an elongated window. The indications are illuminated and projected through the window to the screen. A camera may be provided to record the indications projected on the screen.

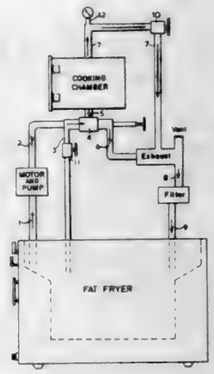
3,431,834
APPARATUS FOR COOKING
Maurice F. Keathley and Artez F. Mainers, Memphis, Tenn., assignors, by mesne assignments, to Kentucky Fried Chicken Corporation, Nashville, Tenn., a corporation of Kentucky
Continuation of application Ser. No. 554,894, June 2, 1966. This application Aug. 31, 1967, Ser. No. 664,891
U.S. Cl. 99—336 **7 Claims**
Int. Cl. A47j *27/84*



An automatic pressure cooking apparatus having a cooking pot and a lid therefor carrying a food rack, a fluid motor for raising and lowering the lid and rack, actuating means for the fluid motor, and latch means automatically responsive to closing of the lid for latching the same.

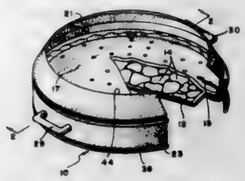
3,431,835
COOKING FOOD UNDER PRESSURE
Raymond H. Angold, 177 Casterton Ave., Kingston, Ontario, Canada
Filed Mar. 2, 1965, Ser. No. 436,440
Claims priority, application Canada, Oct. 9, 1964, 913,595
U.S. Cl. 99—408 **9 Claims**
Int. Cl. A47j *37/12*

Apparatus for deep frying under pressure greater than atmospheric, wherein hot cooking liquid is pumped continuously through a cooking chamber for a predetermined period of time. The chamber is designed so that no food is placed into or removed from the hot cooking liquid. Valve and drain means are provided, respectively, for



controlling the pressure in the chamber during cooking and for effecting draining thereof whenever the pump ceases operation.

3,431,836
PIE PAN HOLDER
Ruby E. Murrell, 3345 Salina, Wichita, Kans. 67204
Filed Apr. 10, 1967, Ser. No. 629,555
U.S. Cl. 99—433 **7 Claims**
Int. Cl. A21b *5/00;* **A47j** *37/01*

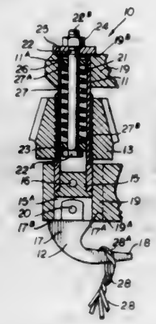


This invention relates to a support structure usable with a cooking receptacle to hold the same primarily during a baking operation and, more particularly, this invention relates to a support structure operable to hold a pie pan and related ingredients therein during the baking thereof to provide even cooking and prevent discharge of liquid ingredients into the oven area. More specifically, this invention relates to a support structure operable to receive and secure a conventional pie pan in a manner to prevent leakage of the ingredients therefrom and having an elevated splash and heat guard member providing for the production of an evenly cooked pie member.

3,431,837
SELF-STRIPPING WIRE TWISTER HOOK FOR WIRE BALERS
Patrick L. May and William K. Ralston, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,581
U.S. Cl. 100—31 **6 Claims**
Int. Cl. B65b *13/28*

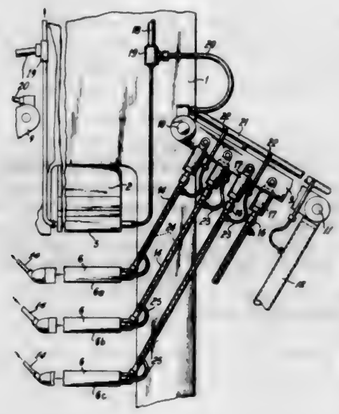
A self-stripping wire twister comprising a shaft rotatable about a fixed axis and a twister hook pivotally

mounted on the shaft and corotatable therewith. The hook is normally disposed in a twisting attitude and is



pivotally movable relative to the shaft to a stripping position.

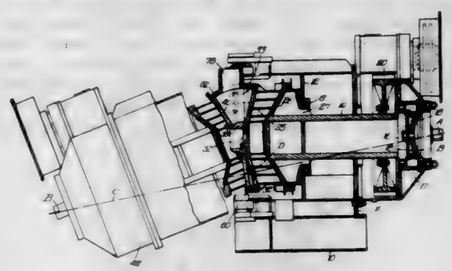
3,431,838
HEATED MULTISTAGE PRESS WITH SYNCHRONIZED CLOSING DEVICE
Wilhelm Hütter, Krefeld, Germany, assignor to Niederrheinische Maschinenfabrik Becker & Van Hullen, Krefeld, Germany
Filed Feb. 3, 1967, Ser. No. 613,849
U.S. Cl. 100—93 **3 Claims**
Int. Cl. B30b *15/34, 7/02*



A heated multistage press provided with synchronized closing means wherein the conduits for introduction and withdrawal of the heating medium are within these closing means. This assures considerable savings in space for these conduits and facilitates the loading of the press.

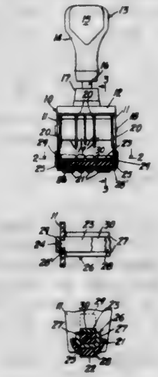
3,431,839
PRESS FOR SEPARATING LIQUIDS FROM SOLIDS
Harold F. Silver and Frank B. Price, Denver, Colo., assignors to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware
Filed Oct. 27, 1965, Ser. No. 505,333
U.S. Cl. 100—158 **6 Claims**
Int. Cl. B30b *3/04*

A conical press having an opposed pair of rotating conical discs. The discs are rotated by motor drives. The discs are supported on structures pivotally hinged on a vertical axis to open and close the nipline of the press. The discs are provided with a plurality of openings communicating with the working face for drainage of the extracted fluids. Reinforcing ribs are provided on the sides



of the discs opposite the working face. The ribs are spaced and spirally curved in a direction opposite to the direction of rotation to provide drainage passageways for the extracted fluid to an underlying collecting chamber.

3,431,840
HANDSTAMP WITH KNEE-ACTION TYPE SUPPORT
Whitney K. Munson, 192 Comanche Drive, Oceanport, N.J. 07757
Filed Mar. 3, 1967, Ser. No. 620,365
U.S. Cl. 101—111 **2 Claims**
Int. Cl. B41j *1/60;* **B41k** *1/56*

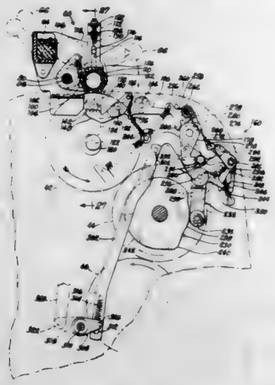


A dater or similar handstamp having a knee-action support for the type in a printing operation of the stamp, wherein said support has a yieldable backing and the handgrip of the stamp has a universal mounting on the casing of the hand stamp.

3,431,841
OFFSET DUPLICATING MACHINES WITH MASTER LOADING AND EJECTING MECHANISMS
Kenneth J. Tonkin, Glenview, John L. Swanson, Libertyville, and Richard R. Jeschke, Niles, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed July 24, 1964, Ser. No. 384,859
U.S. Cl. 101—142 **5 Claims**
Int. Cl. B41f *9/00, 1/30, 21/00*

1. In a printing machine, the combination comprising a rotatable master cylinder for carrying a master printing sheet, a blanket cylinder for receiving an offset image from the master printing sheet, an impression cylinder for

pressing copy sheets against said blanket cylinder, a movable control lever swingable in opposite directions from a neutral position, detent means for detaining said lever in said neutral position and also in first, second and third positions on one side of said neutral position, and an additional position on the other side of said neutral position, means operable by movement of said control lever from said neutral position to said first position for causing the application of ink and water to the master printing sheet, means operable by movement of said control lever to said second position for causing the development of



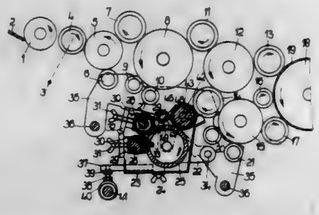
an offset image of the master printing sheet on said blanket cylinder, means operable by movement of said control lever to and beyond said third position for causing the feeding of copy sheets between said blanket and impression cylinders, means operable by movement of said lever from said neutral position to said additional position for causing the ejection of the master printing sheet from said master cylinder, and means operable by movement of said lever to said additional position for causing the removal of the image from said blanket cylinder.

3,431,842
WETTING MECHANISM FOR OFFSET PRINTING MACHINES

Richard Winkler, Rengsdorf, and Kurt Dunnebier, Gladbach, Germany, assignors to Winkler & Dunnebier Machinenfabrik und Eisengiesserei KG, Neuwied am Rhein, Germany, a corporation of Germany

Filed Aug. 28, 1967, Ser. No. 663,622
Claims priority, application Germany, Dec. 5, 1966, W 42,909

U.S. Cl. 101—142 **3 Claims**
Int. Cl. B41f *9/00;* **B41l** *23/00, 25/00*



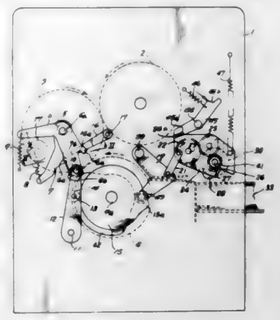
A wetting mechanism is intended for use with an offset printing machine having at least three form rollers and at least two vibrator rolls engaging the form rollers. The wetting mechanism includes a transfer roller engaging a squeezer roller which engages a scoop roller mounted in a trough for the wetting liquid. The transfer roller is in engagement either directly with one of the vibrator rolls or with a rubber roller which engages the vibrator rolls. The scoop roller may be moved in and out of contact with the transfer roller during the operation of the printing machine. Additional squeezer rollers may be located around the scoop roller and a blower may be provided between the squeezer roller and the transfer roller.

3,431,843
DETECTING DEVICE FOR A COPY SHEET CLAMPING DEVICE IN AN OFFSET PRINTING MACHINE

Tamaki Kaneko and Yoshiharu Kagari, Tokyo, Japan, assignors to Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Dec. 28, 1966, Ser. No. 605,308
Claims priority, application Japan, Dec. 30, 1965, 40/81,895

U.S. Cl. 101—218 **4 Claims**
Int. Cl. B41f *7/02, 1/30, 21/00*



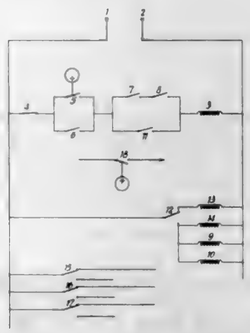
A safety device for a printing machine which separates the blanket and impression cylinders when there is no copy sheet, or copy sheet is improperly positioned on the impression cylinder.

3,431,844
SHEET-FED PRINTING PRESSES

Peter James Ogden, Bramhope, Leeds, England, assignor to Vickers Limited, Millbank, London, England, a British company

Filed May 3, 1966, Ser. No. 547,309
Claims priority, application Great Britain, May 5, 1965, 19,053/65

U.S. Cl. 101—234 **4 Claims**
Int. Cl. B41f *13/24, 5/16, 5/18*



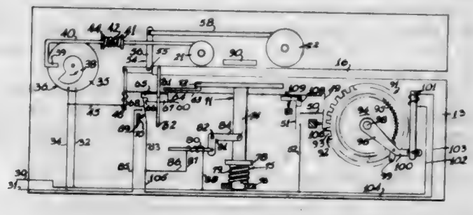
A sheet-fed printing press has an electric control system for controlling disabling of its printing means. The system includes a switch which is closed by manual operation of means for starting the feed of sheets to the press, a sensing device for sensing whether or not a sheet is properly positioned on its way to be printed, a pilot relay actuated by the sensing device, a disabling relay for disabling the printing means when it is deenergized and an auxiliary control relay. The latter relay energizes the disabling relay when it is itself energized. In a circuit for energization of the auxiliary control relay there are three contact arrangements in series. One contact arrangement is a contact pair which is closed and opened again at predetermined instants in the operating cycle of the printing press, this being in parallel with a holding contact pair which closes when the auxiliary control relay is energized. The second contact arrangement is a contact pair of the pilot relay which is normally closed but opens when no properly positioned sheet is sensed by the sensing device during a prescribed period in the operating cycle, and then closes again, the opening and closing taking place before and after the closing and opening of the first-mentioned contact pair. The third contact arrangement is the aforementioned switch in parallel with a normally open contact pair of the disabling relay.

3,431,845
CARD CONTROLLED PRINTING AND NUMBERING MEANS

Harrison G. Hooper, Atlanta, Ga., assignor to Lathem Time Recorder Company, Atlanta, Ga., a corporation of Georgia

Filed Feb. 4, 1966, Ser. No. 525,227

U.S. Cl. 101—287 **7 Claims**
Int. Cl. B41f *1/00;* **B41l** *45/00;* **B41j**



An improvement for a stamping machine having a slot therein for the insertion of an article therein to be stamped, including a first electrical switch, a platen means constructed and arranged for causing the article to be stamped and for opening the first electrical switch upon movement thereof, trigger means for closing the first electrical switch in response to the insertion of the article in the slot; a sequential indicating mechanism comprising rotatable means constructed and arranged to rotate about its axis, the indicating mechanism defining indicia for selective stamping on said articles, and advancing means operatively connected to the first electrical switch and the rotatable means for rotating the rotatable means a predetermined distance upon each closing of the first electrical switch, the advancing means including a second electrical switch constructed and arranged to open and close in response to the rotation of the rotatable means, and a third electrical switch constructed and arranged to close upon movement of the platen means so that closing both the second and third switches advances the sequential indicating mechanism to change the indicia to be stamped on the article.

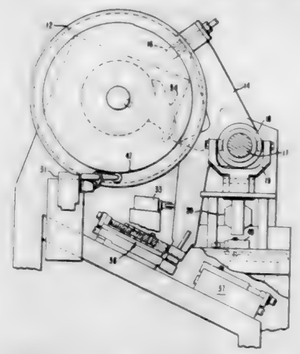
3,431,846
OFFSET IMAGE TRANSFER PROCESS

Robert Haun Beck, Fair Haven, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 28, 1966, Ser. No. 568,663

U.S. Cl. 101—426 **2 Claims**
Int. Cl. B41c *3/00;* **B41f** *3/12;* **B41m** *1/06*

An offset image transfer process and apparatus comprising a frame, two coating rolls carried by the frame, one roll being one-half the diameter of the other, means for rotating the rolls in synchronism and in surface contact, and for disengaging the surfaces; and securing means on the larger roll to hold a matrix image-bearing sheet



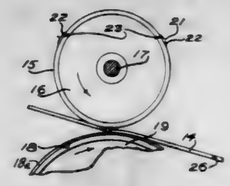
and an image receptor sheet 180° apart while in a fixed position on the larger roll. This process is useful in color proofing where images in various colors are transferred in superimposed registrations onto a receptor sheet.

3,431,847
PERFORATING PRINTING IMPROVEMENT

George B. Smith, 190 Linden Tree Road, Wilton, Conn. 06897, and Robert A. Vested, Weston, Conn., said Vested assignor to said Smith

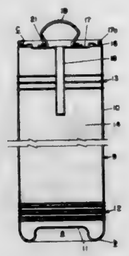
Continuation-in-part of application Ser. No. 304,177, Aug. 23, 1963. This application Mar. 31, 1967, Ser. No. 627,391

U.S. Cl. 101—426 **4 Claims**
Int. Cl. B41c; B41m; B41n



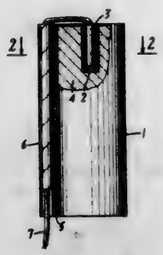
The invention is a method of producing an extensive plurality of flexible packages having exposed perforations in registry with printed matter in an extensive lengthwise series of block units in lengthwise parallel rows of them, with each such block unit representing the printed matter for a single flexible package, by the combination of steps of rigidly securedly but detachably affixing to the cylindrical surface of a roll ordinarily used as a printing roll of a printing station of a flexographic or rotogravure printing press, a number of spaced apart in parallel relationship elongated flexible perforating strips and parallel to the axis of the resulting perforating roll, with the perforating means for each strip extending radially outwardly from its base; feeding through the press a web of stock and applying to the web the printed matter and then passing the web between the perforating roll and its impression roll (sheathed in a securedly affixed but detachable tympan) to apply to it perforations in registry with the printed matter and transverse to the web length.

3,431,848
EXPLOSIVE CARTRIDGE ASSEMBLIES
Stephen F. Foster, Irving, Tex., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 636,572
U.S. Cl. 102—24 25 Claims
Int. Cl. F42b *3/10*



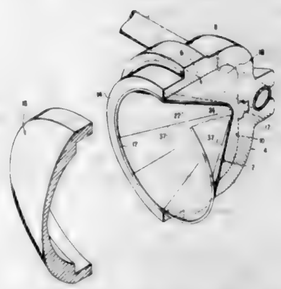
An explosive cartridge assembly particularly adaptable for offshore seismic exploration is provided, of which the shell and at least one end closure is formed of plastic; a plurality of protruding ridge members are disposed transversely on the shell outer wall to facilitate stacking; and each end closure, when plastic, is recessed centrally to provide a remaining peripheral rim portion to facilitate hand handling. In preferred practice the cartridge assembly contains a substantially noncompressible charge to facilitate stacking, and booster well and /or wall structure for self-disarming after a preset period of time in a water environment.

3,431,849
PRIMERS FOR USE WITH DELAY ACTION BLASTING CAPS AND PROCESS OF BLASTING USING THE SAME
Forrest L. Kern and William L. Schwoyer, Allentown, and Thomas P. Dowling, Fullerton, Pa., assignors, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland
Filed May 31, 1967, Ser. No. 642,396
U.S. Cl. 102—24 11 Claims
Int. Cl. F42b *3/10*



Primer cartridges are provided adapted for use with nonelectric delay action blasting caps, initiated by low energy detonating cord, and comprising a cartridge for primer explosive, a receptacle in the cartridge for reception of a blasting cap, a layer of energy-absorbing material on the exterior of the cartridge, and a fuse holder means attached to the layer, with the layer interposed in between the fuse holder and the primer cartridge wall. The layer separates the fuse from the primer wall, and prevents detonation of the primer by the fuse.

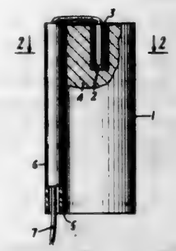
3,431,850
SHAPED CHARGE AND METHOD OF MANUFACTURE THEREFOR
Glenn B. Christopher, Arlington, Tex., assignor to Jet Research Center, Inc., Arlington, Tex., a corporation of Texas
Filed July 13, 1967, Ser. No. 653,269
U.S. Cl. 102—24 9 Claims
Int. Cl. F42b *1/02*



A liner for a shaped charge which includes a conical, peripherally extending, main wall of uniform thickness converging axially inwardly from an open outer end. A closed inner apex portion integral with the main wall is of relatively thinner, varying wall thickness. The main wall includes two slots which extend axially of the wall to divide it into two wall parts. The slots may be spaced peripherally by less than half a circumference to cause the wall to be unequal or alternatively the slots may be of unequal length.

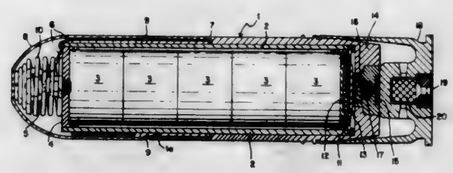
A method for manufacturing the shaped liner which includes cutting an integral, sheet metal blank in the form of two oppositely directed intersecting, arcuate segments disposed about a common diameter and press forming the blank between conoidal mating press members.

3,431,851
PRIMERS FOR USE WITH DELAY ACTION BLASTING CAPS AND PROCESS OF BLASTING USING THE SAME
Forest L. Kern and William L. Schwoyer, Allentown, and Thomas P. Dowling, Fullerton, Pa., assignors to Trojan Powder Company, Allentown, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 642,396, May 31, 1967. This application Aug. 15, 1967, Ser. No. 660,745
U.S. Cl. 102—24 12 Claims
Int. Cl. F42b *3/10*



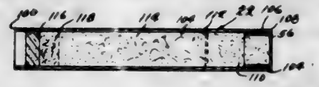
Primer cartridges are provided adapted for use with nonelectric delay action blasting caps, initiated by low energy detonating cord, and comprising a cartridge for primer explosive, a receptacle in the cartridge for reception of a blasting cap, and a tubular fuse holder means made of energy-absorbing material and attached to the cartridge, so that the material of the fuse holder is interposed between the fuse and the primer cartridge wall. The tubular holder separates the fuse from the primer wall, and prevents detonation of the primer by the fuse.

3,431,852
POSITION MARKER
Calvin W. Fowler, Millersville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 15, 1967, Ser. No. 661,174
U.S. Cl. 102—32 7 Claims
Int. Cl. F42b *13/44*



A position marker launched from the ground with a M 79 grenade launcher designed to penetrate a jungle canopy and then deploy into a configuration which will reliably hang a payload, namely smoke canisters, high in the tree-tops at a point very near the point of canopy penetration and with a minimum of expanded metallic components falling through to the ground to endanger the launching personnel.

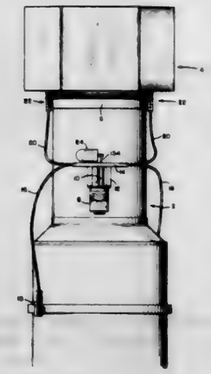
3,431,853
DEFENSIVE WEAPON AND CARTRIDGE THEREFOR
Albert C. Warner and Manton E. Allen, both of P.O. Box 4486, Santa Fe, N. Mex. 87501
Original application Jan. 6, 1966, Ser. No. 519,040. Divided and this application May 17, 1967, Ser. No. 649,769
U.S. Cl. 102—39 5 Claims
Int. Cl. F42b *13/46*; F41c *3/0*



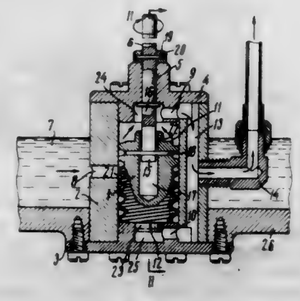
A cartridge for discharging and dispersing a lachrymator charge. The cartridge has a cylindrical exterior surface of substantially uniform diameter throughout its length and includes a tubular shell having at one end a rim fire primer. The annular base rim of the primer abuts the one end of the shell and has a maximum diameter which is not greater than the outside diameter of the shell. A propellant charge in proximity to the primer and a lachrymator charge is disposed within the tubular shell.

3,431,854
PASSIVE SEPARATION SYSTEM
David W. Rabenhorst, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 4, 1967, Ser. No. 658,988
U.S. Cl. 102—49.4 9 Claims
Int. Cl. F42b *15/10*

The invention relates to a mechanically operable system to accomplish separation of a satellite from its launch vehicle, release of despin weights and launch vehicle tip-over subsequent to satellite separation. The device includes a pneumatic timer, an assembly of triggers operatively connected to the timer, a clamp cooperating with a trigger to releasably fasten a satellite to a launch vehicle and a tip-over rocket operable by one of the triggers for diverting the flight of the launch vehicle. The timer comprises a bellows which collapses upon reaching a near vacuum environment. A plunger attached to the bellows is advanced upon the collapse of the bellows to engage the triggers. The bellows is surrounded by a chamber that is evacuable through a slow metering orifice to the low pressure environment. The slow evacuation of said chamber permits a gradual expansion of the bellows and a slow retraction of the plunger, which retraction effects delayed sequential releases of the triggers, thereby actuating sequentially the releasable clamp and the tip-over rocket.

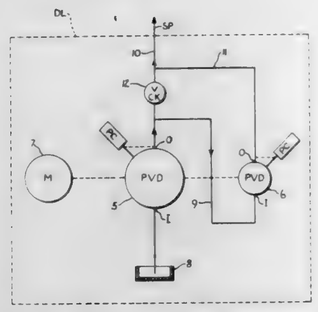


3,431,855
SCREW PUMP
Boris Afanasievich Kazantsev, per. Nechipurenko 2, kv. 20; Igor Nikolaevich Sitro, ul. Gaidara 37, kv. 25; Vladimir Avksentievich Malyk, ul. Gorkogo 26, kv. 13; and Isaak Grigorievich Elyashev, per. Griboedova 4, kv. 4, all of Odessa, U.S.S.R.
Filed Mar. 6, 1967, Ser. No. 620,947
U.S. Cl. 103—3 3 Claims
Int. Cl. F04d *29/50*



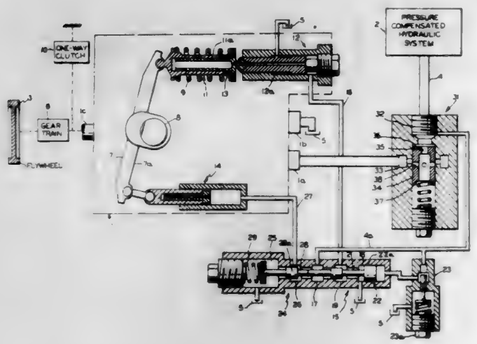
A screw pump having a rotor which is capable of free displacement axially within its casing. Feeders for the liquid being pumped are arranged at the mid-part of the rotor and offtakes at the ends of the rotor. The offtakes are capable of being alternatively overlapped by the end surfaces of the rotor when the direction of rotation of the rotor is changed.

3,431,856
TWO-STAGE PUMPING APPARATUS
Charles H. Whitmore, Burnsville, Minn., and Walter Ernst, Dayton, Ohio, assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Filed Feb. 6, 1967, Ser. No. 614,128
U.S. Cl. 103—5 **1 Claim**
Int. Cl. F04b *23/04, 49/08*



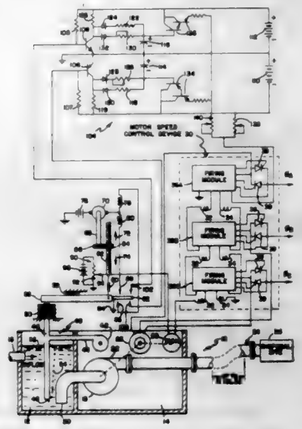
A pair of variable displacement, pressure compensated pumps connected to provide a high volume low pressure output when the work load is below a predetermined value and for staged series operation to provide a lower volume at higher pressure when the work load is above said predetermined value.

3,431,857
CONTROLS FOR OVERCENTER MOTOR-PUMP UNIT
Lyston C. Jennings and Howard C. Spooner, Watertown, N.Y., assignors to General Signal Corporation, a corporation of New Jersey
Filed Aug. 7, 1967, Ser. No. 658,918
U.S. Cl. 103—10 **3 Claims**
Int. Cl. F04b *49/08, 39/00*



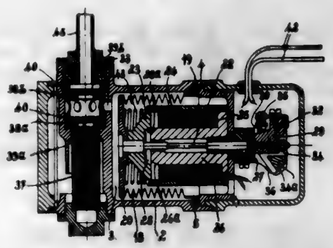
A pressure compensated hydraulic power system having a flywheel energy storage device which, depending upon system pressure, either drives or is driven by an overcenter motor-pump unit. The high pressure port of the motor-pump unit is connected with the system through a one-way flow limiter, and its displacement control element is positioned by controls which respond to system pressure. At pressures above a prescribed level, the control element is held in the maximum displacement position at one side of the zero displacement position, and, at pressures below this level, the control element is shifted over center and is positioned as required to maintain system pressure constant.

3,431,858
PUMPING SYSTEM WITH INERTIA STABILIZATION
Richard G. Lynn, Sr., St. Paul, James R. Machulda, Minneapolis, and John L. Hill, St. Paul, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 11, 1967, Ser. No. 666,844
U.S. Cl. 103—35 **21 Claims**
Int. Cl. F04b *49/02, 49/06*



A controlled rate pumping system for pumping fluids which have significant inertial properties. The pumping means is driven by a speed controlled motor, which motor is controlled by a first control means which maintains equilibrium flow during steady-state conditions and a second control means which temporarily changes flow in exaggerated fashion in response to transient inertia effects.

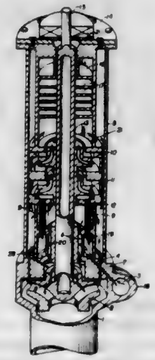
3,431,859
ELECTROMAGNETIC PUMP
Roger Le Flem, Oullins, France, assignor to Martin-Moulet & Cie, Oullins, Rhone, France
Filed May 24, 1967, Ser. No. 641,015
Claims priority, application France, May 27, 1966, 47,329
U.S. Cl. 103—53 **2 Claims**
Int. Cl. F04b *17/04, 45/02*



An electromagnetic pump in which a coil and its core are disposed in a deformable casing which in turn is placed in a chamber provided with a suction valve and a delivery valve, said casing includes a bottom with which the plunger core of the electromagnetic coil is integral. The core of the electromagnet includes, on the one hand,

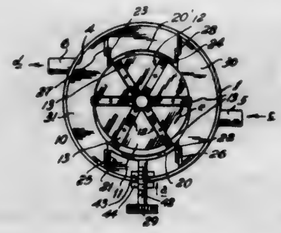
at one of its ends, a magnetic body, one face of which lies opposite a corresponding body or counterpart, said face being provided with an inner conical recess tapering at an angle of from 40° to 50° which is the same as the conical end portion of said corresponding body, and, on the other hand, a support for one of the contacts of a switch, and for a rocker supporting the other contact of the switch and adapted to be rocked and locked in either of its two positions by a spring strip integral with pump cylinder. The cylinder includes moreover a housing in the front surface thereof in which a filter is placed between the suction and delivery valves.

3,431,860
CENTRIFUGAL PUMP OF THE FREE SURFACE TYPE
Robert W. Atz, Canoga Park, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 14, 1967, Ser. No. 654,038
U.S. Cl. 103—111 **3 Claims**
Int. Cl. F04d *29/04, 7/02, 29/10*



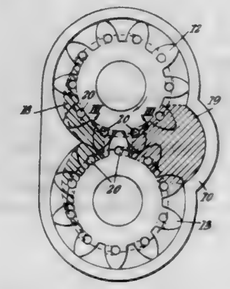
A centrifugal pump of a free-surfaced type is described wherein a portion of the fluid flow recirculates within the pump in the presence of a covering gas. A pair of auxiliary impellers are utilized to control the liquid level within the pump while also preventing flooding of the pump and providing the recirculating fluid therein, for maintaining fluid pressure at a pressurized bearing.

3,431,861
ROTARY VARIABLE-DISCHARGE PUMP WITH RADIALLY DISPLACEABLE VANES AND REVERSIBLE DIRECTION OF DRIVE
Hipolito Andres Martin, Corrientes St. 1393, Buenos Aires, Argentina
Filed Aug. 4, 1966, Ser. No. 570,253
U.S. Cl. 103—120 **5 Claims**
Int. Cl. F04c *15/04, 3/00*



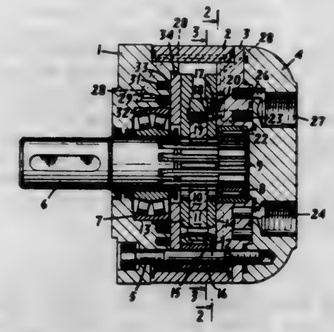
A rotary variable-discharge pump having radially displaceable vanes and reversible direction of drive in which a housing has openings at two opposite points for the inlet and outlet of liquid which communicate with inlet and discharge chambers located on both sides of a rotor and limited by the rotor and cylindrical curved walls parallel to the rotor shaft. The walls are diametrically opposed and integral with a pair of displaceable plates with the concavities of the curved wall facing the lateral surface of the rotor. Each plate has a circular guide groove facing the side of the rotor and a finger on each edge of each vane is positioned in the guide groove.

3,431,862
GEAR PUMPS
Harry Simister Bottoms, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Aug. 24, 1966, Ser. No. 574,822
U.S. Cl. 103—126 **3 Claims**
Int. Cl. F04 *1/04*



A gear pump having an inlet and an outlet at opposite sides respectively of the position at which the two gears mesh and in which at least one of the gears has holes in each of its teeth, the hole in each tooth extending from the end face of that tooth to the trailing face thereof.

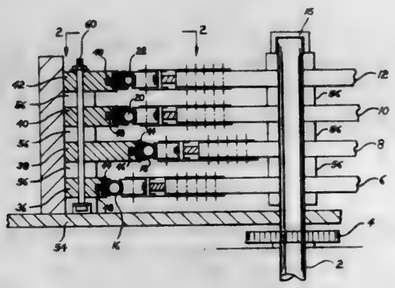
3,431,863
GUIDE MEANS
Jorgen F. Waldorff, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark
Filed Mar. 7, 1966, Ser. No. 540,443
Claims priority, application Germany, Mar. 5, 1965, D 46,690
U.S. Cl. 103—131 **4 Claims**
Int. Cl. F04c *1/16, 3/00*



Rotary apparatus useable as a hydraulic pump or motor provided with a guiding device for a working member which on movement in a circular path is displaced in a plane parallel to itself in planetary or orbital movement. A gear wheel is fixed to a main shaft and has peripheral teeth engageable with internal teeth of an internally

toothed ring gear having a larger number of teeth than the inner gear wheel. The ring gear is movable with respect to the pump or motor housing in conjunction with a planetary constraint device or guiding device which causes the ring gear axis to follow a complete circular path with each revolution of the gear wheel. The guiding device is a valve plate of the distributor valve having peripheral circularly cut recesses around the outer periphery of the ring gear and an equal number of rollers attached to the housing engaging in the recesses in such a way as to allow the ring gear axis to follow a circular path. The relative movement between the ring gear and the housing can be easily adjusted by varying the difference between the roller and recess diameters with respect to the difference between the radial distances of their centers from the respective ring gear or main shaft axis. The friction effect is minimized since the rollers are rotatable and are substantially in line contact with the recess surfaces. Another valve plate has a face adjoining the face of the guiding device with both faces having inlet and outlet ports. The valve plate functioning as the guiding device serves as a closure member which alternately opens and closes one or more ports on the other valve plate.

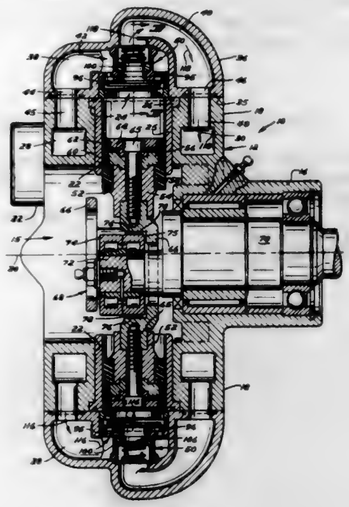
3,431,864
PERISTALTIC PUMP
Charles B. Jones, Jr., % Ireland Army Hospital, Fort Knox, Ky. 40121
Filed Dec. 22, 1966, Ser. No. 603,935
U.S. Cl. 103—149 **11 Claims**
Int. Cl. F04b *43/12, 43/08*



A peristaltic pump having a plurality of compressible tubes arranged in parallel relation and engageable by rollers movable longitudinally of the tubes to compress the tubes and advance liquid therethrough. The rollers are carried by rotatable means and are spaced different arcuate distances apart to cause a different or predetermined length of the compressible tube to be confined between the rollers whereby different amounts of fluid may be advanced through each tube on each cycle of operation even when using tubes having the same internal diameter. The tubes are preferably supported by platens of different radii or arcuate length to cooperate with the rollers moving longitudinally of the tubes upon rotation of the rotatable means.

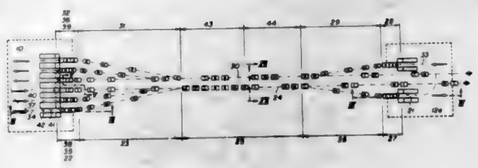
3,431,865
PUMP WITH CONCENTRIC VALVE MEANS
Ernest E. Cook, Anoka, and Ramon Pareja, Edina, Minn., assignors to Hypro, Inc., Minneapolis, Minn., a corporation of Ohio
Filed Apr. 21, 1966, Ser. No. 550,078
U.S. Cl. 103—228 **3 Claims**
Int. Cl. F04b *21/02, 1/04*

A compact pump structure having a plurality of radially disposed pumping cylinders, and having concentrically arranged suction and pressure manifolds, the structure utilizing a valving arrangement with a common valve body having an inner core accommodating the pressure valve assembly, and an outer annular portion accommodating the inlet valve assembly. The structure employs a valve housing assembly which is attached radially outwardly of the main housing, and provides for significant



ease of assembly and disassembly of the entire unit. The broader area available in the suction valve assembly enhances the flow properties of the structure, and also provides for a compact arrangement of the pressure valve assembly. The unitary body provides ease of cleaning for the valving, should it become clogged or fouled by virtue of use with suspended solids for the like.

3,431,866
CLOSED LOOP PASSENGER TRANSPORT COMPLEX
Gabriel Bouladon and Paul Zuppiger, Geneva, Switzerland, assignors to The Battelle Development Corp., Columbus, Ohio, a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,827
Claims priority, application Switzerland, Oct. 29, 1965, 14,980/65
U.S. Cl. 104—25 **5 Claims**
Int. Cl. B61b *3/00, 1/00, 13/10*

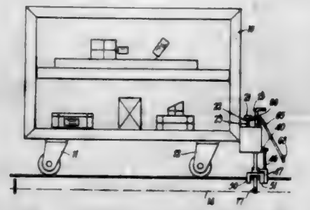


Continuous, endless passenger transport complex for connecting a main station with at least two secondary stations.

An endless series of transport units is provided for each connection. Each unit of a series is continuously moved along guide means, at low speed in each of its stations

and at high speed between stations. Each guide means for a series has in common with the others a main portion along which the units of each series travel at high speed and interleaved with the units of the other series, thus forming groups in which the units are ordered in an invariant succession.

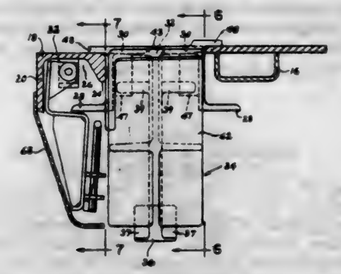
3,431,867
CONVEYOR
Arthur Thomas Charles Burrows, Hertfordshire, England, assignor to George W. King Limited, Stevenage, Hertfordshire, England, a British company
Filed Mar. 20, 1967, Ser. No. 624,340
Claims priority, application Great Britain, Mar. 23, 1966, 12,900/66
U.S. Cl. 104—172 **11 Claims**
Int. Cl. B61b *9/00;* **B61j** *3/04*



In a floor conveyor of the kind wherein load carrying trolleys are towed or propelled over a floor by virtue of the engagement of a depending bolt or rod on each trolley with a driving abutment on an endless drive chain disposed below the floor in a trough or channel defining the conveyor path the provision of selector means on the trolleys whereby it will be possible to cause any trolley to be diverted automatically from the conveyor path to any preselected one of a number of branch lines leading from the latter. The selector means applied to a trolley include a selector disc capable of being set in a predetermined angular position to correspond to a selected branch line or alternatively a punched tape having one or more holes at predetermined points therealong to correspond to one or more selected branch lines, there also being a feeler element on the trolley adapted as the trolley moves along the conveyor and approaches each branch line to be actuated by a member adjacent the conveyor path, cam actuated ratchet means adapted on each actuation of the feeler element to impart a limited movement to the selector disc or tape as the case may be and means adapted when the disc or a hole in the tape is brought to a position corresponding to the selected branch line to effect setting of a guide member which will be effective to cause diversion of the trolley on to such branch line.

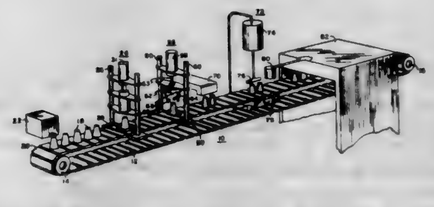
3,431,868
COVER FOR DECK OPENINGS IN RAILWAY FLATCARS
Eugene J. Cordani, Florissant, and Edward H. Sittner, Bridgeton, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 8, 1967, Ser. No. 644,534
U.S. Cl. 105—366 **2 Claims**
Int. Cl. B61d *3/06, 17/10;* **B65j** *1/22*

A railway flatcar having a generally flat deck for the transport of either containers or roadway vehicles with cutout portions or openings formed in the deck to receive container corner supports in a retracted position. A separate cover for each deck opening is mounted beneath the deck surface and is pivoted upwardly to a raised position to cover an associated deck opening when the container support is in an erect or container support position. The container supports cover the openings in retracted posi-



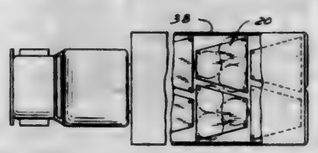
tion and the associated covers are pivoted downwardly beneath the deck in retracted position.

3,431,869
EDIBLE FOOD CONTAINER FORMING MACHINE AND METHOD
Barton Frank, State College, Pa., assignor to Henry Bloom, Pennsauken, N.J.
Filed Oct. 22, 1964, Ser. No. 405,674
U.S. Cl. 107—4 **13 Claims**
Int. Cl. A21b *5/02;* **A21c** *11/00*



This invention comprises a process and an endless belt machine for the making of an edible food container from pretzel dough, in which the dough is extruded on a male mold section, compressed between the male mold section and a female mold section to form a container. The lateral surface of this container is perforated, dryed by air blast, sprayed with hot caustic solution and baked. An endless belt conveyer machine is provided whereby these operations may be accomplished at various stations along said conveyor.

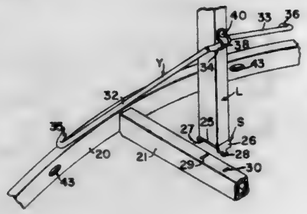
3,431,870
TRAPEZOIDAL PALLET FOR PARTS
Robert M. Naylor, Berkeley Heights, N.J., and Herbert L. Carpenter, Jr., Babylon, N.Y., assignors to The Greif Bros. Cooperage Corporation, Linenhurst, N.Y., a corporation of Ohio
Filed Mar. 20, 1967, Ser. No. 624,488
U.S. Cl. 108—55 **6 Claims**
Int. Cl. B65d *19/44*



A pallet for holding parts during handling, shipping, and storage. The pallet includes a horizontal trapezoidal shaped base and a plurality of upright members resting

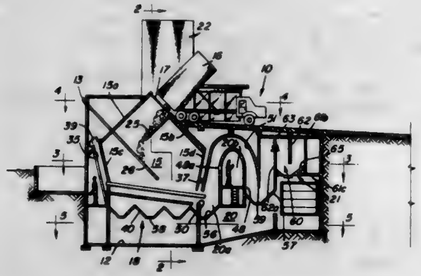
on the base and extending upwardly therefrom. A trapezoidal shaped cover rests on the upper surface of the upright members and is aligned with the base. Means are positioned on the base and on the cover to retain each of the upright members in fixed position thereby retaining at least one column of parts therebetween to facilitate the handling, shipping, and storage thereof.

3,431,871
READILY ASSEMBLED AND DISASSEMBLED TABLE
Arthur W. Ellsworth, South San Gabriel, Robert K. Fujioka, Los Angeles, and Tim M. Uyeda, South San Gabriel, Calif., assignors to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Continuation-in-part of application Ser. No. 494,595, Oct. 11, 1965. This application Nov. 7, 1966, Ser. No. 600,329
U.S. Cl. 108—153 **18 Claims**
Int. Cl. A47b *3/02*



A table has a top which is provided with a peripheral, depending rim and radial struts fixed within such rim, with legs removably attached to the struts. A yoke pivotally connected to each leg holds the same in fixed position. The ends of the yokes are attached by removable clips to the inside of the rim or have hooks for engaging holes in the inner edge of the rim, the rim being hollow in the latter instance. The table may be stored in a minimum of space by removing the legs and yokes and storing the same in the quadrants between the struts.

3,431,872
MUNICIPAL INCINERATOR
Michael Stefanyk, Hinckley, Ohio
(4406 Forest Hills Blvd., Parma, Ohio 44134)
Filed May 8, 1967, Ser. No. 636,848
U.S. Cl. 110—7 **25 Claims**
Int. Cl. F23b *7/00;* **F23k** *5/00;* **F23h** *15/00*



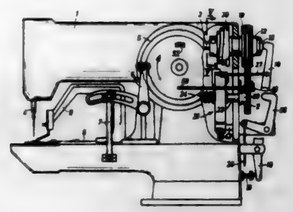
A municipal incinerator embodying a furnace including a combustion chamber having an opening to receive refuse dumped from a truck. The chamber includes a hearth for supporting the refuse having a set of stationary grate bars, a set of movable grate bars, and a plurality of air conduits disposed intermediate the aforementioned bars to distribute the refuse through the hearth. Second and third chambers for secondary combustion and cleansing the products of combustion are provided. A fan induces the flow of gases through the chambers. Plural furnaces may be provided to burn refuse in one furnace while filling the other furnace.

3,431,873
FORCED AIR BURNER
Douglas V. Durand, 3301 32½ Ave. NE., Minneapolis, Minn. 55418
Filed July 13, 1967, Ser. No. 653,154
U.S. Cl. 110—18 **10 Claims**
Int. Cl. F23g *5/00, 1/00;* **F23l** *5/04*



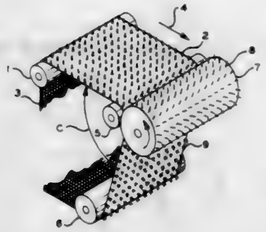
A rotary lawn mower combined with an upright trash burner for supplying a continuous stream of air to the bottom of the trash burner. A flexible cloth air tube attached at one end to a tubular coupling is used to direct air from the mower into the bottom of the burner. The opposite end of the air tube is attached to a tubular adapter designed to insert into a cylindrical receptacle positioned in a hole in the bottom of side wall of the burner. An inverted U-shaped screen and an upwardly directed deflector are located on the bottom of the burner in alignment with the receptacle so that air discharged into the burner is directed upwardly by the deflector through the screen to evenly disperse the air through the trash in the burner.

3,431,874
STOPPING MECHANISM FOR SEWING MACHINES
Franz Schneider, Kaiserslautern, Germany, assignor to G. M. Pfaff AG., Kaiserslautern, Pfalz, Germany
Filed July 17, 1967, Ser. No. 653,821
Claims priority, application Germany, July 23, 1966, P 40,034
U.S. Cl. 112—219 **2 Claims**
Int. Cl. D05b *69/00;* **F16p** *3/00;* **F16d** *67/00*



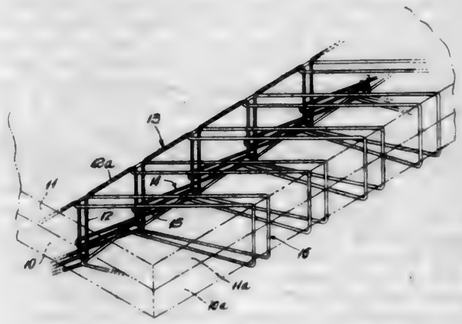
A stopping mechanism for a swing machine where a cam having an axial and radial track and a stopping device having a brake member with cooperating axial and radial brake surfaces are adapted to guide the braking operation in relation to a programming device.

3,431,875
TUFTED ARTICLES AND METHOD FOR MAKING SAME
Harold D. Boultinghouse, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 22, 1966, Ser. No. 581,201
U.S. Cl. 112—410 **10 Claims**
Int. Cl. D05c *17/02;* **D04h** *11/00;* **B32b** *5/02*



A tufted article is formed by employing as the tufting material a substantially nonfibrous, fibrillatable material, and then fibrillating the tufts formed from said tufting material.

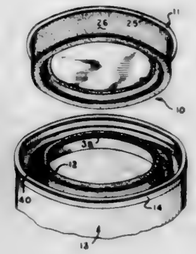
3,431,876
SINGLE NEEDLE, THREE-THREAD EDGE STITCH
Richard Russell, Tappan, N.Y., assignor to Willcox & Gibbs Sewing Machine Company, New York, N.Y., a corporation of New York
Filed Feb. 9, 1967, Ser. No. 614,921
U.S. Cl. 112—433 **5 Claims**
Int. Cl. D05b *1/20, 1/24*



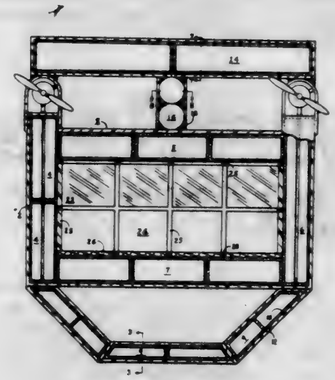
The stitch comprises a row of loops of needle thread passing through the fabric adjacent an edge thereof and having a looper thread disposed below the fabric interlocked and interlaced with the needle thread to form a tight and secure stitch, and a cover thread, independent of the securing stitch, extending over the edge of the fabric and interlocked with the needle thread on the upper side of the fabric and with the loops of the looper thread.

3,431,877
METHOD OF FORMING COATED FRICTION CLOSURES
James K. Kinnavy, Oaklawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 9, 1964, Ser. No. 416,986
U.S. Cl. 113—121 **10 Claims**
Int. Cl. B21d *51/44, 51/46*

10. A method of manufacturing a container end ring and an associated friction closure comprising the steps of spot-coating predetermined areas of metallic sheet material with organosol coatings, forming one coated portion of the sheet material into an annular blank and another coated portion of the sheet material into a circular blank, forming the annular blank into a container end ring having an annular generally U-shaped channel which is at least in part coated with the organosol, and forming the circular blank into a closure having an annular generally U-shaped bead which is at least in part coated with the organosol.

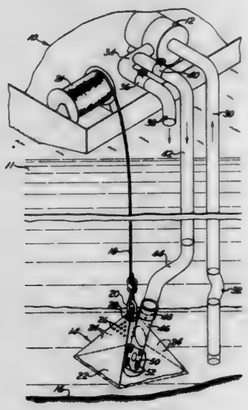


3,431,878
FLUIDFOIL RINGCRAFT
Alvin Edward Moore, 916 Beach Blvd., Waveland, Miss. 39576
Filed Mar. 3, 1966, Ser. No. 531,565
U.S. Cl. 114—66.5 **55 Claims**
Int. Cl. B63b *1/18*



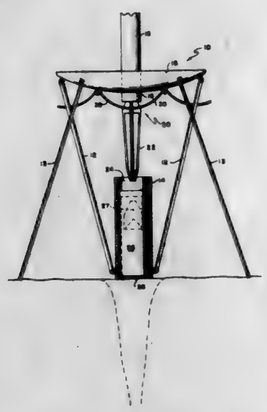
A lightweight, slightly heavier-than-air vehicle (such as an aircraft or boat), yieldable without fracture under major shocks, having fluid-dynamic and aerostatic lifting means. It comprises: flexible skin means; strength-providing, shock-resisting elements of flexible material within the skin; flexible (optionally foam) plastic surrounding said elements and between them and the skin; and optional lighter-than-air balloons in the plastic. To a cabin or fuselage there are attached upper and lower fluidfoils, each of which has a flexible skin comprising plastic and, within the skin, strength-providing elements, which may be inflated tubes, or spring-steel mesh or the like imbedded in the skin plastic. When the vehicle is in water the lower fluidfoil is a hydrofoil. Optional means to provide aerostatic lift, centered above the vehicle's center of gravity, may be in flexible foam plastic that substantially fills a fluidfoil skin, or may be an elongated balloon.

3,431,879
METHOD AND APPARATUS FOR OFFSHORE ANCHORING
Randolph E. Westling, Miami, Fla., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 11, 1967, Ser. No. 660,066
U.S. Cl. 114—206 12 Claims
Int. Cl. B63b *21/24*; E02b *17/00*



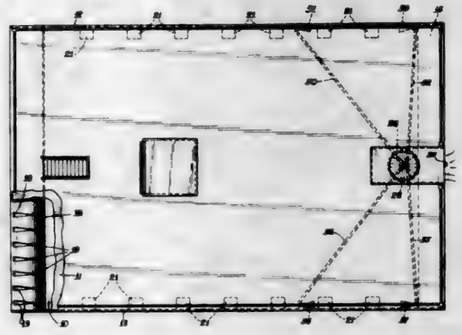
The invention comprises methods and apparatuses for underwater anchoring comprising a hollow anchor which is filled, by various means, with underwater bottom material, to obtain a larger more efficient anchor with less anchor material than would go into a solid anchor of the same shape or a conventional fluke type anchor of the same anchoring ability.

3,431,880
EXPLOSIVE EMBEDMENT ROCK ANCHOR
Otis R. Pannell, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 18, 1967, Ser. No. 691,533
U.S. Cl. 114—206 3 Claims
Int. Cl. B63b *21/28*



An explosive rock embedment anchor assembly having a shaped charge explosive for producing a hole in a hard ocean floor, and a projectile gun for subsequent embedment of a projectile anchor in the hole.

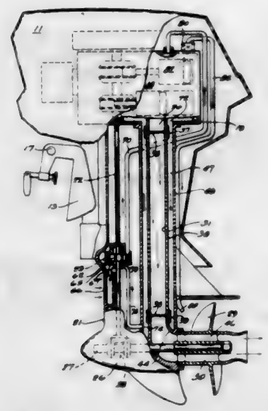
3,431,881
BOAT WITH AIR PROPULSION AND SUPPORT MEANS
Peater van Dillard Redmond, 1631 Sherman Place, Des Plaines, Ill. 60016
Filed Nov. 13, 1967, Ser. No. 682,086
U.S. Cl. 115—11 13 Claims
Int. Cl. B63h *11/00*



A boat has downwardly extending sides defining an open bottom air compartment. Within the compartment are a plurality of buoyancy tanks. The portion defining the rear of the compartment is a panel slanting upwardly and forwardly. The top of this panel is solid while the lower part of the panel has a plurality of triangular openings with the bases of the triangles at the bottom. The fan type air compressor has an air intake above the water level and feeds four nozzles positioned below the water and below the compartment so that air released from the nozzles will be trapped within a compartment. One pair of the four nozzles is positioned adjacent one side of the boat and a second pair of the four nozzles is positioned adjacent the other side of the boat. One nozzle of each pair is directed rearwardly so that air released therefrom will propel the boat forwardly and the other nozzle of each pair is directed forwardly so that air released therefrom will propel the boat rearwardly. Between each pair of nozzles and the compressor is a valve comprising an outer casing member having two ports spaced along the longitudinal axis of the casing and with the same radial position. Within the cylindrical casing member is a cylindrical sleeve member having two ports with the same longitudinal position as the ports of the casing member but positioned 180 degrees apart radially. The sleeve and casing are open at one end and are positioned in a plenum communicating with the compressor so that air from the compressor will enter the plenum and the open end of the members. A handle is connected to the sleeve so that the sleeve may be rotated within the casing to permit the operator to align one port of the sleeve member with the corresponding port of the casing member or align the other port of the sleeve member with the corresponding port of the casing member. Thus, the air may be directed into one or the other of the nozzles of a pair.

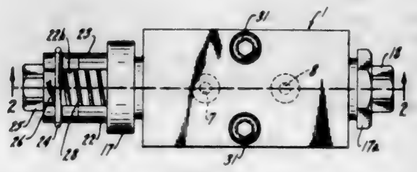
3,431,882
MARINE PROPULSION DEVICE
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,454
U.S. Cl. 115—17 9 Claims
Int. Cl. B63h *21/26*; F01p *3/12*

Disclosed herein is a marine propulsion unit with a water jacket which surrounds an engine exhaust gas tube and which forms a portion of a recirculating engine cooling system. The lower end of the water jacket is in fluid communication with the water pump, and the upper end of the water jacket is in communication with the water jacket for the engine power head. A discharge



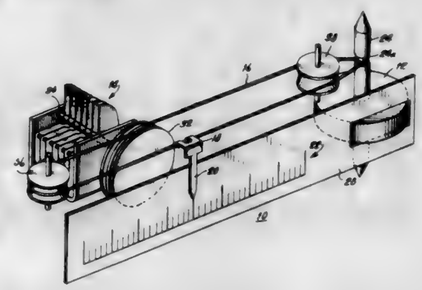
conduit with a temperature responsive valve removes warm water from the power head to maintain uniform operating temperature of the engine. In one embodiment the discharge conduit dumps into the surrounding water near the propeller. In another embodiment the discharge conduit dumps into the exhaust gas passage.

3,431,883
PRESSURE DIFFERENTIAL INDICATOR FOR FILTERS
Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 19, 1965, Ser. No. 433,874
U.S. Cl. 116—70 2 Claims
Int. Cl. G01l *19/12*; B01d *35/00*



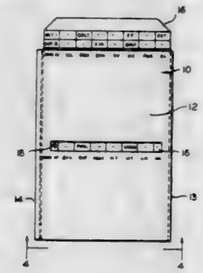
A contamination indicator for fluid filters in which fluid pressure on one side of the filter is continuously supplied to one side of a piston and fluid pressure on the other side of the filter is continuously supplied to the other side of said piston, the piston moving in automatic response to differentials in said pressures and carrying oppositely directed shafts extending outwardly of the piston housing to actuate an indicator, the shafts extending through plugs inserted in identical bores and retaining identical seals in the opposite ends of the piston chamber.

3,431,884
TUNING CONTROL FOR RADIO RECEIVERS
Saul B. Marantz, Kew Gardens, N.Y., assignor to Marantz Company Inc., Woodside, N.Y., a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,548
U.S. Cl. 116—124.1 2 Claims
Int. Cl. H03j *1/02*



A tuning control for a radio receiver and the like in which the manually rotatable control member for variably adjusting a tuning element is a massive flywheel turning on a vertical axis.

3,431,885
EVENT INDICATOR
John Miklas, 5503 31st Ave., Kenosha, Wis. 53140
Filed Mar. 14, 1966, Ser. No. 533,909
U.S. Cl. 116—135 1 Claim
Int. Cl. G09f *9/00*

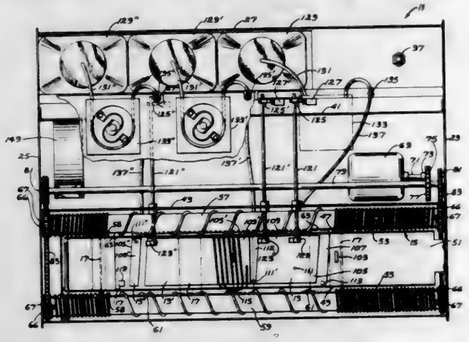


A device including an envelope having an open end and a front and a back side, each with a narrow transversely extending medial window therein, with the windows being in alignment with each other, and a flat card slidably disposed within the envelope with the upper edges of the card having sets of indicia disposed thereon, and the card having another set of indicia thereon adapted to be exposed in said medial windows, with the indicia including dates and locations and teams to appear at scheduled events, to provide sets of cooperative reading that can be read simultaneously with one setting of the card.

3,431,886
APPARATUS FOR APPLYING LIQUID TO SLIDES
James Benjamin McCormick, La Grange, and Leighton Clifford Johnson, Westmont, Ill., assignors, by mesne assignments, to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Continuation-in-part of application Ser. No. 379,822, July 2, 1964. This application June 7, 1965, Ser. No. 461,613
U.S. Cl. 118—10 10 Claims
Int. Cl. B05c *5/02*, *3/20*

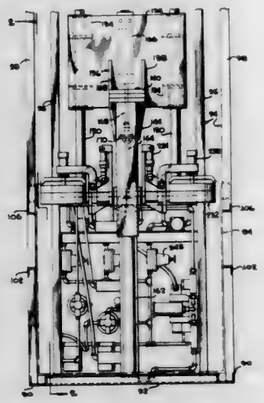
Apparatus and the method of operation thereof is described for conveying objects, such as microscope slides,

over a flat liquid applying surface and injectiing a treating liquid into the space between the object and the surface. Helical conveying apparatus is also described for



moving the slides from a substantially vertical position to a substantially horizontal position prior to conveying the slides over the liquid applying surface.

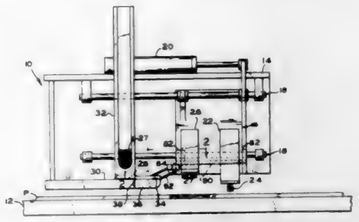
3,431,887
APPARATUS FOR COATING ARTICLES IN A FLUIDIZED BED
Carl K. Pettigrew, Rolling Hills, Reading, Michael C. Siminski, Jr., Sinking Spring, and Donald F. Swavely, Kenhorst, Reading, Pa., assignors, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania
Filed Nov. 13, 1963, Ser. No. 323,444
U.S. Cl. 118—11 **9 Claims**
Int. Cl. B05c *11/11, 11/12, 3/02*



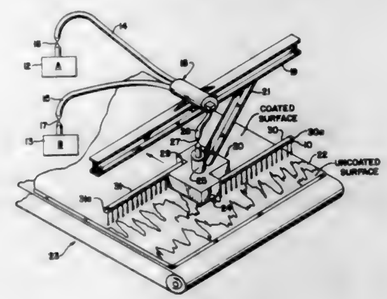
Apparatus for masking and coating articles in a fluidized bed which includes means for immersing articles in the bed, means for causing a minor motion of the articles while immersed and means for rotating the articles after removal from the bed to remove excess coating.

3,431,888
GLUE APPLICATOR FOR PANEL PATCHING MACHINE
William E. Warren, Beaverton, Oreg., assignor to Western Machinery Corporation, Portland, Oreg., a corporation of Oregon
Filed Dec. 4, 1967, Ser. No. 687,690
U.S. Cl. 118—238 **13 Claims**
Int. Cl. B05c *1/02*

A glue applicator for a panel patching machine wherein a rotatable glue roll carried by a glue reservoir mounted on the frame of the machine is supplied with motive power through the horizontal movement of a carriage on the machine which carries recess routing and patch inserting tools. The glue roll is mounted for downwardly pivoting movement in the reservoir against spring pressure so as to effectively coat with glue patches of slightly different thicknesses moved across the roll by the carriage.



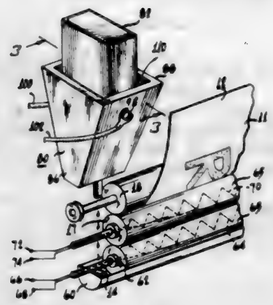
3,431,889
FLUID DISTRIBUTION BAR
Robert E. Fraatz, Richmond, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,487
U.S. Cl. 118—315 **5 Claims**
Int. Cl. B05c *5/00;* **B05b** *7/06*



Apparatus for applying a fluid downwardly onto a flat surface moving relative to the apparatus. The fluid distribution means comprises a horizontal pipe having a plurality of capillary tubing means positioned in openings in the pipe and of a length substantially greater than their inside diameters.

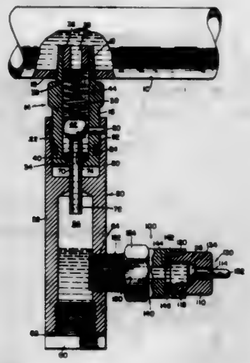
3,431,890
APPARATUS FOR REPLENISHING DEVELOPER IN AN ELECTROPHOTOGRAPHIC SYSTEM
Russell R. Ulary, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 28, 1967, Ser. No. 671,315
U.S. Cl. 118—637 **15 Claims**
Int. Cl. G03g *15/10;* **B05b** *5/02;* **B05c** *11/10*

Apparatus for replenishing principal developer, originally present in an electrophotographic system in the form of a solid meltable body, comprises a container for holding solid meltable replenisher developer. Heating means within the container are energized periodically to melt small portions of the replenisher developer as the principal developer is consumed. The container is formed with a lower opening and disposed so that the small portions of molten replenisher developer can fall through



the lower opening onto the principal developer to replenish the latter periodically.

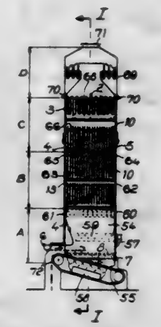
3,431,891
RESEARCH ANIMAL WATERING APPARATUS
Charles P. Boegli, Woodlawn, and Delbert Steigerwald, Terrace Park, Ohio, assignors to the Fieldstone Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 31, 1967, Ser. No. 612,855
U.S. Cl. 119—72.5 **8 Claims**
Int. Cl. A01k *1/00, 7/00*



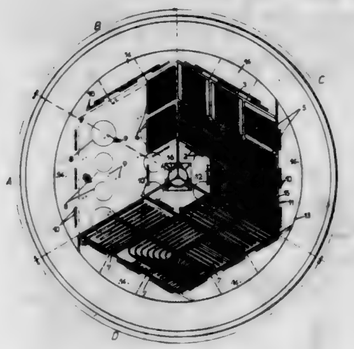
Watering apparatus actuatable by individual animals, and elements thereof including a valved air trap arranged to prevent communication of disease and contaimination amongst caged animals in a battery of cages, the apparatus being easily and quickly serviced without wetting the cage floors and without interrupting the supply of water to cages previously serviced.

3,431,892
PROCESS AND APPARATUS FOR COMBUSTION AND HEAT RECOVERY IN FLUIDIZED BEDS
Albert Godel, Paris, France, assignor to Compagnie Industrielle de Procédés & d'Applications S.A. (CIPA), Neuchatel, Switzerland, a corporation of Switzerland
Filed Aug. 2, 1967, Ser. No. 661,752
Claims priority, application France, Feb. 17, 1967, 95,369
U.S. Cl. 122—4 **10 Claims**
Int. Cl. F22d *13/00*

A process which may be used in conjunction with a steam generator for the combustion of smalls and recovery of heat wherein combustion takes place successively in a primary furnace and in a secondary furnace of postcombustion. In the primary furnace at least a portion of the smalls is combusted at a sufficiently high temperature to cluster the ash into clinkers or slag which can thus be separated from the coal and removed. The secondary furnace receives smalls directly or through gas flow carryover of ash-like carbon particles; it contains at least one fluidized layer of granulated refractory substances. Heat exchange surfaces of the steam generator are located in the fluidized layer to maintain a temperature which is sufficiently low to avoid scorification but which is sufficient for the combustion of particles supplied by the gas flow. Noncombusted residue is returned to the primary furnace for scorification and removal in the form of clinkers or slag.

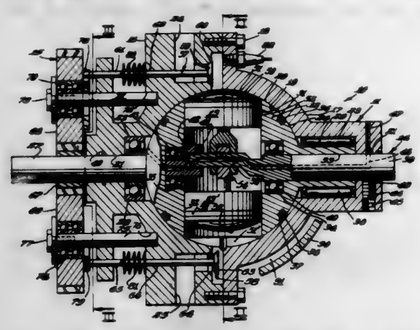


3,431,893
SINGLE-TUBE FORCED-CIRCULATION HEAT TRANSFER DEVICES
Lucien Frédéric Henri Marcel Fouché, Neuilly-sur-Seine, and Marc Roger Armand, Saint-Germain-en-Laye, France,, assignors to Fives-Penhoet, Paris, France, a French body corporate
Filed Nov. 8, 1966, Ser. No. 592,852
Claims priority, application France, Nov. 8, 1965, 37,666
U.S. Cl. 122—32 **11 Claims**
Int. Cl. F22b *1/08*



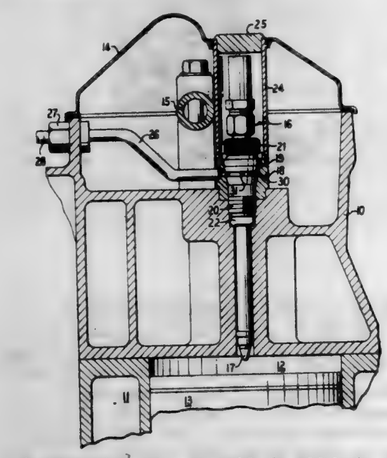
The device consists of juxtaposed unitary panels comprising a number of tubular elements, said panels being grouped into units, said units being so assembled as to have the shape of a polygonal annulus, and to leave between the outer contour of said annulus and the wall of the enclosure in which said units are housed, and in the central portion of said annulus, free spaces adapted to receive the supporting structure and permit the passage of the water-supply and steam-outlet pipes.

3,431,894
ROTARY DEVICE
Von D. Allred, Box 24, Afton, Wyo. 83110
Filed Mar. 8, 1967, Ser. No. 621,629
U.S. Cl. 123—8 16 Claims
Int. Cl. F02b *57/04*; F04b *29/00*



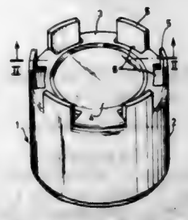
A rotary device which may be utilized as an internal combustion engine, a compressor, a fluid motor or the like has a spherical rotor which has outwardly extending shafts on the axis of its rotation and has a passageway defining a cylinder in which pistons are mounted. The rotor is mounted for rotation about the shafts in a housing which has a complementary spherical cavity and means including an inlet and outlet port for applying and removing a pressurized fluid to the cavity. The pistons are connected to a crank arm which is disposed in the cylinder and is adjustably secured to the housing so that the timing of the stroke of the piston can be adjusted relative to the angular position of the cylinder with respect to the inlet and outlet ports of the housing. The rotary device includes an embodiment in which an ignition means is included to produce an internal combustion engine and a second embodiment in which the inlet and outlet means are adjacent each other and opposite the ignition means to form a two-cycle internal combustion engine.

3,431,895
ENGINE FUEL INJECTION VALVE ASSEMBLY
John M. Bailey, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 16, 1967, Ser. No. 638,782
U.S. Cl. 123—32 1 Claim
Int. Cl. F02m *61/14*



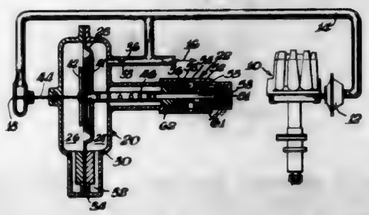
A fuel injection valve assembly in which the valve and nozzle are disposed within the engine head cover and in which a permanent adapter and supply line enable removal of the valve and nozzle without disturbing the supply line or removing the head cover.

3,431,896
VALVE TAPPETS AND METHOD OF MAKING SAME
Luciano Giulietti, Turin, Italy, assignor to RIV-SKF Officine di Villar Perosa S.p.A., Turin, Italy
Filed Feb. 14, 1968, Ser. No. 705,508
Claims priority, application Italy, Feb. 23, 1967, 795,674
U.S. Cl. 123—90 8 Claims
Int. Cl. F01l *1/14*; B23p *15/00*; F16h *53/06*



A valve tappet for an overhead camshaft engine is made from a sheet metal cup member by cutting a plurality of tongues around the edge of the end wall of the cup member and bending the tongues about said edge to form upstanding teeth comprising a discontinuous annular ridge surrounding a seating for a tappet spacer element on said end wall.

3,431,897
ENGINE TIMING ARRANGEMENT
Lamont Eltinge, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 24, 1967, Ser. No. 611,345
U.S. Cl. 123—117 3 Claims
Int. Cl. F02p *5/10*

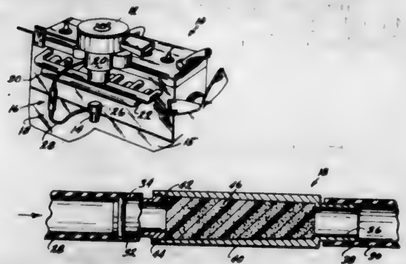


Engine ignition timing is temporarily sharply retarded whenever engine load is increased, by differential pressure control having one of the differential pressures connected to engine vacuum and to a servo that magnifies pressure increases.

3,431,898
APPARATUS FOR USE WITH AN INTERNAL COMBUSTION ENGINE FOR REDUCING AIR POLLUTION
Tommy Driscoll, 23850 Crown Valley Road, Acton, Calif. 93510, and Homer Richards, 47527 N. 91st St., Lancaster, Calif. 93534
Filed Feb. 1, 1967, Ser. No. 613,337
U.S. Cl. 123—119 4 Claims
Int. Cl. F02m *25/06*; B01d *29/00*

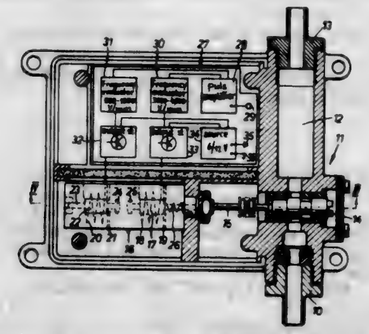
A duct connecting the crankcase of an internal combustion engine to the combustion air-intake whereby noxious gases are withdrawn from the crankcase. The contaminants are trapped in a filter provided in the duct.

Specifically, the filter comprises a transparent filter housing defining a frustum-shaped cavity containing a filter cartridge of cylindrical form and being a perforate or



cellular resilient material, e.g. sponge rubber or plastic. The filter housing terminates in a cylindrical section which is keyed to receive an end closure that also serves to retain the filter cartridge.

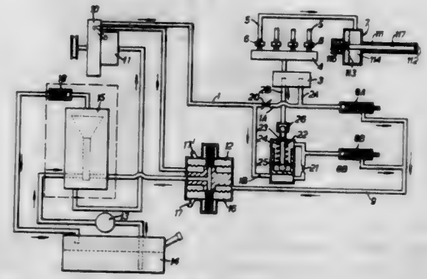
3,431,899
DEVICE FOR DELIVERING SUPPLEMENTARY AIR TO THE FUEL-AIR MIXTURE IN FOUR-STROKE-CYCLE ENGINES
Alfred Neidhart, Kusnacht, Zurich, Switzerland, assignor to Merkurium A.G., Kusnacht, Zurich, Switzerland
Filed Aug. 26, 1966, Ser. No. 575,410
Claims priority, application Switzerland, Aug. 31, 1965, 12,160/65
U.S. Cl. 123—119 3 Claims
Int. Cl. F02m *3/04, 23/06*



A device for reducing the carbon monoxide content of engine exhaust comprises means for supplying supplemental air to the engine to provide a leaner mixture at speeds less than maximum speed and greater than minimum speed. Means for controlling the supplemental air comprises a conduit, a valve for opening and closing the conduit and means for controlling the valve as a function of engine speed. The control means comprises a pulse generator producing pulses representative of engine speed and an electrical circuit including a pulse amplifier to which said pulses are applied.

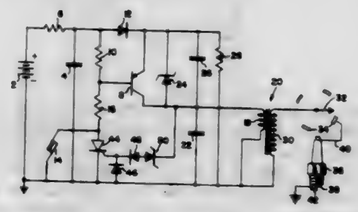
3,431,900
FUEL INJECTION SYSTEMS
Harold Ernest Jackson, Plympton St. Mary, England, assignor to Petrol Injection Limited, Plymouth, England, a British company
Filed Nov. 28, 1966, Ser. No. 597,435
Claims priority, application Great Britain, Dec. 24, 1965, 54,793/65
U.S. Cl. 123—139 5 Claims
Int. Cl. F02m *39/00*

A fuel injection system for an internal combustion engine, in which fuel pressure increases with increasing engine speed and in which, to provide proper fuel supply to the fuel injector nozzles over the whole of the engine operating speed range, the fuel supply path to the injector nozzles has first and second parallel flow branches, connected directly to the nozzles by feed conduits, the flow paths defined by the feed conduits and the nozzles including fixed flow equalising restrictors. In one embodiment, an engine load responsive fuel flow control valve connects the supply path and the first branch, and the second branch contains an engine load responsive fuel flow conload responsive valve) contains a reference flow restrictor the fuel pressure drop across which is indicative of fuel supply to the injector nozzles and is used to control a flow control valve in the second branch to maintain



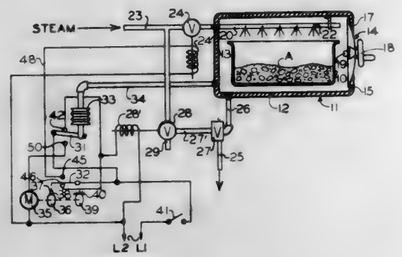
that branch open only at engine speeds below a preselected value. In a second embodiment, the supply branch contains an engine load responsive fuel flow control valve located upstream of both the first and second branches. Both the first and second branches include fuel pressure responsive valves, that in the first branch opening at a higher fuel pressure than that in the second branch. The second branch includes a reference flow restrictor and communicates with the first branch downstream of the fuel pressure valve in the first branch. At low engine speeds (when fuel pressure is low) the first branch is closed and the second branch is open. As engine speed (and fuel pressure) increase, the back pressure across the reference flow restrictor closes the second branch.

3,431,901
ELECTRONIC IGNITION CIRCUIT
William Paul Rogers, 200 W. Merchant St., Audubon, N.J. 08106
Filed Sept. 28, 1966, Ser. No. 582,572
U.S. Cl. 123—148 4 Claims
Int. Cl. F02p *1/00*; H05b *41/36*



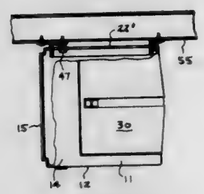
In an electronic ignition system, in which a transistor is controlled by breaker points to interrupt current in the primary of an ignition coil, the immediate resumption of current through the primary following a spark is accomplished by providing a controlled rectifier in shunt with the breaker points. The controlled rectifier has its gate connected so that it is rendered conductive almost immediately upon the occurrence of a spark.

3,431,902
PRESSURE COOKING SYSTEM INCLUDING PRESSURE OPERATED DRAIN VALVE
Alfred Vischer, Jr., Park Ridge, Ill., assignor of two-thirtieths each to William Vischer, Alfred Vischer III, Peter Vischer, and Gertrude V. Bouton, four-thirtieths each to Walter W. Zitzewitz and Elmer K. Zitzewitz, and one-thirtieth each to Gertrude J. Zitzewitz and Barbara O. Zitzewitz
Filed Jan. 30, 1967, Ser. No. 612,425
U.S. Cl. 126—20 8 Claims
Int. Cl. A21b *1/08*; A47j *27/62*



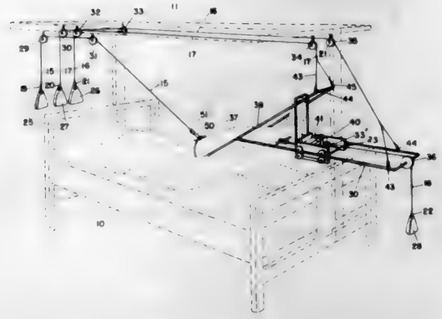
A pressure cooker includes a drain valve that responds to clean, heated vapor used for the preparation of food. The vapor is applied to one side of a diaphragm to urge the diaphragm into a closed position against an annular valve seat surrounding a relatively small orifice that opens into the bottom of the cooker. A washer-like biasing spring maintains the diaphragm in an open position to prevent it from being drawn into the closed position when a negative pressure exists within the cooker, and also to prevent a portion of the diaphragm from deforming when located in the closed position.

3,431,903
FURNACE HUMIDIFIER MOUNTING MEANS
John W. Irwin, Trenton, N.J., assignor to General Electric Company, a corporation of New York
Filed Sept. 14, 1967, Ser. No. 667,830
U.S. Cl. 126—113 5 Claims
Int. Cl. F24h *3/00*; F24f *3/14*; B01d *47/16*



A furnace humidifier that is adapted to be mounted either against a vertical face of a warm air furnace duct or against the underside of the duct. The humidifier housing is of box-like construction and it has two outer walls of general similarity. Each of the two walls has an air inlet opening and an air outlet opening. A mounting frame is adapted to encircle an air opening in the duct and to be fastened in place. The mounting frame has a supporting collar with one portion formed for engagement with an edge of the air openings in one wall of the housing. Said one wall of the housing includes an adjustable fastener that extends into the mounting frame at a point remotely from the said engaging portion of the supporting collar so as to serve as an adjustable leveling means for the humidifier housing.

3,431,904
ORTHOPEDIC TRACTION APPLIANCE
Raymond L. Coss, 3503 Stoughton Road, Erie, Pa. 16506
Filed Aug. 15, 1966, Ser. No. 572,531
U.S. Cl. 128—85 7 Claims
Int. Cl. A61f *5/04*, *5/01*



1. A traction device comprising
a U-shaped traction unit,
a U-shaped splint having a ring attached thereto,
said traction unit being connected to said splint,
said traction unit having a leg receiving member on one end thereof,
and a metal cable adapted to be passed over a pulley on a hospital bed,
said cable having a loop formed in the end thereof with a part of said loop passed around said ring at least twice, whereby said cable grips said ring when a force is exerted thereon.

3,431,905
INTRAUTERINE CONTRACEPTIVE DEVICE
Hugh J. Davis, Baltimore, Md., and Edmund A. Jones, Somerville, N.J.; said Davis assignor to Johns Hopkins University, a corporation of Maryland, and said Jones assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey
Filed May 19, 1966, Ser. No. 551,316
U.S. Cl. 128—130 5 Claims
Int. Cl. A61f *5/46*; A61m *31/00*



An intrauterine contraceptive device formed of a strand of flexible plastic material and having a closed perimeter and an open central area, the device generally conforming to the internal shape of the uterus and having an upper portion and a lower portion, the upper portion consisting of two arms joined at an upwardly extending apex and the lower portion likewise consisting of two arms joined at a downwardly extending apex, each of the arms of the upper portion being joined to an arm of the lower portion to form a side vertex. When the device is in place in the uterus, downwardly directed pressure from the fundus causes the device to expand in a frontal plane, thus increasing the resistance of the device to expulsion.

3,431,906
CONTRACEPTIVE DEVICE
Carl E. Taylor, Baltimore, Md., assignor to The Johns Hopkins University, a corporation of Maryland
Filed Apr. 22, 1966, Ser. No. 551,484
U.S. Cl. 128—130 21 Claims
Int. Cl. A61f *5/46*



An intrauterine contraceptive device which features collapsing elements to reduce its size for installation ease. Essentially the device is a diamond shaped loop of four sides the junctions of which will bend or hinge to cause the diamond to elongate. The acute point of the diamond comprises an attachment point for a retrieval cord and the grasping area for insertion forceps. In another embodiment the retrieval cord is first reeved through a tubular median stub element and secured to the opposite juncture. For this purpose the folding action is a reentry of the two short arms of the figure as the cord is tensioned.

3,431,907
ADHESIVE STRIPS FOR DRESSINGS OR THERAPEUTIC TREATMENTS
Xavier Lucien Lubet-Moncla, Paris, France, assignor to Gustave Girardiere, Boulogne, France
No Drawing. Filed Feb. 24, 1966, Ser. No. 529,635
Claims priority, application France, Feb. 24, 1965, 6,763
U.S. Cl. 128—156 5 Claims
Int. Cl. A61l *15/06*; A61m *31/00*

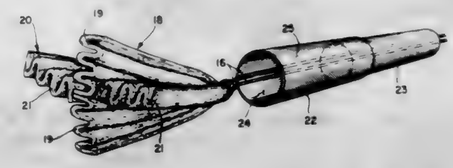
An improved adhesive type bandage is provided in which the dressing portion to be placed in contact with the wound is an antiseptic material in filamentary form, preferably as a felted or non-woven mass. The preferred material is calcium alignate.

3,431,908
SAFETY SNAP-ON BUTTON BABY'S DIAPER
Robert E. Lee, 905 Cedar Ave., Iron Mountain, Mich. 49801
Filed May 23, 1966, Ser. No. 560,911
U.S. Cl. 128—284 2 Claims
Int. Cl. A61f *13/00*



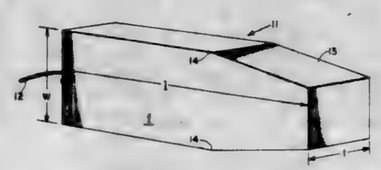
A diaper for an infant, the diaper being adaptable to fit infants of different sizes, and the device being comprised of a pair of triangular panels of cloth having snap fastener elements in the corners thereof for interconnection together of the panels adjacent to each other, and the panels having along a waist edge thereof a plurality of snap fastener elements for selective engagement to accommodate different waist sizes.

3,431,909
UNCOMPRESSED TAMPON AND APPLICATOR
Evelyn H. Krusko, Philadelphia, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1965, Ser. No. 506,372
U.S. Cl. 128—285 8 Claims
Int. Cl. A61m *27/00*



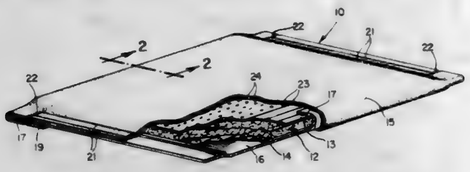
A tampon of the uncompressed type is disclosed, along with a container and applicator therefor. The tampon comprises at least one sheet of soft, absorbent resilient material, preferably a soft, fluffy resilient web of relatively long, natural or synthetic fibers, having substantial thickness and bulk, bonded together by an adhesive spray on one or both surfaces without completely wetting out the web with adhesive so that it retains its bulk, loft and inherent resiliency when compressed. The sheet has a plurality of overlying or adjacent loose pleats or folds parallel to one another and being gathered together at a point central of their ends and folded approximately in half. Some embodiments include one or more additional structures folded in half around the fold area of the first structure. A removal cord is attached to the tampon adjacent the fold area. A container-applicator is disclosed having the surface which contacts the tampon treated to increase its lubricity. In addition, the outside surface of at least a portion of the applicator is made more lubricious and hydrophobic to facilitate insertion.

3,431,910
CATAMENIAL TAMPON
Darrel D. Kokx, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1966, Ser. No. 550,995
U.S. Cl. 128—285 4 Claims
Int. Cl. A61f *13/20*; B32b *3/04*



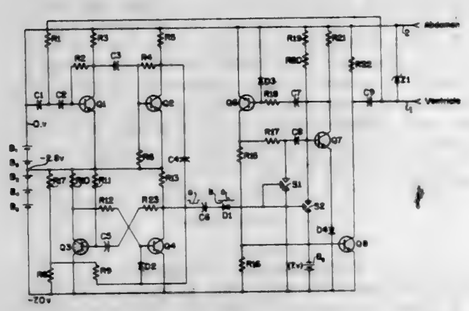
A catamenial tampon blank comprising an assemblage of absorbent fibers having a weight of at least about 3.6 grams, a length of between about 3½ and 5 inches, a maximum transverse cross sectional area of about 1.2 square inches and with a tapered distal end, i.e., the end first inserted in use, having transverse cross sectional areas which do not exceed a maximum based on a given equation.

3,431,911
ABSORBENT PAD
Fred W. Meisel, Jr., Media, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 17, 1966, Ser. No. 558,442
U.S. Cl. 128—287 11 Claims
Int. Cl. A61f *13/18*; B32b *3/24, 3/26*



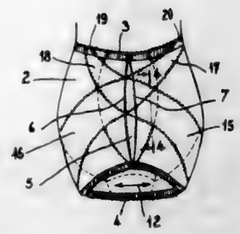
An absorbent pad having a facing layer of soft, flexible, open-celled polymeric foam material, reticulated in some embodiments, which layer covers an underlying layer of fluid absorbent material in the pad.

3,431,912
STANDBY CARDIAC PACER
John Walter Keller, Jr., Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed May 6, 1966, Ser. No. 548,240
U.S. Cl. 128—422 4 Claims
Int. Cl. A61n *1/36*; H03k *3/28*



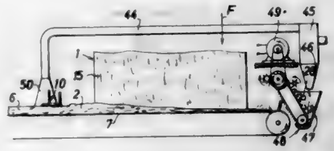
A cardiac pacer providing electrical stimulation to a defective heart only in the absence of natural heart beats includes an electrode implanted in the heart which serves both to deliver artificially-generated pulses to the heart and to detect pulses of natural or artificial origin. The pacer includes inhibiting circuitry which responds to a signal originating from a natural heartbeat by preventing the producton of an artificial stimulus for a period of time at least equal to the normal interpulse interval of the pacer or, alternatively, by advancing the interpulse timing of the source so that an artificial pulse is immediately generated and then prevented from reaching the heart. The source then operates normally unless another natural heartbeat is detected by the electrode before the interpulse interval has been completed. The pacer also includes circuitry designed to simulate electronically a refractory delay period of about 0.4 second, during which time a detected pulse following a prior pulse is ineffective to activate the inhibiting circuitry described above, since such a subsequent signal normally will not cause the ventricle to contract.

3,431,913
FOUNDATION GARMENT
Maurice Bugnon, 43 Ave. Rockfeller, Lyon, France, and Ginette Melin, nee Poncet, 14 Rue Racine, Le Grand Clos, Bellegarde, Ain, France
Filed June 23, 1966, Ser. No. 559,907
Claims priority, application France, Aug. 24, 1965, 46,329
U.S. Cl. 128—546 3 Claims
Int. Cl. A41c *1/18, 1/12*



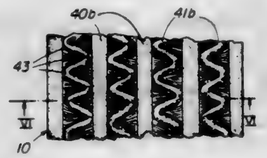
A foundation garment in which a pair of longitudinally elastic strips cross one another over the front of the body and extend diagonally upwards so as to wrap and surround the wearer so as to raise any excess flesh and give the wearer the desired upwardly extending outline while flattening the stomach.

3,431,914
METHOD OF AND MACHINE FOR PRODUCING A TOBACCO ROD
Willy Richter, Hamburg-Bergedorf, Germany, assignor to Hauni-Werke Körber & Co. K.G., Hamburg-Bergedorf, Germany
Filed May 16, 1961, Ser. No. 110,561
Claims priority, application Germany, May 19, 1960, H 39,474
U.S. Cl. 131—21 18 Claims
Int. Cl. A24c *5/39, 5/18*



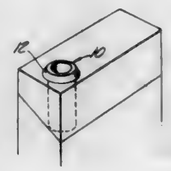
1. A machine for producing a tobacco rod of constant cross section, comprising stream producing means arranged to form a tobacco stream which contains tobacco in excess of that required in the tobacco rod; conveyor means arranged to advance the tobacco stream and the tobacco rod in an elongated path; trimming means adjacent to said path and arranged to enter a portion of said tobacco stream and to remove excess tobacco from the stream so as to produce a tobacco rod of constant cross section, said stream producing means comprising storing means arranged to receive excess tobacco from said trimming means and adjustable transfer means for delivering tobacco from said storing means into said path at a point ahead of said trimming means; a test device arranged to measure the quantity of tobacco in said path; and means for adjusting said transfer means in accordance with the results measured by said test device.

3,431,915
TREATMENT OF RECONSTITUTED TOBACCO SHEET
Osvalds F. Licis, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Sept. 1, 1966, Ser. No. 576,676
U.S. Cl. 131—140 6 Claims
Int. Cl. A24b *9/00*; A24c *5/06*



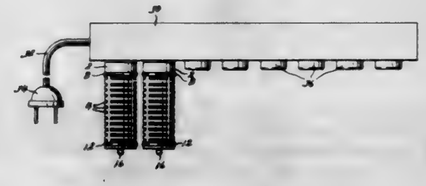
1. A process for treating reconstituted tobacco sheet to increase its filling capacity when it is used as cigarette filler which comprises,
compacting said sheet in transversely spaced flat bands extending longitudinally of said sheet to shorten the natural length of said compacted bands, leaving between succeeding compacted bands uncompacted bands of reconstituted tobacco the natural lengths of which are substantially unchanged,
the compacting of said sheet being effected by subjecting it while it is advancing in a longitudinal course, to compressive forces applied parallel to the sheet faces and counter to the advance thereof so as to rearrange the relative positioning of the reconstituted tobacco constituents within said compacted bands and therewith establish residual differential stresses between the renconstituted tobacco in each compacted band and reconstituted tobacco in the uncompacted bands adjacent thereto,
while simultaneously applying compressive force to said compacted bands in a direction normal to the faces thereof to prevent an increase in the thickness of said compacted bands as the natural lengths thereof are shortened, and
thereafter shredding said sheet into shreds each comprised of at least a segment from one of said compacted bands and a segment from an uncompacted band so that the stress differential existing between the compacted band segment and uncompacted band segment cause said shred to curl and kink.

3,431,916
CIGARETTE SNUFFER
Glenn Gary Davis and Robert Walton Dahlin, Palm Springs, Calif., assignors of fifty percent to Morris Lavine
Filed Feb. 24, 1967, Ser. No. 618,504
U.S. Cl. 131—256 1 Claim
Int. Cl. A24f *13/18, 19/14, 15/18*



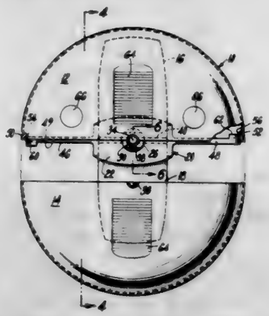
A tubular cigarette snuffer having an annular groove to snap into place in an ash tray adapter or the like.

3,431,917
HAIR DRYING HAIR ROLLER
Mechell F. Harris, 5415 Central St., Kansas City, Mo. 64112
Filed June 30, 1966, Ser. No. 561,826
U.S. Cl. 132—42 3 Claims
Int. Cl. A45d *1/00, 1/02, 1/04, 2/02, 4/06*



A hair roller comprising a foraminous tubular body member filled with a desiccant material and adapted to have a lock of hair wrapped and secured peripherally thereabout, an electrical heating element mounted in said body member within said desiccant material, and means for completing an operative electrical circuit to said heating element.

3,431,918
MULTIPLE COSMETIC STICK CONTAINER
Meta N. Neumann and Charles W. Neumann, both of 112 Sedgwick Road, West Hartford, Conn. 06107
Filed June 30, 1965, Ser. No. 468,453
U.S. Cl. 132—79 3 Claims
Int. Cl. A45d *40/00, 40/20*



The device of this invention comprises a lipstick container having a case of generally oval cross section diametrically split into two case halves. A rotor is removably mounted on one of the case halves. The rotor carries at least two cosmetic sticks and at least one resilient radial tab engageable with detent means on said one of the case halves for retaining the rotor and the cosmetic sticks in a preselected position when the other of the case halves is removed.

3,431,919
COSMETIC PACKAGE
Rinaldo van der Bosch, Webergasse 6, Basel, Switzerland
Filed Oct. 25, 1966, Ser. No. 589,347
Claims priority, application Switzerland, Oct. 27, 1965, 15,091/65
U.S. Cl. 132—79 5 Claims
Int. Cl. A45d *33/00*

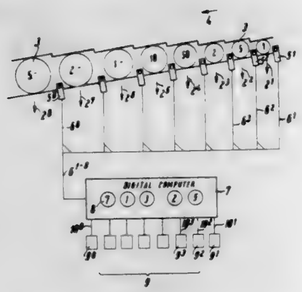
A cosmetic package comprising a first plane member serving as a carrier for make-up and a second plane member consisting of at least one ply of absorptive material

for removing excess make-up. A connecting member secures the first and second members together. A container of moisture-impermeable material surrounds the members



having two compartments with a tearable seam in the vicinity of the connecting member. The first plane member is located in one compartment and the second plane member is located in the other compartment.

3,431,920
METHOD AND APPARATUS FOR SORTING AND COUNTING COINS AND OTHER WORKPIECES
Gert Zimmermann, Auf dem Grat 28–30, Berlin 33, Germany
Filed Feb. 16, 1967, Ser. No. 616,653
Claims priority, application Germany, Mar. 5, 1966, Z 12,075
U.S. Cl. 133—3 **10 Claims**
Int. Cl. G07d *3/00, 9/04*

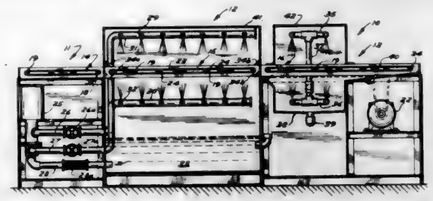


Coins or other articles to be sorted and counted are passed along a sorting section including plural successive sorting stations at each of which coins or articles of a respective size are sorted out. The coins entering each sorting station are counted before sorting. The difference between the number of coins entering two successive sorting stations is determined to derive the number of coins sorted at the first of the two successive sorting stations. This difference is determined by connecting successive sorting stations to differential counters.

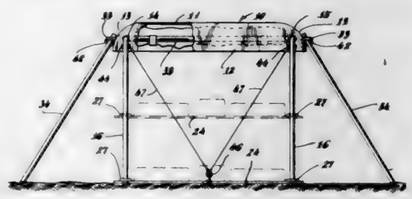
The coins entering a sorting station are counted by pulse transmitters, and each pulse transmitter has a respective valence symbol assigned thereto and which may be either positive or negative. Each respective valence symbol represents the algebraic difference between the absolute values of coins sorted at two successive sorting stations. Valence pulses from the pulse transmitters are algebraically totaled in a common computer to determine the total monetary value of all coins passing through the sorting section.

3,431,921
APPARATUS FOR CHEMICAL ETCHING
Cyril P. Pesek, Wayzata, Minn., assignor to Colight, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 10, 1966, Ser. No. 571,512
U.S. Cl. 134—127 **2 Claims**
Int. Cl. B08b *13/00*

A complete processing device for loading, performing an etching function, and a rinse and drying section and a conveyor mechanism for conveying the individual elements to be etched entirely therethrough wherein the conveyor will provide a sufficient supporting bed for the plates being carried while providing a minimum masking area for such plates and to provide a changeable masking area such that no particular area of the plate is masked from etching or the other processes while it is being carried through the system. The conveyor mechanism provides a plurality of relatively small support devices with means for feeding the plate onto the next such support device wherein the individual support devices are not in line with those of the first area such that the same area on the plate being etched is not covered in succeeding steps through the process.



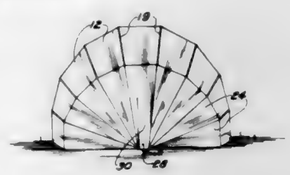
3,431,922
VEHICLE SHELTER AND ARTICLE CARRIER
William R. Kilbride, 48 Lakeside Drive, Guilford, Conn. 06437
Filed Feb. 26, 1968, Ser. No. 708,078
U.S. Cl. 135—1 **13 Claims**
Int. Cl. A45f *1/12, 1/16*



A demountable compartment which can be carried on the top of a vehicle for holding luggage and other articles and forming a roof portion of a shelter for the vehicle or persons.

Structural supporting members together with special fastening means enable the compartment to be easily raised, lowered, and assembled with wall members to provide an enclosed shelter which among other things can be used for camping purposes.

3,431,923
BEACH CABANA
Robert J. Klepac, 2652 Peachtree Road, Atlanta, Ga. 30305
Filed Jan. 12, 1967, Ser. No. 608,859
U.S. Cl. 135—5 **12 Claims**
Int. Cl. E04d *10/08*



The present invention relates to a shelter member that can be used as a portable beach cabana and includes a plurality of wall sections hingedly connected along adjacent edges wherein the two outer unconnected side edges are adapted for contact with a supporting surface such as the ground. Furthermore, a plurality of tongue portions are hingedly connected to said wall sections along a common front between the outer side supporting edges. These tongue portions are secured to one another at their outer extremities when the shelter is assembled so that the wall sections form the top and sides of the shelter and the tongue portions form the rear wall thereof.

3,431,924
TENT STAKE
Alden H. Simpson, 54 Pine Grove St., Springfield, Mass. 01119
Filed Jan. 19, 1967, Ser. No. 610,294
U.S. Cl. 135—15 **2 Claims**
Int. Cl. A45f *1/18*



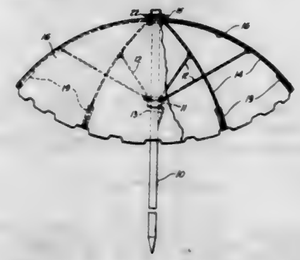
A ground-inserted device for anchoring the tie-down line of a tent, canopy or other standing article to be guyed having a coil spring for receiving the tie-down line, a long and a short extension or leg on either end of the coil spring for insertion into the ground, and a lever-like arm connecting the short extension to the coil spring, whereby laterally and upwardly-directed pulling force on the tie-down line is translated by the coil spring and lever to a laterally and downwardly directed pushing force on the extensions thereby resisting pull-out.

3,431,925
UMBRELLAS
Paul Kraft, Am Linsenbrunnen 1, Geislingen an der Steige, Germany
Filed Aug. 5, 1966, Ser. No. 570,457
U.S. Cl. 135—25 **4 Claims**
Int. Cl. A45b *19/10*



Flat umbrellas are those that collapse into a shape resembling a necktie box. In such umbrellas, the cover spreading ribs are attached in a line along the top of the umbrella at progressively increasing distances from the central umbrella shaft. In the collapsed state of the umbrella, the cover ribs and their auxiliary linkages lie parallel to the umbrella shaft and spaced at the progressively increasing distances therefrom. When the umbrella is opened, the cover ribs must skew into various quasi-radiating positions to spread the cover. This movement of the cover ribs is promoted in the present invention by connecting the ribs with loose pin and hole fits and by providing vacant space laterally to the pin and hole fits, so that the ribs may not only pivot, but may also tilt.

3,431,926
COVER FOR BEACH UMBRELLAS AND THE LIKE
Emanuel Dubinsky, 99 Kingston Ave., Yonkers, N.Y. 10701
Filed Dec. 30, 1966, Ser. No. 606,255
U.S. Cl. 135—34 **1 Claim**
Int. Cl. A45b *15/00*



A cover for large umbrellas, such as beach umbrellas and the like, which is provided with tubes sewn or otherwise provided upon the inner surface of the cover and adapted to receive the ends of the spokes of the umbrella. The cover has a removable top end connection. Since there is no other connection between the cover and the spokes, the cover can be easily and quickly removed from the umbrella to be washed or cleaned, or replaced by a new one.

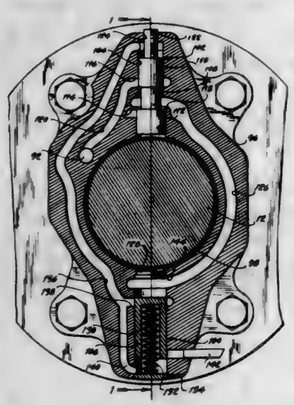
3,431,927
METHOD FOR INCREASING THE PERMISSIBLE FLOW VELOCITY OF A LIQUID FLOWING ON A METAL SURFACE
Malte Kurt Einar Mattsson, Vasteras, Sweden, assignor to Aktiebolaget Svenska Metallverken, Vasteras, Sweden, a Swedish joint stock-company limited
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,671
Claims priority, application Sweden, Dec. 22, 1964, 15,555/64
U.S. Cl. 137—1 **6 Claims**
Int. Cl. F15d *1/06;* **C23f** *11/08*

A method for increasing the permissible flow velocity of a liquid impinging upon a metal surface of copper, aluminum or alloys thereof, by adding a solubilized hydrogen gas to the liquid at a hydrogen gas partial pressure of 0.1–10 atmospheres.

3,431,928
MULTIPLE STAGE GOVERNOR VALVE ASSEMBLY FOR ESTABLISHING A SPEED-PRESSURE SIGNAL
Stanley L. Pierce, Jr., Madison Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 12, 1966, Ser. No. 586,198
U.S. Cl. 137—54 **10 Claims**
Int. Cl. G05d *13/10, 13/30, 13/22*

A compound governor valve assembly adapted to produce a speed signal that is proportional in magnitude

to the speed of rotation of a rotary member comprising a primary modulating valve and a secondary modulating valve, the output pressure of the primary valve being



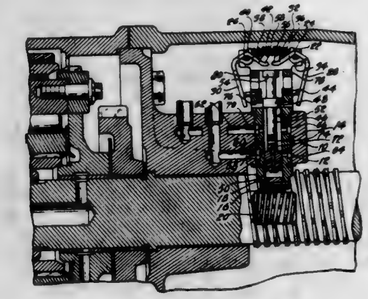
used as a speed signal and the output pressure of the secondary valve being used to modify the characteristics of the primary valve to produce a desired speed-pressure relationship.

3,431,929

SNAP-ACTION FLYWEIGHT GOVERNOR FOR DEVELOPING A SPEED SENSITIVE PRESSURE SIGNAL

Howard Linn Croswhite, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 5, 1966, Ser. No. 518,818
U.S. Cl. 137—56 4 Claims
Int. Cl. G05d *13/26, 13/18*



A rotating speed governor valve assembly having flyweights engaged by a yieldable element that changes its line of action against the flyweights from one position to the other with a snap-action.

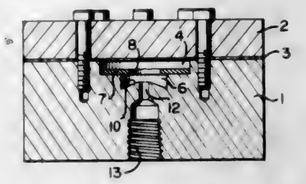
3,431,930

DUAL FLUID VORTEX VALVE

Ronald E. Bowles, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Continuation of application Ser. No. 538,017, Mar. 28, 1966. This application Oct. 12, 1966, Ser. No. 598,559
U.S. Cl. 137—81.5 19 Claims
Int. Cl. F15c *1/08, 1/12, 1/14*

1. A pure fluid vortex control device comprising a first generally cylindrical vortex chamber having an end wall, a second generally cylindrical vortex chamber having an end wall, said chambers being coaxial and contiguous, a further wall forming a common end wall of at least a part of each of said chambers opposite each of said end walls, said end wall of said first chamber having an axial egress orifice, said further wall having an axial orifice which is larger than the diameter of said egress orifice of said first



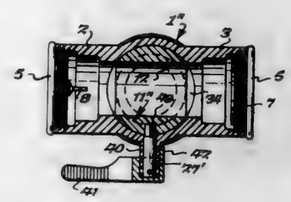
chamber and smaller than the diameter of said vortex chambers, means for introducing a first fluid into said first vortex chamber and means for introducing a second fluid into said second vortex chamber having a density different from the density of said first fluid.

3,431,931

VALVE ASSEMBLY FOR BREATHING APPARATUS

Charles D. Cupp, Lancaster, N.Y., assignor, by mesne assignments, to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Original application Feb. 1, 1963, Ser. No. 255,486, now Patent No. 3,256,910, dated June 21, 1966. Divided and this application Aug. 30, 1965, Ser. No. 545,170
U.S. Cl. 137—102 5 Claims
Int. Cl. G05d *7/00;* A61m *15/00;* F16k *31/60*



A valve body has opposed inhalation and exhalation passages and a lateral breathing passage. A rotary valve ball having a through bore communicating with the inhalation and exhalation passages and a lateral bore is movable about an axis normal to a plane containing the axes of the bores between positions placing the lateral bore in and out of communication with the breathing passage. A pair of opposed journal members have semispherical bearing surfaces in sliding engagement with the ball, and drive means are operatively associated with the ball for moving it. One of the journal members encircles and seals the lateral bore in the valve position placing it in communication with the breathing passage, and seals all of the bores from the breathing passage in the other position of the ball.

3,431,932

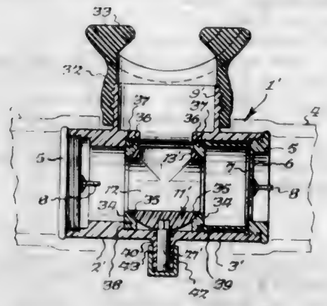
VALVE ASSEMBLY FOR BREATHING APPARATUS

Charles D. Cupp, Lancaster, N.Y., assignor, by mesne assignments, to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Original application Feb. 1, 1963, Ser. No. 255,486, now Patent No. 3,256,910, dated June 21, 1966. Divided and this application Aug. 30, 1965, Ser. No. 545,171
U.S. Cl. 137—102 3 Claims
Int. Cl. G05d *7/00;* A61m *15/00;* F16k *31/60*

A valve body has opposed inhalation and exhalation passages and a lateral breathing passage. A rotary valve

ball having a diametral bore communicating with the inhalation and exhalation passages in one position of the ball and a radial bore communicating with the breathing passage is mounted for rotation about the axis of the radial bore to another position wherein the diametral bore is out of communication with the inhalation and



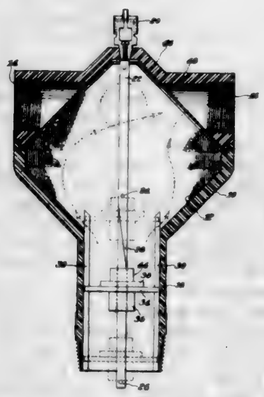
exhalation passages. A pair of opposed annular journal members each having a semispherical bearing surface in sliding engagement with the ball encircle the opposite ends of the diametral bore in the one position of the ball. The journal members seal the diametral bore from the exhalation and inhalation passages in the other rotary position of the ball.

3,431,933

INTERMITTENTLY REVERSING CONTROL VALVE

Howard A. Tidd, 4251 NW. 38th Terrace, Fort Lauderdale, Fla. 33309

Filed May 26, 1966, Ser. No. 553,114
U.S. Cl. 137—119 4 Claims
Int. Cl. G05d *11/00*



An intermittently reversing control valve having a piston whose vertical motion is transferred and converted into rotary motion of the control member thereby switching the flow from one to another of a plurality of outlets.

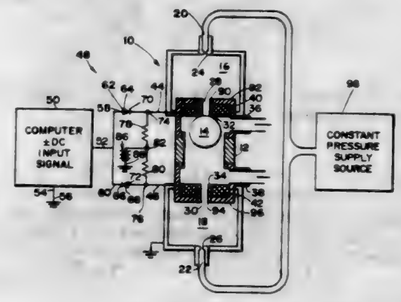
3,431,934

SELF-MODULATING PULSE FLUID SWITCHING VALVE

Hugh E. Riordan, Wyckoff, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed June 22, 1966, Ser. No. 559,542
U.S. Cl. 137—119 21 Claims
Int. Cl. G05d *11/00*

A valve housing is provided including a shuttle member supported therein for reciprocative movement between two extreme limit positions. To effect such movement, an energy source supplies pressurized fluid in alternate succession through a pair of plenum chambers fluidically coupled to the housing at each extreme position. A magnetic coil located in proximity to each extreme position respectively applies predetermined magnetic forces to the



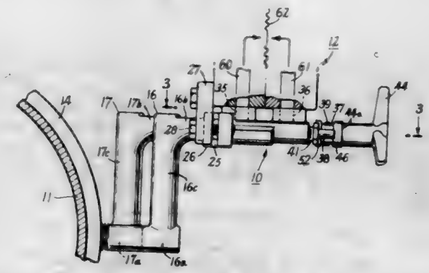
shuttle member thereby modifying the fluid forces acting on the latter and controlling the dwell time of the shuttle at each of its limit positions in accordance with the predetermined magnetic forces.

3,431,935

APPARATUS FOR USE IN THE MEASUREMENT OF FLUID FLOW

Hoel L. Bowditch, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass.

Filed Oct. 23, 1965, Ser. No. 503,250
U.S. Cl. 137—269 18 Claims
Int. Cl. F16l *23/00;* G01l *13/02*



A manifold and valve system for coupling a differential pressure measuring device to a pair of fluid pressure conduits. The system provides a predetermined sequence of valve actuations which assures that the differential pressure device is not subjected during the coupling (or uncoupling) operation to a pressure difference greater than the differential pressure to be measured, regardless of the static pressure of the line under measurement. The manifold also is provided with a coupling arrangement permitting mounting of the measuring device directly on a fluid flow pipe, in any of several selectable orientations, depending upon the particular application.

3,431,936

VALVE WITH WASHOUT SLOT

R. Ellsworth Doremus, Clifton, and Richard E. Doremus, Upper Montclair, N.J., assignors to Krouse Doremus Foundry Co., Delawanna, N.J., a corporation of New Jersey

Filed Dec. 21, 1966, Ser. No. 603,519
U.S. Cl. 137—323 8 Claims
Int. Cl. F16k *43/00, 51/00*

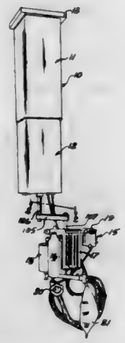
A valve with an elongated inlet fitting for which wash-

out is provided when the valve is closed through a drain opening in the face of the end wall thereof and a passage-



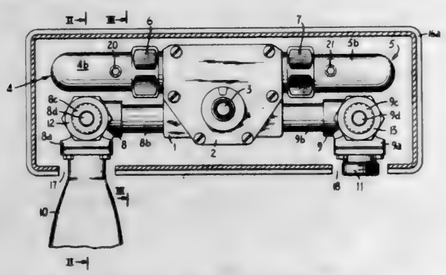
way beneath the end wall of a valve communicating with the drain opening.

3,431,937
MEDICAL SERVICE UNIT
Raymond C. Hettlinger, Evergreen Park, Ill., and Robert L. Smith, Louisville, Ky., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,724
U.S. Cl. 137—355.16 **18 Claims**
Int. Cl. F16l *3/16;* **A61m** *5/14*



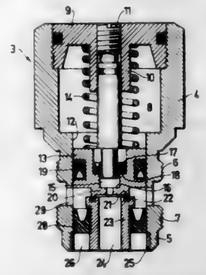
A telescoping type medical service unit adapted to be supported from the ceiling of a room and reciprocated by a fluid operating force. Preferably, a vacuum is employed as such force. Control and brake means are carried by the reciprocating member which may also provide outlets and attachments for various types of equipment.

3,431,938
SURFACE MOUNT MIXING VALVE
Carl Sorensen and Age Molgard, Nordborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed May 27, 1966, Ser. No. 553,547
Claims priority, application Germany, May 28, 1965, D 47,378
U.S. Cl. 137—359 **2 Claims**
Int. Cl. F16l *5/00*



A surface mount decorative mixing valve and water outlet assembly having a removable front-accessible cover for mounting on a surface vertically thereon and against thereof. The mixing valve has a pair of inlet stubs for connection to hot and cold water inlets arranged at opposite sides of the mixing valve and symmetrical with respect thereto. A control shaft is disposed centrally between the two stubs. Outlet connections from the mixing valve are provided with valve means controlling water flow-therethrough. A pair of discharge outlets such as a faucet and shower outlet are provided. A cover extends over the mixing valve, inlet stubs and outlet valves and has a pair of slits to receive the discharge outlets. The cover has a top plate having openings for the control shafts of the mixing valve. The slits extend to the surface on which the assembly is mounted whereby the cover can be placed over the completely mounted and connected assembly, and condensation and leakage water may escape from its underside.

3,431,939
VALVE MEANS FOR DAMPING THE PISTON STROKE IN A PNEUMATIC CYLINDER
Lars Sven Erik Innings, Huddinge, and Lars Arne Hammarlund, Tumba, Sweden, assignors to AB Mekanprodukter Hans Holm, Hagersten, Sweden, a corporation of Sweden
Filed Jan. 13, 1966, Ser. No. 520,440
U.S. Cl. 137—509 **4 Claims**
Int. Cl. F16k *15/00, 17/04*

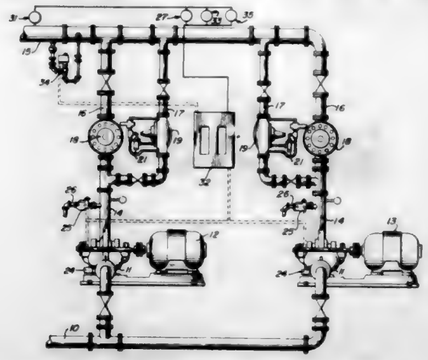


A valve structure which adapts itself to the pressure in a damping chamber to the extent that impact and rebounding are practically wholly prevented. The valve means comprises a housing in which a movable piston defines a valve chamber closed at opposite ends. The piston is forced outwardly by a spring inserted in the valve chamber. A valve member formed on the outer end of the piston is adapted to engage a valve seat to close, normally, a passage between the outlet port of the cylinder and a channel from the damping chamber, and said spring is then dimensioned to permit the valve piston to move from the seat upon a predetermined increase of pressure in the damping chamber. A non-return valve is provided to open from the outlet port into the valve chamber to permit the escaping pressure gas to build up a pressure within said valve chamber so as to increase the resistance against the removal of the piston from the seat due to the increased pressure in the damping chamber. For venting purposes, a non-return valve is, moreover, provided to open from the valve chamber into the channel which extends from the damping chamber.

3,431,940
SHUT-OFF FOR PRESSURE CONTROLLED LIQUID FLOW SYSTEM AT ZERO FLOW
William M. Hanley, Evanston, Ill., assignor to FMC Corporation, a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,960
U.S. Cl. 137—565 **4 Claims**
Int. Cl. E03b *5/00, 11/00*

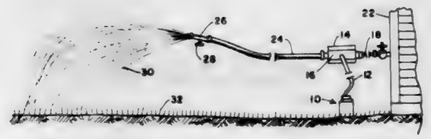
A liquid flow system for delivering liquid at a constant pressure in response to variable flow demands which is operable in different modes during periods of anticipated

flow demand and periods of no anticipated flow demand. During periods of anticipated flow demand, the electrical motors for operating the system pumps are under the control of a timer which prevents the motors from cycling on and off. During periods of no anticipated flow demand, the motors are under the control of a dual setting pressure switch, which has a first setting to shut off the system



pumps when pressure rises a predetermined amount above the system pressure, and which starts the motors when the pressure drops a predetermined amount below the system pressure. A timer delay switch is energized by the dual setting pressure switch for retaining the motors energized for a predetermined period during periods of no anticipated flow demand, so that the motor windings will be cooled.

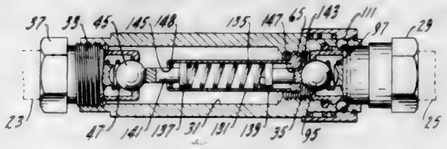
3,431,941
HERMETICALLY SEALED CONTAINER
Valentine Hechler IV, 26 Meadow View Lane, Northfield, Ill. 60093
Continuation-in-part of application Ser. No. 520,568, Jan. 14, 1966. This application Apr. 25, 1966, Ser. No. 545,007
U.S. Cl. 137—604 **16 Claims**
Int. Cl. E03e *1/046;* **B05b** *7/30;* **B65d** *35/08*



A variable capacity sealed container for storing and dispensing liquid under sub-atmospheric pressure in which a follower means externally exposed to atmospheric pressure moves easily in sealed relation to the container under liquid withdrawal by suction. The liquid is educted through a pressure differential responsive back flow check valve which under resting conditions closes, and supports the stored liquid and the follower means against movement in any orientation of the container.

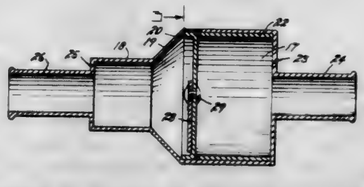
3,431,942
HYDRAULIC COUPLER
Arnold F. Kopaska, Rte. 4, Guthrie Center, Iowa 50115
Filed Feb. 23, 1966, Ser. No. 529,322
U.S. Cl. 137—614.05 **10 Claims**
Int. Cl. F16l *29/00, 37/22, 37/28*

A coupler for releasably connecting a pair of conduits one or both of which may contain hydraulic fluid under pressure. The coupler includes a male body member connected to one conduit and a female body member connected to the other conduit. A releasable locking means is provided for holding the body members together in a telescoping relationship. Each body member has a spring biased closing ball check valve as part thereof. A pressure exerting means is located in the female body member and is adapted to exert an unseating force against each ball check valve when the body members are coupled together which force is greater than the seating force



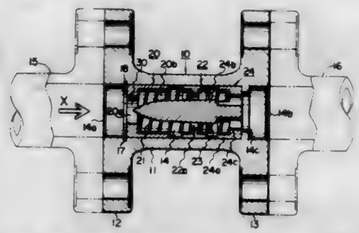
exerted against a ball check by its spring but less than the sum of the seating forces exerted against the ball check by its spring and by the pressurized fluid in its conduit so that when the fluid pressure in its conduit is reduced, the pressure producing means will open the ball check and hold it open.

3,431,943
TEMPERATURE AND PRESSURE CONTROL DEVICE FOR AUTOMOTIVE HEATERS
Walter R. Armand, 1320 Speet Blvd., Denver, Colo. 80204
Filed June 9, 1967, Ser. No. 644,936
U.S. Cl. 137—625.31 **3 Claims**
Int. Cl. F17d *1/00;* **F16k** *21/02;* **B60h** *1/02*



A housing for insertion in the water supply line to an automotive space heater having a relatively small intake chamber and a relatively large discharge chamber separated by a perforated partition containing a plurality of port holes and provided with means for placing any desired number of said holes in the active water circuit between said chambers, said discharge chamber being connected to the intake of the conventional water pump of the vehicle engine to partially evacuate said discharge chamber.

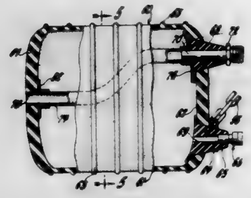
3,431,944
METERING VALVE
Masao Sakuma, Kawasaki-shi, Japan, assignor to Kabushiki Kaisha Keihin Seiki Seisakusho, Kawasaki-shi, Kanagawa-ken, Japan, a corporation of Japan
Filed Jan. 3, 1967, Ser. No. 606,924
Claims priority, application Japan, Aug. 6, 1966 (utility model), 41/74,682
U.S. Cl. 138—45 **2 Claims**
Int. Cl. F16k *21/02;* **F15d** *1/10*



A metering valve comprising a hollow, slidable and spring-loaded piston and a needle positioned downstream

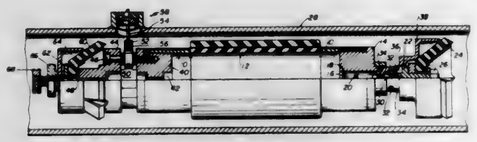
of said piston, said piston and said needle establishing therebetween a variable throttle opening when said piston is subjected to fluctuating fluid inlet pressures.

3,431,945
PLUMBER'S PNEUMATIC PLUG
Hubert A. Robillard, 2384 17th St., Wyandotte, Mich. 48192
Filed May 23, 1966, Ser. No. 552,217
U.S. Cl. 138—90 1 Claim
Int. Cl. F16l 55/12



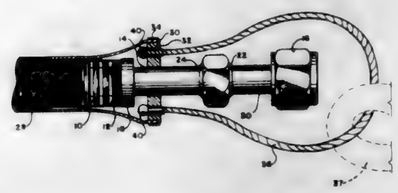
A plumber's pneumatic pipe plug is disclosed comprising hollow inflatable and deflatable conduit seal means having a rubber body and rubber end caps joined to said body, the body being stretchable and the end caps being non-stretchable in relation to said body, a first rubber boss mounted in one of said end caps and projecting outwardly thereof, a through aperture in said first boss and an air valve mounted therein, a second rubber boss mounted in said one end cap and projecting outwardly thereof, a through aperture in said second boss and pipe means mounted therein, said pipe means extending through said second boss and having its inner end disposed in the interior of said pipe plug, a flexible conduit disposed in the hollow interior of said pipe plug and having one end thereof connected to said pipe means inner end, the other end of said flexible conduit extending through the other of said end caps, said flexible conduit being longer than the axial distance between said end caps, said air valve serving to inflate and deflate said pipe plug, said pipe means and said flexible conduit serving to pass fluid through the end caps of said pipe plug and through the hollow interior thereof.

3,431,946
INFLATABLE PIPE PLUG
Willard A. Sawyer, 3127 E. 49th St., Tulsa, Okla. 74105
Filed Nov. 19, 1965, Ser. No. 508,700
U.S. Cl. 138—93 5 Claims
Int. Cl. F16l 55/12; F28g 1/12



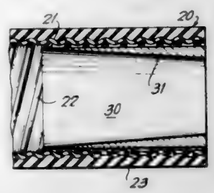
An inflatable pipeline plug and line travel pig includes a fluid pressure actuated packer the control of which is achieved exteriorly of the pipe. After the plugging operation the device becomes a movable pig.

3,431,947
SAFETY HARNESS FOR FLEXIBLE HOSE AND THE LIKE
Vernon C. Hines, 2915 S. Lafayette Drive, Denver, Colo. 80210
Filed May 13, 1966, Ser. No. 549,885
U.S. Cl. 138—106 3 Claims
Int. Cl. F16l 3/00



A safety harness for high pressure, flexible hoses or the like covers the hose with a diagonally braided covering with both ends of the covering secured to a ring encircling a hose fitting on each end, and a cable secured to the ring is anchored to the supply or receiver vessel. In the event the hose or fitting breaks the covering and anchored cable secures the hose independently of the hose connections.

3,431,948
COUPLING END REINFORCEMENT FOR FLEXIBLE CONDUIT
Malvin H. Goldenberg, 27 Phipps Lane, Plainview, N.Y. 11803
Original application Mar. 3, 1964, Ser. No. 349,000, now Patent No. 3,324,893, dated June 13, 1967. Divided and this application Apr. 13, 1967, Ser. No. 652,357
U.S. Cl. 138—109 3 Claims
Int. Cl. F16l 9/00, 11/00



A reinforcement for a flexible conduit. The flexible conduit includes a tubular wall which is flexible and fluid-tight and reinforced along its length against radial collapse during bending of the conduit. One end of the conduit is adapted to be connected with a relatively rigid tubular component with respect to which the conduit is to be flexed. The reinforcing means which strengthens the end portion of the conduit which is coupled to this component is in the form of a tubular reinforcing structure telescoped with the tubular wall of the flexible conduit and extending inwardly from the end of the conduit. The tubular reinforcing means has an outer end situated at the end of the conduit and an inner end situated within the flexible conduit, and the tubular reinforcing means has a wall whose thickness decreases gradually from its outer toward its inner end.

3,431,949
LAMINATED WALL PRESSURE VESSEL FOR USE IN HYDROGEN ATMOSPHERES
Yoshimitsu Uto, Taizo Yamazaki, and Toshikazu Shinkawa, Hiroshima-ken, Japan, assignors to Messrs. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan
Filed Feb. 28, 1967, Ser. No. 619,318
U.S. Cl. 138—143 4 Claims
Int. Cl. F16l 9/14; F25j 1/00



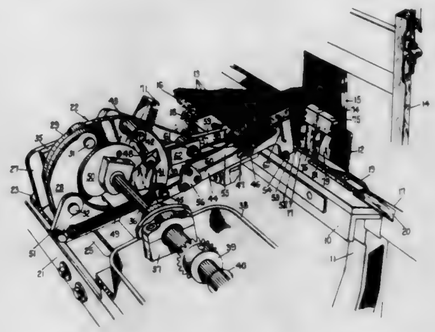
A laminated pressure vessel is formed with inner and outer concentric walls between which is positioned a laminate of plurality of cylindrical plates or a laminate from a single spirally wound plate which is successively built up from the inner cylinder to the outer cylinder. The plates are applied and secured by means of longitudinally extending welds and a detection bore extends radially from the unexposed surface of the wall of the vessel which is to be exposed to hydrogen inwardly or outwardly through the laminate to the opposite side of the vessel. Either the inner or the outer cylinder of the vessel, whichever is to be exposed to the hydrogen atmosphere, is made of a steel which is resistant to hydrogen embrittlement, and in addition at least one layer of the laminate adjacent the wall which is to be exposed to the hydrogen and the weld deposit is also made of a steel resistant to hydrogen embrittlement.

3,431,950,
DRILL COLLARS
Raymond A. Malott, Fullerton, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 573,962
U.S. Cl. 138—177 10 Claims
Int. Cl. F16l 9/20



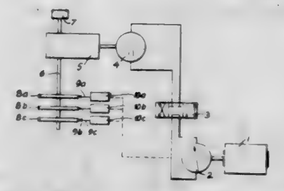
1. A section of pipe for use in a well drilling string, said section comprising:
- a longitudinally extending tubular wall having an outer periphery and an inner bore;
- a plurality of conduit means extending substantially transversely across and entirely within said tubular wall, each of said conduit means having opposite terminal ends that are communicative with said outer periphery;
- each of said conduit means being sealed from communication with said bore.

3,431,951
LOOM FILLING POSITIONER
Harrison N. Thibault, Hopedale, and Anthony J. Tosches, Milford, Mass., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar as trustees
Filed Jan. 8, 1968, Ser. No. 696,189
U.S. Cl. 139—122 10 Claims
Int. Cl. D03d 47/24, 47/00



A filling positioner for shuttleless looms comprising a controlled gripping member which is movable in timed relation to the weaving cycle from a position where it receives and holds the filling to a position where it releases said filling after presenting it to the element which inserts it into the sheds formed by warp threads.

3,431,952
DEVICES FOR ADJUSTING THE TRANSVERSE WIRE SPACING IN WIRE MESH WELDING MACHINES
Hans Gott, Graz, and Josef Ritter, Graz-Krolsbach, Austria, assignors to EVG Entwicklungs- und Verwertungsgesellschaft m.b.H., Graz, Austria, a corporation of Austria
Filed Jan. 24, 1967, Ser. No. 611,413
Claims priority, application Austria, Jan. 31, 1966, A 856/66
U.S. Cl. 140—112 14 Claims
Int. Cl. B21f 15/08; B23k 11/10; B21b 37/14

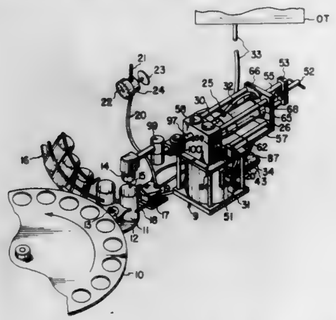


A wire mesh making machine has a control system, including cam and cam follower means, that provides for an abrupt change in the spacing of the transverse wires without need to stop the machine.

3,431,953
MEASURED LIQUID DISPENSER
Russell G. Rutherford, R.R. 6, Hutchins Park, Rockford, Ill. 61103
Filed May 25, 1966, Ser. No. 552,803
U.S. Cl. 141—361 12 Claims
Int. Cl. B65b 1/04, 3/00; B67c 3/00

A discharge pipe, with a downwardly directed outer end serving as a nozzle disposed over a can or the like to receive a measured amount of liquid, is connected with the discharge port of a pump cylinder, whose intake port has a stand-pipe extending downwardly into a small tank that

contains the liquid at a constant level by reason of float control, there being an overhead supply tank delivering the liquid to the small tank. An air operated piston in an air cylinder behind the pump cylinder operates the piston of the pump cylinder once per can as a spring-pressed arm that controls an air valve for the air cylinder is swung in one direction by a can fed past it and the arm thereafter returns to normal position under spring pressure. The discharge of liquid from the pipe is regulated by a manually



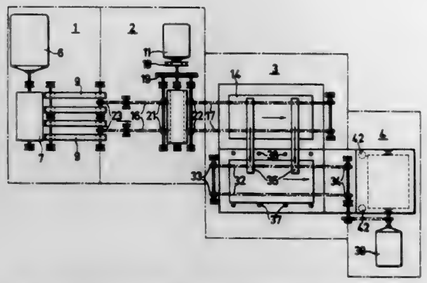
adjustable valve to avoid splatter, this being possible by virtue of the operation of the pump piston under air pressure. A pair of check valves seating inwardly in the discharge pipe and another pair of check valves seating outwardly in the intake port and its related stand-pipe cut off the liquid discharge positively at the end of each discharge even if one of a pair of valves fails to seat fully, thus assuring exactly the same amount of liquid being dispensed in every operation.

3,431,954

SUBSTANTIALLY AUTOMATIC AND CONTINUOUSLY OPERATING MACHINERY FOR THE MANUFACTURE OF MATCH SPLINTS AND THE LIKE

Lennart Hedborg, Overboelare, Belgium, assignor to Aktiebolaget Siefvert & Fornander, Kalmar, Sweden

Filed Mar. 7, 1967, Ser. No. 621,338
Claims priority, application Sweden, Mar. 16, 1966, 3,448/66
U.S. Cl. 144—2 **4 Claims**
Int. Cl. B27c *9/00;* **B27l** *11/02*



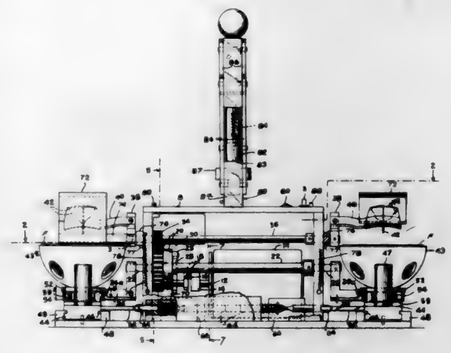
This invention relates to a substantially automatic and continuously operating system for the manufacture of match splints or the like. The system comprises in combination a veneer lathe for the peeling of a veneer web; a shearing means adapted to divide said veneer web into separate sheets; a sheet piling device adapted to arrange the sheets in a pile in which each veneer sheet overlaps a plurality of preceding veneer sheets and is overlapped by a plurality of succeeding veneer sheets; and a cutter for cutting said pile of veneer sheets into match splints.

3,431,955

AUTOMATIC FRUIT SECTIONING APPARATUS

Walter M. Heymann, 211 W. 61st St., New York, N.Y. 10023

Filed Apr. 4, 1966, Ser. No. 540,021
U.S. Cl. 146—3 **5 Claims**
Int. Cl. B26d *1/28, 1/44, 3/00*



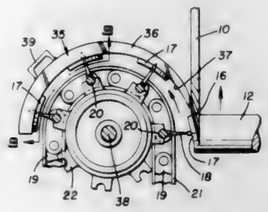
The specification discloses a rotatable fruit holder on each side of a motor housing. By means of chain linkages the motor causes two shafts to reciprocate. One shaft causes a sectioning knife to move into and out of the fruit contained by the holders and the second reciprocating shaft causes the holders to rotate in one direction, there being provided a flexible member and a holding spring to prevent turning in the reverse direction. A manually operated device is provided to core the fruit. The holders are arranged to slide into cutting position where switches are closed to start operation of the sectioning apparatus which automatically shuts off when the sectioning is completed.

3,431,956

IMPALING NEEDLE ARRANGEMENT FOR A SAUSAGE SLICING MACHINE

Ronald B. Hayes, P.O. Box 338, Johnstown, Ohio 43031

Filed Feb. 20, 1967, Ser. No. 617,376
U.S. Cl. 146—94 **4 Claims**
Int. Cl. B26d *4/24;* **B65g** *17/14*



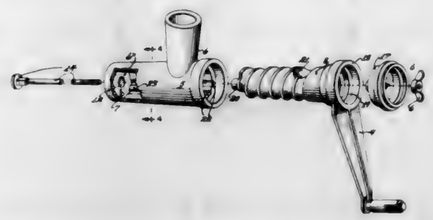
According to this invention, there is provided, in cooperation with a sausage slicing machine, an impaling needle arrangement for receiving the sausage slices as they are produced by a rotating slicing blade which cuts and displaces them successively from the sausage stick. The needle arrangement is such that it will receive and firmly retain the sausage slices, even if they are small and thin, and will carry them to a point of use where they may be removed from the needles of the structure.

3,431,957

TOY PASTE-STRIP FORMING DEVICE FOR PEANUTS AND THE LIKE

Ernest J. Swimmer, 340 E. 52nd St. 10022, and Alan A. Hicks, 330 E. 80th St. 10021, both of New York, N.Y.

Filed Jan. 30, 1967, Ser. No. 612,492
U.S. Cl. 146—182 **5 Claims**
Int. Cl. A23l *1/21;* **A47j** *9/00*



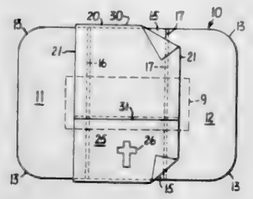
This invention comprises a casing having opposed apertures which receive and support the horizontally arranged tubular compression chamber which receives a handle-carried compression screw. At the top of the chamber is an inlet nozzle by which nuts may be fed downwardly to be received in succession or limited plurality in a cavity formed in the compression screw, and, at the discharge end of the compression cylinder, the nuts in crushed paste like form, are extruded as a tape to pass into a receptacle. By "nuts" is meant kernels, i.e. nut meats.

3,431,958

RELIGIOUS ARTICLE

Mary E. Justice, Briarcliff Manor, N.Y., assignor to The Rector, Church Wardens and Vestrymen of Saint Paul's Church, Ossining, Ossining, N.Y., a religious corporation of New York

Filed Feb. 7, 1967, Ser. No. 614,427
U.S. Cl. 150—52 **6 Claims**
Int. Cl. B65d *65/22, 65/02, 65/04*



Altar vestments formed of (a) a fabric sheet underpiece draped over the altar to provide a decorative covering for its sides, (b) a fabric sheet overpiece laid over the underpiece and providing a decorative frontal panel for the altar. The rear portion of the overpiece and the central portion of the underpiece may be made of lightweight utilitarian inexpensive material. The overpiece may be constructed to have two or more decorative facings each usable as the frontal panel for the altar.

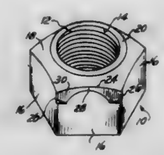
3,431,959

LOCKNUTS

Jerry T. Beebe, Grosse Pointe, and O. Paul De Loe, Detroit, Mich., assignors to Towne Robinson Fastener Company, Dearborn, Mich., a corporation of Michigan

Filed Mar. 20, 1967, Ser. No. 624,262
U.S. Cl. 151—21 **10 Claims**
Int. Cl. F16b *39/28, 39/02;* **B21d** *53/20*

Prevailing torque-type locknuts made by impacting the body of conventional nuts proximate one end thereof and on two opposite sides of the body with greater impact force at the edge corners of the sides than at the center; and methods of making such locknuts by impacting with



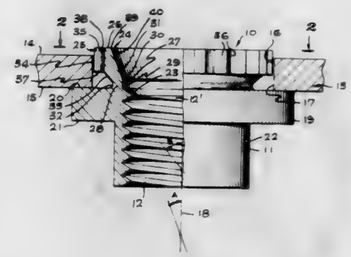
tools having a predetermined end face shape and impacting the nuts on such two opposed sides preferably at an angle to the longitudinal axis of the nuts.

3,431,960

THREADED FASTENER WITH DEFORMABLE ANCHORING PORTION

Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif. 90210

Filed Oct. 10, 1966, Ser. No. 585,615
U.S. Cl. 151—41.72 **9 Claims**
Int. Cl. F16b *39/28*



A threaded element having a flange engageable with a carrier part about an opening, and having a smaller diameter anchoring portion adapted to project into the opening and terminating at an edge carrying serrations which are deformable radially outwardly and axially toward the flange and into locking engagement with the material of the carrier part about the opening. The anchoring portion has radially inner and outer surfaces both of which flare to increased diameters as they advance axially beyond the flange, and which preferably flare at different angles so that the anchoring portion progressively increases in thickness beyond a reduced diameter axially extending bending portion near the flange.

3,431,961

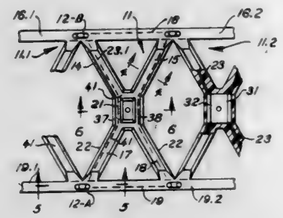
ELASTOMERIC TRACTION LINK ELEMENT

Rolf Pfoertner, 2176 E. 28th Ave., Vancouver, British Columbia, Canada

Filed June 2, 1966, Ser. No. 555,649
U.S. Cl. 152—222 **7 Claims**
Int. Cl. B60c *27/00*

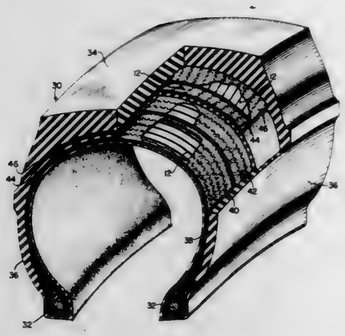
An elastomeric traction link element of integral construction, a generally X-shaped configuration with bars at open ends of the X forming two open triangles joined at their apices in a central member. A continuous cable extending in a generally hour-glass configuration through

all members of the triangles, and releasable securing means so that a required number of links may be joined



together in end-to-end relation to provide a traction device for an automobile tire.

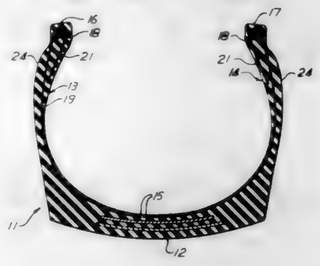
3,431,962
REINFORCEMENT FOR PNEUMATIC TIRES AND THE LIKE
Theodore M. Kersker and Frederick J. Kovac, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 22, 1966, Ser. No. 574,220
U.S. Cl. 152—355 **13 Claims**
Int. Cl. B60c *9/06*



A pneumatic tire or like elastomeric article, and a reinforcement element therefor, which comprise a strip of non-circular cross-section, e.g., rectangular, having a multiplicity of continuous parallel untwisted filaments adhesively bonded or compacted together in continuous untwisted parallel array, or ply fabrics including such strip reinforcement elements. The strip elements have cross-section peripheries significantly greater and gage thickness significantly smaller than conventional cord of equal strength.

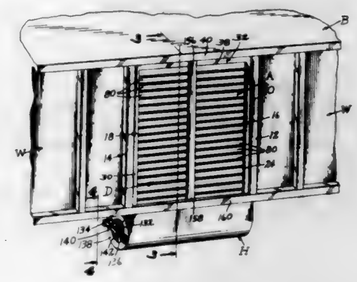
3,431,963
PLY CONFIGURATION FOR PNEUMATIC TIRES
Charles C. Sons, Jr., Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 25, 1966, Ser. No. 567,666
U.S. Cl. 152—356 **1 Claim**
Int. Cl. B60c *5/00, 9/00, 11/00*

Radial plies in a tire have a configuration which reduces fatiguing and cutting of the tire material by the plies during stressing of the tire. The plies extend progressively closer to the outer surface of the sidewall in approaching the bead regions and have end portions which are doubled back at the beads and terminated at an inner portion of the sidewalls in a region of relatively low tensile stress. The configuration avoids a reversal of curva-



ture of the plies near the beads which can contribute to tire failure.

3,431,964
RAILROAD BOXCAR DOOR CONSTRUCTION
Ralph P. Rogers, 1311 30th Ave. N., Minneapolis, Minn. 55411
Filed Aug. 3, 1966, Ser. No. 570,011
U.S. Cl. 160—23 **10 Claims**
Int. Cl. E06b *9/08, 9/17;* **B61d** *19/00*

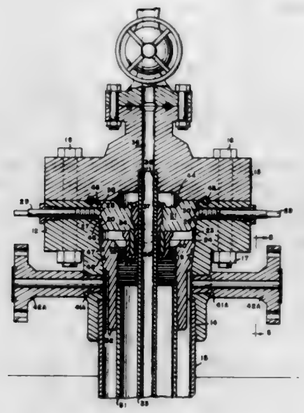


A pair of spaced vertical support members for connection with the door casing members of a boxcar opening together with a horizontal support connected to the upper ends of the support members, a plurality of horizontal sections mounted at the ends thereof on the support members with sealing engagement of the edges of the sections, means for maintaining sliding sealing engagement of the ends of the sections with the vertical supports, cylindrical means carried adjacent the vertical supports to which the lowermost of the sections is connected and upon which the sections are wound or unwound, means for rotating the cylindrical means to wind the sections thereupon, means for maintaining a sealing engagement between the inner surface of the sections and the floor of the boxcar and means for maintaining a sealing engagement between the uppermost of the sections with the horizontal support member when the door is closed.

3,431,965
WELL PRESSURE CONTROL APPARATUS
Cassius L. Tillman III, P.O. Box 343, Peters Road, Harvey, La. 70058
Filed Feb. 2, 1967, Ser. No. 618,257
U.S. Cl. 166—89 **8 Claims**
Int. Cl. E21b *43/12*

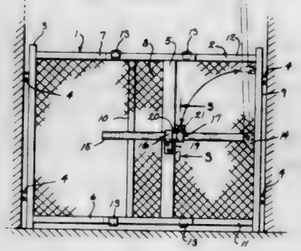
Improvements in the mounting of well tubing the, mounting members being supported in a cavity of a body

member at different vertical positions in spaced relation to each other. Radial passages in the body member communicate the exterior with the space between the mount-



ing members. The innermost tubing passes through a seal in the upper mounting member and the upper end is connected directly to an opening in the body member.

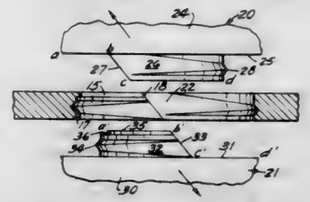
3,431,966
FRICTION-HELD REMOVABLE GATE
Stanley G. Injeski, Milwaukee, Wis., assignor to Worldsbest Industries, Inc., Cudahy, Wis., a corporation of Wisconsin
Filed May 19, 1967, Ser. No. 639,887
U.S. Cl. 160—225 **2 Claims**
Int. Cl. E06b *9/02, 3/92*



A portable gate is shown for insertion between the jambs of a door or between posts such as at the head of stairway that comprises two rectangular frames slidably secured to one another for adjustment of the horizontal length of the gate with a pivoted bar on one frame that can be moved toward a horizontal position in which a cam carried by the bar strikes an upright portion of the other frame to force the frames apart whereby the gate may be wedged tightly in position.

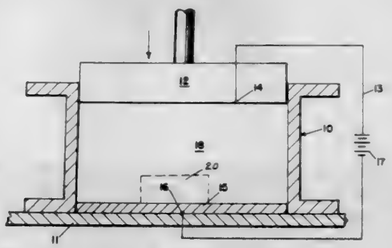
3,431,967
TWO-PIECE MOLD FOR MOLDING AN UNDERCUT RIM, AND METHOD OF MOLDING
Richard D. Hipp, Jr., Circle Pines, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 12, 1964, Ser. No. 389,160
U.S. Cl. 164—6 **10 Claims**
Int. Cl. B22c *9/22;* **B22d** *33/04;* **B29d** *12/00*

Undercut frame-like castings, e.g. lens holders, are produced in simple two-piece single-draw injection molds, the two halves of the mold being assembled and dis-as-



sembled along a plane at an acute angle to the plane of the frame.

3,431,968
PROCESS FOR MAKING SAND MOLDS
Walter W. Eichenberger, 2615 W. 10th St., Erie, Pa. 16505
Filed May 23, 1966, Ser. No. 552,324
U.S. Cl. 164—39 **8 Claims**
Int. Cl. B22c *15/10*



A method of making a foundry mold by connecting a high voltage, high frequency electrical power source across the sand in the mold during the molding process so that the sand particles are stressed and oriented thereby resulting in a denser and more accurate mold.

3,431,969
PROCESS FOR PREPARING SAND CORES
Janis Robins, St. Paul, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Filed Aug. 15, 1966, Ser. No. 572,200
U.S. Cl. 164—43 **5 Claims**
Int. Cl. B22c *1/22;* **C07c** *55/06*

The bench life of foundry core binders containing polyisocyanates and suitable hydroxy-containing co-reactants (e.g., oil-modified alkyd resins) is extended by addition of a free acid (e.g., oxalic acid) to the foundry mix.

3,431,970
PROCESS FOR PRODUCING STRUCTURES CONTAINING SHAPED VOIDS
Franciszek Olstowski and John G. Mezoff, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 22, 1965, Ser. No. 445,834
U.S. Cl. 164—97 **14 Claims**
Int. Cl. B22c *9/10;* **B22d** *17/00*

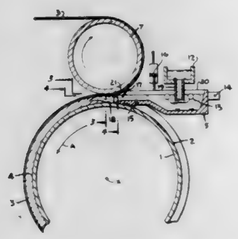
This invention relates to structures containing shaped voids prepared by compressing and forming expanded vermicular graphite, having an apparent bulk density of from about 0.1 to about 2.0 lbs./ft.^{3}, to a more dense form having structural integrity, inserting said compressed form into a mold as a core, and casting a hardenable material in said mold around said core. The invention also

relates to a method for preparing a composite core by adding molten metal to a mold filled with expanded vermicular graphite. Said composite core is subsequently positioned in a pressure die casting mold whereby molten metal is cast about the core to form a thin layer thereon.

3,431,971
CONTINUOUS CASTING MACHINE OF THE ROTATABLE WHEEL TYPE

Ivan Gyongyos, Rikon, Tosstal, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland

Continuation-in-part of application Ser. No. 447,651, Apr. 13, 1965. This application Sept. 2, 1965, Ser. No. 484,691
Claims priority, application Republic of South Africa, Apr. 15, 1965, 65/2,022
U.S. Cl. 164—278 **3 Claims**
Int. Cl. B22d *11/06*

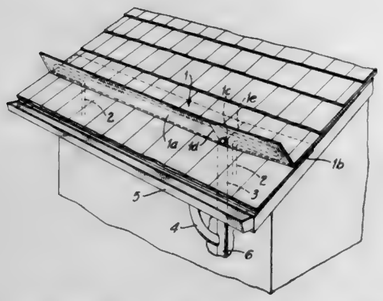


A continuous casting machine for molten metal has a cooled wheel with an annular groove open at the circumference, and a cover band that moves synchronously with the groove throughout a portion thereof, covers the circumference and forms with said groove portion the casting mold. The tundish that delivers the molten metal to the mold has a spout that is closed on all four sides and has a form that matches for sealing the form of the groove and band near the point of the mold entrance.

3,431,972
APPARATUS FOR REMOVING SNOW FROM PITCHED ROOFS

Oscar Bernardi, Ortisei, Bolzano, Italy, assignor to Oscar Bernardi & Co., Ortisei, Italy, an Italian company

Filed Nov. 20, 1967, Ser. No. 684,238
Claims priority, application Italy, Nov. 21, 1966, 25,210/66
U.S. Cl. 165—47 **4 Claims**
Int. Cl. F24h *3/00*

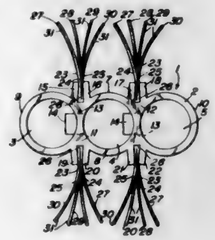


A generally V-shaped channel mounted on the sloping side of a pitched roof near the bottom edge and parallel thereto, with one flange flat against the roof, and the other projecting upwardly to provide a barrier which stops snow from sliding off the roof. A heating element extends lengthwise of the channel and melts the snow, which runs off through a drain pipe. As the snow in the channel is melted, the remaining snow above the channel slides down the roof until it is stopped by the barrier flange, where it can be melted by the heating element.

3,431,973
HEAT EXCHANGERS

Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois

Original application Oct. 24, 1965, Ser. No. 504,330. Divided and this application Jan. 22, 1968, Ser. No. 703,220
U.S. Cl. 165—172 **7 Claims**
Int. Cl. F28f *1/38, 1/20*



A heat exchanger embodying fins clamped between ribs, and the method of making same.

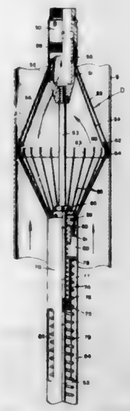
ERRATUM

For Class 166—89 see:
Patent No. 3,431,965

3,431,974
SUBSURFACE FLUID FLOW DIVERTER

Henry M. Buck, Judith F. Bruecher, and Louis A. Carlton, Houston, and Aaron E. Pierce, Humble, Tex., assignors to Esso Production Research Company, a corporation of Delaware

Filed Jan. 24, 1966, Ser. No. 522,720
U.S. Cl. 166—136 **8 Claims**
Int. Cl. E21b *33/12, 23/00, 47/00*

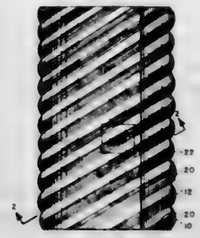


A collapsible-expansible umbrella-type flow diverter capable of being lowered through small diameter well pipe when collapsed and expanded in large diameter well pipe. The flow diverter is particularly useful with subsurface fluid flow measuring apparatus which requires diversion of fluid flow therethrough.

3,431,975
PERFORATED PIPE

Darrell N. Blake, 143 Glen, Council Bluffs, Iowa 51501

Filed Oct. 6, 1967, Ser. No. 673,494
U.S. Cl. 166—227 **2 Claims**
Int. Cl. E21b *43/08*



A generally cylindrical pipe having corrugations extending around its circumference with elongated perforations extending in parallelism with and through the elongated crests of the corrugations on the outer side of the pipe, flanges along the sides and across the ends of the perforations, the flanges inclining outwardly of the pipe and inwardly toward a center of each perforation. A vertical section of a well casing comprising a pipe as described disposed in the ground with its axis vertical.

3,431,976
POLYMER SUSPENSION AND PRODUCTION OF OIL THEREWITH

Robert R. Harvey and Mike M. Vaclaw, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 2, 1967, Ser. No. 671,931
U.S. Cl. 166—274 **10 Claims**
Int. Cl. E21b *43/20;* **C09k** *3/00*

A stable aqueous suspension of a polymer of an olefin of 2 to 6 carbon atoms is made by dispersing polymer particles of a size in the range of 0.001 to 2 microns in a concentration in the range of 0.001 to 5 wt. percent of the suspension in water or brine with the aid of a nonionic surfactant in solution in a concentration in the range of 0.001 to 5 wt. percent of the solution, said surfactant being a polyethylene oxide ether or thioether having at least 30 ethylene oxide units at the hydrophilic end and a single terminal hydroxyl group. An oil-displacing surfactant is added to the suspension and a slug of the resulting suspension is introduced to an oil stratum and driven thru a section thereof to produce oil therefrom. The oil-displacing surfactant is preferably a polyethylene oxide ether or thioether having from 4 to 10 ethylene oxide units at the hydrophilic end and a single terminal hydroxyl group.

3,431,977
FORMING FRACTURES IN THE DESIRED DIRECTION IN EARTH FORMATIONS

Clarence Robert East and Morton A. Mallinger, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

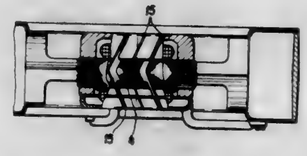
No Drawing. Filed July 24, 1967, Ser. No. 655,293
U.S. Cl. 166—281 **6 Claims**
Int. Cl. E21b *33/13, 43/26*

A vertical fracture is formed extending into an earth formation in a desired direction from a well penetrating the formation. In the process, the usual steps are first followed of forming a vertical slot through a liner in the well and forming a notch in the formation behind the slot, the notch extending in the direction of the desired fracture. Pressure is applied as usual to form or extend a fracture. The improvement comprises sealing this first fracture by filling it with a sealing liquid, re-notching the formation in the plane of the desired fracture and again applying a fracturing pressure.

3,431,978
PROPELLER FAN

Georg Friedrich Papst, 1 Karl Maierstrasse, 7742 St. Georgen, Black Forest, Germany

Filed May 15, 1967, Ser. No. 638,517
Claims priority, application Germany, Mar. 16, 1967, P 41,652
U.S. Cl. 170—159 **9 Claims**
Int. Cl. F04d *25/06*

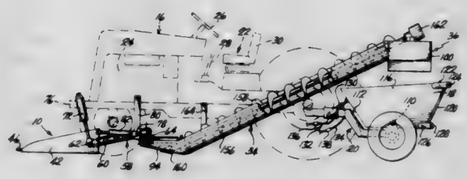


The blades of a propeller fan consist of sheet metal and are resistance welded directly to the laminations of the rotor which surrounds the stator. Each blade is welded to each lamination and the welding operation is carried out while the blades are pressed against the rotor with a force which suffices to effect slight penetration of blades into the external surfaces of laminations and to thus insure satisfactory exchange of heat when the fan is in use.

3,431,979
SURFACE AND/OR GROUND EMBEDDED ARTICLE PICKERS

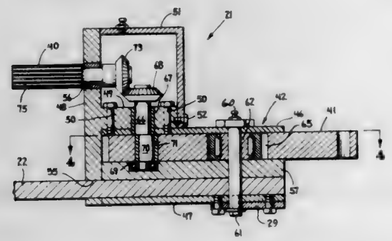
Kennith L. Gregerson, Rte. 1, Box 148-B, Granite Falls, Wash. 98252

Filed June 28, 1966, Ser. No. 561,167
U.S. Cl. 171—63 **10 Claims**
Int. Cl. A01b *43/00*



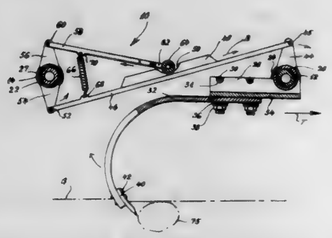
A scoop is mounted below a tractor in a path extending between the tractor's two front wheels. The scoop discharges onto a rearwardly extending first conveyor. The first conveyor discharges onto a second conveyor which extends laterally to a side location out from beneath the tractor. The second conveyor discharges onto a third elevating conveyor. The third conveyor raises the articles and deposits them into a bin carried by the tractor or by a trailer behind the tractor.

3,431,980
GRADER BLADE
Marshall V. Singer, Jr., 623 W. 2nd St., Seymour, Ind. 47274
Filed Apr. 1, 1966, Ser. No. 539,398
U.S. Cl. 172—40 4 Claims
Int. Cl. A01b *35/04, 35/10*



This invention relates to specific means for imparting a reciprocating or vibratory motion to the blade or blades of road graders or other earth working apparatus in order more effectively to cut though hard mounds of earth.

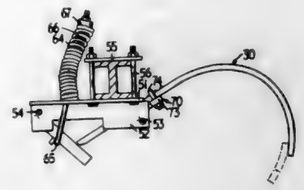
3,431,981
ECCENTRIC BEARING LINKAGE FOR HOE DRILLS
Walter David Hofer, Brocket, Alberta, Canada
Filed July 5, 1966, Ser. No. 562,684
U.S. Cl. 172—269 8 Claims
Int. Cl. A01b *61/04, 19/08*



A stabilized linkage for shank mountings in cultivators that does not sway or twist in loose ground or out of the ground, and that supports a shank retractably to yield if an obstruction is encountered. The linkage includes a shank mounting assembly having front and rear parallel shafts with rotatable bearings on the shafts. A bracket is secured to one of the shafts and a curved shank has one end attached to the bracket. A pair of arms radiate from the bearings and a pivoted link bar connects the arms. A block is carried by the link bar and is recessed. A third arm radiates from one of the bearings and a lever is attached at one end to said third arm. A roller on the lever rides in the recess in the block and a coiled spring is attached at opposite ends to the link bar and lever to hold the roller in the recess and retract the roller.

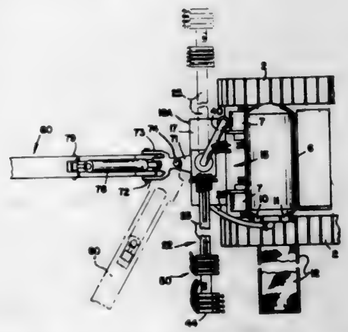
3,431,982
SPRING TRIP RELEASE FOR A CHISEL PLOW
Terry Wassill, Melville, Saskatchewan, Canada
Filed May 11, 1966, Ser. No. 549,420
Claims priority, application Canada, May 14, 1965, 930,676
U.S. Cl. 172—710 4 Claims
Int. Cl. A01b *15/00, 23/00, 31/00*

An assembly for resiliently, pivotally mounting the shank of an earth working tool to enable the same to yield, on encountering an obstruction. The shank is itself pivoted and its end bears against a bar member



that is pivoted about a second parallel axis, a spring acting on the bar member to hold it and hence the shank in a normal operating condition.

3,431,983
POSITIONABLE CONTROL ASSEMBLY
Earl C. Jacobson, 377 Santa Clara Ave., Eugene, Oreg. 97402
Filed Nov. 14, 1966, Ser. No. 593,970
U.S. Cl. 173—43 6 Claims
Int. Cl. E21c *5/11, 9/00, 11/02*

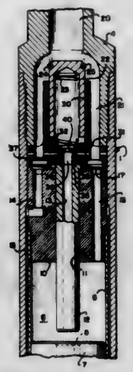


A track supported crawler type tractor is disclosed having a working boom member swingably mounted to one end of the tractor with drilling equipment being pivotally carried at the boom member's outer end. Separately and swingably mounted to the tractor chassis is a control arm having operator manipulated valve assemblies at its outer end with said valve assemblies being in circuit with the drilling equipment to enable a machine operator to control said drilling equipment from a location removed from the tractor and preferably oppositely of the tractor's centerline from the operating drilling equipment to avoid falling debris.

3,431,984
CHECK VALVE VENT AND BLOW AIR METERING PLUG FOR ROCK DRILLS
Alois A. Buehler, Easton, Pa., and Carl R. Peterson, Princeton, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 22, 1967, Ser. No. 648,037
U.S. Cl. 173—78 8 Claims
Int. Cl. E21c *7/04;* B25d *17/14;* E21b *21/00*

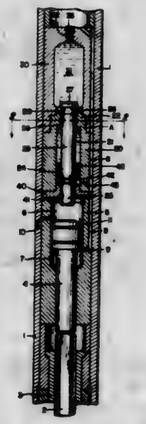
For use with a rock drill having a check valve in the air supply passage, a plug which serves to vent the check valve should it be desired that no additional blow air be supplying fluid under pressure to the blow air passage. The plug may be positioned so that it only exhausts the check

valve should it be desired that no additional blow air be used for cleaning cuttings. It may also be used to provide



a passage for blow air when the rock drill has no check valve.

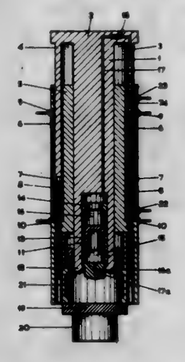
3,431,985
LIQUID SPRING
John T. Bowen, Princeton, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed May 27, 1966, Ser. No. 553,485
U.S. Cl. 173—119 14 Claims
Int. Cl. E21b *1/00;* E21c *3/00;* B25d *9/00*



A liquid spring particularly adapted for use with a rock drill. The spring includes a chamber filled with liquid and a plunger extending into the liquid. The plunger is adapted to be moved toward the chamber by the piston of the rock drill, seal the chamber and compress the liquid in the chamber. The compressed liquid in turn initiates forward movement of the plunger and rock drill piston. Apparatus is provided for re-supplying the chamber with liquid.

3,431,986
HYDRAULIC PILE-DRIVING DEVICE
Joost W. Jansz, The Hasg, Netherlands, assignor to Hollandsche Beton Maatschappij, N.V.
Filed May 24, 1967, Ser. No. 640,994
Claims priority, application Netherlands, May 24, 1966, 6607149
U.S. Cl. 173—134 9 Claims
Int. Cl. E02d *7/10;* B25d *9/12*

A hydraulic pile-driving device includes at least one hydraulic cylinder which is connected with a ram body to move it up and down, a hydraulic main circuit operating the hydraulic cylinder being controlled by a hydraulic control circuit operating in dependence upon the position



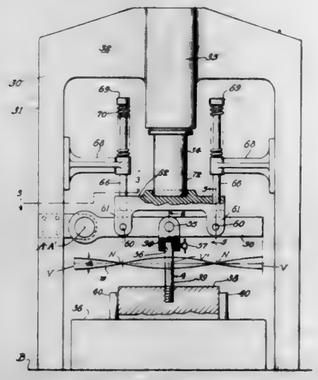
of the piston in the hydraulic ram cylinder. Special hydraulic circuit connections and components prevent hydraulic shocks and maintain the downward acceleration of the ram at a constant value.

3,431,987
APPARATUS FOR TEMPORARILY STOWING DETACHABLE PORTIONS OF SUSPENDED LOADS
Ian Rendall, London, England, assignor to George Wimpey & Company Limited, London, England, a British company
Filed Sept. 25, 1967, Ser. No. 670,264
Claims priority, application Great Britain, Sept. 29, 1966, 43,544/66
U.S. Cl. 173—141 7 Claims
Int. Cl. E21b *15/00;* B23b *47/26*



Earth boring apparatus comprises a motor-transmission unit to which the boring tool is detachably connected. The unit is tiltably mounted in a carriage which is movable up and down on a supportng structure by a cable system. Guide tracks on the supporting structure are engaged by followers on the carriage and are so shaped that as the carriage is moved up and down on the supporting structure it is tilted about a substantially horizontal axis at the locality of attachment of the cable system to the carriage, so that the carriage is tilted to a position to facilitate attachment of a boring tool to the unit, or detachment of a boring tool from the unit.

3,431,988
SONIC METHOD AND APPARATUS FOR INSERTING FASTENING ELEMENTS INTO PLASTIC COMPLIANT BODIES
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif. 91406)
Continuation-in-part of application Ser. No. 441,209, Mar. 19, 1965, which is a continuation-in-part of application Ser. No. 423,771, Jan. 6, 1965. This application Jan. 20, 1966, Ser. No. 521,948
U.S. Cl. 175—56 9 Claims
Int. Cl. E21c *11/00*; E01g *3/00*; E02f *5/18*



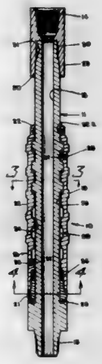
A method for driving inserts, including studs, pins and the like, into bodies of parent material which is plastic or plastically deformable, comprising applying sonic energy to the insert while said insert is being driven into the parent material.

3,431,989
PLANETARY EXCAVATOR
Willis D. Waterman, 626 Max, Salina, Kans. 67401; Betty Jo Waterman, administratrix of said Willis D. Waterman, deceased
Continuation-in-part of application Ser. No. 420,704, Dec. 23, 1964. This application July 31, 1967, Ser. No. 657,359
U.S. Cl. 175—95 4 Claims
Int. Cl. E21b *3/02, 9/24*; F16h *55/34*



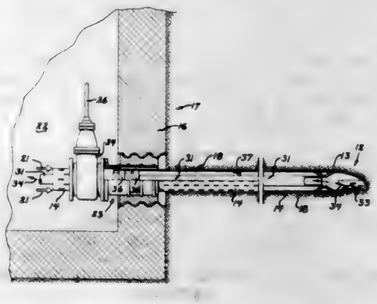
A rotary excavator for drilling large diameter shafts into the earth and in which a pilot hole cutter and laterally extended hole cutters are reversely driven by resilient drive members powered by reversible motors, and the laterally extended cutters move the cuttings into the pilot hole, for removal of the cuttings from the pilot hole through a central pipe as a result of the high velocity flow of drilling fluid through the pipe to the surface of the earth.

3,431,990
KEYSEAT WIPER
Derrel D. Webb, Houston, Tex., assignor to Houston Engineers, Inc., Houston, Tex.
Filed Feb. 2, 1967, Ser. No. 613,538
U.S. Cl. 175—295 3 Claims
Int. Cl. E21b *1/06, 1/10, 5/00*



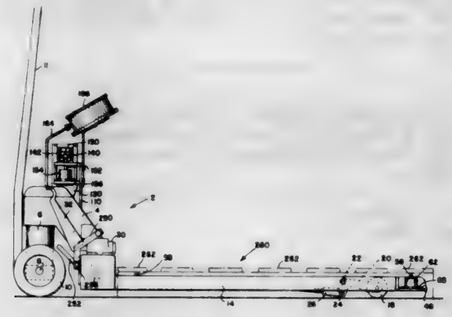
A keyseat wiper comprising a tubular member connectible in a drill string and a sleeve about an intermediate portion of the member. The sleeve is shorter than the distance between jarring shoulders on opposite ends of the member and has spirally arranged wiper blades on its outer surface. A longitudinal spline on the sleeve has notches adapted to be selectively engaged by lugs of a longitudinal spline on the tubular member in alternate axial positions of the member within the sleeve. The tubular member spline is held engaged with the sleeve spline in either position by right hand torque applied to the member, and is disengaged to permit the member to move axially within the sleeve when torque is released.

3,431,991
DIGGING HEAD FOR WATER COLLECTOR PIPE
Frederick C. Mikels, P.O. Box 242, Kennewick, Wash. 99336
Filed Oct. 23, 1967, Ser. No. 677,422
U.S. Cl. 175—400 5 Claims
Int. Cl. E21b *9/34, 11/02*; E03b *3/11*



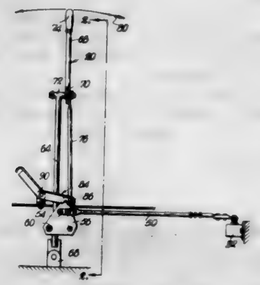
An elongated, hollow, body is mounted on the leading end of a screen pipe emergent from the caisson of a water collector. The upper portion of the digger body is formed with a rounded nose and is imperforate whereas the bottom is substantially planar and is provided with openings. As the head is urged horizontally through a water-bearing stratum, detrital material is continuously flushed away from its situs, thus allowing the pipe to continue its advance. The fluid material passes through the body openings, thence through the screen pipe to the caisson for removal to waste. The shape and manner of operation of the digger head is such as to maintain a horizontal path.

3,431,992
LIFT TRUCK SCALE
Alten E. Whitecar, Westville, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1966, Ser. No. 602,368
U.S. Cl. 177—140 10 Claims
Int. Cl. G01g *19/08*



A scale on a lift truck for handling palletized loads, the scale comprising four hydraulic units depressible by an undersurface of the pallet and transmitting pressure to a weight indicator.

3,431,993
SPEED, STEERING AND DIRECTION CONTROL FOR VEHICLES
Cecil L. Case, Newton, Kans., assignor to Hesston Corporation, Inc., Hesston, Kans., a corporation of Kansas
Filed Mar. 23, 1967, Ser. No. 625,378
U.S. Cl. 180—6.48 2 Claims
Int. Cl. B62d *11/04*



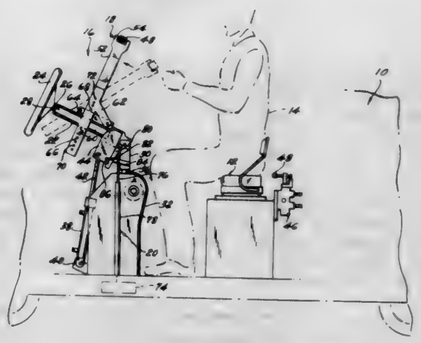
A vehicle control which includes an operating lever interconnected through linkage with a pair of hydraulic fluid regulating devices and mounted for pivotal movement about one axis to operate both devices in the same direction for speed and reversing control, and about a second axis to operate the devices simultaneously in opposite directions for steering the vehicle.

3,431,994
ELECTRIC DRIVE FOR BICYCLES
Garfield A. Wood, Jr., 4565 Sabal Palm Road, Bay Point, Miami, Fla. 33137
Filed June 13, 1967, Ser. No. 645,703
U.S. Cl. 180—31 12 Claims
Int. Cl. B62k *11/10*; B62d *3/00, 6/02*



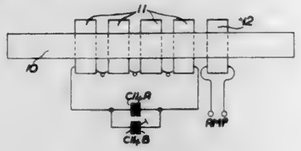
The specification and drawings disclose an electrically operated bicycle drive. The drive assembly generally includes a friction drive wheel adapted to frictionally engage a tire of the bicycle to drive the bicycle. The friction drive wheel is rotated by a plurality of small electric motors connected by a gear train to a gear on the friction drive wheel. The drive assembly is clamped over either the front or rear wheel of the bicycle by a clamp which engages either the front or rear forks of the bicycle. The friction drive wheel is spring biased against the tire in its driving position to minimize slippage.

3,431,995
VEHICLE AND DRIVER SAFETY DEVICE
Henry E. Klernan, 136 W. Pulaski Road, Huntington Station, N.Y. 11746
Filed Jan. 19, 1966, Ser. No. 521,595
U.S. Cl. 180—82 6 Claims
Int. Cl. B60k *27/00, 33/00*; B60r *19/00, 23/00*



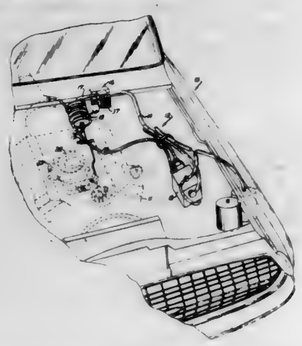
A driver safety device including a safety belt coupled to the steering mechanism of a vehicle. The safety belt is also intimately coupled to at least one control mechanism of the vehicle, such as the brake or transmission, in such a manner that the control mechanism cannot be made operative unless the belt is placed firmly about the vehicle driver.

3,431,996
VEHICLE GUIDANCE SYSTEM
Cyril George Giles, James Alexander Martin, and John Richard Spindlow, Harmondsworth, West Drayton, England, assignors to National Research Development Corporation, London, England, a British company
Filed Sept. 20, 1965, Ser. No. 488,523
Claims priority, application Great Britain, Sept. 23, 1964, 38,827/64
U.S. Cl. 180—98 2 Claims
Int. Cl. B60k 27/00; G05b 11/01



A system for automatically guiding a vehicle along a desired path by means of guidance equipment on the vehicle operating with reference to a linear field source extending parallel but offset with relation to the desired path.

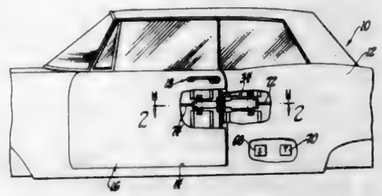
3,431,997
ATTITUDE COMPENSATOR DEVICE FOR A MOTOR VEHICLE SPEED CONTROL SYSTEM
Keshav S. Kavthekar, Detroit, and Richard G. Russell, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,663
U.S. Cl. 180—108 2 Claims
Int. Cl. B60k 31/00; F02d 11/08



The vacuum line of a speed control system of a motor vehicle has a port therein. The port is sealed by a non-permeable member which is secured to a pivotally mounted pendulum. The pendulum, in response to the movement of the vehicle into a sharp curve, swings sufficiently with respect to the vehicle to align vacuum bleeding slots in the non-permeable member with the port of the speed control system. As the vacuum is reduced in the speed control system, the engine speed of the vehicle is also reduced sufficiently that the vehicle passes through the curve at a reduced speed.

3,431,998
VEHICLE SAFETY MECHANISM
Robert L. Martin, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 27, 1967, Ser. No. 649,251
U.S. Cl. 180—112 8 Claims
Int. Cl. B60j 5/00

A vehicle safety latch mechanism is attached to a vehicle and operates to prevent a door thereof from moving to the open position in the event of a crash. The assembly includes an elongated member movable from an unlatched position to a latched position for spanning the space between the door and the vehicle body for maintaining the door in the closed position when the vehicle encounters a crash condition. The latch mechanism also includes a first explosive means for moving the elongated member to the latched position when the crash condition is encountered and a second explosive means for subsequently returning the elongated member to the unlatched position whereby the door may be opened after the crash.

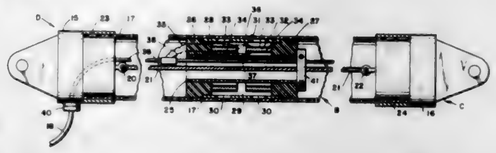


3,431,999
COMMON DEPTH POINT SEISMIC PROSPECTING
Walter H. Glazier, Calgary, Alberta, Canada, assignor to Esso Production Research Company, a corporation of Delaware
Filed Apr. 26, 1967, Ser. No. 634,002
U.S. Cl. 181—.5 4 Claims
Int. Cl. G01v 1/00



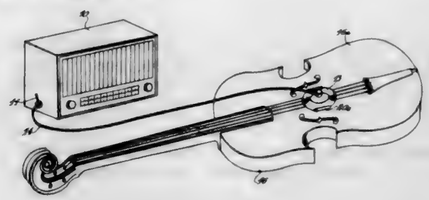
Common depth point seismic method in which seismic disturbances are initiated at a first line of locations substantially perpendicular to a plurality of parallel linear detector arrays, the arrays are moved half the distance between impulse locations, and seismic impulses are initiated midway between the first impulse locations.

3,432,000
SUBMERSIBLE DETECTOR FOR SENSING UNDERWATER SOUNDS
Leo Ongkiehong and Harm Mast, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 21, 1967, Ser. No. 624,817
Claims priority, application Great Britain, Mar. 25, 1966, 13,489/66
U.S. Cl. 181—.5 3 Claims
Int. Cl. G01v 1/38



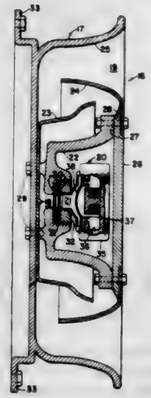
In a liquid filled, flexible streamer carrying underwater seismic exploration hydrophones, the sound pressure wave detectors may be isolated from the false inertial forces that result when the mass of the liquid filling the streamer is shifted or accelerated by disposing the detectors in fluid-tight chambers having a rigid wall between the liquid filled interior of the streamer and the pressure detector containing interior of said chambers. Sensitivity to seismic sonic waves is retained by arranging the pressure detector containing chambers to include a portion of the flexible streamer casing as one wall thereof and filling the chamber with liquid in direct contact with both, the interior surface of the flexible streamer casing and the surface of the pressure detector, so that the flexible casing wall acts as a diaphragm to transmit sonic pressure waves directed against the outer surface of the casing directly to the pressure detector via the chamber liquid.

3,432,001
SOUND IMPROVING DEVICES
Samuel C. Anastin, 4723 N. Dover St., Chicago, Ill. 60640
Filed Aug. 31, 1966, Ser. No. 576,273
U.S. Cl. 181—31 2 Claims
Int. Cl. G10k 13/00



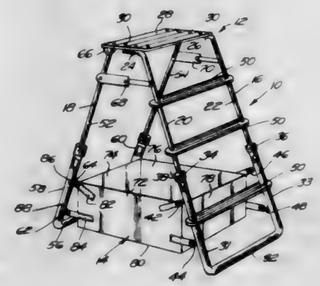
A sound producing assembly in which an electrical sound-producing source such as a radio or the like includes a remote speaker having a cone-type speaker in combination with a string-type instrument having a sound chamber and overlying bridge, and mounting means on the bridge securing the speaker cone in downwardly-opening relation over the sound chamber whereby sounds are transmitted through said bridge to the sound chamber and are refined to a degree and depth and provide an effect not normally attained by the speaker per se.

3,432,002
HORN-LOADED LOUDSPEAKER
Abraham B. Cohen, Oklahoma City, Okla., assignor to LTV Ling Altec, Inc., Oklahoma City, Okla., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,125
U.S. Cl. 181—31 1 Claim
Int. Cl. G10k 13/00



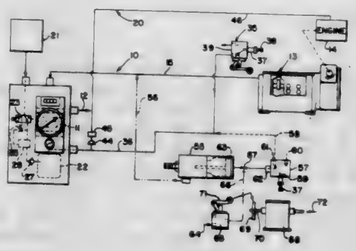
A loudspeaker is disclosed herein which includes a three-bend folded horn, a conventional compression driver, and a protective housing to enclose the compression driver and isolate it from environmental gases so that the loudspeaker is characterized as being explosion proof.

3,432,003
PORTABLE DIVING PLATFORM
Albert C. La Pierre, 127 Illinois St., Central Falls, R.I. 02863
Filed Sept. 22, 1966, Ser. No. 581,211
U.S. Cl. 182—107 5 Claims
Int. Cl. E06c 7/42, 7/16; E04g 5/02



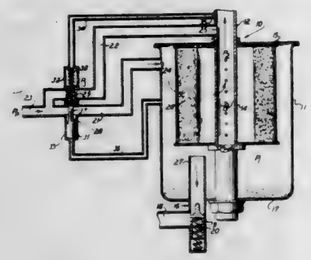
A portable diving platform including a foldable step ladder having hinged sections that are angularly spread to define a standing support, a platform mounted on the sections for supporting a diver, and an anchor means interconnecting the bases of the two sections and being constructed for receiving water therein to act as a ballast for holding the platform from movement when it is submerged in water.

3,432,004
PNEUMATIC CYCLE RATIONING CONTROL
William W. Lyth, Cleveland, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 10, 1966, Ser. No. 571,596
U.S. Cl. 184—6 15 Claims
Int. Cl. F01m 1/00; F16n 17/06, 29/00



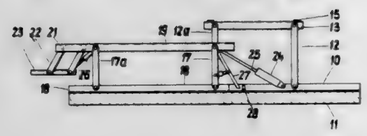
An apparatus to monitor the flow of lubricant from a cyclic lubricator to the object to be lubricated. A source of pressurized fluid introduces a charge of fluid into an accumulator once during each cycle of the lubricator. A mechanism bleeds fluid from the accumulator during each cycle. Failure of the lubricator to transport lubricant will terminate the charging operation and allow the bleeding mechanism to reduce the pressure in the accumulator below a predetermined level which in turn initiates an alarm or terminates the operation of the device being lubricated.

3,432,005
SELF-CLEANING OIL FILTER SYSTEMS
Walter G. Gates, Allen Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,302
U.S. Cl. 184—6 **6 Claims**
Int. Cl. F01m *1/00;* **F16n** *17/06, 29/00*



A self-cleaning lubricant (oil) filter unit having biased valve means sensitive to the pressure differential across the filter. Upon the filter becoming clogged and affecting the pressure differential, the direction of oil flow through the filter element is automatically reversed to provide a back-flushing action to dislodge the contaminants from the surface of the filter element.

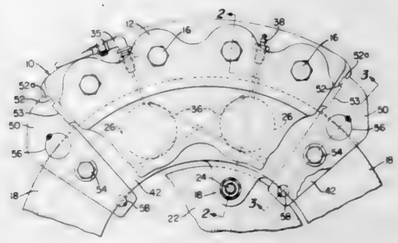
3,432,006
HYDRAULIC HOIST FOR MOTOR VEHICLES
Egon Senger, 51 Hansastrasse, Rheine, Westphalia, Germany
Filed Mar. 3, 1967, Ser. No. 620,498
Claims priority, application Germany, Apr. 26, 1966, S 103,429
U.S. Cl. 187—8.72 **7 Claims**
Int. Cl. B66f *7/08*



A lifting device for working simultaneously at different levels on a motor vehicle. This device includes a vehicle supporting means, a lifting means connected to the supporting means to raise the vehicle to a level for working underneath. The device further includes a platform means which is operably connected to the supporting means for working simultaneously at a level above the floor at another point on the vehicle. The connecting means functions to raise the platform means to a working position when the supporting means is raised to a working position.

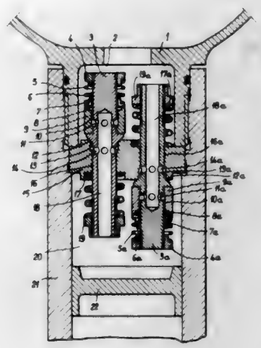
3,432,007
DISC BRAKE WITH QUICK CHANGE LINING STRUCTURE
Kenneth P. Hillegass, Copley, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 25, 1967, Ser. No. 655,783
U.S. Cl. 188—73 **8 Claims**
Int. Cl. F16d *55/00, 69/00*

A disc brake which may have the linings replaced without dismantling or disconnecting the brake assembly. It includes a lining-back-plate subassembly for each friction lining not fastened to the actuating pistons. At each end of the back-plate is attached a removable guide plate that extends radially outwards from the back-plate to overhang the fixed, non-rotatable housing. Thus, any tangential movement of the lining during a brake application will be resisted by the guide plates resting against



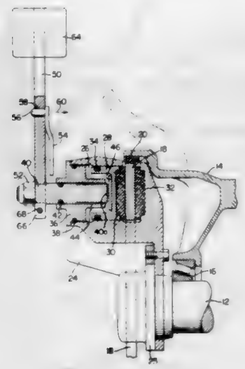
the housing. To remove the lining subassembly from the brake during the relining operation, one of the guide plates is detached from its back-plate by removing the screws holding it in position and pulling the guide plate laterally away from the back-plate. The lining subassembly then carried on the back-plate can be removed by sliding it laterally parallel to the face of the disc.

3,432,008
HYDRAULIC SHOCK ABSORBERS
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed May 1, 1967, Ser. No. 634,929
Claims priority, application France, Sept. 28, 1966, 78,022
U.S. Cl. 188—94 **2 Claims**
Int. Cl. F16d *57/00;* **F16k** *31/12, 31/36*



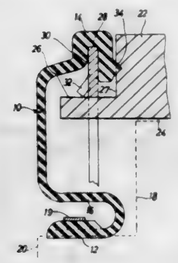
The invention relates to a hydraulic shock absorber intended for example for the suspension system of a vehicle, of the type comprising a body separating two compartments filled with a fluid, a main valve slidably mounted in said body and a return spring. The shock absorber is characterised in that the main valve has a longitudinal duct formed therethrough and acts as a seat to a secondary valve urged against said seat by a calibrated spring. The main valve constitutes in conjunction with the shock absorber body and said secondary valve annullar jets communicating with said longitudinal duct through orifices formed in the lateral wall of said duct.

3,432,009
PARKING ATTACHMENT FOR DISK BRAKE
Carl E. Bricker, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 9, 1967, Ser. No. 607,973
U.S. Cl. 188—106 **4 Claims**
Int. Cl. F16d *65/14, 55/00;* **B60t** *13/04*



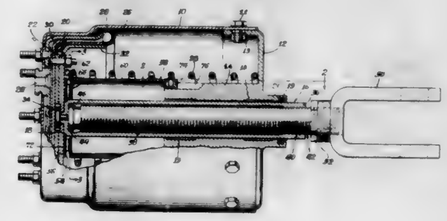
A combined caliper type disk brake and parking brake actuated by a piston which is operated either by hydraulic pressure or by mechanical pressure from a shaft threaded through the housing of a cylinder which contains the piston. The shaft is rotated by a lever attached to shaft end which projects from the cylinder housing. Because the shaft is threaded through the housing, rotation of the shaft will cause it to move axially in the cylinder and force the piston to apply braking pressure against the brake disk.

3,432,010
SEALS FOR HYDRAULIC APPARATUS
Robert B. Hemus, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed June 19, 1967, Ser. No. 646,889
Claims priority, application Great Britain, June 22, 1966, 27,819/66
U.S. Cl. 188—152 **7 Claims**
Int. Cl. B60t *11/10;* **F16j** *15/18, 15/50*



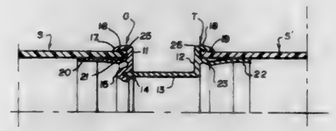
The invention relates to a novel sealing boot for use in automobile disc brakes and includes a new method for fixing the boot to the brake actuating piston and the caliper body of the brake. The boot has radially spaced inner and outer peripheries of which the inner periphery fits over the piston end and the outer periphery is internally formed with a radial pocket. Within this pocket is seated a fixing ring which is provided with radial sprags, so that as the boot is passed over the cylinder housing the actuating piston, the sprags are resiliently sprung to grip the cylinder and to fix the ring between the cylinder and the boot. The inner periphery of the boot is engaged over the piston end and may be clamped on that end by a clamping ring shrunk around the boot either dielectrically or electromagnetically.

3,432,011
AUTOMATIC SLACK ADJUSTER
Russell G. Altherr, Munster, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Nov. 9, 1966, Ser. No. 593,065
U.S. Cl. 188—196 **3 Claims**
Int. Cl. F16d *65/38*



In a railway car brake slack adjuster of the type in which a hollow shaft is threaded concentrically around a brake actuator rod and a cylindrical member concentric around the shaft and rod is moved by a push plate axially with the shaft and rod in brake-applying movement and on excess of such movement is caused to rotate in one direction and, by means of a ratchet connection with the shaft, on return movement and reverse rotation causes similar reverse rotation of the shaft relative to the rod so as to take up slack in the brake rigging, the improvement consists in interposing a friction plate between the push plate and the ratchet connection in order to prevent rotation of the shaft during axial movement in brake-applying direction.

3,432,012
LUGGAGE CASES
Roger D. Winter, Denver, Colo., assignor to Samsonite Corporation, Denver, Colo.
Filed Oct. 11, 1966, Ser. No. 585,843
U.S. Cl. 190—49 **6 Claims**
Int. Cl. A45c *13/04*

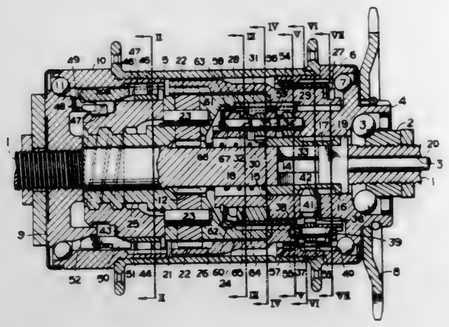


A luggage case in which one or both sections comprise a concave shell attached to a generally planar frame strip, having inside and outside flanges between which are received the edges of the corresponding end and side walls of a shell. An outer nib on the shell is locked behind an inside extension of the outer flange of the frame strip, while an offset in the inside flange of the shell permits the nib to be snapped past the extension, so that, after assembly, the inside flange of the frame strip restrains inward movement of the shell edge. The outer edge of the nib may be beveled or tapered, to act as a wedge during such assembly.

3,432,013
REAR HUB WITH BUILT-IN THREE STAGE SPEED CHANGE MECHANISM FOR A BICYCLE

Shuzo Matsumoto, Sakai, Japan, assignor to Shimano Kogyo Kabushiki Kaisha, Sakai, Japan

Filed June 28, 1967, Ser. No. 649,601
Claims priority, application Japan, July 5, 1966, 41/43,915
U.S. Cl. 192—6 1 Claim
Int. Cl. F16d 67/00, 41/30

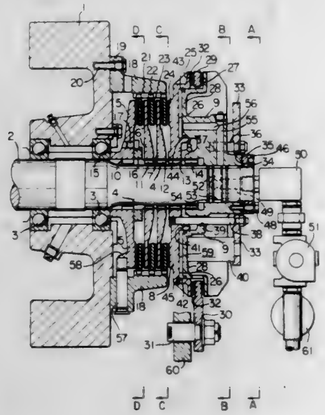


Rear hub having a built-in three stage speed change mechanism for a bicycle having a coaster brake operable by rotating the sprocket wheel in the reverse direction, wherein there is provided no clutch heretofore employed in this type of speed change mechanism comprising a planetary gear, the mechanism being so improved that any trouble occurring in speed change operation caused by the presence of the clutch can be removed.

3,432,014
CLUTCH AND BRAKE COMBINATION

Mayuki Iwamatsu and Akira Fujimura, Tokyo, Japan, assignors to Aida Iron Works & Co., Ltd., Kanagawa-ken, Japan

Filed Feb. 20, 1967, Ser. No. 617,332
U.S. Cl. 192—18 7 Claims
Int. Cl. F16d 11/06, 13/22, 67/02

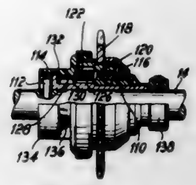


A clutch and brake combination arranged between a driving wheel running continuously and a crankshaft driven thereby through said combination. A cylinder and piston mechanism is formed by the supporting members of the clutch and brake and is adapted to be supplied with pressure fluid from an outer pressure source for forcing the clutch member into full clutch engagement while at the same time releasing the brake.

3,432,015
REVERSIBLE ONE-WAY CLUTCH WITH PILOT BRAKE

Hans Joachim Schwerdhöfer, Schweinfurt, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt, Germany

Filed June 7, 1966, Ser. No. 555,756
Claims priority, application Germany, June 15, 1965, F 46,333, F 46,334
U.S. Cl. 192—43.1 14 Claims
Int. Cl. F16d 11/06, 13/04, 43/00

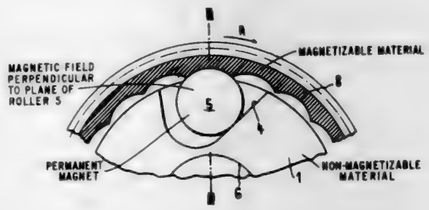


A double-acting freewheeling clutch whose input, coupling, and output members are mounted on a sleeve coaxially receiving the driven shaft. The output member of the clutch is permanently coupled to the shaft.

3,432,016
MAGNETIC ROLLER CLUTCH

Kurt Vogt, Bienne, Switzerland, assignor to Omega Louis Brandt & Frere S.A., Bienne, Switzerland

Filed Aug. 30, 1966, Ser. No. 576,013
Claims priority, application Switzerland, Sept. 8, 1965, 12,534/65
U.S. Cl. 192—45 7 Claims
Int. Cl. F16d 41/06, 41/07

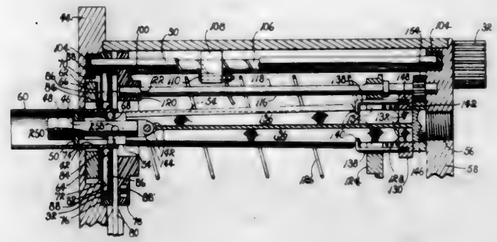


A free wheel coupling device is shown in which a driven element is coupled with a driving element by a roller. The roller is positioned in a notch of one of the elements so that the roller is held against the inner rim of the other element. The roller and the rim form a magnetic circuit at least a portion of which is made of magnetic material. The inner surface of the rim may be smooth or festooned. Either of the elements may be the driving element.

3,432,017
ACTUATION DEVICE CONTROLLED BY DEFORMABLE KEY HAVING END-TO-END CONFORMITY

Wesley P. Kliewer, 712 Dickran Drive, Tulare, Calif. 93274

Filed July 13, 1967, Ser. No. 653,053
U.S. Cl. 194—4 21 Claims
Int. Cl. G07f 1/06

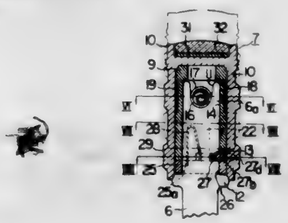


An acutation device including configuration testing mechanisms and magnetic gates for denying entrance to a counterfeit key but responsive to the insertion of a legitimate key of uniform end-to-end configuration for actuating a vending machine to dispense an item, the device cutting off or consuming a portion of the key commensurate with the price of the item. The device has provision for pushing in any remaining unspent portion of the key toward the purchase of an item and utilizes the key cutoff blades to block the inner workings of the device against a non-legitimate key and probing with unauthorized objects and, in a modified form, is operable to actuate any one of a plurality of vending machines to provide the customer with a variety of choice.

3,432,018
TYPE BAR ASSEMBLY FOR TYPEWRITERS

Tomoyoshi Watanabe, Yukio Hishida, and Takashi Hirata, Nagoya-shi, Japan, assignors to Brother Kogyo Kabushiki Kaisha, Nagoya-shi, Aichi-ken, Japan

Filed June 19, 1967, Ser. No. 646,845
Claims priority, application Japan, June 24, 1966, 41/41,207; June 30, 1966, 41/42,759; Apr. 14, 1967, 42/23,866
U.S. Cl. 197—36 9 Claims
Int. Cl. B41j 1/32



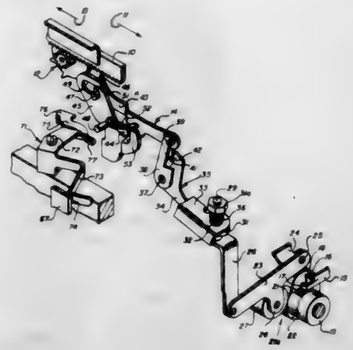
A type bar assembly having a cylindrical core member detachably fixed on the free end of the type bar and type face holding members exchangeably and rotatably mountable on the core member, each of the type face holding members having respectively on its periphery a group of particular characters and marks used in a different specialized field for printing a particular character according to any specialized field.

Additionally, each type holding member can be replaced with a single type face bearing structure with a special type face used rarely by detaching said core member from the type bar.

3,432,019
AUTOMATICALLY DISABLED BACKSPACE MECHANISM

Lloyd E. Hare, West Hartford, Conn., assignor to Litton Business Systems, Inc., a corporation of New York

Filed Sept. 29, 1966, Ser. No. 582,977
U.S. Cl. 197—91 1 Claim
Int. Cl. B41j 19/62

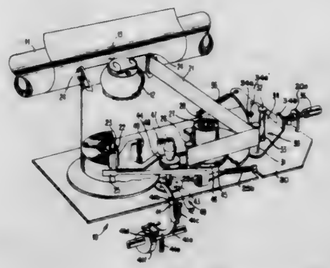


In a conventional carriage typewriter, a power operated backspace mechanism having a backspace pawl, is provided with an interposer responsive to movement of the carriage to a left margin position to block engagement of the backspace pawl with a carriage rack while permitting translatory movement of the pawl should a backspace key lever be depressed with the carriage so positioned.

3,432,020
SMALL INCREMENT RIBBON FEED

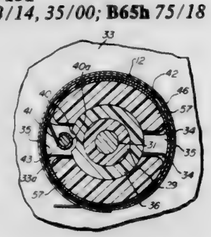
Allison H. Caudill and Willie Goff, Jr., Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 6, 1966, Ser. No. 519,098
U.S. Cl. 197—151 3 Claims
Int. Cl. B41j 33/28; B65h 23/14



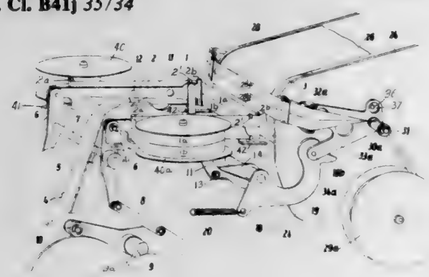
Relatively uniform, small increment metering of typewriter ink ribbon onto a spool is accomplished without the usual pinch roll and capstan by reliance on the dynamics of a system including a source of incremental motion, a resilient coupling, and a slipping transmission all connected in series power transmitting relationship to the spool and further including a brake device acting against the ribbon delivered to the spool to maintain a substantial tension in the ribbon. The increase in effective spool diameter as ribbon is wound modifies the dynamic response of the system to the incremental input motion to compensate for the inherent geometrical non-uniformity ordinarily experienced in winding web directly onto spools.

3,432,021
RIBBON SPOOL
Joseph L. Morelli, Hartford, Conn., assignor to Litton Business Systems, Inc., a corporation of New York
Filed July 14, 1967, Ser. No. 653,551
U.S. Cl. 197—151 **4 Claims**
Int. Cl. B41j *33/14, 35/00;* **B65h** *75/18*



A carbon ribbon spool for winding used ribbon having, a pair of separable flanges one of which has a hub of variable diameter which is easily contracted to release the used ribbon wound thereon.

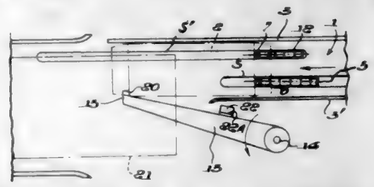
3,432,022
MULTIPLE-COLOR PRINTING STRUCTURE FOR BOOKKEEPING MACHINES AND THE LIKE
Horst Priebs, Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Apr. 21, 1966, Ser. No. 544,245
Claims priority, application Germany, Apr. 26, 1965, A 49,034
U.S. Cl. 197—153 **8 Claims**
Int. Cl. B41j *35/34*



A business machine has a pair of bichrome ribbons selectively controllable conjointly to print duplicate originals, one of the ribbons being suitably disposed on the main frame of the machine for cooperation with an inlet guide for one record sheet, the other of the ribbons being suitably disposed on a pivotally mounted platen frame for cooperation with a second record sheet carried thereby. The frames carry cooperating linkage interconnectable, when the platen frame is rotated to print position, to effect conjoint control over the ribbons to selectively conjointly change the effective ribbon fields thereof.

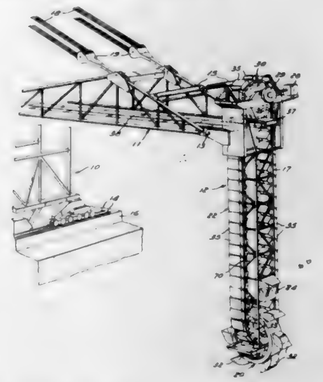
3,432,023
APPARATUS FOR TURNING A BOX ON A CONVEYOR
Horst Lucas, Bochum, Germany, assignor to Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei m.b.H., Bochum, Germany, a corporation of Germany
Filed Apr. 24, 1967, Ser. No. 633,143
Claims priority, application Germany, May 12, 1966, E 31,652
U.S. Cl. 198—33 **2 Claims**
Int. Cl. B65g *47/24*

Described is apparatus for rotating rectangular boxes and the like, moving along a conveyor, through a 90° arc. This is accomplished by means of a hook, rotatable about a stationary axis, which engages one edge of the box, together with a chain-driven dog which engages the



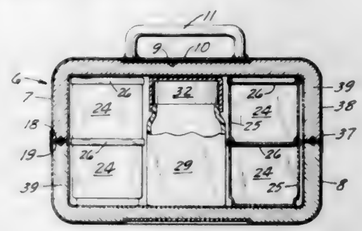
diagonally opposite edge of the box to rotate it through the aforesaid arc of 90°.

3,432,024
BULK MATERIAL HANDLING APPARATUS WITH ROTARY DIGGING DEVICE
Carl Ludwig, Cleveland, Ohio, assignor to McDowell Wellman Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 2, 1966, Ser. No. 524,404
U.S. Cl. 198—36 **12 Claims**
Int. Cl. B65g *37/00, 17/12;* **E02f** *3/18*



A bulk material handling apparatus having an endless rotary excavating device with a plurality of digging containers supported to allow an endless bucket chain elevator to pass through the axial area of this rotary excavating device and interlock with it to provide a means to transfer bulk material from the buckets of the digging wheel to the buckets of the elevator.

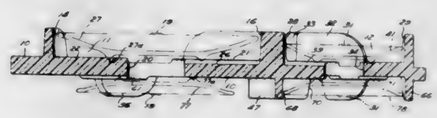
3,432,025
INSULATED INDIVIDUAL LUNCH CASE
Carl A. Luhe, St. Paul, Minn.
(Rte. 4, Thief River Falls, Minn. 56701)
Filed Mar. 8, 1967, Ser. No. 621,529
U.S. Cl. 206—4 **3 Claims**
Int. Cl. A45c *11/20;* **B65d** *25/04, 25/28*



A portable thermally insulated lunch case comprising two identically shaped insulated shells which mate to

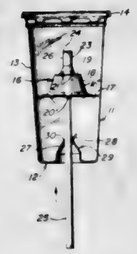
form a sealed chamber in which a plurality of containers may fit together and which will substantially fill the chamber.

3,432,026
PLACE SETTING PACKER
John P. O'Leary, Beaver, Pa., assignor, by mesne assignments, to Interpace Corporation, Parsippany, N.J., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,174
U.S. Cl. 206—47 **9 Claims**
Int. Cl. B65d *79/00, 71/00, 1/34*



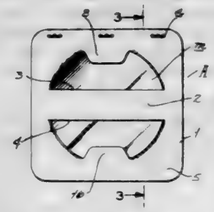
Shipping and/or packer for an assortment of pieces of ware of different shapes and ranges of sizes, as in a place-setting; molded from expanded plastic. A central base has upstanding walls for the various ranges of ware size, molded on either side to permit both sides of base to be used for carrying and displaying ware and to provide base with optimum strength and stiffness. Ware is held on base by tape passing through slots in upstanding walls, rather than by the walls, the tape preferably being under sufficient tension to impress the feet of ware into the expanded plastic, thereby effectively individualizing each packer base to the ware taped on it.

3,432,027
DISPENSING CONTAINER ASSEMBLY
Martin Mueller, Chicago, Ill., assignor, by mesne assignments, to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 518,945, Jan. 5, 1966. This application Oct. 21, 1966, Ser. No. 615,554
U.S. Cl. 206—56 **14 Claims**
Int. Cl. B65d *83/00;* **B28b** *7/10;* **B29c** *7/00*



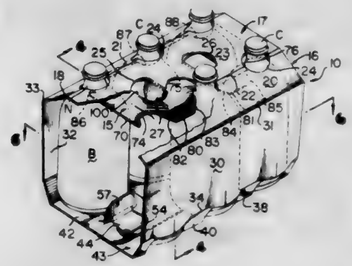
A container assembly for dispensing ice cream or the like including a unitary plastic container having upwardly extending guide means in the bottom surface thereof for guiding an independent push means into puncturing engagement with a frangible section at the upper end of the guide means. An inner base member is provided within the container, and includes an upwardly extending push means retaining boss in axial alignment with the guide means, so that the contents of the container can be discharged by inserting an independent push means in the guide means to rupture the frangible section and move the push means into engagement with the retaining boss on the inner base member.

3,432,028
PACKAGE FOR A MIRROR AND THE LIKE
Bernard Nathan and Gary L. Tate, Vincennes, Ind., assignors to Hamilton of Indiana, Inc., Vincennes, Ind., a corporation of Indiana
Filed Apr. 8, 1968, Ser. No. 719,353
U.S. Cl. 206—62 **8 Claims**
Int. Cl. B65d *85/46, 85/48*



A package for a mirror and like flat, relative rigid material constructed from a single blank of preferably corrugated or like matter and being suitably die cut and formed to present a mirror-receiving compartment substantially centrally of the sheet so that portions of said sheet, and within the plane thereof, will overlie the forward face of said mirror, while other portions of said sheet will underlie the rear face of said mirror and be presented in planar parallel relationship to the plane of said sheet; there being openings for exposing portions of said mirror to inspection.

3,432,029
PARTITION FOR CONTAINERS
William M. Brown, Darien, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 11, 1966, Ser. No. 541,708
U.S. Cl. 206—65 **13 Claims**
Int. Cl. B65d *35/02, 75/00*



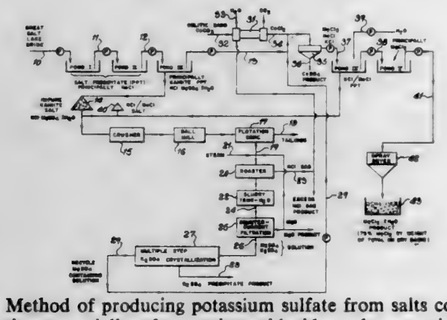
This disclosure is directed to a wrap-around tubular carrier and a separate partition supported upon the necks of containers packaged therein. The partition functions to maintain the containers in predetermined aligned relationship, and the top panel and partition have aligned finger-receiving openings to permit the carrier to be manually grasped and carried.

3,432,030
PROCESS FOR TREATING MINERALS
James P. Olivier, Macon, Ga., assignor to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,692
U.S. Cl. 209—5 **15 Claims**
Int. Cl. B03d *3/06;* **B03b** *1/04*

Process for beneficiating a mineral matter. The process involves extracting the mineral matter, which has been conditioned with specific conditioning agents, with a wa-

ter insoluble, nonionizable organic liquid. The process enables the removal of discoloring impurities, particularly titanium dioxide, from mineral matter of any particle size.

3,432,031
SELECTIVE RECOVERY OF SALTS FROM MIXED SALT SOLUTIONS
Lockwood W. Ferris, Salt Lake City, Utah, assignor, by mesne assignments, to National Lead Company, New York, N.Y., a corporation of New Jersey
Original application Oct. 2, 1964, Ser. No. 400,994. Divided and this application Aug. 22, 1967, Ser. No. 668,737
U.S. Cl. 209—10 **8 Claims**
Int. Cl. C01d *5/18, 5/10;* **B03d** *1/08*



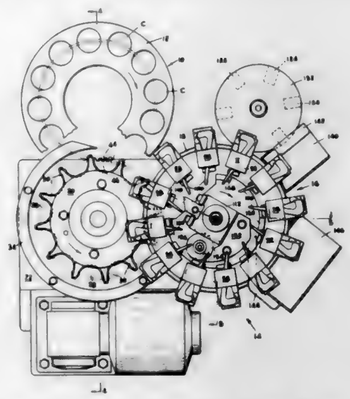
Method of producing potassium sulfate from salts consisting essentially of potassium chloride and magnesium sulfate comprising; heating said salts in the presence of moisture at temperature sufficiently high, preferably at about 1250° F., to produce by interaction of said salts, a reaction product containing potassium sulfate and magnesium oxide, water slurrying the reaction product, separating the magnesium oxide and evaporating the resulting solution to precipitate potassium sulfate. The salts if initially in an impure state are purified by flotation concentration in the presence of a fatty amine acetate or chloride, prior to processing as above stated.

3,432,032
PRESORTING METHOD AND APPARATUS
David G. Curphey, Sunnyvale, and William J. Fowler, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 24, 1966, Ser. No. 560,323
U.S. Cl. 209—73 **46 Claims**
Int. Cl. B07c *5/06, 5/34;* **G06k** *9/00*



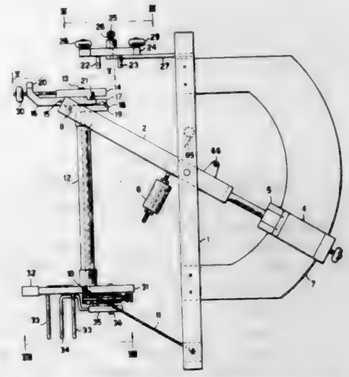
The presorting apparatus of the present invention serves to separate non-machine readable mail from the machine readable mail. It is the purpose of the presorting apparatus to scan and detect the character-to-character relationship of the address of an article to determine whether the address is in the form of printed indicia or non-printed indicia. Toward this end, the factors considered are the character density, the character height, envelope length, skew and location of the address.

3,432,033
AUTOMATIC INSPECTION DEVICE
George Everett, Burlington, Unionville, Conn., assignor, by mesne assignments, to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Mar. 30, 1967, Ser. No. 627,050
U.S. Cl. 209—73 **16 Claims**
Int. Cl. B65d *41/12;* **B07c** *9/00*



Automatic inspection device for bottle crowns or the like, employing reciprocatory gauging plungers to determine presence and thickness of crown liners. The position of a lifter on each plunger is controlled by a trigger which is tripped by a gauging cam or which passes the cam, depending upon the height of the plunger above an inspection table. The plunger lifter engages a lifting cam at one station or another, in accordance with the lifter position, to raise the plunger and release the associated crown for removal from the inspection table.

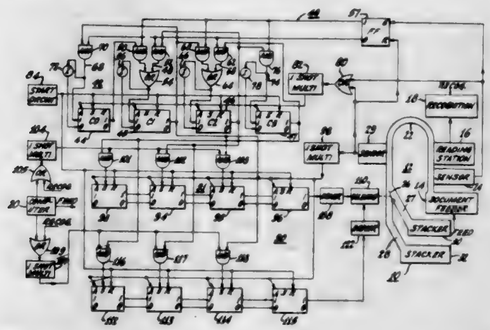
3,432,034
WEIGHT SORTING MACHINE
Jacob H. Mosterd, Barneveld, Netherlands, assignor to Apparatenbouw "MOBA" N.V., Barneveld, Netherlands
Filed Sept. 14, 1966, Ser. No. 579,332
Claims priority, application Netherlands, Sept. 16, 1965, 6512100
U.S. Cl. 209—73 **10 Claims**
Int. Cl. B07c *5/16;* **B07b** *13/08*



A machine for weight-sorting objects, as for example eggs, provided with at least one weighing device, means for substantially horizontally moving the weighing device

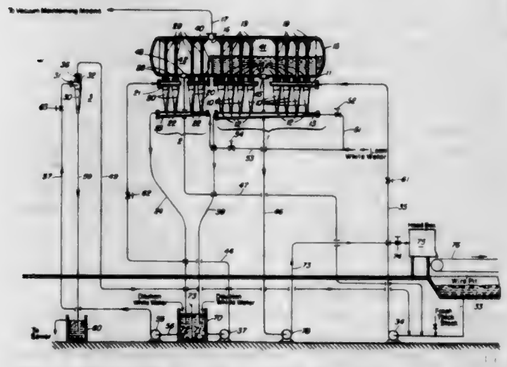
along a track, guides each of which has a downwardly sloping portion mounted near the track, the forward ends of the guides being at different heights, each weighing device being provided at its lower end with a gripper adapted to assume either an open or a closed position, the gripper being coupled to a member which in the closed position of the gripper can cooperate with a guide, and which upon movement of the gripper from the closed to the open position is pivoted away from a related guide.

3,432,035
DOCUMENT HANDLING APPARATUS
Robert L. Adams, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 13, 1966, Ser. No. 601,397
U.S. Cl. 209—74 **9 Claims**
Int. Cl. B07c *1/00, 3/00;* **G08b** *21/00*



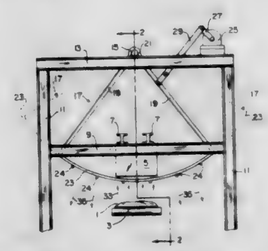
Document tracking apparatus that tracks a plurality of documents simultaneously traversing a transport path. The apparatus keeps a running count of the number of documents in the transport path and positions selector signals, which determine the destination of each document, in locations of a selector signal storage circuit that correspond to the count. As each document leaves the transport path, the appropriate selector signal is extracted from the storage circuit to determine the destination of the document.

3,432,036
CONDITIONING PAPERMAKING STOCK
Robert G. Kaiser, Ho-Ho-Kus, N.J., assignor to Clark & Vicario Corporation, North Tarrytown, N.Y., a corporation of New York
Filed Dec. 9, 1964, Ser. No. 417,161
U.S. Cl. 209—211 **23 Claims**
Int. Cl. B03b *3/45*



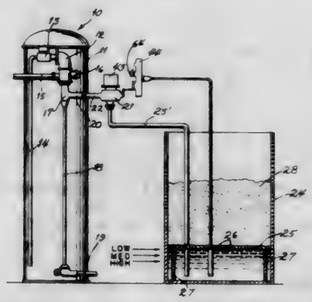
In a papermaking stock conditioning system employing sequential stages of cleaners and a vacuum-influenced receiver for deaerating primary cleaned stock, enhanced stability and control of the system are achieved by spraying secondary cleaned stock directly into a zone of vacuum, rather than discharging the secondary cleaned stock into a liquid-filled manifold. The zone of vacuum into which the secondary cleaned stock is sprayed may be the receiver, in which event partitioning means may be employed to segregate the primary stock from the secondary stock, or a zone of vacuum separate from the receiver may be used. Cleaned stock from the stage subsequent to the secondary cleaning stage may be similarly treated.

3,432,037
MAGNETIC SEPARATOR
William I. Pixley, Huntleigh, Mo.
(10408 Manchester Ave., St. Louis, Mo. 63122)
Filed Apr. 14, 1967, Ser. No. 630,968
U.S. Cl. 209—223 **3 Claims**
Int. Cl. B03c *1/18*



The separator has a stationary magnet positioned so that the magnetic flux is concentrated over the path of a mixture to draw the magnetizable material from the mixture and hold it against a portion of a member positioned between the mixture and the magnet. The member is oscillated in opposite directions transverse to the path of travel of the mixture of materials thereby to draw the magnetizable material against it. The flux density at the sides of said path of travel is less than that required to hold the magnetizable material against the nonmagnetizable member, thereby permitting the magnetizable material to drop from the member alternately at opposite sides of the path of travel.

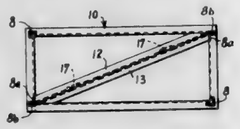
3,432,038
PRESSURE RESPONSIVE DEVICE FOR CONTROLLING LIQUID LEVEL IN TANKS
Don E. Heskett, P.O. Box 262, Villa Park, Ill. 60181
Filed Nov. 5, 1964, Ser. No. 409,092
U.S. Cl. 210—96 **27 Claims**
Int. Cl. B01d *21/00*



A pressure responsive device for controlling the brine level in a brine tank comprising a water softening tank and a brine tank and vacuum means for transferring the

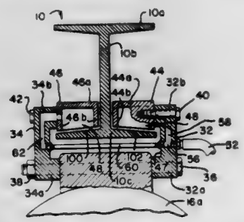
brine water from the brine tank to the water softening tank and solenoid operated valve means for controlling such brine flow including a flexible diaphragm valve opened and closed in response to fluid pressure and a solenoid plunger cooperative with the diaphragm valve to vary the differential pressures across the diaphragm valve, and a pressure responsive switch responsive to changes of the liquid level in the brine tank for supplying brine to the water softener and time setting means for determining the amount of brine to be transferred to the water softening tank and controlling the over-center switch arrangement of the pressure responsive switch.

3,432,039
TRANSPORTABLE AND STACKABLE MATERIAL HANDLING BASKETS
James B. Howitt, 60 Glengarry Ave., Montreal 16, Quebec, Canada
Filed July 18, 1966, Ser. No. 565,925
U.S. Cl. 211—133 **8 Claims**
Int. Cl. A47f *3/14;* **B65d** *7/00*



This invention relates to material holding baskets which can be stacked one upon another or one above the other upon vertically disposed racks when transported during use, and when empty may be separated into two portions, said portions being adapted for stacking in nestable relationship to reduce the space occupied during nonuse.

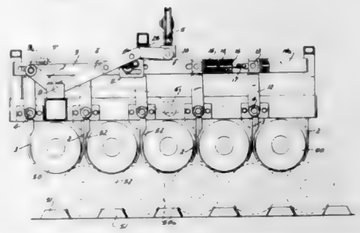
3,432,040
FLUID SUPPORTED HOIST
Richard L. Van Gaasbeck, Rochester, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 13, 1967, Ser. No. 682,134
U.S. Cl. 212—134 **10 Claims**
Int. Cl. B66c *19/00;* **B66d** *1/00*



A hoist apparatus comprising an overhead support and a mounting assembly, carrying a lift hoist, which is fluid supported on the overhead support.

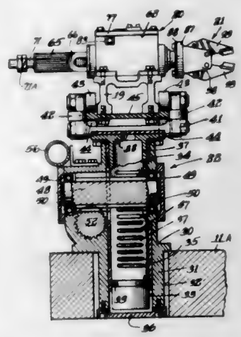
3,432,041
APPARATUS FOR TRANSFERRING PIPES OR THE LIKE
Aloysius Theodorus van Huët, Schoolstraat 9, Pannerden, Netherlands
Filed Dec. 29, 1966, Ser. No. 605,939
Claims priority, application Netherlands, Dec. 29, 1965, 6517076
U.S. Cl. 214—1 **10 Claims**
Int. Cl. B66c *17/00, 1/46*

Apparatus for transferring arrays of pipes or other elongated commodities by gripping devices each of which comprises one or more fixed and one or more movable gripping members. The gripping members are mounted on a frame which can be raised and lowered by a crane. Raising of the frame causes the movable gripping members to engage the commodities which are placed or located between the fixed and movable gripping members in the lowered position of the frame.



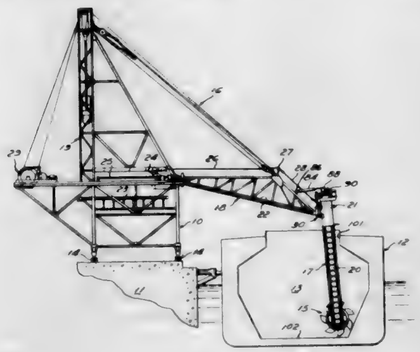
The movable gripping members release the commodities when the frame deposits the commodities onto a supporting surface, and the apparatus is provided with means to prevent movement of movable gripping members to the gripping positions when the frame is lifted again so that the commodities need not share such renewed upward movement of the frame.

3,432,042
TRANSFER ASSEMBLY FOR PRESSES
Frederick H. Bautz, Hazel Crest, and Howard J. McElroy, South Holland, Ill., assignors to Verson Allsteel Press Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,625
U.S. Cl. 214—1 **19 Claims**
Int. Cl. B25j *3/00;* **B65g** *61/00*



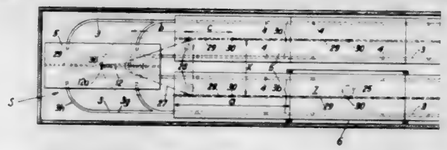
A transfer assembly is provided for a press for gripping and transferring work pieces from station to station along the press. It includes at least one longitudinally movable feed bar and at least one gripper mechanism carried by said at least one feed bar for longitudinally moving gripper finger mechanisms having gripper fingers to grip and release the work pieces for transferring the work pieces as said at least one feed bar is longitudinally moved. The gripper mechanisms laterally advance and retract the gripper finger mechanisms and open and close the gripper fingers thereof. Said at least one feed bar is also raised and lowered by a lifter mechanism. In operation, the feed bars are in their lowered position, and the gripper finger mechanisms are then laterally advanced and the fingers are closed to grip the workpiece. The feed bars and gripper finger mechanisms are then raised, longitudinally moved in one direction and then lowered to transfer the workpiece from one station to the next. The gripper fingers are then opened and the gripper finger mechanisms are then laterally retracted and longitudinally returned in the opposite direction by the lowered feed bar for another cycle of operation. A single driving means including a longitudinally reciprocatable rod operates to advance and retract the gripper finger mechanism and also to close and open the gripper fingers thereof.

3,432,043
SWELL CONTROL FOR BUCKET LADDER
Carl Ludwig, Cleveland, Ohio, assignor to McDowell-Wellman Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed June 1, 1966, Ser. No. 554,499
U.S. Cl. 214—14 **13 Claims**
Int. Cl. B63b *27/22;* **B65g** *21/16*



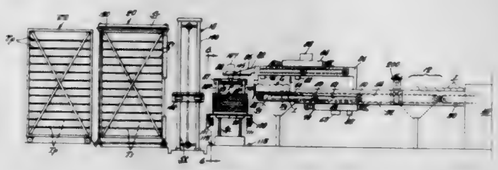
An apparatus, useful in ship unloading, for suspending a rotary digging wheel and vertical bucket leg elevator from a horizontal boom with a hydraulic system including support cylinders which counterbalance the vertical working load of the digging wheel and elevator and permit the structure to move vertically and pendulously with the collision forces introduced by harbor swells and other dynamic changes in digging conditions.

3,432,044
INSTALLATION FOR STORING ARTICLES, PARTICULARLY FOR PARKING VEHICLES
Karl Heinz Stienen, Rainacker, Sinneringen, Bern, Switzerland
Filed Feb. 8, 1965, Ser. No. 430,847
Claims priority, application Switzerland, Feb. 26, 1964, 2,396/64; Dec. 28, 1964, 16,723/64
U.S. Cl. 214—16.1 **2 Claims**
Int. Cl. E04h *6/00*



An installation for storing articles, especially for parking vehicles, which comprises a housing and a number of storage stories for the articles supported by and within such housing. Each storage story is provided with substantially horizontally disposed track means upon which there are arranged a plurality of similar article-support platforms. Further, lift means are provided for transferring a support platform from one storage story to another when the article-support platforms at all of the stories are at standstill. Such lift means advantageously incorporate an elevator platform which can be stopped at any given storage story and wherein track section means are carried by said elevator platform which serve to cooperate with the track means at each storage story in order to provide a closed track for transfer and displacement of the article-support platforms thereon. According to one important aspect of the invention, drive means are also provided for displacing the article-support platforms in that horizontally disposed track means of a given storage story which is closed by the track section means carried by the elevator platform and further, such drive means are advantageously mounted at the elevator platform which always has disposed thereon an article support platform. Also, according to a further feature of the invention there is a slip free driving connection between all platforms and the drive means of the elevator platform.

3,432,045
APPARATUS FOR ARRANGING AND PLACING GROUPS OF ARTICLES IN SHELVES
Robert E. Bauer, 8105 Flourtown Ave., Wyndmoor, Pa. 19118
Filed Mar. 14, 1966, Ser. No. 533,902
U.S. Cl. 214—16.4 **8 Claims**
Int. Cl. B66c *19/00;* **B66d** *1/00*



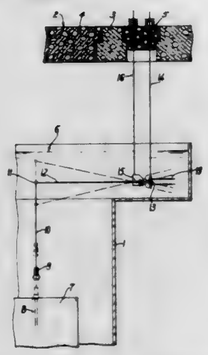
Apparatus for handling articles such as loaves of bread discharged from the discharge conveyor of an automatic packaging machine comprising an accumulator station including a movable platen, orientation means for directing loaves on to the platen in groups of a given number and orientation, a pallet station adjacent the accumulator station including at least one pallet, means for cycling the platen to deliver a group of loaves to said one pallet at the pallet station, a transfer elevator, a stationary rack adjacent the transfer elevator, transfer means for transferring a filled pallet to the transfer elevator, said transfer elevator including sensing means whereby a filled pallet is delivered to an empty tier of the stationary rack, a portable rack and clearing means for transferring all of the filled pallets from the stationary rack to the portable rack when all of the tiers have been filled.

3,432,046
TRANSFER MEANS FOR A LOAD CARRIER IN A STORAGE SYSTEM
Joseph Krusinski, Cleveland, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 8, 1966, Ser. No. 578,020
U.S. Cl. 214—16.4 **7 Claims**
Int. Cl. B65g *1/00, 57/00;* **B66c** *17/02*



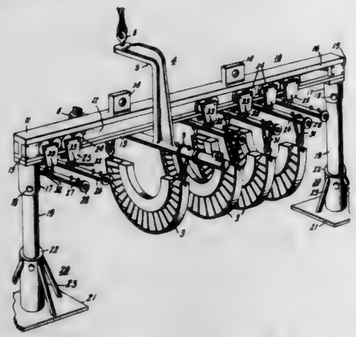
A warehouse system with a plurality of storage bays with aisles therebetween, a load carrier movable in said aisles and having means thereon to remove or deposit a load in the storage bays, and a transfer means located adjacent the end of the aisle for transferring the load carrier to a selected aisle.

3,432,047
MECHANISM FOR EFFECTING THE POSITIONAL ADJUSTMENT OF NUCLEAR REACTOR CONTROL RODS
Louis Vautrey, Paris, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Sept. 15, 1966, Ser. No. 579,607
Claims priority, application France, Oct. 22, 1965, 35,970
U.S. Cl. 214—27 6 Claims
Int. Cl. B66d 3/02; G21c 19/20



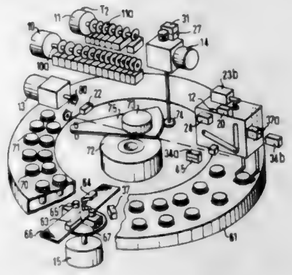
Nuclear reactor control rod positioning mechanism comprising a control rod grab and a system of rods and levers to position and actuate the grab. The mechanism to position the grab includes first and second vertical rods coupled by intermediate rods. The grab is attached to the end of the second vertical rod. The grab operating mechanism comprises first and second vertical rods coupled by an intermediate rod with the lower end of the second rod being coupled to a pusher cam system to operate the jaws of the grab.

3,432,048
APPARATUS FOR INSPECTING AND OVERHAULING TURBINE DIAPHRAGMS
Ronald Obie Musgrove, Metairie, and William Joseph McMillan, New Orleans, La., assignors to General Electric Company, a corporation of New York
Filed Jan. 4, 1966, Ser. No. 518,684
U.S. Cl. 214—41 5 Claims
Int. Cl. B66f 19/00



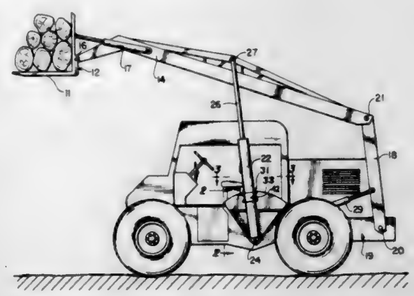
Apparatus for inspection, repair, and maintenance of steam turbine diaphragms in which individual diaphragms are lifted from the turbine shell by an L-shaped lifting bar and suspended from a hanging rack supported by a trolley movable on an I-beam. The I-beam and diaphragm assemblies are movable as a unit to a position where inspection and repair may be made, the movable trolleys permitting separation of adjacent diaphragms to facilitate inspection and repair.

3,432,049
APPARATUS FOR AUTOMATICALLY FEEDING ARTICLES FROM A STORE OR BATCH
Francis Thomas Howells, Moels, Hoylake, England, assignor to Elliotts Liverpool Limited, Liverpool, Lancashire, England, a British company
Filed Feb. 20, 1967, Ser. No. 617,200
U.S. Cl. 214—89 10 Claims
Int. Cl. B66b 17/14; B25j 3/00



An apparatus for automatically feeding articles from a store or batch of such articles to a testing or processing station has a rotatable table for supporting at least one ring of aricles for rotation with the table. The table is rotated step-by-step to bring each article in turn to a transfer station. A transporting mechanism is reciprocatable between said transfer station and a testing or processing station centrally located within the table. Openable and closable, article-holding, jaw means are provided on said transfer mechanism, means being provided for raising and lowering said jaw means. The apparatus also includes time sensitive switch means operative cyclically to step or index the table to bring an article to the transfer station, cause the jaw means to engage and raise said article, the transport means to transport the article to the testing or processing station, the jaw means to lower the article and release it into said testing or processing station and after the testing or processing operation has been carried out to cause the jaw means to engage and lift the article from the testing station, the transfer means to transport it back to the transfer station and the jaw means to lower and open so as to release the article to its position in the rotary table.

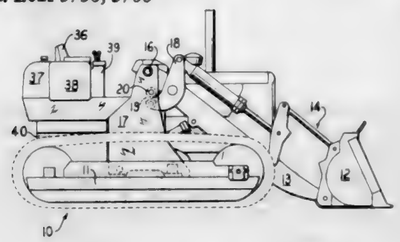
3,432,050
REACHING LOADER WITH GUIDED LIFT CYLINDERS
Philip E. La Tendresse, Baraga, Mich., assignor to Pettibone Mulliken Corporation, a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,212
U.S. Cl. 214—139 4 Claims
Int. Cl. B66f 9/16



In a reaching loader in which the boom is pivoted at the upper end of an upstanding reaching link, lateral stability is achieved through guidance of the lift cylinder assemblies which extend from the boom to the chassis. A

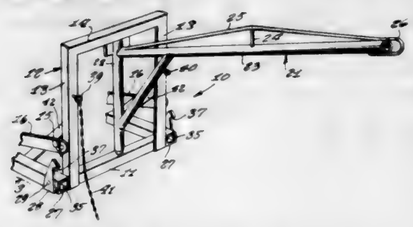
U-shaped yoke, rigidly secured to each cylinder, slides along an arcuately shaped guide plate.

3,432,051
LOADER FRAME FOR TRACK-TYPE LOADERS
Herbert W. Borer and Charles C. Ehlke, Naperville, and James Svoboda, North Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 29, 1967, Ser. No. 626,830
U.S. Cl. 214—140 1 Claim
Int. Cl. E02f 3/36, 3/00



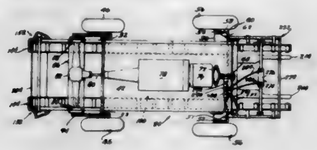
A frame for supporting the lift and tilt mechanisms and the bucket of a loader mounted on a track-type tractor and for supporting the engine thereof which also has a rearward extension for supporting the operator's station of the loader.

3,432,052
TRACTOR HANDY BOX
Bill J. DeBusk, Rte. 1, Midway, Tenn. 37809
Filed July 18, 1966, Ser. No. 565,886
U.S. Cl. 214—501 2 Claims
Int. Cl. B60p 1/04, 1/46



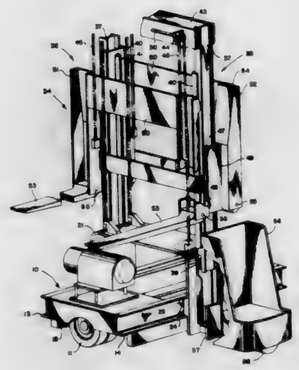
A removable flat bed securable to the rear of a tractor, a manually operative lever for dumping the flat bed and a rearwardly extending boom used for raising objects from the ground and placing them upon the flat dump bed.

3,432,053
AUTOMOTIVE BIN CARRYING MACHINE
Alex A. Vereschagin, 240 E. Shasta St., and John J. Vereschagin, Rte. 1, Box 304–C, both of Orland, Calif. 95963
Filed June 2, 1967, Ser. No. 643,267
U.S. Cl. 214—505 13 Claims
Int. Cl. B60p 1/44; A01d 90/00



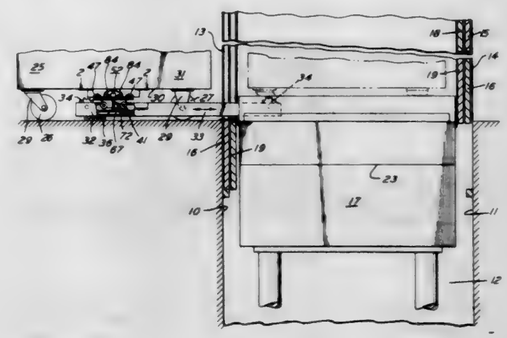
A wheeled motor driven chassis having a bin receiving compartment formed therein and including fork lift means to elevate a grounded bin into communication with the compartment, and conveyor means movable into engagement with the elevated bin to remove the bin from the forks for transfer into the compartment.

3,432,054
SIDE LOADING INDUSTRIAL TRUCK
Bronislaus I. Ulinski, Jenkintown, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 15, 1967, Ser. No. 616,271
U.S. Cl. 214—670 8 Claims
Int. Cl. B66f 9/18; B65g 37/00



A lift truck having a load lifting mechanism straddling the body of the truck and movable in a direction transverse to the usual direction of travel of the truck to accommodate loads of greater width. Additionally, the lifting mechanism includes a load carriage or forks at both sides thereof to permit a load to be handled at opposed sides of the truck without maneuvering the truck.

3,432,055
COUPLING FOR CARTS
Nicholas R. Guilbert, Jr., Glenside, Pa., assignor to Guilbert, Incorporated, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 15, 1967, Ser. No. 616,240
U.S. Cl. 214—730 8 Claims
Int. Cl. B66f 9/14; E04h 6/06



This invention relates to a coupling for carts and more

particularly to a coupling with provisions for guiding the movement of a cart to a position for coupling.

3,432,056

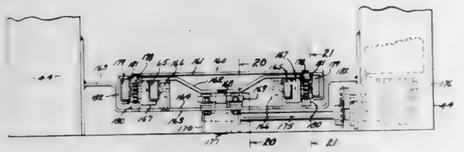
LATERALLY MOVABLE EXTRACTOR MECHANISM

Anthony R. Chasar, Columbiana, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio

Original application Sept. 3, 1965, Ser. No. 484,845, now Patent No. 3,371,804, dated Mar. 5, 1968. Divided and this application Mar. 1, 1968, Ser. No. 709,765

U.S. Cl. 214—730 **1 Claim**

Int. Cl. B66f *9/14*



The extractor comprises a first rectilinearly reciprocal power driven member or rail mounted on the elevator, which serves as a housing for the extractor, and a second rectilinearly reciprocal load carrying member or rail driven by the first member for movement parallel to that of the first member. The first member carries spaced gears thereon which move bodily with the first member, with the gears meshing with upper and lower racks on the elevator and on the second member respectively in the retracted condition of the members. Upon rotation of the gears due to drive movement of the first member, the second load carrying member is driven out ahead of the first member and the spaced gears permit movement of the second member outwardly a greater distance to extended position, while still maintaining meshing relation of the rack on the second member with one of the gears while the other gear maintains meshing relation with the rack on the elevator.

3,432,057

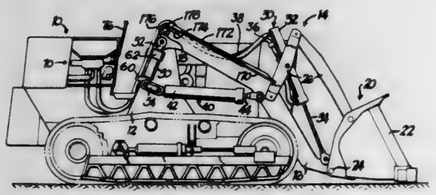
AUTOMATIC BUCKET POSITIONER

Gary J. Goth, Rogers, Minn., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin

Filed Feb. 28, 1967, Ser. No. 619,363

U.S. Cl. 214—764 **10 Claims**

Int. Cl. E02f *3/70*



A material handling implement pivoted on a vehicle for movement between a dump position and load position through a hydraulic jack under the control of a spring-closed valve. An automatic control is provided for allowing the valve to close when the implement reaches the load position.

3,432,058

SAFETY CAP FOR MEDICINE BOTTLE OR THE LIKE

Henry A. Burgess, 811 N. San Dimas Ave., San Dimas, Calif. 91773

Filed June 12, 1967, Ser. No. 645,229

U.S. Cl. 215—9 **10 Claims**

Int. Cl. B65d *55/02, 41/06*



A safety bottle or container for medicine, poisons, or the like, having a cap adapted to be removed from the container in only one rotary position of the cap, and retained against removal in other positions by two lugs on the cap or container engageable with a flange on the other of the two parts. One of the lugs is shorter circularly than the other, and is adapted to move axially past the flange through a notch formed in the flange, which notch is too short to enable movement of the other lug therethrough. No notch is provided at any point through which the longer lug may pass, so that the cap can be removed in only one setting, and only by swinging movement of the first lug through its notch, followed by movement of the longer lug radially to a position in which it may pass the periphery of the flange.

3,432,059

TEATS FOR INFANTS' FEEDING BOTTLES

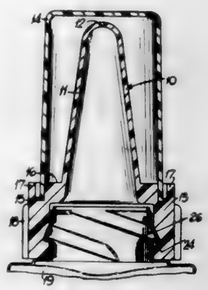
Frederick Allen Stephens, Studley, and Arthur Hurst, Earlswood, England; said Stephens assignor to The British Needle Company Limited, Redditch, Worcestershire, England

Filed Sept. 30, 1966, Ser. No. 583,298

Claims priority, application Great Britain, Oct. 20, 1965, 44,423/65

U.S. Cl. 215—11 **3 Claims**

Int. Cl. A61j *9/00, 11/00*



A disposable infants' feeding bottle is formed as a thin walled blow moulding in a synthetic plastic material. The bottle has a screw-threaded neck and there is an annular plateau at the juncture of the neck with the body of the bottle. The bottle has a teat comprising a thin walled substantially conical nipple portion integrally connected to a thickened portion formed with an internal screw thread which coacts with the screw thread on the neck of the bottle, the end of said thickened portion sealingly engaging the plateau on the bottle. The thickened portion of the teat has a groove in which a removable cap of rigid synthetic plastic material is inserted to protect the nipple portion of the teat.

3,432,060

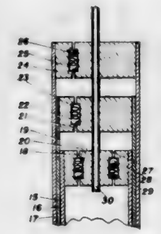
TUBULAR PRESSURE VESSEL

John James Cowley, Toronto, Ontario, Canada, assignor, by mesne assignments, to Therapeutic Research Corporation Limited

Filed Apr. 23, 1965, Ser. No. 450,325

U.S. Cl. 220—3 **1 Claim**

Int. Cl. F25j *5/00;* **B65d** *7/42, 81/18*



This specification discloses tubular pressure vessel incorporating a length of thin wall tubing wound upon itself and provided with capillary tube outlet means for containing gases under very high pressures.

3,432,061

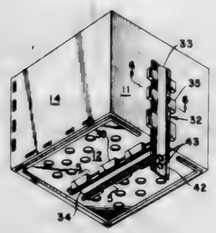
MODULAR DISPLAY BIN

Victor F. Anderson, Wenonah, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,997

U.S. Cl. 220—7 **4 Claims**

Int. Cl. B65d *25/24, 25/00, 7/40*



A modular container may be constructed from a single injection molded sheet of plastic material by molding integral hinges, tabs and slots. When the panels are folded into respective positions to form the sides and bottom of a generally cubical container, the abutting edges of the panels are secured together with tabs having barbs that are integrally formed on one of each cooperative set of abutting edges. The other edge of each cooperative set of abutting edges is provided with slots into which the barbed tabs are inserted. The width of a tab barb is slightly greater than the width of a cooperative slot so the barb may be inserted in the slot with slight deformation of either the barb or the slot or both.

3,432,062

STORAGE TANKS FOR FLOW TEMPERATURE LIQUIDS, ESPECIALLY FOR LIQUEFIED GASES

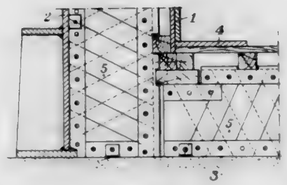
Jacques E. Lamy, Fontenay-aux-Roses, and Pierre A. Gris, Saint-Gratien, France, assignors to Societe Anonyme Francaise de Constructions Industrielles d'Isolation Isolfeu and Societe d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara, both of Paris, France

Filed Dec. 22, 1966, Ser. No. 604,069

Claims priority, application France, Dec. 23, 1965, 43,492

U.S. Cl. 220—15 **9 Claims**

Int. Cl. B65d *25/00*



The present invention relates to improvements in storage tanks for low-temperature liquids such as liquefied gases, of the kind comprising an inner chamber and an outer chamber supported on the same base and separated by heat-insulating material, the improvements comprising the interposition, between the lateral walls of said chambers and between the bottom of the inner chamber and its supporting base, of a wooden bracing frame embedded in the mass of insulating material and comprising a system of beams perpendicular to said chambers and spaced apart by distances which depend on the loads to which the beams are subjected, said beams being constituted by the juxtaposition of layers of strips arranged obliquely to the walls of the said chambers, in a plane perpendicular to said chambers, the obliquity of the strips of each layer being different from that of the adjacent layer. The beams are intended to transmit to the outer chamber or to the base, the forces to which the inner chamber is subjected, each beam being provided at each of its side extremities with perpendicular uprights, one of which is supported against the outer chamber, either directly or through the intermediary of a continuous soleplate, while another upright supports a system of boards applied against the inner chamber so as to prevent deformation of the inner chamber.

The inner and outer chambers may be coupled together by chains, and the main insulation barriers may comprise a layer of stiff insulation applied against the inner face of the outer chamber, and by a filling of expanded perlite.

3,432,063

BOTTLE CRATE OF SYNTHETIC MATERIAL

Alexander Schoeller, Gottingen, Germany, assignor to Firma Alexander Schoeller & Co., Flaschenkastenwerk, Gottingen, Germany, a corporation of Germany

Filed Apr. 26, 1965, Ser. No. 450,629

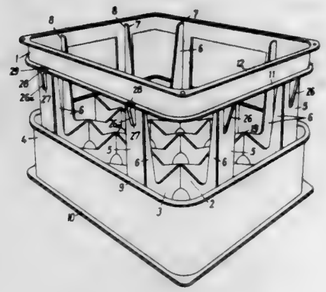
Claims priority, application Germany, Apr. 25, 1964, Sch 35,044

U.S. Cl. 220—21 **6 Claims**

Int. Cl. B65d *1/24, 57/00, 21/02*

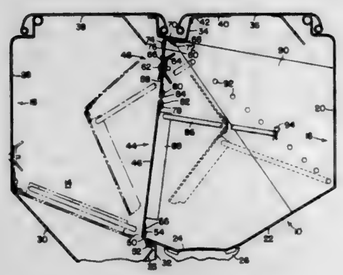
A bottle crate having spaced upper and lower frames, with the upper frame including an outwardly extending flange. Guide faces are disposed on opposite sides of the crate and slope from the flange on the upper frame toward the bottom frame for preventing entanglement of

horizontally adjacent crates, and the guide faces are engagingly complementary to the upper frame so that the



crates may be stacked vertically sideways with another crate for immobilizing the crates for display and access of the contents.

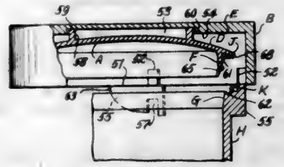
3,432,064
ADJUSTABLE PARTITION FOR COMBINATION GRAIN AND FERTILIZER HOPPER
Warren Edward Ten Pas, Horicon, Ernst Emil Schnell, West Bend, and Donald Herman Polzin, Horicon, Wis., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 690,956
U.S. Cl. 220—22 **6 Claims**
Int. Cl. B65 *5/00, 1/24, 1/36*



A combination grain and fertilizer hopper for a grain drill provided with an adjustable partition between the fertilizer and grain compartments whereby the volume of one compartment can be increased by diminishing the volume of the other compartment. A rod carried by the adjustable partition is passed through one of a plurality of apertures in a bracket to hold the partition in its desired position of adjustment.

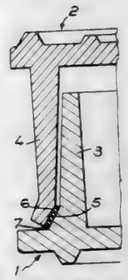
3,432,065
TAMPER-PROOF FLUID-TIGHT CONTAINERS
Gottfried Bugla, Toronto, Ontario, Canada, assignor to Bantox Safety Closures Limited, Toronto, Ontario, Canada
Continuation-in-part of application Ser. No. 423,992, Jan. 7, 1965. This application June 26, 1967, Ser. No. 648,693
U.S. Cl. 220—40 **10 Claims**
Int. Cl. B65d *41/06*

A skirted cap in tightenable relationship with the mouth-area of a bottle, operates upon being tightened to compress a fitment located between the cap and mouth area, and having perimetrical inner and outer sealing flanges, downwardly and outwardly respectively said



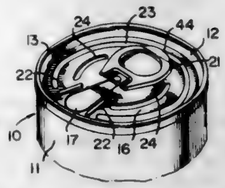
flanges tending toward distortion against said mouth-area during the tightening operation.

3,432,066
BOX FOR STORING A SPOOL OF TAPE OR FILM
Pierre A. L. Posso, 20 Rue Gandon, Paris 13, France
Filed Aug. 22, 1967, Ser. No. 662,406
Claims priority, application France, July 4, 1967, 112,897
U.S. Cl. 220—46 **4 Claims**
Int. Cl. B65d *53/00, 85/04;* **B65h** *75/02*



Sealable box for storing a spool, for example a spool of magnetic tape. The box has a base and a cover each with a rim, and a locking device for holding base and cover together in the closed position of the box. The rims have sealing means such that when the base and cover are moved towards one another closing, the sealing means seals the space between the rims by virtue of a movement which is transverse to the direction of movement of the base and cover towards one another.

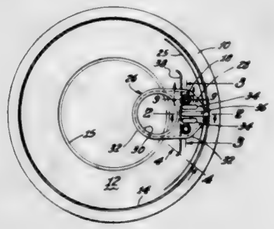
3,432,067
PULL TAB OPENING MEANS
Nick S. Khoury, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 11, 1966, Ser. No. 533,611
U.S. Cl. 220—54 **3 Claims**
Int. Cl. B65d *17/20*



This disclosure has to do with a pull tab for easy opening containers wherein the tab is of a ring shape and the principle portion of the tab is in the form of a ring shaped body. The forward part of the body is generally U-shaped and is defined by an upstanding flange. The forward portion of the tab body terminates in a pair of transversely spaced fulcrums. A connecting panel is connected to the flange of the U-shaped forward portion along a transverse

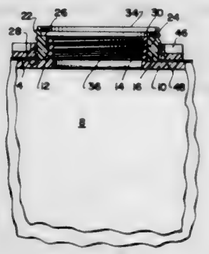
line with the connecting panel being otherwise free of the body whereby the connecting panel is free to bend relative to the body along the transverse line. The connecting panel is provided with a rivet receiving opening, the center of which is disposed intermediate the fulcrums and the connection between the connecting panel and flange.

3,432,068
EASY OPEN CAN END
Ermal C. Fraze and Francis M. Silver, Dayton, Ohio, assignors, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Mar. 28, 1967, Ser. No. 626,544
U.S. Cl. 220—54 **21 Claims**
Int. Cl. B65d *17/20*



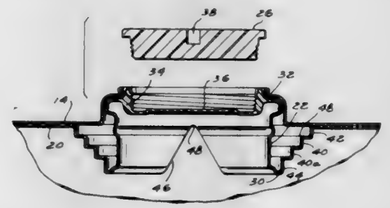
A tab for manual severance of a full-sized tear panel in a can end is attached to a pair of bosses on the panel to incline the tab to concentrate the severance pressure at the working end of the tab. In addition, to facilitate initial severance along an adequate extent of the perimeter of the panel, the panel is weakened along a bend line to define a segment of the panel with the bend line rearward of the two bosses so that the initially depressed segment of the panel includes the pair of bosses and the pivotal action for initial severance occurs at the bend line of the panel.

3,432,069
CLOSURE CONSTRUCTION
Walter J. Craig, Prospect Heights, Ill., assignor to K and M Rubber Company, Elk Grove Village, Ill., a corporation of Illinois
Filed Oct. 11, 1967, Ser. No. 674,402
U.S. Cl. 220—63 **4 Claims**
Int. Cl. B65d *25/44, 25/34*



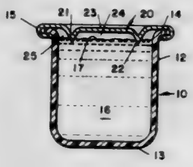
A closure construction for a molded plastic container designed to facilitate the installation and maintenance of the container within a storage drum fabricated from a common material such as plastic, metal, fiber or composite. The closure construction includes a container with an integrally molded threaded neck portion, a collar threaded over the neck portion, a plug threaded into the neck portion of the container and a second collar member threaded over the first collar and into engagement with the top or lid portion of the drum to maintain the position of the neck with respect to the exterior of the drum.

3,432,070
DRUM LINER WITH FLEXIBLE NECK
Herbert L. Carpenter, Jr., and Robert A. Dubois, Babylon, N.Y., assignors to Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware
Filed Aug. 16, 1967, Ser. No. 661,126
U.S. Cl. 220—63 **7 Claims**
Int. Cl. B65d *25/14, 5/56, 5/40*



A plastic drum liner having a neck defining an opening into the interior thereof which is flexibly coupled to the liner top. The coupling means comprises a multiplicity of integral accordion pleats circumferentially disposed about the neck and concentric therewith. The accordion pleats downwardly incline from an outermost pleat having portions thereof integral with the liner top to an innermost pleat having portions integral with the lower peripheral edge of the neck which is disposed below the plane of the liner top. The flexible coupling permits three dimensional movement of the neck with respect to the liner top.

3,432,071
DEVICE FOR TRANSPORTING FLUIDS IN PLASTIC CONTAINERS
William C. Burns, Palatine, Ill., and Meye Vlig, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,149
U.S. Cl. 220—66 **5 Claims**
Int. Cl. B65d *7/42*



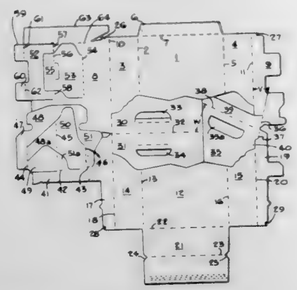
Relatively thin walled plastic containers may be used to market liquid commodities without danger of collapsing due to evacuation of the gas space between the surface level of the liquid contents and the container end closure resulting from permeation of the plastic container walls of the gas trapped in said space, which evacuation results from temperature changes, pressure differentials and other factors, by closing the top of said container with a gas impermeable lid having a fluid barrier which divides the gas space into at least two regions. One gas space region, between the fluid barrier and the plastic container wall which is continuous around the periphery of the container, allows only a relatively small volume of the total gas trapped between the lid and the liquid surface level to contact the plastic walls and therefore be subject to permeation and diffusion therethrough.

3,432,072
RECHARGE VESSELS FOR A LIQUIFIED GAS UNDER PRESSURE
Marcel Quercia, Paris, France, assignor to Societe Flaminaire Marcel Quercia, Paris, France
Filed Feb. 15, 1967, Ser. No. 616,268
Claims priority, application France, Feb. 16, 1966, 49,874
U.S. Cl. 220—67 7 Claims
Int. Cl. B65d 7/42



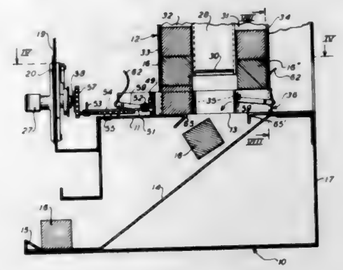
A recharge vessel containing a liquified gas is made of two portions of plastic material, a top one and a bottom one. The bottom portion is cup-shaped and includes a bottom and a cylindrical side wall, whereas the top portion is in the form of a relatively flat inverted funnel the edge of which is secured by welding or glueing to the top edge of the bottom portion. The top portion is made of a very hard material, possibly opaque, and in particular a polyamide loaded with glass fibres, whereas the bottom portion is made by molding of a transparent or at least translucent material such as a polyamide without charge of glass fibres.

3,432,073
ARTICLE CARRIER
Homer W. Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed May 5, 1967, Ser. No. 636,367
U.S. Cl. 220—113 7 Claims
Int. Cl. B65d 75/24, 75/56



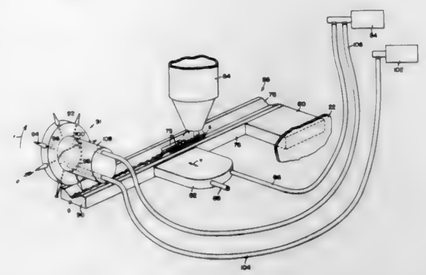
A basket style article carrier having bottom and side walls together with end wall panels is provided with a pair of outer handle panels between which a medial reinforcing partition is disposed, such partition being foldably joined at one end of the carrier to a pair of upstanding riser panels which in turn are secured in face contacting relation to each other and foldably joined to the associated end wall panels. At the other end of the carrier, a pair of riser panels are foldably joined to the end wall panels and secured to each other in face contacting relation and to the outer handle panels and one such riser panel is provided with a longitudinal medial strut to which transverse partitioning structure is foldably joined. A medial keel panel is foldably joined to a combination medial and transverse partition structure which is integrally formed with the other riser panel at the said other end of the carrier.

3,432,074
VENDING MACHINE
Angus M. Brown, Montclair, N.J., assignor to Bloomfield Manufacturing Co., Caldwell Township, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 537,550, Mar. 25, 1966. This application Mar. 21, 1967, Ser. No. 632,876
U.S. Cl. 221—117 10 Claims
Int. Cl. G07f 11/04; B65g 59/06; G65h 3/24



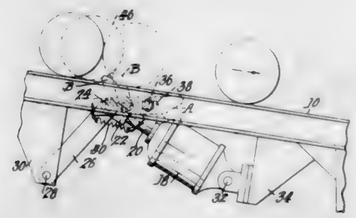
A vending machine comprising a supporting platform with an aperture for the passage of articles to be dispensed to a delivery chute, a merchandise magazine disposed above said platform, but offset from said aperture, for holding a stack of articles to be dispensed, a carriage slidable over said platform and under such a stack, and mechanism for sliding said carriage to move the lowermost article of the stack to the aperture when it is replaced by the next article thereabove for later dispensing, and "empty lock" means to prevent coin acceptance when there is no article available for being dispensed.

3,432,075
PRECISION SEED PLANTING APPARATUS AND METHOD
Herbert Arthur Myers, Coal Valley, and Don Earl Holzhei, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,483
U.S. Cl. 221—178 5 Claims
Int. Cl. B65g 9/04, 3/08



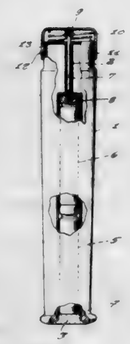
A precision seed planting apparatus in which seeds are placed in a transversely vibrating trough which causes the seeds to be oriented and moved past a vacuum seed pickup head in single file, the pickup head discharging picked seeds onto the ground, the planted seeds then being covered with an anti-crustant material such as vermiculite.

3,432,076
ROLL STOP FOR A ROLL DECK
James H. Arsenault, Whitinsville, Mass., assignor to Curtis & Marble Machine Co., Worcester, Mass., a corporation of Massachusetts
Filed May 18, 1967, Ser. No. 639,408
U.S. Cl. 221—295 2 Claims
Int. Cl. B65g 59/00; B65h 3/30; C07f 11/16



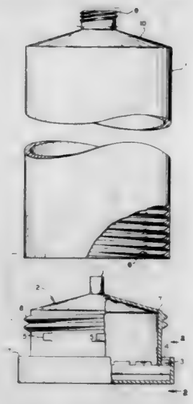
A roll stop including two movable, retractible, stop members, the main one of which stops the entire line of rolls and the other or auxiliary stop being mounted on but relatively movable with respect to the main stop member and is arranged to stop the second roll and the rolls thereafter upon retraction of the first stop to release the first roll; wherein the two stop members are relatively movable but operate together and are connected by a spring so that the auxiliary member operates with any size of roll, being depressible by a large roll but springing up to accomplish its auxiliary stopping action due to the spring immediately the large roll has moved from its stopped position.

3,432,077
NIGHTSTICK HAVING PRESSURIZED SPRAY
Samuel T. Voll, 308 S. 52nd St., Great Falls, Mont. 59401
Filed Oct. 23, 1967, Ser. No. 681,954
U.S. Cl. 222—78 3 Claims
Int. Cl. B67d; A63b 59/00



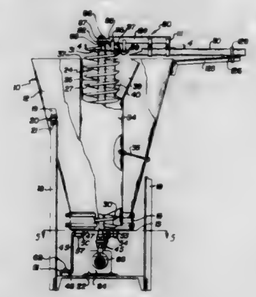
A policeman's club or nightstick which can be used in conventional manner and also can be used to spray or solution on an assailant which temporarily leaves him helpless.

3,432,078
DIMINISHING CONTAINER AND DISPENSER
Leland V. Hall, P.O. Box 174, Riddle, Oreg. 97469
Filed Apr. 26, 1966, Ser. No. 546,140
U.S. Cl. 222—80 5 Claims
Int. Cl. B65d 83/00; B67b 7/30; B67d 5/42



A short piston threaded at its upper end is screwed into a squeeze bottle and carries a cutter which shaves off the end of the squeeze bottle. The piston is hollow and receives the shavings as they are formed. Pawls on the piston engage teeth in the threads of the squeeze bottle to prevent the piston from being unscrewed out of the squeeze bottle. The top end of the piston is complementary in shape to the top of the squeeze bottle, and a projection on the end of the piston extends out of the spout of the squeeze bottle when the bottle is empty.

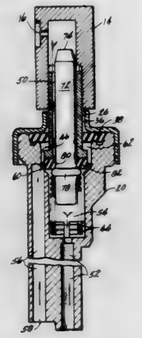
3,432,079
PARTICULATE MATERIALS DISPENSER
Edward C. Williams, 1378 Fernwood Crescent, North Vancouver, British Columbia, Canada
Filed Feb. 27, 1967, Ser. No. 618,733
U.S. Cl. 222—199 19 Claims
Int. Cl. B65g 65/38, 27/18



A dispenser for particulate materials, such as granular and powdery materials, grains and the like, having a vertical spiral ramp conveyor subjected to vertical and rotational oscillatory movement, and a discharge chute at the upper end of the conveyor positioned to receive particulate material therefrom and subjected to longitudinal reciprocatory movement so that the material can be dis-

charged at predetermined rates regardless of the nature of the granular and powdery materials.

3,432,080
SELF-VENTING DISPENSING AND RECHARGING AEROSOL VALVE ASSEMBLY
Frank Venus, Jr., Watertown, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed May 17, 1967, Ser. No. 639,194
U.S. Cl. 222—402.16 **5 Claims**
Int. Cl. B65b *3/04, 3/18;* **B65d** *83/14*



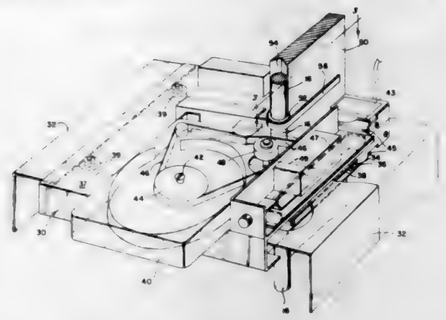
An aerosol valve assembly which, in addition to providing normal dispensing of a fluid product held under pressure in a container, incorporates means for automatically venting to atmosphere, during a filling mode of operation of the valve, the interior of a container to which the valve is attached. A valve stem is provided in which a separate core made accessible by removal of a spray button is axially shifted relative to the stem upon endwise engagement with a filling duct of a recharging device, while the valve stem is itself simultaneously moved to a limiting position. Such movement of the stem and core serves to open a recharging passage through the core and valve housing to the interior of the container, and to provide a separate venting passage through a by-pass in the valve housing and valve stem to atmosphere.

3,432,081
LIPSTICK BLOTTER
Virginia A. Forte, Mishawaka, Ind., assignor to William Getha, Lakeville, Ind.
Filed Nov. 3, 1966, Ser. No. 591,820
U.S. Cl. 225—39 **6 Claims**
Int. Cl. B26f *3/02;* **B65h** *35/10*



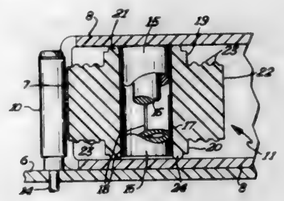
A lipstick blotter device, having walls defining an internal space and an opening therein to said space, and a pack of absorbent and easily torn material in strip form disposed in said space and having a portion projecting through said opening and extending from said dispenser. The length of the internal space is substantially longer than the width of said roll to provide room for used material in the same space as said pack of material.

3,432,082
COMMON CAPSTAN MOUNTING SYSTEM
Ross H. Beville, Bethesda, Md., Wayne E. Schober, Minneapolis, Minn., and David R. Durst, Gaithersburg, Md., assignors to Broadcast Electronics, Inc., Silver Spring, Md., a corporation of Maryland
Filed Jan. 5, 1967, Ser. No. 611,212
U.S. Cl. 226—110 **13 Claims**
Int. Cl. B65h *17/20*



This is a system of aligning and retaining in precision alignment a rotary drive means such as may be used for plural power take-offs. In its broadest sense it is useful in any transmission system; but it is especially adapted to driving multiple cartridge tapes with a single capstan characterized by being precisely aligned with the pinch roller associated with each cartridge.

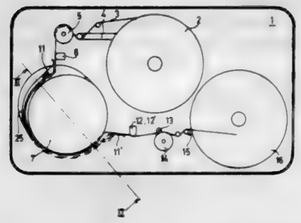
3,432,083
PINCH ROLLER
John H. Rentschler and Loren J. Sewall, Minneapolis, Minn., assignors to Minnesota Rubber Company, Minneapolis, Minn., a corporation of Minnesota
Filed May 26, 1966, Ser. No. 553,118
U.S. Cl. 226—186 **7 Claims**
Int. Cl. B65h *17/20*



Disclosed herein is an improved pinch roller formed of an elastomeric material having a preferred Shore durometer test of 60–80 and being mounted directly on its supporting shaft and having reduced end portions carrying annular bearing structure of minimum contact area and preventing the flow of lubricant to its tape engaging surface, the roller having an uninterrupted cylindrical tape engaging surface defining its maximum radial dimensions.

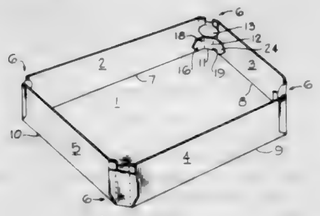
3,432,084
GUIDE PLATE FOR MAGNETIC TAPE
Willem van den Bussche, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 27, 1967, Ser. No. 649,223
Claims priority, application Netherlands, June 30, 1966, 6609088
U.S. Cl. 226—197 **2 Claims**
Int. Cl. B65h *23/32*

A single plate for guiding tape on and off an angularly mounted cylindrical tape drum. The guide serves to maintain the tape in a substantially level plane as it is transported from the supply reel to the receiving reel via the



cylindrical drum. Deflecting faces on each end of the plate are angularly aligned to receive and pass the tape along the desired path.

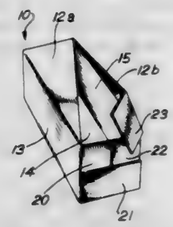
3,432,085
PANEL INTERLOCKING ARRANGEMENT
Joseph H. Lock, Mableton, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Oct. 27, 1967, Ser. No. 678,741
U.S. Cl. 229—35 **3 Claims**
Int. Cl. B65d *5/26*



A tray having a main generally rectangular base panel is provided with oppositely disposed side panels joined to the side edges of the base panel. For securing the ends of the side panels together, locking straps are joined to the base panel diagonally at the corners and locking flaps are joined to the end edges of the side panels. The locking flaps are provided with locking recesses along their upper edges and the locking straps are provided with transversely projecting shoulders. Thus when the corner structure is assembled, the locking flaps are disposed in flat face contacting relation with each other and each locking strap is disposed exteriorly of the associated corner and with its locking shoulders disposed in the coincidental locking recesses of the locking flaps. According to one feature of the invention, sealing flaps are joined to the side edges of the locking strap and, when in assembled positions, these flaps are disposed in face contacting relation with the inside of the adjacent ends of the associated side panels.

3,432,086
CARTON
J. Robert Galloway, 27 Norwood Ave., Manchester, Mass. 01944, and Robert K. Galloway, 44 Lexington Ave., Magnolia, Mass. 01930
Filed Sept. 27, 1967, Ser. No. 670,961
U.S. Cl. 229—37 **2 Claims**
Int. Cl. B65d *5/12, 5/02*

A carton which is formed from a single blank of sheet material and which is of a design such that the blanks can be progressively cut from a continuous length of material, with no waste. The carton has a number of side walls which join together to form the carton, at least one of which is formed with two side wall sections, each of which is triangular-shaped and forms one-half of the side wall. Each of the side walls, with the exception of the side wall formed by the two side wall sections, has an end flap affixed to each of its opposite

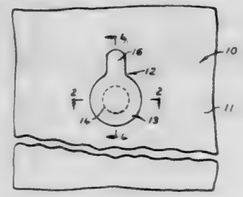


ends. The two side wall sections each has only one end flap affixed to its one end. These end flaps are overlapped and affixed together to maintain the carton erect, thereby eliminating the need for the normally required manufacturer's glue seam.

ERRATUM

For Class 229—51 see:
Patent No. 3,432,090

3,432,087
PACKAGE VALVE
Alfred P. Costello, North Vancouver, British Columbia, Canada (3637 Pine Crescent, Vancouver 9, British Columbia, Canada)
Filed Aug. 17, 1967, Ser. No. 661,383
Claims priority, application Great Britain, Sept. 1, 1966, 39,060/66
U.S. Cl. 229—62.5 **6 Claims**
Int. Cl. B65d *31/14, 17/24, 5/70*

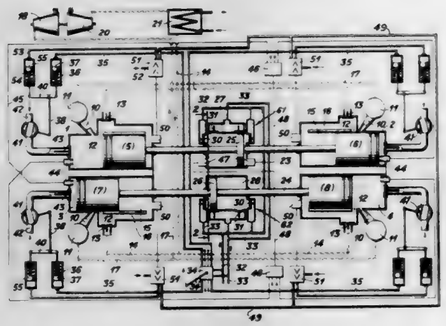


A package valve adapted for use with evacuated packaged food products. A seal of pressure sensitive tape secured over a weakened portion of the package, adapted for the seal to lift when pressure within the package rises sufficiently to rupture the weakened portion.

3,432,088
FREE PISTON-TYPE INTERNAL COMBUSTION PUMPING ENGINE
Anton Steiger, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed May 24, 1967, Ser. No. 640,888
U.S. Cl. 230—56 **5 Claims**
Int. Cl. F02b *71/00*

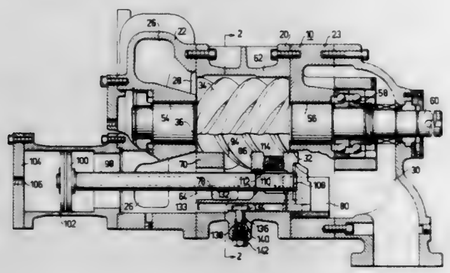
There is disclosed a pump or compressor comprising four pumping units each having a double-acting pumping piston disposed in a pumping cylinder, this piston being connected by a piston rod to two pistons each disposed in an internal combustion engine cylinder having spark

ignition, the three coupled pistons constituting a free piston unit. The four pumping units are disposed in a rectangular array and are connected together by ignition control so that successive units peripherally around the array are in successively opposite phases while diagonally opposite units in the array are in the same phases. The ignition system operates on pressure-sensitive devices disposed one at each end of one of the pumping cylinders and operates to fire the eight engine cylinders in the se-



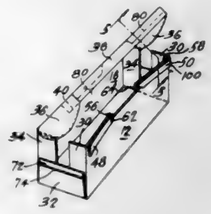
quence required to operate the pumping units in the phase relation above described. In addition, each engine cylinder includes a device for sensing the approach of the piston in that cylinder to the end of its stroke. Signals generated by these approach detectors are applied to interconnected control devices which differentially adjust the fuel supply to their respective engine cylinders so as to correct for departures thereof from correct phase relative to a master engine cylinder.

3,432,089
SCREW ROTOR MACHINE FOR AN ELASTIC WORKING MEDIUM
Lauritz Benedictus Schibbye, Saltsjo-Duvnas, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Oct. 11, 1966, Ser. No. 585,860
Claims priority, application Great Britain, Oct. 12, 1965, 43,204/65
U.S. Cl. 230—138 **11 Claims**
Int. Cl. F04c *29/08, 29/10;* **F04b** *49/00*



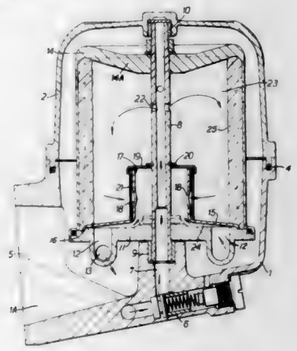
A compressor of the screw rotor type having means for injecting pressurized cooling liquid into its working space and a slidable valve element for adjustment of its capacity, said valve element being hollow and provided with injection nozzles and connected to a servo motor of the piston and cylinder type operated by said pressurized liquid and having a tubular piston rod used for conducting pressurized liquids into the interior of the valve element.

3,432,090
SELF-LOCKING BOX
Karl Engel, Pierrefonds, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada
Filed June 12, 1967, Ser. No. 645,135
Claims priority, application Canada, Feb. 25, 1967, 983,817
U.S. Cl. 229—51 **6 Claims**
Int. Cl. B65d *17/00, 45/00*



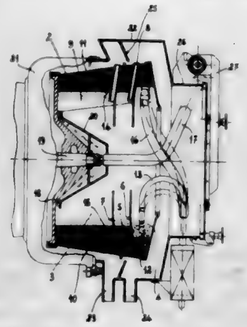
The present invention relates to a box structure having a hinged cover provided with end flaps and a front cover panel telescoping over end forming flaps and the front carton wall, the front cover panel has a locking flap foldably connected thereto, separable sections in said locking flap secured to tabs in said front wall, and separable sections being separable from said locking flap to form a locking slot in said inner panel and a locking projection on said front wall.

3,432,091
CENTRIFUGAL FLUID CLEANERS
Rodney Thomas Beazley, Maidstone, England, assignor to The Glacier Metal Company Limited, Wembley, England, a company of Great Britain
Filed Sept. 21, 1966, Ser. No. 580,977
Claims priority, application Great Britain, Sept. 22, 1965, 40,507/65
U.S. Cl. 233—1 **5 Claims**
Int. Cl. B04b *3/00*



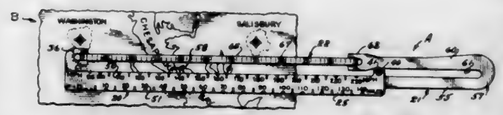
A fluid cleaner of the centrifugal type comprises a rotor provided with a hollow hub through which fluid to be cleaned is delivered to inlet apertures communicating with the interior of the rotor chamber. Material centrifuged out is deposited on the wall of the rotor chamber, and the cleansed liquid flows out of the rotor chamber through one or more nozzles directed at a tangent to the axis of rotation of the rotor so as to render the rotor self-rotatable by the reaction of the liquid jets which are discharged from the nozzles.

3,432,092
SELF-CLEANING CENTRIFUGAL SEPARATOR
Joseph Antoine Noel Rousselet, Montalivet-Annonay, Ardeche, France
Filed Aug. 19, 1966, Ser. No. 573,540
Claims priority, application France, Sept. 7, 1965, 46,368
U.S. Cl. 233—22 **3 Claims**
Int. Cl. B04b *11/08*



An overflow centrifuge in which one or more radial separators form respective compartments at the inner surface of a rotatable bowl containing liquid fractions to be separated. A plurality of pipes extend into each compartment at a particular depth therein to continuously remove respective fractions from the compartments as the bowl rotates. A spoon member extends into the last compartment to remove the heaviest fractions therefrom while the bowl is rotating.

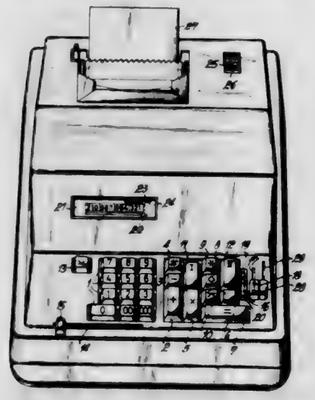
3,432,093
NAVIGATION INSTRUMENT
Charles E. Berry, Fairmont, W. Va., assignor to Viking Oil Company, Bristol, Tenn., a corporation of Tennessee
Filed Apr. 19, 1968, Ser. No. 722,798
U.S. Cl. 235—61 **6 Claims**
Int. Cl. G06c *1/00*



A navigation instrument including cooperatively mounted rate of speed indicia elements and time indicia elements correlated to each other and to a chart having linear distance measurements of a given scale, and wherein the instrument may be referenced to the chart in providing a direct reading of either rate of speed or time when one is a known factor and the other is an unknown factor.

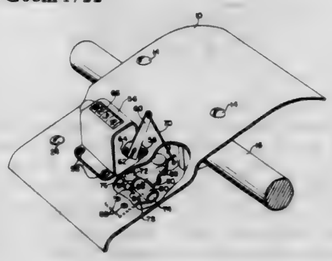
3,432,094
FOUR-SPECIES CALCULATING MACHINE
Andreas Metschnabl, Nuremberg, and Gottfried Burkhardt, Altenfurt, near Nuremberg, Germany, assignors to Diehl, Nuremberg, Germany
Filed Oct. 14, 1965, Ser. No. 496,190
Claims priority, application Germany, Oct. 17, 1964, D 45,656
U.S. Cl. 235—63 **20 Claims**
Int. Cl. G06c *23/00, 29/00*

1. In a printing calculator of the ten digit key, four-function type having a transversely moveable pin carriage, longitudinally displaceable racks for picking up values from the pin carriage, a main counting mechanism comprising a plurality of input wheels and operable to receive values from said racks and moveable transversely, storage unit means, and first preselecting means for selecting a decimal point position, said first preselecting means being adjustable only prior to a calculating operation; means for producing a digit value, input means for entering said digit value into a selected one of said input wheels for rounding off purposes, normally disengaged coupling means for coupling said digit producing means to said input means, a result key actuatable for initiating a calculating operation, release means operated by said result key and operable to release said coupling means for movement to engaged position, second preselecting means also adjustable only prior to a calculating operation and connected to said input means for positioning said input



means in operative alignment with a selected one of said input wheels located immediately rightwardly of the input wheel pertaining to the last decimal place being printed, arresting means operable to hold said coupling means in ineffective position during calculations not involving a decimal point and operable during calculations involving a decimal point to permit said coupling means to actuate said input means to insert said digit value into said selected input wheel, a printing mechanism for each column of digits, and means operable for preventing the printing mechanisms located rightwardly of the rightwardmost decimal digit to be printed, and means interconnecting said first and second preselecting means and controlling the adjustability of said second preselecting means relative to said first preselecting means.

3,432,095
LAND MEASURER
William A. Jones, Fonthill, Ontario, Canada, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,883
U.S. Cl. 235—91 **8 Claims**
Int. Cl. G06m *1/22*



A land measurer for use with agricultural implements which may be of different incremental widths, the meas-

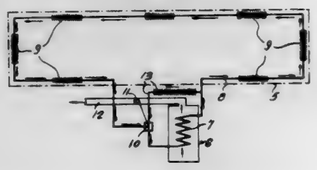
urer having removable cams that actuate a counter, varying numbers of cams being employed for machines of varying widths.

3,432,096
PINION ASSEMBLY
Patrick L. Powell, Franklin Park, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed July 3, 1967, Ser. No. 650,672
U.S. Cl. 235—96 10 Claims
Int. Cl. G06c 27/00



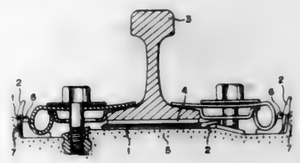
The following specification discloses an odometer in which the pinions for transferring rotational movement between the odometer dials are of moulded plastic and rotatably supported by a respective plastic bracket. One or more lips are provided on the bracket for snap fitting engagement with a circumferential flange on the pinion to hold the pinion against axial movement.

3,432,097
RAILROAD BOXCAR HEATER SYSTEM
Sydney F. Horsey and William J. L. Tyler, Valois, Quebec, Canada, assignors to Canadian Bronze Company Limited, Montreal, Quebec, Canada
Filed Oct. 28, 1966, Ser. No. 590,256
Claims priority, application Canada, Sept. 15, 1966, 970,441
U.S. Cl. 237—5 6 Claims
Int. Cl. B60h 1/22; B61d 27/00; F24d 3/00



A boxcar heater underslung below the car, the heater being fired by oil fuel and the gases of combustion being passed to a series of heating radiators within the boxcar, control means for bypassing the gases of combustion from the car heating radiators through a radiator external of the boxcar when the temperature within the boxcar exceeds a predetermined level. Means are also included to feed air directly to the combustion chamber of the heater and a spring loaded seismically balanced damper permits the passage of air from within the heater directly to the exhaust flue of the heater.

3,432,098
METHOD OF FILLING GAPS IN PERMANENT RAIL BEDS
Yutaka Sato, Tokyo, Japan, assignor to Japanese National Railways, Tokyo, Japan, a corporation of Japan
Filed Feb. 14, 1967, Ser. No. 616,083
Claims priority, application Japan, Feb. 16, 1966, 41/12,886
U.S. Cl. 238—283 2 Claims
Int. Cl. E01b 9/38



The disclosure deals with a construction pad which is formed as a flat bag that is inserted in voids or gaps between contacting structures, and is then filled with liquid synthetic resin which on early completed cure by an added curing agent permanently fills out the void or gap.

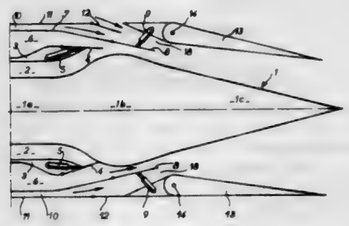
3,432,099
FIGURE HAVING AN ASSOCIATED SPRAY OF LIQUID SIMULATING WEARING APPAREL
Krystyna W. Boniecki and Maria Albin Boniecki, both of 1822 S. Sherman St., Denver, Colo. 80210
Filed Feb. 20, 1967, Ser. No. 617,154
U.S. Cl. 239—18 10 Claims
Int. Cl. B05b 1/14, 17/08



A decorative fountain having a figure, which may be a three-dimensional statue, high or low or base relief, medallion, picture or the like, has liquid spray openings located at different levels and locations of the figure body, providing a spray of liquid assuming the shape of wearing apparel, such as a garment, a dress or a portion of a garment for the figure. In one form the figure is a representation of a human female and has openings at about the level of the waist of the figure to provide a flow of liquid which has the appearance of a skirt for the figure. In another form, spray openings located above the chest will form a spray of liquid having the appearance of a full dress for the figure. The spray of liquid may be made as a series of small jets, a full peripheral sheet of liquid flowing from the figure, or animated jets such as formed by a rotary sprinkler. In each instance, a spray of liquid in a different shape and form of wearing apparel is provided for the figure. In darkened areas

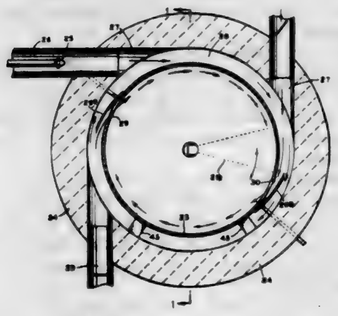
colored lights effectively and dramatically show up the water apparel for the statue, magically transforming the configuration of the figure.

3,432,100
EJECTING NOZZLE FOR PROPELLERS PROVIDED WITH A PLURALITY OF DRIVING STREAMS AND, MORE PARTICULARLY, TWO DRIVING STREAMS
Jean Marie Hardy, Esbly, and Henry Marie Andre Rene Lacombe, Bois-le-Roi, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Apr. 20, 1967, Ser. No. 632,438
Claims priority, application France, Apr. 20, 1966, 58,380
U.S. Cl. 239—127.3 4 Claims
Int. Cl. B64d 33/04; B64c 15/04



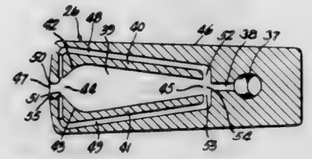
A nozzle for a jet engine producing two coaxial driving streams comprising two coaxial channels surrounding a central streamlined body and two annular series of flaps pivotally secured to the downstream ends of said channels and adapted to control the outputs of the annular channels fed with corresponding driving streams. The outer annular series of flaps may be located on the upstream or on the downstream side of the inner annular series of flaps.

3,432,101
CYCLONIC REACTOR
Peter J. Hubbard, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Original application Feb. 3, 1966, Ser. No. 524,715. Divided and this application Apr. 11, 1967, Ser. No. 649,381
U.S. Cl. 239—214.17 2 Claims
Int. Cl. B05b 3/02; F23d 11/04



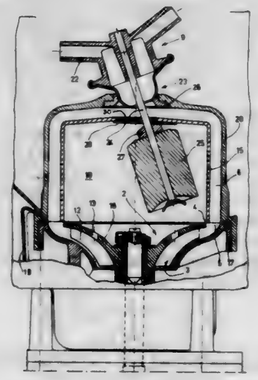
This invention relates to an atomizing device for spraying coarse material such as, for example, spraying comminuted sewage sludge into a combustion chamber for rapid burning therein.

3,432,102
LIQUID DISPENSING APPARATUS, MOTOR AND METHOD
George L. Turner, Hickory Corners, Gerould A. Johnson, Battle Creek, Richard A. Disbrow, Hickory Corners, and Donald E. Nestell, Battle Creek, Mich., assignors to H. B. Sherman Manufacturing Company, Battle Creek, Mich., a corporation of Michigan
Filed Oct. 3, 1966, Ser. No. 583,659
U.S. Cl. 239—242 15 Claims
Int. Cl. B05b 3/16, 3/04, 3/06



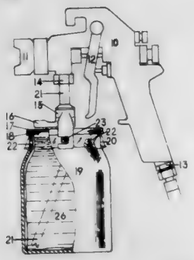
This invention deals with a highly simplified wall-attachment fluid amplifier wherein the fluid (liquid) being delivered, for instance water from a lawn sprinkler, is used to automatically control itself during delivery, without outside control members, while providing turning power for the lawn sprinkler head portion, and in combination with a mechanical rotative shifting mechanism, actuated by the flowing water, becomes self-reversing in its rotative turning operation.

3,432,103
DISHWASHER SPRAY APPARATUS WITH GRADUALLY INCREASING NOZZLE PRESSURE
Johannes Hoppen, Schwelm, Westphalia, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 14, 1967, Ser. No. 616,070
Claims priority, application Germany, Feb. 15, 1966, G 46,039
U.S. Cl. 239—255 2 Claims
Int. Cl. B05b 3/06; B08b 3/02



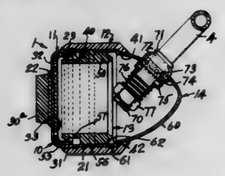
Dishwasher spray apparatus using a centrifugal pump rotor with peripheral outlet and a secondary outlet. The secondary outlet empties into a prechamber which is connected in turn to the peripheral outlet and provides a gradually increasing pressure at a nozzle connected to the peripheral outlet.

3,432,104
SEAL SPRAY GUN SIPHON CUP
Theodore L. Kaltenbach, Mequon, Wis.
(1475 Wadsworth Drive, Florissant, Mo. 63031)
Filed Mar. 23, 1967, Ser. No. 642,267
U.S. Cl. 239—328 **10 Claims**
Int. Cl. B05b *11/00*



Apparatus for spraying paint or other liquids, and particularly to a siphon or gravity cut structure, which must be secured to a spray gun equipped with siphon nozzles. The cup assembly can be secured to the spray gun by either a swivel nut, quick detachable fluid connection or in some cases, by a length of fluid hose with connections. This invention is dependent on a spray gun to siphon paint or other liquids from the cup assembly and also to form a seal at the fluid nozzle and needle seats when the trigger is released on the gun.

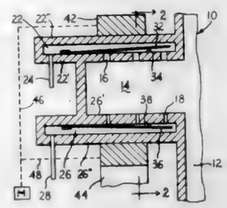
3,432,105
SHOWER HEAD
William B. Delamater, 9114 Valley View, Whittier, Calif. 90603
Filed Dec. 5, 1966, Ser. No. 598,991
U.S. Cl. 239—455 **4 Claims**
Int. Cl. B05b *1/30, 1/18*



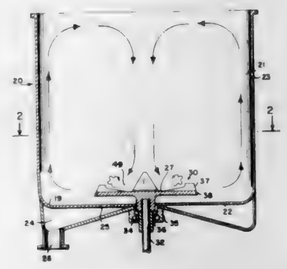
A device comprising a pair of spaced apart shower heads and piping between each shower head connected to a common source of water which is regulated as to temperature by a mixing valve; each shower head is independently adjustable to regulate the character of water spray emitted therefrom, including the closing of the flow of water through the shower head by a turning thereof; the spray regulation has a turnable shower spray control member having elongated spaced apart openings arranged in a circle and a cap having identically formed openings to that of the spray control member; turning of the spray control member regulates the area of the openings between the cap and spray control member to thereby regulate the character of the spray from fine to coarse, or complete shut off of the spray.

3,432,106
MAGNETICALLY CONTROLLED FLUID INJECTOR
John J. Townsley, Parsippany, and Milton Gershon, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 612,842
U.S. Cl. 239—585 **5 Claims**
Int. Cl. B05b *1/32;* **B64d** *33/04;* **F16k** *31/06*

Valve mechanisms including a flexible plate or a slidable plug for covering an injection orifice, the position of the plate or the plug with respect to the orifice being controlled by a slidable magnet, which can be of the permanent type or an electromagnet, and additionally by varying the energizing current in the electromagnet which can be fixed instead of slidable.

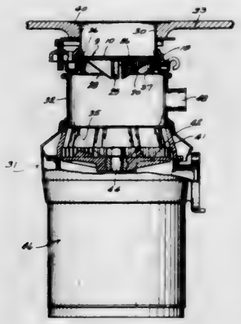


3,432,107
PULPER IMPELLER VANE
Charles A. Johnson, Andover, Mass., assignor to Bolton-Emerson, Inc., Lawrence, Mass., a corporation of Massachusetts
Filed Dec. 22, 1966, Ser. No. 603,904
U.S. Cl. 241—46.17 **6 Claims**
Int. Cl. B02c *19/00, 21/00*



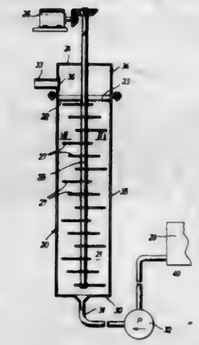
1. A pulper impeller of the type rotatable by a shaft within a tank for pulping fibrous paper stock material, said impeller comprising:
a backplate, mounted fast on said shaft and having a flat, diametrical face in a single plane normal to the axis of said shaft,
and a plurality of pulping circulation vanes, uniformly spaced around, and projecting axially from, said backplate,
each said vane being substantially arcuate in plan, being of predetermined length, and being of substantially uniformly increasing height from a position proximate the central portion of said backplate outwardly to a first position centrally of the length of said vane,
said vane increasing abruptly and substantially in angle of slope from said first position centrally of said length to a second position centrally of said length to form an inwardly facing wall substantially normal to the plane of said backplate and parallel to the axis of said shaft,
whereby the said inwardly facing walls on said vanes form a rotating barrier to outward vortical flow from said impeller, the resulting turbulent zone preventing plugging, matting, and stapling of material on said vanes.

3,432,108
FLEXIBLE INLET COVER
James H. Enright, Racine, Wis., assignor, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed July 22, 1966, Ser. No. 567,246
U.S. Cl. 241—100 **14 Claims**
Int. Cl. B02c *23/02, 18/42*



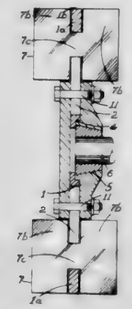
A flexible cover for the inlet of a waste disposer, said cover comprising an elastomeric web having beam forming convolutions extending inwardly from an outer edge thereof toward its center, a flow opening of small cross section at said center, the beams formed by said convolutions comprising upwardly facing relatively deep alternate ribs and channels into which web material is gathered and which tend to flatten out as the opening is expanded.

3,432,109
MACHINE FOR DISPERSING AND COMMINUTING FLOWABLE MATERIALS
August Geissel, Bergen-Enkheim, Germany, assignor to Gebrueder Netzsch Maschinenfabrik, Selb, Bavaria, Germany
Continuation-in-part of application Ser. No. 362,115, Apr. 23, 1964. This application Apr. 22, 1966, Ser. No. 549,127
Claims priority, application Germany, Jan. 18, 1964, N 24,318; Apr. 23, 1965, N 26,623
U.S. Cl. 241—172 **49 Claims**
Int. Cl. B02c *17/00, 23/02;* **B01f** *15/00*



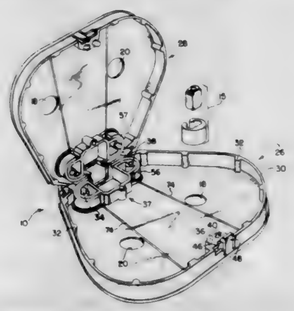
A machine for comminuting dispersing and thoroughly intermixing a plurality of flowable materials accommodated in a chamber into which a rotary drive shaft extends to which a plurality of substantially disk-shaped annular agitating elements are fixed eccentric to the shaft axis and spaced in direction of the axis from each other.

3,432,110
MOUNTING OF BEATER AND LIKE BLADES ON ROTORS
Ronald Frederick Bourne, Sandhurst, Johannesburg, Transvaal, Republic of South Africa (Wedgewood Gate, Sanddown, Johannesburg, Transvaal, Republic of South Africa), and Donald Gordon Cheyne, 47a 12th Ave., Parktown North, Johannesburg, Transvaal, Republic of South Africa
Filed July 19, 1966, Ser. No. 566,335
U.S. Cl. 241—191 **9 Claims**
Int. Cl. B02c *17/16*



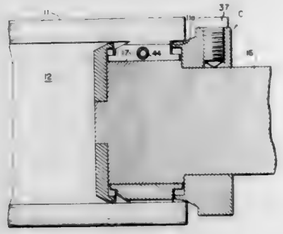
A rotor assembly, particularly suitable for hammer mills, impact and attrition mills, and like milling machinery, which comprises a rotor in the form of a plate which is mountable on a rotary shaft and which has a plurality of circumferentially spaced, radially disposed slots extending axially therethrough. A blade with an open slot in at least a radially outwardly disposable edge thereof, is provided for each plate slot. Each blade and the plate is interengageable by movement of the blade in its plate slot in an axial and a radial direction with respect to the plate to accommodate a portion of the blade in the plate slot and a portion of the rotor in the blade slot. A holding means retains each blade against disengaging movement out of its plate slot.

3,432,111
WEB TRANSPORTING CARTRIDGE FORMED OF A PAIR OF IDENTICAL HOUSING MEMBERS
Francis E. Ryder, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,908
U.S. Cl. 242—55.13 **9 Claims**
Int. Cl. G11b *15/32;* **B65h** *55/00, 75/02*



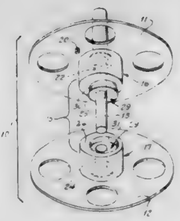
Molded cartridge for transporting web material such as film from one interior portion of the cartridge to another while permitting information on the web to be sensed is formed of a pair of identical members which have cooperating aligning, hinging and latching means.

3,432,112
EXPANSIBLE CHUCK FOR TUBULAR CORE
Clement D. Le Hardy, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed Aug. 10, 1967, Ser. No. 659,811
U.S. Cl. 242—68.2 **3 Claims**
Int. Cl. B65h *17/02*



An expansible chuck which includes a stub shaft having an intermediate portion of polygonal cross sectional shape which underlies floating segments yielding urged radially outward into engagement with annular collars mounted on the shaft one of the collars being provided with means engageable with one end of a tubular core mounted on the chuck for positioning the core on the chuck in coaxial relationship with the shaft. The segments are provided with V-shaped inner surfaces engageable by apexes on the shaft intermediate portion upon relative movement between the shaft and segments so as to cam the segments radially outward into positive driving engagement with the core inner wall.

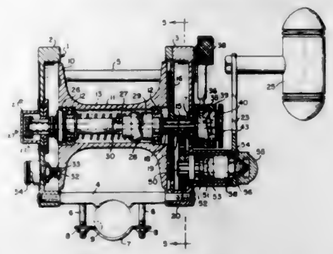
3,432,113
SPLIT REEL
Myron L. Freedman, Fort Lee, N.J., assignor to Comprehensive Service Corporation, New York, N.Y., a corporation of New York
Filed July 26, 1967, Ser. No. 656,164
U.S. Cl. 242—71.8 **10 Claims**
Int. Cl. B65h *75/18*



A reel having a central hub of two interfitting parts attached to end flanges. These parts are eccentric of the axis and lock together when engaged and turned relatively to each other.

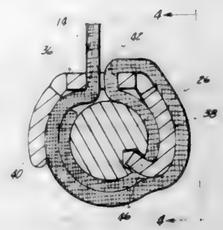
3,432,114
FISHING REEL WITH DRAG MEANS
Herbert I. Meisner, 60 W. 22nd St., Hialeah, Fla. 33010
Filed Feb. 16, 1966, Ser. No. 530,249
U.S. Cl. 242—84.45 **3 Claims**
Int. Cl. A01k *89/02*

A fishing reel having a crank-operated, gear drive including a friction disk carried by the drive. A manually-operated lever shifts a cam to draw the spool shaft and spool toward the friction disk to provide an overload release, spool drive. Reverse rotation of the disk is prevented by an anti-reverse having confronting toothed members, one member being yieldably shiftable on but fixed against rotation on a shaft element carried by the



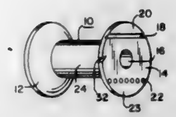
frame, and the other being fixed for rotation with the friction disk so as to provide a drag against the unwinding of a line from the spool. The spool may be rotated by oscillating the drive crank connected to the spool via ratchet elements.

3,432,115
BELT SECURING MEANS
Robert W. Stoffel, Ferndale, and Wendell Stevenson, New Baltimore, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.
Filed July 21, 1967, Ser. No. 655,226
U.S. Cl. 242—107 **5 Claims**
Int. Cl. B65h *75/48, 75/28*



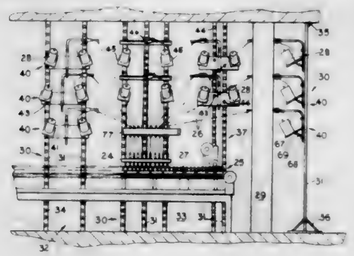
A snubber member having a generally C-shaped cross-section and mounted on the reel of a safety seat belt retractor provides means for anchoring the unstitched end of the safety belt to the reel. Finger sections provided on the snubber member engage sockets formed in the longitudinal surface of the reel.

3,432,116
SPOOL CONSTRUCTION HAVING A SNAP-OFF END PORTION
Marguerite M. Lauen and James E. Lauen, both of 6647 Thornwood, San Diego, Calif. 92111
Filed July 24, 1967, Ser. No. 655,653
U.S. Cl. 242—118.7 **7 Claims**
Int. Cl. B65h *75/14*



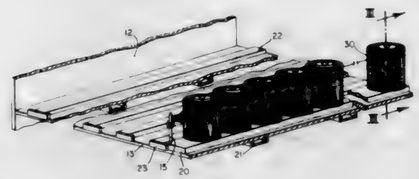
This invention relates to a spool construction for carrying thread or similar line materials that has a cylindrical body and enlarged circular end flanges. At least one of the circular end flanges has a weakened portion along a straight line spaced radially outward from the center of the spool and which weakened portion may be broken off to provide the end flange with a flat surface to prevent rolling of the spool on a surface.

3,432,117
MODULAR CREEL APPARATUS INCLUDING STRAND GUIDES
John E. Leger, Nashua, N.H., assignor to Union Carbide Corporation, a corporation of New York
Filed May 24, 1967, Ser. No. 641,016
U.S. Cl. 242—131 **11 Claims**
Int. Cl. D03j *5/10*



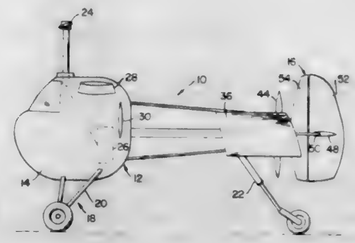
A strand package support and spindle is combined with an elongated strand guide rod in a modular unit, the unit being mountable at any height on a creel frame and assembled in such quantity as is required by a strand consuming machine. The strand guide rod is horizontally and vertically adjustable to position its guide eye relative to the machine. The package support and spindle are tiltably adjustable in multiple directions to permit the spindle to be aligned for symmetrical end feed ballooning in conformity with the location of the strand guide.

3,432,118
CREEL
George A. Carruthers, Ambleside, England, assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1967, Ser. No. 606,832
U.S. Cl. 242—131.1 **7 Claims**
Int. Cl. B65h *49/18*



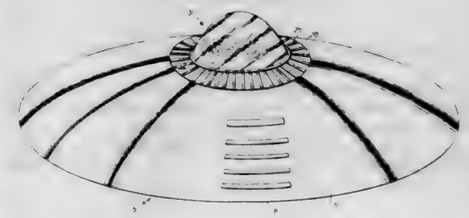
The disclosed creel has several mobile units, each unit being a cabinet provided with a large number of elongated, parallel compartments open at the front. Independent package carriers are provided, each fitting removably into one of the compartments of the cabinet. Each carrier has a limited number of equally spaced, parallel rotatable shafts. Each shaft is arranged to store a yarn package, with capacity for free rotation. Yarns are withdrawn from the packages simultaneously and along a line perpendicular to the axes of the packages.

3,432,119
HELICOPTER
Edward W. Miller, 128 W. 25th Ave., San Mateo, Calif. 94403
Filed Oct. 24, 1966, Ser. No. 589,086
U.S. Cl. 244—6 **12 Claims**
Int. Cl. B64c *27/26, 27/06*



A helicopter having a body provided with a main rotor adjacent to the forward end thereof and a second rotor adjacent to the rear end thereof. The second rotor is swivelly mounted on the body for movement into any one of a number of operative locations angularly disposed relative to the fore and aft axis of the body to provide directional stability therefor. Means is provided to counteract the torque on the body caused by the main rotor. A pair of wings is mounted on the body to provide lift therefor. A tail assembly provides pitch and yaw control of the body.

3,432,120
AIRCRAFT
Efrain Guerrero, Arlington, Va. (901 20th St. NW., Washington, D.C. 20006)
Filed May 20, 1966, Ser. No. 551,656
U.S. Cl. 244—12 **11 Claims**
Int. Cl. B64c *29/00, 17/08*

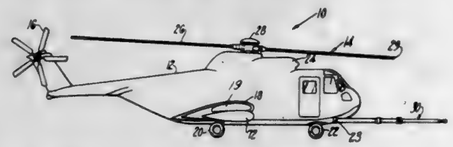


The specification discloses floatable aircraft with an annular wing and an air duct mounted within the wing. The impeller, control surfaces, and motor are gimbal mounted in the air duct to provide directional movement for the aircraft. Weight sensing means are mounted on the ground engaging members to sense the load on each ground engaging member and the total weight of the aircraft. The weight distribution may then be calculated and a shiftable ballasting member is rotated to dynamically balance the aircraft.

3,432,121
AIRCRAFT FUEL STORAGE AND DISTRIBUTION SYSTEM
Everett W. Delaney, Stratford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,108
U.S. Cl. 244—17.11 **27 Claims**
Int. Cl. B64c, *27/04;* **B64d** *37/00*

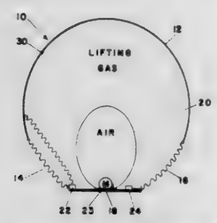
An aircraft fuel storage and distribution system with provisions for in-flight pressure refueling, ground pres-

sure refueling, ground gravity refueling, fuel transfer between tanks, jettisoning of auxiliary tanks, rapid over-



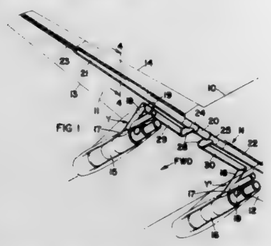
board dumping of fuel from all tanks, and selective fuel shut-off of the fuel being pumped into each tank.

3,432,122
COMBINATION BALLONET AND DILATION SYSTEM FOR BALLOONS
Maynard L. Flickinger, Akron, and Robert S. Ross, Northfield Center, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed June 19, 1967, Ser. No. 646,864
U.S. Cl. 244—31 **2 Claims**
Int. Cl. B64b *1/54, 1/62*



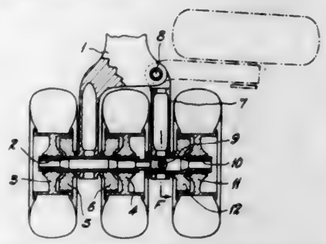
Utilization of a combination ballonet-dilation system for a semi-rigid or pressure rigidited balloon takes advantage of the best features of both systems, while allowing for atmospheric pressure and temperature variations as the balloon is raised or lowered.

3,432,123
CROSS DUCTING SYSTEM FOR AUGMENTOR WING AIRCRAFT
John Albert Conway, Milton, Ontario, and Cedric Chaffer Barker, Etobicoke, Ontario, Canada, assignors to The Dehavilland Aircraft of Canada, Limited
Filed Apr. 3, 1967, Ser. No. 627,749
U.S. Cl. 244—53 **4 Claims**
Int. Cl. B64b *1/24;* **B64c** *3/38*



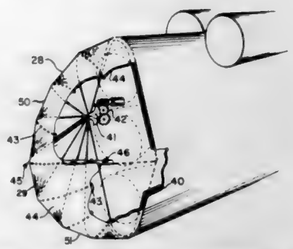
This specification discloses a cross ducting system for installation in an augmentor wing aircraft having a pair of jet engines which generate bypass air with the system comprising a pair of Y ducts one for each engine, with the stem of each Y being connected to an engine, a diverter where the two legs join the stem, a pair of lateral ducts, each being connected to a leg of a Y; and a span wise nozzle duct unit extending across the trailing edges of both wings and consisting of a tubular casing of circular cross section in which is positioned a splitter plate that is twisted at the center to provide, in effect, four nozzle ducts, two for each wing. The casing has an exhaust slot extending throughout its length and the splitter plate carries nozzle blocks which enter the slot providing an exhaust slot for each of the nozzle ducts. Each lateral duct is connected to the casing and diffuser vanes are located at the joinder to direct air in opposite directions in the casing. The nozzle casing has blowing ducts extending over the ailerons.

3,432,124
UNDER-CARRIAGE WITH THREE WHEELS ARRANGED ON THE SAME SHAFT
Rene Lucien, Neuilly-sur-Seine, France, assignor to Societe Anonyme, Messier, Paris, France
Filed Mar. 3, 1967, Ser. No. 620,421
Claims priority, application France, Mar. 7, 1966, 52,265
U.S. Cl. 244—103 **7 Claims**
Int. Cl. B64c *25/34, 17/02*



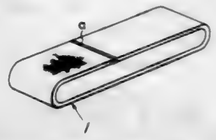
An under-carriage with three wheels in which a half-fork supports a double axle constituting the common axis of rotation of the central wheel and one of the outside wheels, an articulated arm being mounted on the half-fork and supporting an overhung stub axle which constitutes the axis of rotation of the other outside wheel, an extremity of the double axle being engaged in the stub-axle and being detachably connected thereto by means of a coupling engaging the lower extremity of the articulated arm and the adjacent extremity of the double axle.

3,432,125
STOWABLE AFT FAIRING FOR A REUSABLE ROCKET
Paul M. Schroeder, Jr., San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed July 18, 1966, Ser. No. 565,788
U.S. Cl. 244—130 **5 Claims**
Int. Cl. B64c *1/38;* **B64d** *33/04;* **B64g** *1/00*



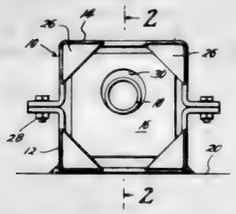
A foldable fairing device mounted on the aft blunt base of a pilot-controlled rocket. The fairing is preferably formed in upper and lower sections, each having a plurality of preloaded U-shaped hoops for tensioning a foldable cover attached to the hoops and to the rocket housing. The end portions of each hoop are pivotally journalled on the rocket housing adjacent the blunt end thereof. During pilot controlled flight, the hoops and cover are rotatably extended in clamshell fashion to effect an aerodynamic fairing aft of the blunt rocket base. In rocket powered flight, the hoops and cover are retracted into a recess within the structure of the blunt base. Extension and retraction is by power actuator geared to an end of the aftmost hoops of each fairing section.

3,432,126
ENDLESS METALLIC SCREEN FOR THE SCREEN PORTION OF A PAPER MACHINE
Manfred Kurtz, Reutlingen, and Lothar Bangert, Nagold, Germany, assignors to Hermann Wangner, Kommanditgesellschaft, Reutlingen, Germany
Filed July 12, 1966, Ser. No. 564,662
Claims priority, application Germany, July 13, 1965, W 39,543
U.S. Cl. 245—10 **2 Claims**
Int. Cl. B21f *31/00;* **C23f** *13/00*



An endless metal screen suited for use as the screen structure of a paper making machine and being formed of a strip of screening of relatively non-oxidizable metallic composition having the ends thereof secured together in a transverse soldered joint of noble metal composition. A minor quantity of the wire strands of the screening are provided with at least their outer surfaces formed of a metallic composition of a metal other than and less noble than that used for the rest of the screening wires. The less noble portions of the minor quantity wire strands thus are more readily dissolved by electro-chemical corrosion and serve as sacrifice electrodes to provide protection for the major quantity of strands in the screening.

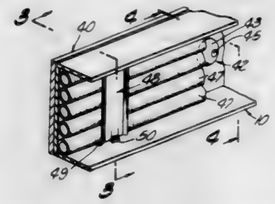
3,432,127
MOUNTING DEVICE
William C. Philipp, Houston, Tex., assignor to Hutchison Manufacturing Company, Houston, Tex., a corporation of Delaware
Filed May 11, 1967, Ser. No. 637,678
U.S. Cl. 248—15 **3 Claims**
Int. Cl. F16m *1/00;* **F16f** *15/04*



A mounting device for vibrating equipment to permit relatively undamped vibration comprising a resilient block which is loosely held within a mounting bracket, the resilient block having a large opening therethrough, in which rests a loose fitting support for the vibrating basket.

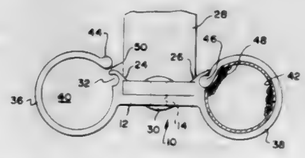
3,432,128
CHANNEL ASSEMBLY FOR FLEXIBLE TUBING, CONDUCTORS, AND THE LIKE
Walter J. Elleboudt, 10814 E. Monte Vista Drive, Whittier, Calif. 90601
Filed Apr. 13, 1967, Ser. No. 630,572
U.S. Cl. 248—68 **5 Claims**
Int. Cl. F16l *3/22;* **A47f** *5/10*

A channel assembly for the protective support of flexible tubing, conductors and the like featuring a simple plate-like connector plate blanked from sheet stock and channel members lying in the same plane or in planes lying at an angle to one another. A self-locking clip de-



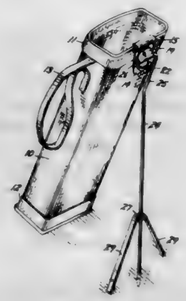
signed to straddle the contents of the channeling is easily inserted without tools and effective to hold the contents of the channeling captive.

3,432,129
SADDLE CLIP
Kenneth E. Santucci, 1380 Edgewood, Winnetka, Ill. 60093
Filed Aug. 9, 1967, Ser. No. 659,373
U.S. Cl. 248—69 **3 Claims**
Int. Cl. F16l *3/22, 3/08*



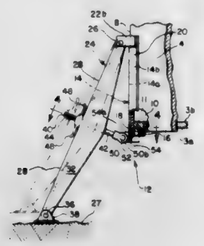
A saddle clip for mounting a plurality of wires, cables and the like on a base member. The clip is provided with a mounting web and at least one wire retainer member for retaining one or more wires. The wire retainer member includes a locking member which is designed to co-act with a member on the web portion for locking the wire retainer to the web to provide a wire retaining enclosure.

3,432,130
GOLF BAG STANDS
William W. Breedlove and Joseph W. Fabry, Jr., both of 1985 Owens Court, Lakewood, Colo. 80215
Filed Apr. 27, 1967, Ser. No. 634,277
U.S. Cl. 248—96 **3 Claims**
Int. Cl. A63b *55/00*



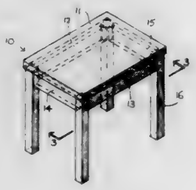
Briefly, the stand has a single supporting rod, provided with fixed leg braces, which is adjustably, hingedly and removably mounted at its upper extremity in a clamp assembly fixedly secured to the upper edge of the head of the golf bag.

3,432,131
CONTAINER STORAGE STILT MEANS
John J. Martin, Warminster, Pa., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,337
U.S. Cl. 248—188.8 **14 Claims**
Int. Cl. F16m *11/16*



A container storage stilt structure comprising four identical supports for supporting a container at each of its four corners, each support being provided with a vertical support brace for engaging the respective corner portion of the container and including a container support pad; the container storage stilt support further comprising an upright leg element having a pivotal foot and pivotally connected to the upper part of the corner support brace and adjustably connected to the container corner supper brace to determine the angle between the support brace and the leg element.

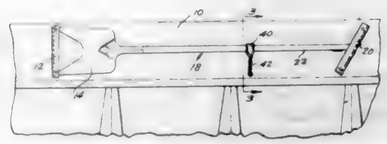
3,432,132
STRUCTURAL JOINING SYSTEM
John M. Thurston, Venice, Calif.
(18 W. Carver St., Huntington, N.Y. 11743)
Filed June 6, 1967, Ser. No. 643,911
U.S. Cl. 248—188.91 **2 Claims**
Int. Cl. F16m *11/16;* **A47b** *3/06, 13/04*



A novel joining system is disclosed herein for structures such as furniture or the like which provides a frame having a plurality or preformed sockets formed at critical locations that are adapted to receive and seat supporting members. A wire tensioning arrangement is provided interconnecting each of the supporting members so that the members are joined in releasable holding relationship with their respective sockets with respect to the frame to produce a unitary loading structure.

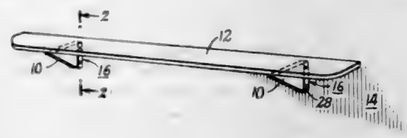
3,432,133
SHOVEL HOLDER ATTACHMENT FOR VEHICLES
Oswald Charles Schmid, R.D. 1, Phillipsburg, N.J. 08865
Filed Apr. 4, 1967, Ser. No. 628,324
U.S. Cl. 248—201 **4 Claims**
Int. Cl. A47f *7/00;* **A47b** *81/00*

A holder for securely supporting a shovel, having a rounded or rectangular head, on a vehicle during transit. The holder includes a vehicle mounted bracket designed to receive either type of shovel head, and a cooperating



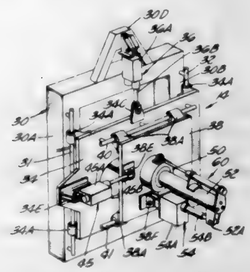
inclined bracket for receiving the handle and wedging the shovel between the brackets.

3,432,134
SHELF BRACKET
Samuel Forschmidt, 30 Lotus Lane, Westbury, N.Y. 11590
Filed Jan. 23, 1967, Ser. No. 611,051
U.S. Cl. 248—235 **1 Claim**
Int. Cl. A47f *5/00*



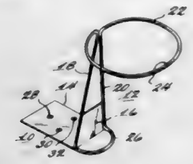
A metal bracket fitted over the end of a support member for a shelf. The bracket provides shoulders against which the support member abuts. A slotted wall is formed rearwardly of the shoulders to accommodate the heads of nails and the like which are disposed in supporting position in the space defined by the shoulders and the rear wall of the bracket.

3,432,135
SUBREFLECTOR-POSITIONING MECHANISM
Donald R. Carr, Lemon Grove, Calif., assignor to Whittaker Corporation, a corporation of California
Filed Dec. 29, 1966, Ser. No. 605,787
U.S. Cl. 248—287 **3 Claims**
Int. Cl. A47f *5/00;* **A47h** *1/10;* **F16m** *13/00*



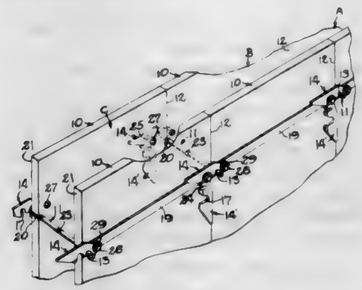
A subreflector is accurately positioned with respect to a large main parabolic reflector using electrical linear actuators for positioning such subreflector in any one of three mutually perpendicular directions. The subreflector is mounted on a shaft extending through a cylindrical bearing on a plate. The plate is slidably mounted on a second plate structure which in turn is slidably mounted on an open frame, this second plate structure and frame being apertured to accommodate the previously mentioned bearing and shaft. A first linear actuator is between the shaft and the first plate. A second linear actuator is between the first and second plates and a third linear actuator is between the frame and second plate so as to provide independent adjustment in any one of three mutually perpendicular directions.

3,432,136
MEMORIAL FLOWERPOT HOLDER
Lee E. Penney, 1315 S. Monroe St., Appleton, Wis. 54911
Filed Mar. 27, 1967, Ser. No. 626,157
U.S. Cl. 248—315 **4 Claims**
Int. Cl. A47g *7/02*



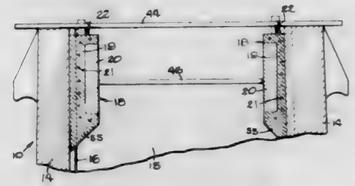
The memorial flowerpot holder of this invention includes a tab or plate having (1) a first horizontally extending portion which is adapted for insertion under the die of a two-piece monument, for example, and (2) a second portion which extends in a direction inclined with respect to the vertical by an angle of approximately 9°. Connected to the second portion of the tab is a rod having (1) a first portion which also extends in the same direction as the second portion of the tab, (2) a second portion of the rod which is formed into a loop or ring adapted to receive flowerpots or the like, and (3) a third portion which is disposed adjacent the bottom of the second portion of the tab, the third portion horizontally extending in a direction opposite from that of the first portion of the tab thereby providing additional support for the pot holder.

3,432,137
CONCRETE FORM STRUCTURE
Wilfred J. Krajco, 4202 Robertson Road, Madison, Wis. 53714
Filed Feb. 13, 1967, Ser. No. 615,428
U.S. Cl. 249—45 **14 Claims**
Int. Cl. E04g *11/10, 17/10*



A concrete form structure comprising spaced inner and outer walls each made up of a plurality of form sections secured together in abutting edge-to-edge relation. Each form section is a rectangular panel having laterally opening notches in its upright edges for receiving the ends of headed tie wires extending between the walls at the joints between each pair of sections, and locking levers are pivoted on the panels beside the notches and formed with two locking notches in the underside of each lever when the latter is in its locking position overlapping the adjacent section. One locking notch receives the tie wire to secure the wire to the panel before the next section is assembled, and the other notch is shaped to fit over the upper end of a similar lever depending from its pivot on the adjacent section, the free ends of the levers being beveled to be cammed upwardly as the next section is fitted edgewise into place. In a modified form, the levers are longitudinally shiftable relative to the pivots and are formed with tie-wire notches having shoulders engaging the tie wires to hold the levers partially raised during assembly of successive sections. Then the levers are shifted longitudinally to release them for movement into the locking position.

3,432,138
INGOT MOLD WITH OPPOSED EXOTHERMIC SIDEBOARDS
Harry D. Shephard, Jr., Pittsburgh, Pa., and Norman J. Griffiths, deceased, late of Vanderbilt, Pa., assignors, by mesne assignments, to Foseco, Inc., Cleveland, Ohio, a corporation of New York
Filed Sept. 8, 1959, Ser. No. 13,673
U.S. Cl. 249—106 **14 Claims**
Int. Cl. B22d *7/10*



7. An ingot mold having an open end mold cavity for casting metal ingots, means for increasing ingot yields comprising, a pair of substantially exothermic side boards secured to said ingot mold along opposed inner surfaces of the upper portion of the mold cavity and on opposite sides of the pouring area of the mold, and bare surface areas on the inner surface of the mold between said side boards.

3,432,139
EXTENSIBLE PLUG VALVE
Arthur Philip Jentoft, Wexford, Pa., assignor to H. H. Robertson Company
Filed Oct. 12, 1961, Ser. No. 144,610
The portion of the term of the patent subsequent to Nov. 27, 1978, has been disclaimed
U.S. Cl. 251—61.1 **9 Claims**
Int. Cl. F16k *31/145, 31/165, 51/00*



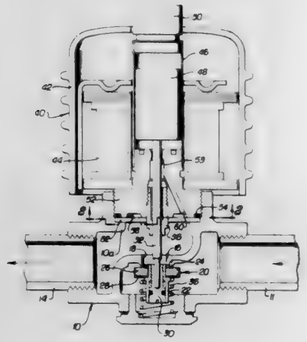
8. A gas flow regulating valve for controlling the flow of gas from a conduit terminal, comprising:
- a back plate secured in spaced outer relation to the end of said conduit terminal by means of spaced support arms extending from said back plate to said conduit terminal;
- a normally collapsed, resilient bellows having one end secured to said back plate;

a hollow conical plug of thin resilient material positioned between said bellows and the said conduit terminal and having its base end secured to the other end of said bellows whereby said back plate, said bellows and said plug define a chamber, said plug being movable axially toward and away from said conduit terminal solely by the extension and contraction of said bellows;

extensible alignment means connecting said plug to said back plate for maintaining said plug substantially axially aligned with the central axis of said conduit terminal; and

conduit means for introducing and withdrawing fluids from said chamber whereby said plug moves axially toward and away from said conduit terminal to control the flow of gas therefrom.

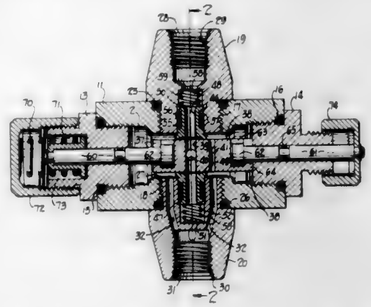
3,432,140
SOLENOID VALVE
William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed June 30, 1966, Ser. No. 562,157
U.S. Cl. 251—129 **4 Claims**
Int. Cl. F16k *1/46, 31/04*



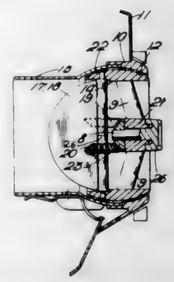
A power operated valve comprises a valve body having an inlet chamber, an outlet chamber and a movable valve element for selectively controlling a passage of fluid from said inlet chamber to said outlet chamber in a sealed cavity in the valve which includes an actuator rod for moving the valve element and power means for reciprocating the rod. Porous means are provided between the inlet chamber and the sealed cavity to permit fluid communication therebetween, while permitting the passage of fluid or viscous substances found in contaminated fluids.

3,432,141
SLIDE VALVES FOR FULL FLOW AND FINE METERING
Ernest Irti, Parma, and John H. Mueller, Olmsted Township, Ohio, assignors, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,484
U.S. Cl. 251—172 **20 Claims**
Int. Cl. F16k *3/26, 3/814, 3/316*

A flow control valve including a slide reciprocal in a valve body chamber, a pair of plunger seals reciprocally mounted in the valve body, the plunger seals having passages therethrough and end faces projecting into engagement with opposite flat surfaces of the slide, thereby to guide the slide for movement between first and second positions, and the slide being formed to establish fluid communication between two valve ports via the slide chamber in one position of the slide, to block fluid communication between the two valve ports in the other slide position, and to provide fluid communication between the plunger seal passages in both slide positions.



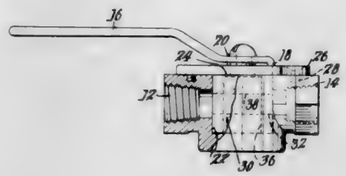
3,432,142
VENTILATING VALVES FOR VEHICLES
Peter Ludford, Coventry, England, assignor to Humber Limited, a British company
Filed May 23, 1966, Ser. No. 552,128
Claims priority, application Great Britain, May 25, 1965, 22,191/65
U.S. Cl. 251—212 **1 Claim**
Int. Cl. F16k *1/22*



A valve for regulating air flow comprising a part-spherical housing located in a part-spherical mounting, the housing having a throughway in which two flaps are mounted for rotation about an axis extending across the throughway the flaps being capable between them of closing the throughway. Each flap is formed with a bevel gear and extending into the throughway is a hollow cylindrical projection mounted on bars extending inwardly from the wall of the throughway in which projection a manually operable spindle is located at one end of the spindle extending out of the throughway and being formed with a knurled knob and the other end of the spindle located in the throughway being formed with a bevel gear which engages with the bevel gears on the flaps so that rotation of the spindle rotates the flaps in opposite directions.

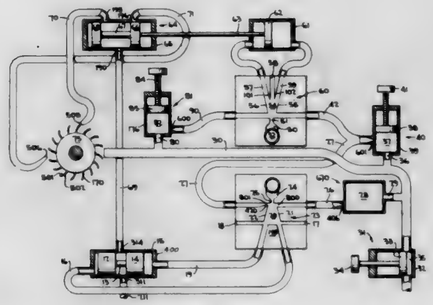
3,432,143
PERMANENT ELASTOMETRIC VALVE SEAT CONSTRUCTION
Alvin L. Johnson, Worcester, Mass., assignor to General Industries, Inc., Worcester, Mass., a corporation of Massachusetts
Filed Oct. 18, 1965, Ser. No. 497,200
U.S. Cl. 251—317 **5 Claims**
Int. Cl. F16k *5/04, 5/18, 31/50*

1. A valve comprising a housing having a chamber, said chamber having an open side, a plate closing said chamber at the open side, a substantially permanently positioned elastometric plug in said chamber, said plug being hollow and having a chamber transverse to the direction of flow, the plug having opposite flow apertures therein, a stem in said chamber in the plug, a handle on the stem, said stem having a diameter greater than



the original diameter of the chamber in the plug so that it compresses the plug and forms a permanent seal, a flow opening through said stem for alignment with the flow openings in the elastometric plug or selectively for misalignment therewith to close the valve, and means connecting the stem to the handle.

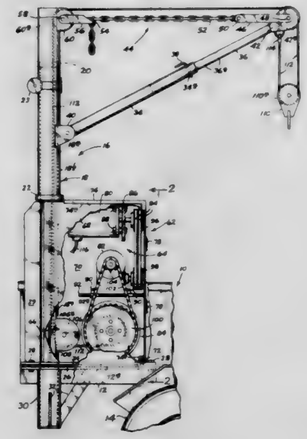
3,432,144
PRIME MOVER LIMIT CONTROL
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 2, 1967, Ser. No. 629,849
U.S. Cl. 253—1 **14 Claims**
Int. Cl. F01d *17/06, 17/20, 21/02*



Two fluid resonators detect an overspeed and underspeed condition of a rotating prime mover. Control means are associated with said resonators to continuously control the speed of the rotating prime mover.

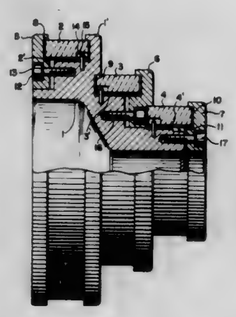
3,432,145
MOBILE CRANE
Clarence T. Mudge, Portland, Oreg., assignor to Sunset Fuel Company, Portland, Oreg., a corporation of Oregon
Filed Jan. 3, 1967, Ser. No. 606,867
U.S. Cl. 254—145 **8 Claims**
Int. Cl. B66c *23/60, 23/06;* **E21c** *29/16*

A mobile crane adapted to be mounted on a vehicle body, trailer, dolly or otherwise suitably supported, comprising an upright support mast, a boom assembly mounted on the mast, load-attaching means depending from the boom assembly, and load-lifting apparatus mounted within a protective housing secured to the post. The load-lifting apparatus includes a rotatable drum connected by means of a cable to the load-attaching means, a motor mounted above the drum for driving the same oriented with the axis of its shaft and disposed horizontally, and a speed reduction unit interposed between



the motor and drum providing a driving connection between the two.

3,432,146
WIRE-DRAWING CAPSTAN
Alfred Schubert, Hamburg, and Heinz Eichas, Plochingen, Germany, assignors to Feldmuhle Aktiengesellschaft, Dusseldorf, Germany
Filed Feb. 28, 1967, Ser. No. 619,317
U.S. Cl. 254—150 **9 Claims**
Int. Cl. B66d *1/30;* **F16h** *55/42*

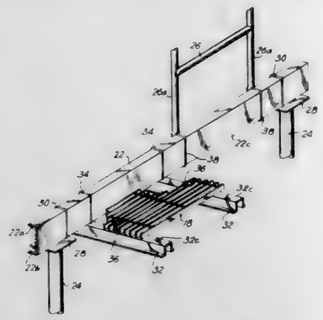


A wire-drawing block of the stepped-cone type having a tubular core of metallic material and several coaxial, axially offset rings of sintered ceramic material, the rings being secured by clamping elements which engage an outer cylindrical face of each ring while the inner ring faces are separated from the core by annular gaps, resilient packings being axially interposed between the ceramic rings and the metallic structure. Tensile stresses in the ceramic rings due to differences in thermal expansion coefficients are thereby avoided.

3,432,147
DECKING CONSTRUCTION WITH RAIL MEMBERS
Kenneth D. Schreyer, Doylestown, and David W. Meehl, Hatboro, Pa., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1967, Ser. No. 628,637
U.S. Cl. 256—59 **5 Claims**
Int. Cl. E04h *17/14;* **E04b** *1/18*

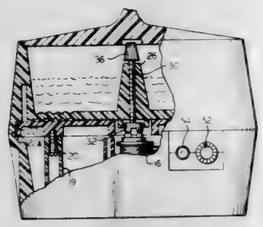
A decking construction in which the kick-plate on a second or higher level deck also serves to support rail

members and flooring beams across which the flooring is laid. The kick-plate is in the form of a channel having a pair of flanges joined together by a web. The channel is



disposed with its web vertical. The flooring beams are secured against the lower flange of the channel, while the rail members are secured against the free edges of the flanges of the channel.

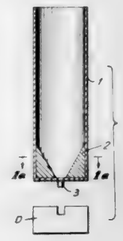
3,432,148
VIBRATORY DEVICES FOR CLEANING DENTURES OR THE LIKE
Paul P. Krolik, 50 E. Washington, and Theodore H. Perlman, 25 E. Washington, both of Chicago, Ill. 60602
Continuation-in-part of applications Ser. No. 535,646, Mar. 11, 1966, and Ser. No. 568,831, July 29, 1966. This application Aug. 21, 1967, Ser. No. 661,882
U.S. Cl. 259—72 **5 Claims**
Int. Cl. B01f *9/10, 13/08*



Includes a lower housing portion having an alternating current actuated coil associated with a cleaning tank that has a cavity at the bottom thereof which conformingly engages the top of the lower housing. The tank has an adjustable armature at the center thereof which protrudes downward through an opening in the lower housing and is in magnetic alignment with the coil and lower housing whereby an alternating current actuated magnetic vibrator having different vibration strength is formed with said coil. The cover encloses the cleaning tank to protect it and its contents from ambient contaminates.

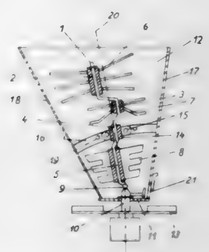
3,432,149
APPARATUS FOR STIRRING A LIQUID
Nils Gustav Stalberg, Sporrvagen 23, Jakobsberg, Sweden, and Erling Gotthard Berglund, Flygarvagen 29, Barkarby, Sweden
Filed Apr. 10, 1967, Ser. No. 629,575
Claims priority, application Sweden, Apr. 27, 1966, 5,739/66
U.S. Cl. 259—75 **8 Claims**
Int. Cl. B01f *11/00*

Apparatus for stirring a liquid without the use of stirrers, the apparatus including an elongated vessel which is driven in rotation in alternate opposite directions, the vessel including internal triangular wings at



the bottom thereof or having a noncircular shape at said bottom so as to exert dragging action on the liquid and produce circulation and mixing thereof.

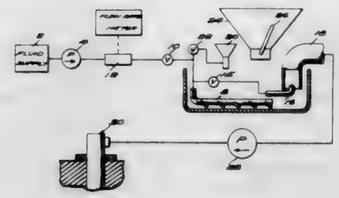
3,432,150
AGITATOR FOR CENTRIFUGAL SPREADERS
Heinz Dreyer, Gaste, Kreis Osnabruck, Germany, assignor to Amazonen-Werke H. Dreyer, Gaste, Kreis Osnabruck, Germany, a corporation of Germany
Filed July 28, 1965, Ser. No. 475,455
U.S. Cl. 259—106 **9 Claims**
Int. Cl. B01f *7/18*



The specification discloses a novel agitator which is particularly useful in the dislodgement of particulate material and, especially, fertilizer material. The agitator described herein is unique specifically in that it comprises a drive shaft operatively associated with a drive means on one end thereof and operatively associated with an agitator shaft at the other end thereof. The agitator shaft is aligned, at least partially, nonaxially with the drive shaft. The agitator shaft further has agitator elements extending radially therefrom at some angle to the agitator shaft axes and may have a bearing means disposed intermediate the end thereof connected with the drive shaft and the end thereof remote from the drive shaft. Preferably, the bearing means is located intermediate the ends

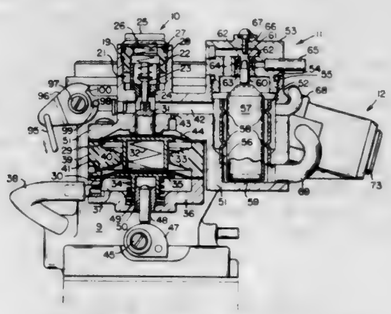
of the agitator shaft. Further preferably, the agitator shaft is composed of a multiplicity of generally parallel, nonaligned, operatively associated sections which are adapted to revolve around the general center line of the agitator.

3,432,151
PORTABLE SAND-FLUID BLENDER
Bernard T. O'Loughlin, Duncan, Okla., and William A. Tindell, Jr., Dallas, Tex., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,918
U.S. Cl. 259—148 **10 Claims**
Int. Cl. B28c



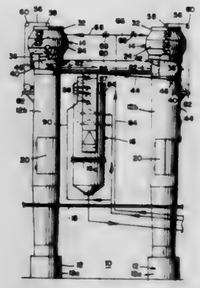
The blending of solid, insoluble particulate material with a liquid is carried out in a blending tub by pumping the liquid at a known flow rate into the tub through an agitating manifold. The manifold has a plurality of nozzles which direct the liquid into the tub with sufficient velocity to cause thorough agitation of the liquid in the tub. Sand, or other particulate material, is dispensed at a measured rate into the tub where it mixes with the liquid and the sand-liquid blend is drawn into the suction pipe of a pump. A portion of the liquid bypasses the agitating manifold and flows directly into the discharge pipe to boost the pump suction. By correlating the sand flow rate with the liquid flow rate, blends of a predetermined concentration can be produced.

3,432,152
FUEL INJECTION SYSTEM
Frank B. Sweeney, 947 Meigs St., Rochester, N.Y. 14620
Filed Mar. 25, 1966, Ser. No. 537,332
U.S. Cl. 261—34 **30 Claims**
Int. Cl. F02m *59/20, 45/12*



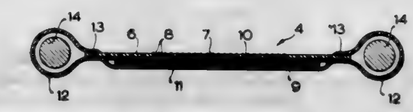
A fuel injection system meters pressurized fuel into the engine's intake manifold in response to the sensing of air movement above the throttle valve and includes a pressure regulator responsive to output pressure, throttle position, and manifold vacuum, and a vapor separator that is in equilibrium relative to fuel pressure for operating independently of fuel pressure to separate vapor and provide a continuous bleed back to the tank.

3,432,153
APPARATUS FOR COLLECTING CONTAMINANTS FROM GASES
Daniel D. Drum, Northbrook, Ill., assignor to National Dust Collector Corporation, Skokie, Ill., a corporation of Illinois
Filed Sept. 25, 1967, Ser. No. 670,033
U.S. Cl. 261—108 **10 Claims**
Int. Cl. B01d *47/06*



Apparatus for collecting contaminants from gases comprising a quenching chamber having an inlet adapted for communication with the upper end of a gas stack and an outlet. The lower end of the chamber includes a liquid collecting trough around the stack below the upper end and a valve member including a depending skirt is mounted in the chamber for movement between an inlet closing position, wherein the lower end of the skirt extends into the liquid in the trough forming a gas-tight, liquid seal around the upper end of the stack and an open position wherein the skirt is above the liquid in the trough. When the valve member is open, liquid is directed onto the top of the valve member and flows downwardly around the skirt into the trough forming a continuous, flowing, liquid curtain for cooling and collecting the contaminants in the exhaust gases passing from the stack into the chamber.

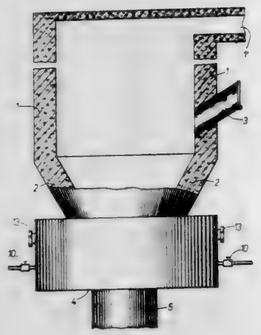
3,432,154
SEWAGE WATER AERATION DEVICE
Martin Hermann Danjes, Hermannstrasse 3, Detmold, Germany
Continuation-in-part of application Ser. No. 543,596, Apr. 19, 1966. This application Nov. 29, 1967, Ser. No. 686,453
U.S. Cl. 261—122 **6 Claims**
Int. Cl. B01d *47/00*



The sewage water aeration device consists of a cover foil provided with punched areas under which a flotable plate is arranged, which is tightly enclosed by two foils. When air is supplied into the device the cover foil expands and the air is admitted through its holes in fine bubbles into the sewage water. As the air supply is inter-

rupted the aeration holes are sealed from below by the uplift of the flotable plate and the sewage water is barred from blocking said holes.

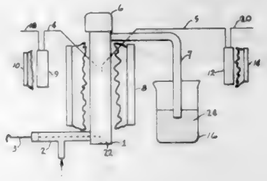
3,432,155
METHOD AND APPARATUS FOR HEAT-TREATING GRANULATED EXPANSIBLE MATERIALS
Heinz Dennert, Viereth 120, Upper Franconia, Bavaria, Germany
Filed Apr. 5, 1965, Ser. No. 445,659
Claims priority, application Germany, Apr. 7, 1964, D 44,094; Apr. 21, 1964, V 25,848; May 9, 1964, V 25,960; May 16, 1964, D 44,453
U.S. Cl. 263—21 **28 Claims**
Int. Cl. F27d *3/00;* **C04b** *31/00*



In a method of expanding an expansible granular material, and an apparatus for performing the method, there exists a vertical reaction chamber having a burner chamber underneath, the two chambers being coaxial and having a central neck like opening connecting them. A plurality of gas burners mounted substantially radially inwardly in the outer perimeter of the burner chamber to provide a gas current which flows toward the vertical axis of the burner chamber where the gas currents combine and deflect upwardly through the neck like opening into and through the reaction chamber and out the upper end thereof. Granular material is intermittently charged into the reaction chamber, enters the ascending gas current, and reach a point in height where the buoyancy of the gas current no longer exceeds the gravitational force on the particle, and the particles separate from the ascending gas current and fall by gravity outside the gas current along the wall of the reaction chamber toward the necklike opening where they are again picked up and carried upwardly by the gas current. This circulatory movement of the granular material is continued, and intermittently the extended particles are removed. According to a further embodiment a vertical guide element can be placed coaxially within the burner chamber so as to project at least into the necklike opening.

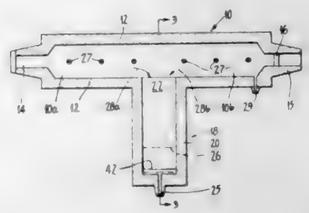
3,432,156
APPARATUS FOR PRODUCING CESIUM
Roy E. Jones, Trona, Calif., assignor, by mesne assignments, to San Antonio Chemicals, Inc., a corporation of Delaware
Original application Mar. 27, 1964, Ser. No. 355,233, now Patent No. 3,293,025. Divided and this application June 3, 1966, Ser. No. 584,926
U.S. Cl. 266—34 **2 Claims**
Int. Cl. C22b *27/00, 5/16*

An apparatus for producing elemental cesium in which molten reactants are carried from separate closed container means through conduit means into the reaction zone of a closed reactor means. Metering means are provided in operative association with said conduit means to control the rate at which the molten reactants are supplied to the reactor means. Heating means are provided in operative association with said separate container means and said reactor means to maintain the reactants



in a molten state and promote the reaction of the reactants. The reaction zone is provided with stirring means to intermingle and agitate the reactants. An outlet means is provided in said reactor means for removing elemental cesium as a gaseous reaction product therefrom.

3,432,157
APPARATUS FOR REFINING METALS
Howard Knox Worner, New Lambton, New South Wales, Australia, assignor to Conzinc Riotinto of Australia Limited, Melbourne, Victoria, Australia
Original application Aug. 17, 1964, Ser. No. 390,042, now Patent No. 3,226,672, dated Dec. 28, 1965. Divided and this application Nov. 8, 1966, Ser. No. 620,568
U.S. Cl. 266—35 **17 Claims**
Int. Cl. C21c *5/42*

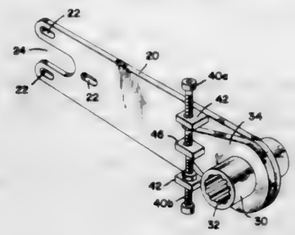


This disclosure teaches an apparatus for refining metals which includes a furnace having a refining chamber with a metal inlet and a metal outlet, a slag separation chamber communicating with the refining chamber and having a slag outlet, and means for injecting oxygen containing gas into the metal in the refining chamber. The arrangement of the refining chamber and slag separation chamber is such as to permit slag to flow from the refining chamber into the slag separation chamber with some of the slag flowing countercurrent to the flow of metal in the refining chamber and to permit metal which separates from the slag in the slag separation chamber to return to the refining chamber.

3,432,158
VARIABLE TORQUE ARM
Warren Goodwin, 17808 Tourney Road, Los Gatos, Calif. 95030
Filed Sept. 27, 1967, Ser. No. 671,059
U.S. Cl. 267—57 **3 Claims**
Int. Cl. B60g *11/18;* **F16f** *1/36;* **B62d** *21/14*

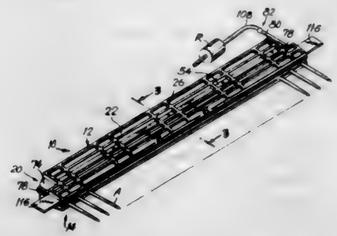
A variable torque arm in which an internally splined hub is mounted on one end, the hub being movable

angularly with respect to the lever arm. The hub is connected to a plate the end of which is provided with a



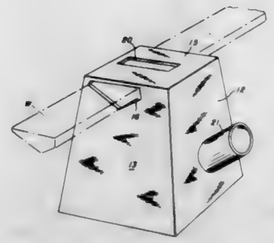
projection captured between adjusting bolts mounted on the lever arm. Movement of the bolts changes the relative angular position of the hub and the lever arm.

3,432,159
PORTABLE PNEUMATICALLY OPERATED CLAMP FOR GRIPPING A GROUP OF ELONGATED SPACED PARALLEL ARTICLES FOR FINISHING OPERATIONS
Harold Rakatansky, Providence, R.I., assignor to Imperial Knife Associated Companies, Inc., Providence, R.I., a corporation of Rhode Island
Filed June 20, 1966, Ser. No. 558,906
U.S. Cl. 269—20 **9 Claims**
Int. Cl. B25b *5/04, 5/16;* **B23q** *3/06*



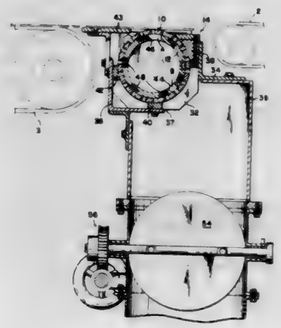
A clamp for gripping simultaneously a series of elongated articles in spaced parallel relationship for finishing operations. The clamp has a pair of clamping members each of which includes a jaw and an operating portion. An aligned string of pivots hingedly engages the clamping members. The jaws and operating portions are axially elongated to enable the jaws to grip the series of articles. The jaws can swing between spaced and adjacent positions as can the operating portions. The operating portions define between them an axially elongated chamber. A spring biases the jaws into spaced positions. An elongated flexible hose is situated within and along the length of the chamber. The hose can be expanded by high pressure air to force the jaws to close upon the articles. A quick-connect/disconnect valve permits selective feeding of the air into the tube. A release valve permits air to be selectively bled from the tube. The clamp further includes means to detachably engage it with articles gripped therein to a finishing machine so that in conjunction with the quick-connect/disconnect valve the clamp is portable whereby to enable the clamp to be loaded with the articles and the tube to be expanded so as to grip the articles while the clamp is away from a finishing machine and so that the clamp with the articles gripped therein can thereafter be engaged to the finishing machine.

3,432,160
SUPPORT FOR BARS UNDERGOING A FLAME-CUTTING OPERATION
Sidney N. Wovcha, Virginia, Minn., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 605,037
U.S. Cl. 269—287 **2 Claims**
Int. Cl. B23q *3/00*



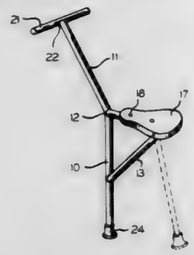
A support for metal bars while undergoing a flame-cutting operation which comprises a plurality of metal plates welded together to form a hood shaped as a frustum of a pyramid. Side plates have aligned openings near their upper edges through which a bar can be inserted endwise, where it is supported for cutting and the top plate has a slot through which cut is made. An exhaust pipe is connected to the hood to carry away fumes produced in the cutting operation.

3,432,161
SHEET CONTROL APPARATUS
Ingvald Dale, Hoquiam, and Charles B. Lewis, Aberdeen, Wash., assignors to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash., a corporation of Washington
Filed Oct. 13, 1966, Ser. No. 586,404
U.S. Cl. 271—46 **13 Claims**
Int. Cl. B65h *29/68, 29/58*



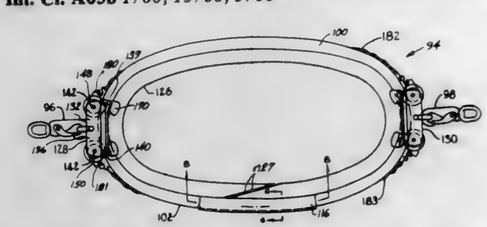
A sheet control apparatus employing suction to control sheet speed, or direction, or both comprises an outer moving surface exposed to the sheet material with openings therethrough and an inner rotary valving mechanism having at least one opening periodically communicable with the openings through the outer moving surface such that vacuum means may draw a continual negative pressure in the rotary valving mechanism with suction applied periodically to the outer moving surface openings whenever the opening in the rotary valving mechanism is in registry therewith.

3,432,162
MOVABLE SEAT TYPE EXERCISER
Leonard P. Flemming, 2536 N. 91st St., Wauwatosa, Wis. 53226
Filed Feb. 20, 1967, Ser. No. 617,361
U.S. Cl. 272—58 7 Claims
Int. Cl. A63b *21/00, 23/00*



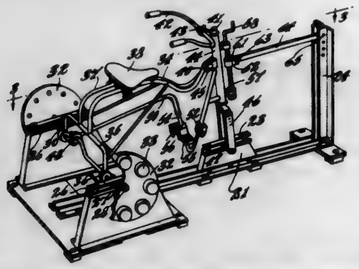
It comprises seat mounted on standards with different types of legs and a handle whereby an operator can be seated thereon and by pushing the handles he may bring his leg forward and move forwardly.

3,432,163
TWISTING AND TUMBLING BELT
Raymond J. Murphy, 20412 Craimer Lane, Huntington Beach, Calif. 92646
Continuation-in-part of application Ser. No. 516,937, Dec. 28, 1965. This application Jan. 11, 1968, Ser. No. 697,162
U.S. Cl. 272—60 9 Claims
Int. Cl. A63b *1/00, 13/00, 5/00*



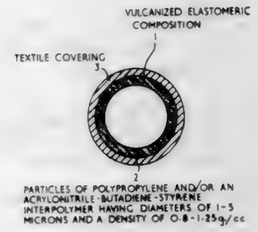
A tumbling and twisting belt having a belt track adapted to encompass a tumbler's waist and a pair of roller assemblies connected to the track for movement therearound, includes divergent, roller-engaging flanges preventing relative axial movement between the roller assemblies and the track. Cable means connect the roller assemblies together to keep them spaced 180 degrees apart.

3,432,164
EXERCISING MACHINE
Hugh A. Deeks, 827 Haddon Ave., Collingswood, N.J. 08108
Filed Feb. 14, 1967, Ser. No. 616,061
U.S. Cl. 272—73 9 Claims
Int. Cl. A63b *23/04, 21/00*; A63g *17/00*



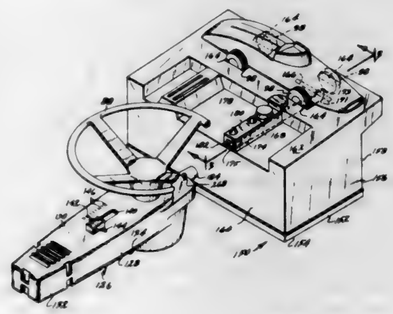
The invention relates to an exercising machine which is capable of producing simulated effects of horseback riding, and can alternatively canter or gallop or can automatically change from one to the other.

3,432,165
GAME BALL
Robert C. Haines, Marston Green, Birmingham, and Patrick J. Corish, Sutton Coldfield, England, assignors to The Dunlop Company Limited, London, England, a company of Great Britain
Filed June 28, 1965, Ser. No. 467,704
Claims priority, application Great Britain, July 9, 1964, 28,325/64
U.S. Cl. 273—61 6 Claims
Int. Cl. A63b *39/06*



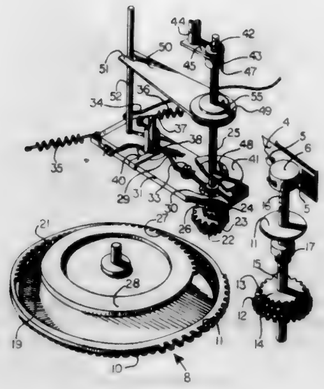
A pressureless ball, e.g., a tennis ball comprising a hollow sphere of a vulcanised elastomeric composition containing dispersed discrete particles of a reinforcing filler comprising acrylonitrile-butadiene-styrene copolymers or polypropylene.

3,432,166
CONTROL MEANS FOR TOY ELECTRIC RACING CARS
Adolph E. Goldfarb, 7424 Varna St., North Hollywood, Calif. 91605
Filed Feb. 1, 1965, Ser. No. 429,301
U.S. Cl. 273—86 19 Claims
Int. Cl. A63f *9/14*



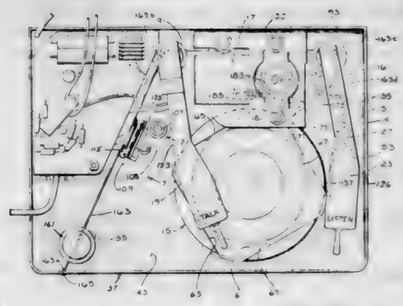
The invention is a system and apparatus for controlling toy vehicles, particularly electrically controlled miniature racing cars. The cars travel on electrified tracks. The controls include steering wheels which by rotation, control circuitry controlling the electrification of the tracks in such manner that the control wheels must be manipulated to keep the cars energized and traveling on the tracks, thereby simulating actual steering.

3,432,167
RACING GAME WITH POWER ACCUMULATING MEANS
Camille Normandin, 301 Roy St., Sorel, Quebec, Canada
Filed Nov. 17, 1966, Ser. No. 595,126
U.S. Cl. 273—86 18 Claims
Int. Cl. A63f *9/14*



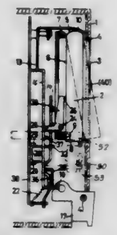
This invention concerns a racing game in which the different racers are independently and individually controlled by competing players, means being provided to move the racers at at least two different sets of speeds, there being provided different speeds in each set, the speeds of one set being higher than the speeds of the other set, the racers, when running at said higher speeds, expending a reserve of energy which, when spent causes automatic slowing down of the racers to the lower set of speeds, the racers capable of accumulating energy only when running at said lower set of speeds.

3,432,168
TURNTABLE BRAKING MECHANISM FOR RECORDING APPARATUS
L. C. James Kingsbury, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,352
U.S. Cl. 274—1 3 Claims
Int. Cl. G11b *3/10, 3/40*



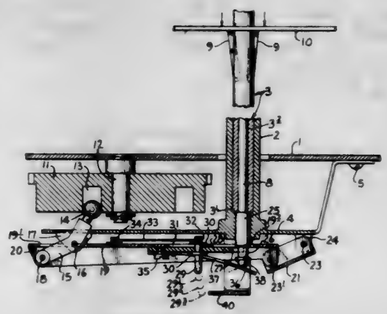
A turntable braking mechanism for a recording device which responds automatically to movement of a playback arm into its rest position.

3,432,169
TAPE CARTRIDGE EJECTING ARRANGEMENT
Erich Schroder, Nuremberg, Germany, assignor to Grundig Elektro-Machanische Versuchsanstalt Inh. Max Grundig, Furth, Bavaria, Germany
Filed Feb. 13, 1967, Ser. No. 615,795
Claims priority, application Germany, Feb. 12, 1966, G 46,010
U.S. Cl. 274—4 12 Claims
Int. Cl. G11b *5/00, 15/32*



The tape cartridge of a tape recorder and/or tape player is ejected from the casing of the device by a second actuation of a stop button whose first actuation causes stopping of the tape movement by returning a start button to its position of rest.

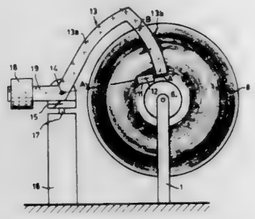
3,432,170
RECORD CHANGING APPARATUS
Theophiel Clement Jozef Lodewijk Staar, Kraainem, Belgium, assignor to Staar S.A., Brussels, Belgium, a corporation of Belgium
Filed May 18, 1966, Ser. No. 551,002
Claims priority, application Belgium, Dec. 8, 1965, 21,304
U.S. Cl. 274—10 15 Claims
Int. Cl. G11b *17/10*



In a phonograph apparatus of the type having a vertical spindle adapted to support and sequentially drop records onto a turntable, an improved spindle is provided. The spindle has a retractable and extensible support operated by a control rod extending through the spindle. Both the support and the control rod are adapted to move downwardly a limited distance with respect to the phonograph apparatus in response to the weight of one or more records on the support. An actuating mechanism is provided for engaging a lower portion of the control rod, and thereby retract the support, when but only when the control rod has been moved into a limited downward position in response to the weight of a record on

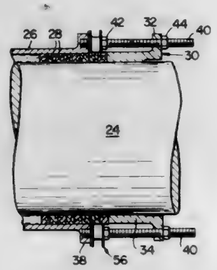
the support. The spindle advantageously includes a structure for retaining records above the lowermost record when the latter is dropped onto the turntable.

3,432,171
PHONOGRAPH TONE ARM AND MOUNTING
Jean Foufounis, 27 Chemin du Chene 1020, Renens Vaud, Switzerland
Continuation-in-part of application Ser. No. 476,364, Aug. 2, 1965. This application Nov. 13, 1967, Ser. No. 687,412
U.S. Cl. 274—23 **4 Claims**
Int. Cl. G11b *3/16*



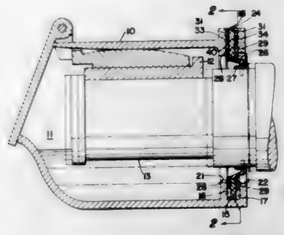
A tone arm pivoted at one end on a first shaft perpendicular to the plane of rotation of the record. The playing head has a pair of needles each projecting from opposite sides of the head for alternative use. The tone arm is bent in at least one point of its length in order to form two segments lying in the same plane, the segments of the arm in the vicinity of the shaft extending outside the circumference of the disc regardless of the functioning position of the arm while the other segment of the arm carrying the playing head extends substantially in the direction of the centre of the record.

3,432,172
METHOD AND APPARATUS FOR INSTALLING NEW PACKING ON A PROPELLER SHAFT
Allen L. Hendrickson, Redwood City, Calif., assignor of one-half to Olga T. Hendrickson, Redwood City, Calif.
Filed Nov. 25, 1966, Ser. No. 597,069
U.S. Cl. 277—1 **7 Claims**
Int. Cl. F16j *15/26*



A method and apparatus for adding new packing to the stern gland of a ship's propeller without drydocking the vessel. An apparatus is provided for temporarily securing the old packaging within the stern gland while the new packing is brought into engagement with the means holding the old packing in place. The temporary means is then removed, and the new packing is forced into the stern gland in contact with the old packing. No changes of any kind in the structure of the stern gland are required for using the method and apparatus of the invention.

3,432,173
JOURNAL BOX SEALING DEVICE
Richard P. Papenguth, Manhattan Beach, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 27, 1967, Ser. No. 612,214
U.S. Cl. 277—29 **11 Claims**
Int. Cl. F16j *15/32, 15/10*



A railway car journal box axle and dust sealing device that has vent passages to permit air to flow in and out of the box while maintaining the dust seal and the axle seal.

3,432,174
SLIDE-RING SEAL
Fritz Teske, Industriestr. 32, and Lothar Teske, Industriestr. 30, both of Porz-Westhoven, Germany
Filed Nov. 4, 1966, Ser. No. 592,082
Claims priority, application Germany, Nov. 6, 1965, 29,735
U.S. Cl. 277—80 **9 Claims**
Int. Cl. F16j *15/34*

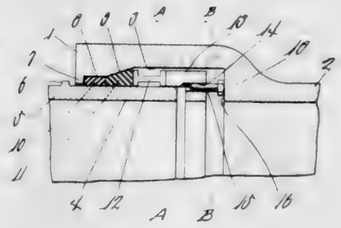


This invention provides a slide ring seal assembly for sealing relatively moving components. The assembly includes a pair of coaxially, radially disposed annular disks comprising magnetic material. A means is provided for securing each of the said annular disks to a corresponding moving component. A flexible, magnetic slide ring seal means is magnetically secured to the said annular disks to provide the desired sealing effect.

3,432,175
PIPE JOINT WHICH CAN BE ASSEMBLED FROM INSIDE PIPE
Teiichi Kawai, Minoo, Japan, assignor to Kubota Iron and Machinery Works, Ltd., Osaka, Japan
Filed May 23, 1966, Ser. No. 552,306
Claims priority, application Japan, June 5, 1962, 40/33,465
U.S. Cl. 277—104 **1 Claim**
Int. Cl. F16j *15/02;* **F16l** *21/04, 21/02*

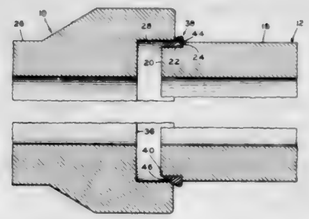
A pipe joint which can be assembled from inside the pipe. An annular packing is interposed between a bell on the one end of one pipe and a spigot end of the next pipe, and a pressing means is positioned adjacent the inner end

of the bell and is urged against the packing to pack it tightly between the bell and the spigot end by a series of



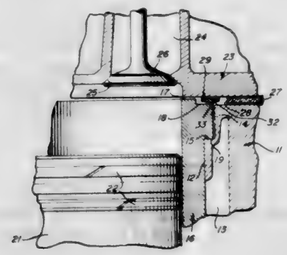
bolts threaded into a pressing ring and having their heads against the surface at the inner end of the bell.

3,432,176
PIPE JOINT
Frank P. Valenziano, Summit, N.J., assignor to Interpace Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 411,893, Nov. 17, 1964. This application Mar. 31, 1967, Ser. No. 652,355
U.S. Cl. 277—168 **6 Claims**
Int. Cl. F16j *15/00, 9/00;* **F16k** *41/00*



A push-on joint for bell and spigot pipe having a wedge shaped resilient gasket, stretched over, and abutted against a bearing surface on the spigot end of one pipe, the wedge shaped portion of the gasket centering the spigot in the bell opening of an abutting pipe when the spigot is inserted and pushed into the bell.

3,432,177
CYLINDER SLEEVE SEAL
Otha Leroy Colwell, Mount Prospect, Ill., assignor to Felt Products Mfg. Co., a corporation of Illinois
Filed Dec. 28, 1965, Ser. No. 518,753
U.S. Cl. 277—205 **3 Claims**
Int. Cl. F16j *15/48, 15/32, 9/08;* **F16k** *41/00*



An annular resilient gasket for sealing the cylinder bores of an internal combustion engine has an arcuate cross sectional configuration providing two annular flat surfaces separated by an annular concave surface, and a convex surface having an annular rib. When the gasket is compressed between the cylinder head and a flange of the cylinder sleeve, the downward pressure is concentrated against the annular rib. The downward pressure spreads the outer edges of the gasket slightly, thereby providing a very tight sealing engagement between the annular flat surfaces of the gasket and the underside of the cylinder head.

3,432,178
DEVICE FOR ROLLING BABY CARRIAGES ON STAIRS
Heinz Peter Xander, Dunantring 66, Frankfurt am Main-Sossenheim, Germany
Filed July 13, 1967, Ser. No. 653,173
Claims priority, application Germany, July 20, 1966, X 67
U.S. Cl. 280—5.22 **4 Claims**
Int. Cl. B62b *9/02*

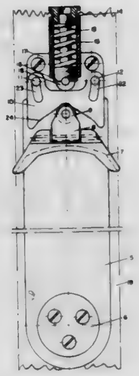


Device attachable between a front wheel and a rear wheel on the same side of a baby carriage to permit its rolling up and down stairs. The device comprises a movable band adapted to run on stairs by means of guide rollers attached to the lower end of two longitudinal bars shaped to conform to the circumference of the wheels of the baby carriage between a front and a rear wheel thereof. In the operative position of the device the elastic band is stretched and rolls on the edges of the steps of the stairs while concave rollers inside the longitudinal bars roll on the circumference of the baby carriage wheels and are held in engagement therewith by the traction exerted by the elastic band.

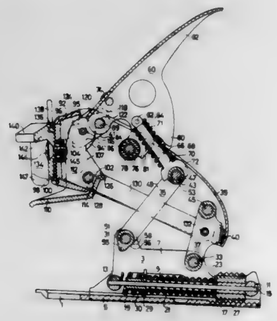
3,432,179
TOE IRON FOR SAFETY SKI-BINDINGS
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany, and Günter Adam, Garmisch-Partenkirchen, Germany; said Adam assignor to said Marker
Filed June 1, 1966, Ser. No. 554,549
Claims priority, application Germany, June 3, 1965, M 65,460
U.S. Cl. 280—11.35 **8 Claims**
Int. Cl. A63c *9/00*

Toe irons for safety ski bindings of the type which can be swivelled out of their normal position to either side of the ski. The swivel action takes place about a vertical axis lying in the area of the heel of the ski boot without forwardly directed components of motion in the longitudinal direction of the ski. Beyond a predetermined angular pivoting, release occurs. The toe iron consists of a toe piece mounted on a swivel plate with the toe piece

engaging a spring and lever arrangement. The resistance of the spring is transmitted to the toe piece while the toe piece slides upon an edge of the spring and lever arrangement. The operation is such that during swivelling increases in resistance of the spring are compensated for by the elongation of the lever arm between the lever fulcrum and the bearing point of the toe piece.

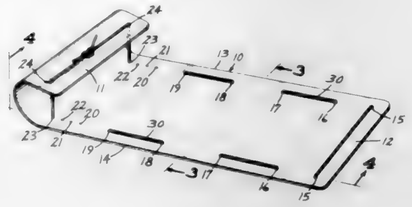


3,432,180
HEEL ENGAGING UNIT FOR A SAFETY SKI BINDING
Willy Suhner, 38 Aarauerstr., 5200 Brugg, Switzerland
Continuation of application Ser. No. 592,866, Nov. 8, 1966. This application May 6, 1968, Ser. No. 727,087
Claims priority, application Switzerland, Nov. 11, 1965, 15,587/65
U.S. Cl. 280—11.35 **31 Claims**
Int. Cl. A63c *9/00*



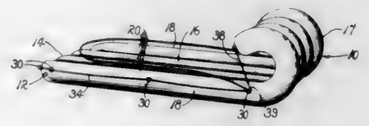
The present invention relates to a heel engaging unit for a safety ski binding, and more specifically to a strapless heel engaging unit provided with heel engaging means which automatically secure the heel of a ski boot to the unit when the user steps with the heel into the heel engaging means while the latter are in a step-in position and which subsequently holds the ski engaging means in a downhill run position in which the bottom surface of the heel will be maintained closely adjacent to the top surface of the ski or in a walking or cross-country skiing position in which the heel of the ski boot may move within certin limits upwardly and downwardly with respect to the top surface of the ski.

3,432,181
TOBOGGAN CONSTRUCTION
Lee C. McKee, 6612 Golden Ridge Drive, Hopkins, Minn. 55343
Filed Mar. 6, 1968, Ser. No. 710,933
U.S. Cl. 280—18 **4 Claims**
Int. Cl. B62b *13/02*; **A63b** *71/02*



A toboggan formed of a sheet of flexible material having a plurality of spaced apart holes along either longitudinal edge thereof and a flexible line threaded therethrough so as to provide a plurality of sections of line at the under surface of the toboggan parallel with the longitudinal axis thereof acting as runners and a portion of the line threaded through an arcuately upwardly turned front portion of the sheet to maintain the front portion in the upturned position.

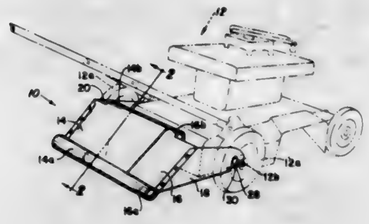
3,432,182
COASTING VEHICLE
Victor M. Solipasso, Sanger, Calif., assignor of one-fifth each to Harvey A. Jacobsen, Fresno, and Ronald H. Metzler, Del Rey, Calif.
Filed Feb. 6, 1967, Ser. No. 614,254
U.S. Cl. 280—18 **4 Claims**
Int. Cl. B62b *13/16, 13/12*



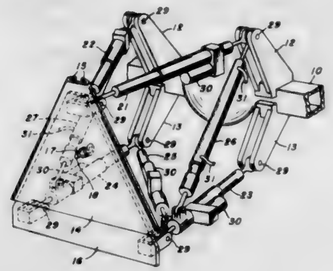
A coasting vehicle having an elongated hollow body of flexible material which is collapsible to substantially unrestrained shape and which is selectively expandable to a predetermined resiliently yielding form by the introduction of a flowable fluid into the body so that in such expanded condition the body includes a continuous arcuately upwardly bent forward end and a fluid chamber longitudinally coextensive with the body and the return-bent end so that such fluid is flowably interchangeable within the chamber resistively to accommodate indentations in the body incident to encountering irregularities in the terrain over which the vehicle passes. In its preferred embodiment, the invention takes the form of a pneumatically inflated toboggan.

3,432,183
ADJUSTABLE LAWNMOWER GUARD
Walter H. Groll, Pittsburgh, Pa.
Filed Oct. 24, 1967, Ser. No. 677,639
U.S. Cl. 280—150 **3 Claims**
Int. Cl. B60r *21/14, 21/00*

A guard for a rotary lawnmower is provided which may be attached to the lawnmower without disassembly or modification of the lawnmower in any way. The guard is formed of sheet metal with interleaved parts which frictionally engage each other. The frictional engagement of the interleaved parts permits the width of the lawnmower guard to be adjusted. A guard is supported by the axles of the lawnmower and pivots about the axle. Gravity maintains the guard in contact with the ground to prevent the operator of the lawnmower from getting his feet or hands into the blade of the lawnmower.



3,432,184
POWER ACTUATED TRACTOR HITCH
Robert H. Tweedy, McCandless Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,049
U.S. Cl. 280—479 **4 Claims**
Int. Cl. B60d *1/16, 1/08, 1/10*

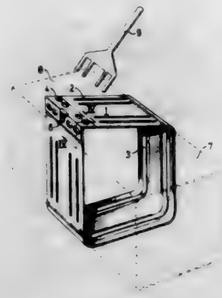


A mechanism for hitching an implement to a tractor. Includes power-driven actuators attached to the tractor and to a coupling plate. Actuators are controlled from within the tractor and can move the plate universally to align it with the implement and engage and release the implement.

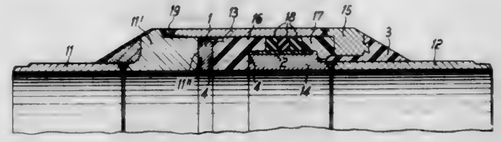
3,432,185
JOINTING AND SEALING MEANS
Eric Rosengren, Oresundsvagen 19, Bjarred, Sweden
Filed Jan. 17, 1967, Ser. No. 609,916
Claims priority, application Sweden, Jan. 21, 1966, 773/66
U.S. Cl. 285—39 **4 Claims**
Int. Cl. F16l *55/00, 35/00*

A clamp-on joining and sealing means is provided for two abutting pipe ends having essentially the same cross sectional shape. An elongated strip of tough, bendable metal or the like is formed with two parallel rows of apertures across one end and one row of apertures across the other end and with groups of recesses defining channels on the inner face of the strip at locations corresponding to the number of sides on the pipes to be joined. Beads of plastic sealant are deposited in the channels.

The strip is then bent around the abutting pipe ends until the two extreme end rows of apertures are aligned, after which a forked tool engages the third row of apertures to pull the strip until the three rows of apertures are all aligned, thereby clamping the strip in tight sealing engagement with the pipe ends.



3,432,186
ELECTRICALLY INSULATING COUPLING FOR PIPES AND THE LIKE
Karlheinz Braun, Kehl (Rhine), Germany, assignor to Eisenbau Albert Ziefle K.G., Kehl (Rhine), Germany, a firm of Germany
Filed May 13, 1968, Ser. No. 728,716
Claims priority, application Germany, June 15, 1967, E 34,195
U.S. Cl. 285—53 **5 Claims**
Int. Cl. F16l *13/02, 21/02, 59/16*

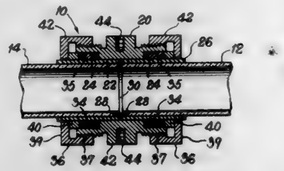


To provide an electrically insulating coupling, which can be welded, without destruction to internal insulation material, a heat-blocking ring (1) is interposed between a metal, weldable collar and organic insulation material, the heat-blocking ring being formed with grooves and dimensioned to provide for air spaces within the coupling. Some of the grooves may be filled with a rubbery sealing mass.

3,432,187
TUBE COUPLING
Walter G. Mooney, Wayne, Lloyd K. Dutton, West Paterson, and Francis K. Lynch, Hewitt, N.J., assignors to Mooney Brothers Corp., Little Falls, N.J., a corporation of New Jersey
Filed May 23, 1967, Ser. No. 640,744
U.S. Cl. 285—55 **8 Claims**
Int. Cl. F16l *19/02, 19/06, 21/02*

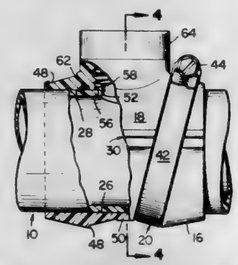
A tube coupling for coupling tubes capable of carrying corrosive fluids, the tube coupling employing an outer body of relatively rigid, high strength material, an inner tubular member of a resiliently deformable, generally inert, corrosion resistant material such as a fluorocarbon resin received within the outer body and having a bore for receiving a tube therein, an annulus of elastomeric

material placed around the inner member adjacent an end thereof, the annulus being affixed to the inner member and abutting a shoulder in the outer body so as to retain the inner member within the outer body against inadvertent removal therefrom, a nut threaded onto the outer



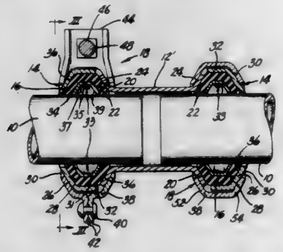
body and means coupling the nut and the annulus such that upon threading the nut along the outer body the means will axially contract the annulus, radially contract the inner diameter of the annulus and thereby deform the inner tubular member radially inwardly to grip the tube therein.

3,432,188
PLASTIC PIPE SADDLE
Frank E. Turner, San Mateo, Calif., assignor to Smith-Blair Inc., San Francisco, Calif., a corporation of California
Filed Feb. 1, 1967, Ser. No. 613,202
U.S. Cl. 285—197 **2 Claims**
Int. Cl. F16l *41/00, 33/00, 49/00, 31/00*



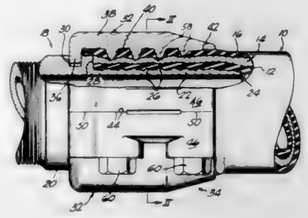
A pipe saddle is provided comprised of a pair of curved plastic body members that fit around a pipe and are held firmly together by a pair of retaining bands, one of the body members having a boss with a threaded bore and an inner flexible collar that positions and maintains the saddle properly on the pipe and increases hydraulic efficiency at the conduit junction.

3,432,189
FLEXMASTER END RESTRAINT
Leonard E. Buller, Canoga Park, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Mar. 21, 1966, Ser. No. 536,039
U.S. Cl. 285—232 **2 Claims**
Int. Cl. F16l *17/00, 19/00, 21/00*



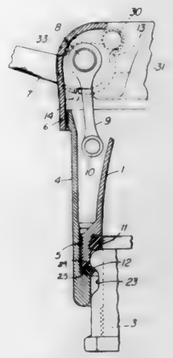
The invention relates to a fluid coupling, preferably between two plain pipe ends, which include rubber-like sealing gaskets compressed to provide seals. The gaskets are provided with grooves which receive restraining rings to prevent any relative axial movement between the pipe ends.

3,432,190
CLAMP-TYPE HOSE FITTING
Guenter Otto Kunz, Jackson, Mich., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Nov. 30, 1966, Ser. No. 597,991
U.S. Cl. 285—253 **1 Claim**
Int. Cl. F16l *33/00*



A split clamp hose fitting including complementary half sections, each having a solid longitudinally extending tongue on one side which mates with a recess on the other to eliminate extrusion of the outer cover of the hose and to provide 360° of radial compression and to thereby improve the sealing characteristics.

3,432,191
SEPARABLE COUPLING
Edwin H. Ludeman, Redbank, N.J., assignor to Andrew Industries Incorporated, Dayton, N.J., a corporation of New Jersey
Filed Oct. 10, 1966, Ser. No. 585,503
U.S. Cl. 285—311 **6 Claims**
Int. Cl. F16l *37/18, 37/00*



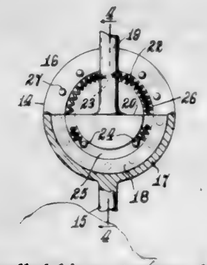
A separable coupling for engaging a tubular adaptor for such purposes as filling underground storage tanks is provided with a contractable, resilient ring which enters into an external circular groove on the adaptor to secure the coupling on the adaptor. The resilient ring is radially contracted by means of a sleeve which reciprocates with respect to the body of the adaptor. The sleeve and the body are provided with co-operative beveled surfaces above and below the ring which surfaces approach each other to radially contract ring. The mechanism for reciprocating the sleeve is enclosed for protection and includes a self-locking toggle mechanism to lock the adaptor in place. A sealing gasket is provided which is compressed against the adaptor as the resilient ring is contracted.

3,432,192
STEEL PIPE TOWER USING STEEL PIPE JOINTS AND METHOD FOR ASSEMBLING THE SAME
Makoto Ito, Kitakyushi, and Kazumoto Yamamoto, Nobeoka, Japan, assignors, by direct and mesne assignments, to Asahi Kasei Kogyo Co., Ltd.
Filed Jan. 27, 1966, Ser. No. 523,359
Claims priority, application Japan, Feb. 5, 1965, 40/5,976, 40/5,977
U.S. Cl. 285—382.2 **9 Claims**
Int. Cl. F16l *13/14;* **E04h** *12/10;* **F16b** *7/00*



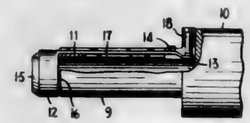
A steel tower having explosively assembled joints and method of assembly thereof. The joints are constructed by placing circumferential and axial grooves on an anvil, sliding a pipe member of the tower onto the anvil, placing explosives on the pipe member of the tower over the location of the grooves, and exploding the explosives. The walls of the pipe member are thereby sunk into the grooves to form a tight joining of pipe member to anvil.

3,432,193
SPRING HINGE STRUCTURE
James G. Oxford, 321 Locust, Elgin, Ill. 60120
Filed Aug. 14, 1967, Ser. No. 660,345
U.S. Cl. 287—100 **5 Claims**
Int. Cl. F16c *11/00;* **B25g** *3/38;* **F16d** *27/00;* **F16m** *13/00*



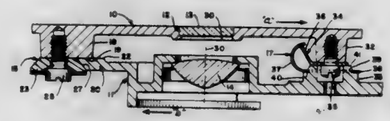
A spring controlled hinge structure for complemental parts such as the support standard for a chair or the like. The structure including a semi-circular body carried at one end of a first standard being pivotally mounted in the hollow of a circular body carried at the end of a second standard with pairs of spring means received in channels in the two bodies biasing the standards into coaxial alignment.

3,432,194
DEVICE FOR ATTACHING A DENTAL HAND TOOL OF THE SLIP JOINT TYPE
Marcel Garnier, Besancon, Doubs, France, assignor to Micro-Mega, Besancon, Doubs, France
Filed Jan. 24, 1967, Ser. No. 611,448
Claims priority, application France, Feb. 7, 1966, 48,649
U.S. Cl. 287—119 **4 Claims**
Int. Cl. F16b *7/00;* **F16d** *1/00;* **F16l** *21/00*



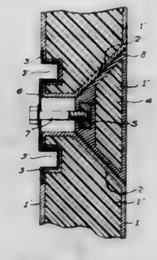
Device for connecting a dental handpiece of the slip joint type in which the slip socket has a longitudinal spring fitting in a groove and has near its extremity a stub adapted to cooperate with an annular groove provided inside the bore of the rear socket of the handpiece to cause an engagement during longitudinal displacement, a button rigid with the socket-slip being able to lower the longitudinal spring in the groove in order to lower the stub in such a way as to permit the disengagement of the handpiece.

3,432,195
RELEASABLE LOCKING LATCH
Earl V. Jackson, Penfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 27, 1966, Ser. No. 553,513
U.S. Cl. 287—189.36 **4 Claims**
Int. Cl. F16b *1/00;* **G02b** *21/06*



An automatically locking spring latch which cooperates with other joining means to lock together two adjacent parts of an apparatus, one part of the apparatus being demountable from the other by use of a spring lock releasing tool.

3,432,196
PROCESS FOR CONSTRUCTING HIGH-INSULATION PANELS, PARTICULARLY SANDWICH PANELS FOR PREFABRICATED FREEZERS, AND PANELS PRODUCED BY THIS PROCESS
Giovanni Marchiorello, Via Nazionale 106, Belvedere di Tezze Sul Brenta, Vicenza, Italy
Filed June 28, 1966, Ser. No. 561,177
Claims priority, application Italy, July 10, 1965, 15,771/65
U.S. Cl. 287—189.36 **7 Claims**
Int. Cl. F16b *1/00, 5/00, 7/00*

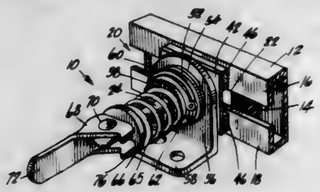


A joint and a method for connecting a plurality of panels to form a planar wall or a cornered wall in which identically constructed panels are utilized to erect either wall, and the geometry of the panel construction, per se, wherein each panel includes a continuous perimetric edge having a flat portion extending at an angle between a pair of opposed panel sides and an adjacent flat portion disposed at substantially right angles to the opposed panel sides.

3,432,197
SLIDER LATCH
Albert W. Albertine, Santa Monica, and John A. Graves, Newport Beach Estates, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed June 30, 1966, Ser. No. 561,886
U.S. Cl. 287—189.36 **3 Claims**
Int. Cl. F16b *1/00, 5/00, 7/00*

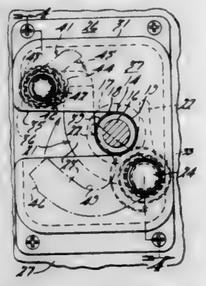
A friction locking apparatus to retain a first member

slidable axially with respect to a second member wherein the locking apparatus is movable along with the first



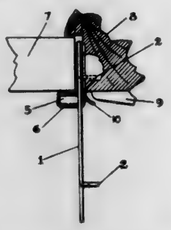
member and operates against the second member through a resilient, non-metallic gripping surface.

3,432,198
LATCH MECHANISM
Robert W. Connor, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 27, 1967, Ser. No. 649,221
U.S. Cl. 292—216 **4 Claims**
Int. Cl. E05c *3/26*



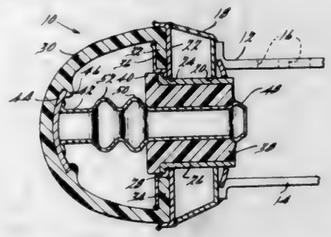
A door latch mechanism having a bifurcated latch element engageable with a keeper device, the latch element being held in latched position by direct engagement with a releasable detent means.

3,432,199
PORTABLE TRAVEL LOCK
John E. Sorrell, 870 S. East St., Anaheim, Calif. 92805
Filed May 22, 1967, Ser. No. 640,120
U.S. Cl. 292—292 **1 Claim**
Int. Cl. E05c *19/18*



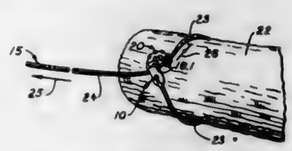
A mechanism for bolt-locking hinged doors consisting of an essentially rectangular flat plate with struck-out center portions in opposite ends bent to form a right angle with the plate and having an inverted-V slot in the plate, positioned centrally between struck-out portions, with a slidable abutment member positioned in the slot and extending at a right angle to the plate, with one of the struck-out portions inserted in the hole in a latch striker-plate when the door is closed and with the slidable abutment member positioned in the slot to abut the door solidly and prevent the door from being opened.

3,432,200
ELASTOMERIC IMPACT ENERGY ABSORBING BUMPER
David W. Barton, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,460
U.S. Cl. 293—71 **9 Claims**
Int. Cl. B60r *19/00;* **B61f** *19/04*



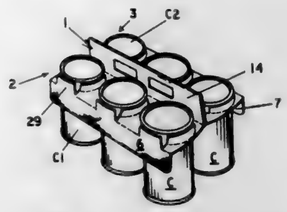
A motor vehicle impact energy absorbing bumper having an outer shell of flexible material that will deform upon impact. Secured to the inner surface of the outer shell for movement therewith is a shaft slidably and snugly received in a resiliently deformable bushing. The shaft has enlarged portions between the bushing and shell that abut and deform the bushing upon displacement of the shaft due to impact forces applied to the shell.

3,432,201
CHOKER HOOK LOCKING CHAIN
William D. Hadley, Minstral Island, British Columbia, Canada
Filed Aug. 28, 1967, Ser. No. 663,712
U.S. Cl. 294—74 **6 Claims**
Int. Cl. B66c *1/12, 1/34*



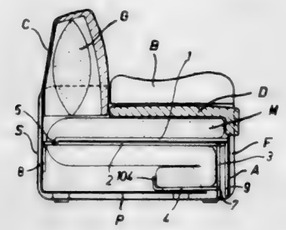
A locking chain for a choker hook. A short length of chain adapted for one end to be secured to the hook, the chain being wound a few turns about a running part of a loop of choker line looped around a load, with the other end of the chain then secured to the hook. The wrapped chain tends to prevent a noose formed when the line is tightened from loosening when the line slacks.

3,432,202
ARTICLE CARRIER FOR FLANGED CONTAINERS
David P. Ebelhardt, Highland Park, Ill., assignor to The Mead Corporation, a corporation of Ohio
Filed Dec. 27, 1966, Ser. No. 605,036
U.S. Cl. 294—87.2 **5 Claims**
Int. Cl. B65d *73/00, 71/00, 75/52*



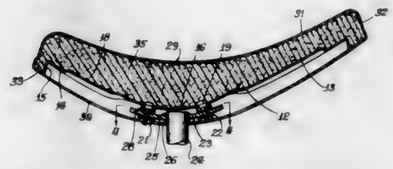
A container carrier with a handle for securing together and carrying a plurality of cans therein the carrier holding elements engage the beads of the cans to support and retain the cans in the carrier.

3,432,203
BED-SOFA
Pompeo Cavalli, 4 Via Don Minzoni, Bologna, Italy
Filed Nov. 8, 1967, Ser. No. 681,502
Claims priority, application Italy, Nov. 8, 1966, 26,801A/66
U.S. Cl. 297—109 **9 Claims**
Int. Cl. A47c *13/00, 17/04*



A piece of furniture having a chair frame with a base, sides and bottom, a folding four part bed frame pivoted to the chair frame and serially pivoted to each other, the first and second bed parts being of the same length to overlie each other while folded, the third bed part being pivoted to said chair frame sides, the fourth bed frame part being disposed to slide on said base during the extending movement, a stop to support the second bed frame part in the collapsed position, and a mattress foldable to an S shape when collapsed on said folding frame.

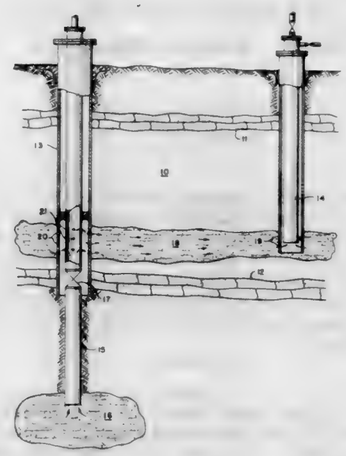
3,432,204
UNICYCLE SADDLE
Frank P. Brilando, Niles, Ill., assignor to Schwinn Bicycle Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 24, 1967, Ser. No. 663,113
U.S. Cl. 297—214 **5 Claims**
Int. Cl. B62j *1/02, 1/08, 1/26*



Unicycle saddle with curved base plate and mounting plate of same curvature welded to seat post and adjustably secured to base plate to facilitate varying longitudinal and angular adjustments of saddle, with latter having laterally flaring front and rear end portions formed by vinyl cover peripherally engaging base plate and padding interposed therebetween by introducing polyurethane foam through an aperture in the base plate.

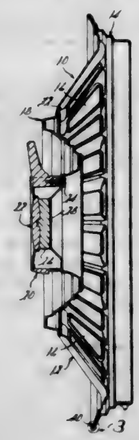
3,432,205
SULFUR STEAM DRIVE
Clarence E. Hottman and Pieter Van Meurs, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,176
U.S. Cl. 299—4 **4 Claims**
Int. Cl. E21c *41/14, 43/00;* **E21b** *43/24*

An improved method of recovering sulfur from underground deposits comprising establishing at least two wells in channel communication with each other, injecting via an injection well a circulating fluid in said channel below the melting point of sulfur and thereafter injecting via an



injection well a circulating hot liquid at 250–350° F. through said communicating channel so as to render the sulfur molten and recovering said sulfur via a production well.

3,432,206
WHEEL COVER
Edward G. Spisak, Wayne, Mich., assignor to Gar Wood Industries, Inc., Ypsilanti, Mich., a corporation of Michigan
Filed Dec. 19, 1966, Ser. No. 602,632
U.S. Cl. 301—37 **1 Claim**
Int. Cl. B60b *7/00;* **B60r** *13/00, 19/00*



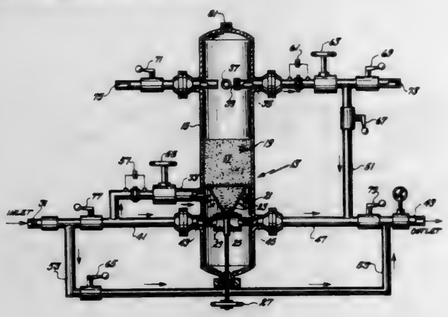
A wheel cover embodying an improved means for securing the various component parts thereof against relative indexing movement. The means for preventing anti-indexing movement comprises a strip of resilient elastomeric material which is interposed and clamped within a U-shaped channel in one cover part and a peripheral edge of another cover part.

3,432,207
WHEEL AND METHOD OF MANUFACTURING THE SAME
Roy C. Holmstrom, Dearborn, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Jan. 25, 1967, Ser. No. 611,635
U.S. Cl. 301—63 6 Claims
Int. Cl. B60b *1/06*; B21h *1/02*; B21k *1/32*



A wheel having a rim spot-welded to a steel wheel body wherein the "spot" welded areas are indented to relieve the stresses created therein during the cooling of the welded metal. The indentations are rectilinear and are disposed in selected locations along one edge of the weld. By this means the welds are more able to withstand the stresses resulting from the flexure of the wheel body relative to the rim.

3,432,208
FLUIDIZED PARTICLE DISPENSER
Jacque A. F. Hill, Lincoln, and James S. Draper, Belmont, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 7, 1967, Ser. No. 681,302
U.S. Cl. 302—53 2 Claims
Int. Cl. B65g *53/40, 53/58*

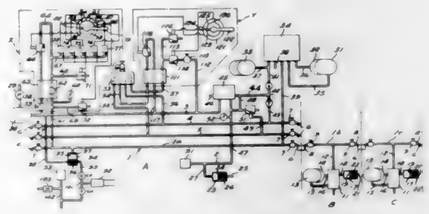


A device for dispersing fluidized micron-size particles in bulk form at a constant weight flow into a high pressure gas flow. A tank containing a bed of particles is provided with a porous cone lower section having an adjustable opening at its apex which is downwardly directed. Pressurized air is introduced from below through the porous cone causing the particle bed to be lifted and fluidized, allowing the minute particles to flow downward through the adjustable opening in the cone and into an entrainment chamber where a moving air stream picks up and delivers the fluidized particles into the high pressure gas flow.

3,432,209
TRANSPORT OF SOLIDS WITH PETROLEUM IN PIPELINES
Paul R. Scott, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 4, 1965, Ser. No. 506,408
U.S. Cl. 302—66 3 Claims
Int. Cl. B65g *53/30*

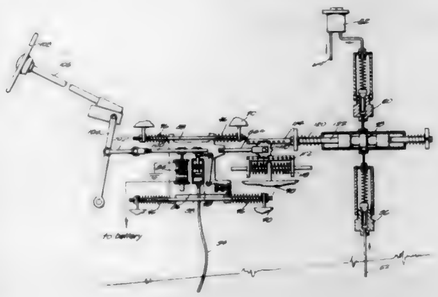
A method of pipeline transporting of slurries of inorganic salts in petroleum without settling-out the salts while in transit by addition to the slurry of a small amount of an anionic sulfonate dispersant and subsequent recovery at the terminal end of the inorganic salts and petroleum into its essentially pure components.

3,432,210
BRAKING SYSTEM
Harold C. Crouch, Cleveland, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,543
U.S. Cl. 303—3 18 Claims
Int. Cl. B60t *13/68, 13/74*



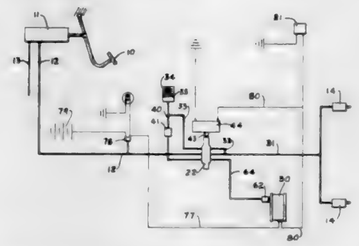
A brake system applicable to a train of vehicles made up of a traction vehicle and at least one vehicle moved by the traction vehicle, which system has braking means on each moved vehicle that operates to apply brakes in response to reduction in pressure of fluid in a brake pipe that extends from the traction vehicle to each moved vehicle, and means, preferably carried by the traction vehicle, for reducing fluid in the brake pipe by any one of several preselected predetermined amounts.

3,432,211
SAFETY AUTOMATIC BRAKE
George A. Sawan, Chtoura, Talabaya, Lebanon
Filed Jan. 26, 1968, Ser. No. 700,790
Claims priority, application Lebanon, Mar. 7, 1967, 2,360
U.S. Cl. 303—18 10 Claims
Int. Cl. B60t *7/16, 8/10*



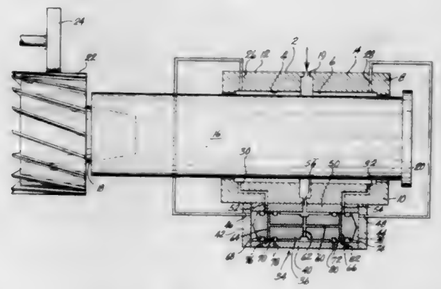
Automatic brake means in which the hydraulic brake pump for the front and rear brakes of an automobile are driven by equalizer actuating means driven from a brake pedal, an impact or thrust responsive electric switch actuable on panic depression of said brake pedal such as during skid conditions of the automobile, a relay solenoid mounted on a clamp frame for actuation by the impact responsive electric switch for clamping the clamp frame to a clamp shaft, the clamp shaft being connected for axial movement to the steering rod, corrective equalizer or differential mechanism responsive to displacement of said clamp shaft, so that when the steering rod is moved and the clamp frame is retained to follow the clamp shaft by energization of said relay solenoid, a slide valve is opened for bleeding hydraulic fluid from the front brake lines back to the fluid reservoir of said brake system.

3,432,212
INERTIA RESPONSIVE NONSKID SYSTEM
Fred C. Stevens, 1 Garrett Place, Bronxville, N.Y. 10708
Filed Jan. 26, 1968, Ser. No. 700,796
U.S. Cl. 303—21 9 Claims
Int. Cl. B60t *8/02, 13/00, 8/12*



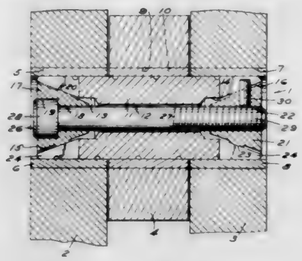
A nonskid braking system for hydraulically operated vehicle brakes including a shaft driven by or with the wheels and carrying an inertia wheel connected by a one way drive so that the wheel is normally driven by the shaft but is free to override the shaft when the latter decelerates. A solenoid operated control valve is connected to supply braking fluid from the master cylinder to the wheel brake cylinders under normal conditions but when the inertia wheel overrides the drive shaft, the control valve is actuated to disconnect the brake cylinders from the master cylinder and to connect them to a receiver which will receive some of the brake fluid therefrom so as to reduce the pressure on the brake cylinders.

3,432,213
SELF-LEVELING AIR BEARING FIXTURE
Clarence R. Adams, Kirkland, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,342
U.S. Cl. 308—5 3 Claims
Int. Cl. F16c *32/00*



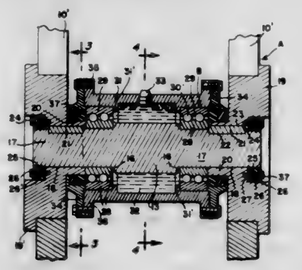
An air bearing for rotatably supporting a shaft while maintaining it in a substantially horizontal position. A pair of pressure sensitive fluid ports communicate with the upper forward and rear portions of the shaft housing, a pair of pressure delivery fluid ports substantially diametrically opposed to the pressure sensitive ports communicate with the lower forward and rear portions of the shaft housing, and a valve assembly communicates with both pairs of ports. The pressure sensitive ports sense pressure variations in the shaft housing caused by tilting of the shaft from its horizontal position, and the valve assembly operates in response to such sensed pressure variations to admit fluid under pressure to the appropriate pressure delivery port to return the shaft to its horizontal position.

3,432,214
MOUNTING PIN ASSEMBLY
Robert Cashman and Anthony Wasco, Jr., Saginaw, Mich., assignors to Saginaw Machine and Tool Company, Saginaw, Mich., a corporation of Michigan
Filed Aug. 15, 1966, Ser. No. 572,541
U.S. Cl. 308—15 5 Claims
Int. Cl. F16c *11/00*; F16b *35/00, 39/00*



An expansible and contractile pivot assembly has a cylindrical, longitudinally bored body having conical recesses at its opposite ends. The body is slotted axially adjacent each of its ends to provide resilient segments or fingers which may be expanded and contracted radially. In each recess is a conical thrust member, each of which is axially bored. The bore of one thrust member is smooth and the bore of the other thrust member is threaded. A bolt having a head at one end interconnects the thrust members, the head seating on the smooth bore thrust member and the other end of the bolt being threaded and in threaded engagement with the bore of the other thrust member. The thrust member in threaded engagement with the bolt carries a radially projecting pin which extends into a slot at the adjacent end of the cylindrical body to prevent relative rotation while permitting relative axial movement of that thrust member and the body. Rotation of the bolt in one direction effects movement of first one and then the other thrust member toward one another to effect expansion of the segments at opposite ends of the body member.

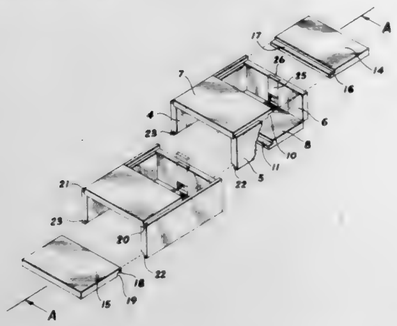
3,432,215
ROLLER BEARING FOR DIGGING WHEEL OF EXCAVATING MACHINERY
Mark O. Seay, Eunice, N. Mex. (Star Rte. A, Box 227, Hobbs, N. Mex. 88240)
Filed Sept. 22, 1966, Ser. No. 581,315
U.S. Cl. 308—187 3 Claims
Int. Cl. F16c *33/78, 33/66*; E02f *3/22*



The disclosure of this invention pertains to a supporting bearing structure for mounting the digging wheel of an excavating machine including an axle having wheels thereon with a lubricant reservoir on the axle between the wheels, anti-friction bearing devices disposed between the

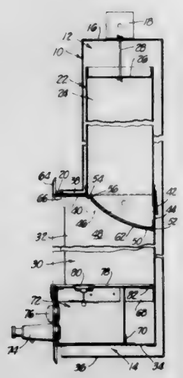
axle and the reservoir and end closure means for the reservoir outwardly of the bearing devices to prevent leakage of lubricant from the reservoir.

3,432,216
SECTIONAL CABINET
Peter Quay Yang, 250 E. 65th St., New York, N.Y. 10021
Filed Feb. 13, 1967, Ser. No. 615,425
U.S. Cl. 312—111 **5 Claims**
Int. Cl. F16b *12/00*



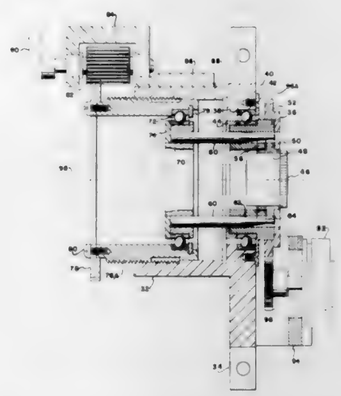
Open-ended sectional cabinet shown assembled, and in exploded views, locking structure is provided preventing separation of the cabinet compartments in the direction of the axis thereof, and also transversely and longitudinally thereof.

3,432,217
RECESSED WASHROOM DISPENSER AND METHOD OF INSTALLING THE SAME
Arnold A. Cowan, Tarzana, Calif., assignor, by mesne assignments, to The Bobrick Corporation, North Hollywood, Calif., a corporation of California
Filed Oct. 17, 1967, Ser. No. 675,904
U.S. Cl. 312—242 **13 Claims**
Int. Cl. A47b *67/02;* **F16b** *12/00*



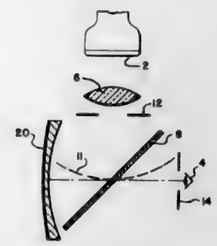
A dispenser rough-in box has an upper towel dispenser casing preassembled movable in an upper part thereof during original fabrication of said box, said upper casing being movably supported in said box by a suspension cord. The box upper part is fully recessed in a wall and a lower part thereof opens forwardly through a wall opening, said box lower part being dimensioned such that said upper dispenser casing cannot be inserted after the box fabrication. A lower soap dispenser casing is inserted in the box lower part after wall mounting of the box, said lower casing including a pivotal dispensing closure for the upper casing and being operably connected to said upper casing by movement of the upper casing on the suspension cord.

3,432,218
HIGH SPEED MECHANICAL VARIABLE AMPLITUDE NUTATING MECHANISM
Raymond H. Loughridge, Kent, and Conrad Trybus, Cuyahoga Falls, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Sept. 30, 1966, Ser. No. 585,708
U.S. Cl. 350—6 **4 Claims**
Int. Cl. G02b *27/18*



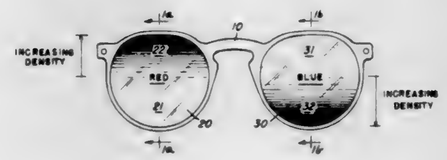
A high speed mechanical nutating device which rotates a lens in the plane of the lens to eliminate distortions of the optical image focused by the lens. The lens is radially offset without disturbing a parallel relationship between the axis of the lens and the optical axis of the system upon rotation of the lens in the plane of the lens about an axis coincident with the optical axis of the system.

3,432,219
WIDE FIELD OPTICAL VIEWER WITH CONCAVE MIRROR EYEPIECE
Martin Shenker, Monsey, and Joseph La Russa, Yonkers, N.Y., and George Thomas Nershi, River Edge, N.J., assignors to Farrand Optical Co., Inc., New York, N.Y., a corporation of New York
Filed Aug. 21, 1962, Ser. No. 218,413
U.S. Cl. 350—29 **8 Claims**
Int. Cl. G02b *17/00, 13/06, 9/00*



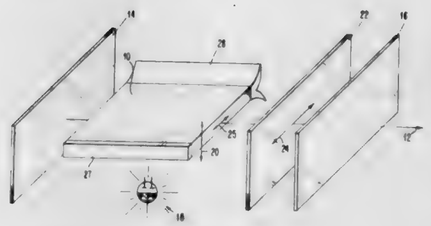
1. An image-forming optical instrument comprising means to define a position for an object, image-forming means having positive power and an axis to form at a surface in space intersected by that axis a rear aerial image of an object on said position-defining means, a partially transparent and partially reflecting mirror disposed obliquely across said axis, the intersection of said axis with said mirror being adjacent to the intersection of said axis with said surface, and a concave mirror having its concave side facing said partially transparent mirror and disposed in one of two positions, the first position for said concave mirror being that in which said concave mirror is intersected by said axis as transmitted through said partially transparent mirror and is distant from said surface by substantially its own focal length, the second position for said concave mirror being that in which said concave mirror is intersected by said axis as reflected in said partially transparent mirror and is distant by substantially its own focal length from the image of said surface in said partially transparent mirror, the negative of the sum obtained by adding the Petzval curvature contributions of said image-forming means to the reciprocal of the radius of curvature of said object lying between one and four times the reciprocal of the radius of curvature of said concave mirror.

3,432,220
DEVICE, VARIABLE-DENSITY STEREOVIEWING SPECTACLES
Gilbert O. Schreiner, Rte. 3, Newburg, Mo. 65550
Filed June 25, 1965, Ser. No. 467,149
U.S. Cl. 350—132 **3 Claims**
Int. Cl. G03b *27/22;* **G02c** *7/10*



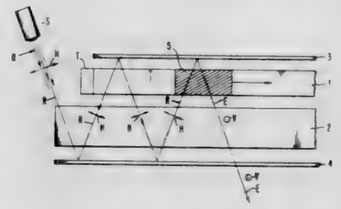
Stereoviewing spectacles equipped with different colored lenses and having light imbalance corrective shading gradually increasing in density in singular opposite directions from a central portion on the respective lenses.

3,432,221
STRESSED LASER SCANNING DEVICE USING LIGHT POLARIZERS
Thomas J. Harris, Poughkeepsie, and Erhard Max, Wappinger Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 5, 1964, Ser. No. 387,728
U.S. Cl. 350—149 **11 Claims**
Int. Cl. G02f *1/24, 1/26, 1/28*



A continuously scanning laser beam is produced by excitatory forces which are applied only to the active laser medium itself. In particular, the laser construction is arranged so that the active medium is rendered sensitive to the polarization angle of its own generated light by interposing a polarized light analyzing means between the active laser medium and at least one of its associated mirrors. The active medium, which is either normally or potentially birefringent, is subjected to a stress wave that is propagated through it at a rate commensurate with the desired scanning speed. Lasing action occurs only in the filamentary portion of the medium which at that instant is being suitably stressed by the applied wave to generate light having a polarization consistent with that of the analyzing means, the position of this filamentary portion shifting with the progress of the wave through the medium.

3,432,222
OPTICAL SCANNING DEVICE
Harold Fleisher, Poughkeepsie, Kurt M. Kosanke, Wappingers Falls, Werner W. Kulcke, Poughkeepsie, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 30, 1964, Ser. No. 400,532
U.S. Cl. 350—149 **14 Claims**
Int. Cl. G02f *1/24, 1/26, 1/28*



A laser beam is caused to execute a scanning movement along a path through which a discrete pulse of scanning excitation is propagated, the displacement of the scanning beam being commensurate with that of the scanning pulse. The path is defined in part by a pair of parallel mirrors or other reflecting surfaces extending lengthwise of the path. The laser beam is directed on a zigzag course along the path between these mirrors, repeatedly crossing and recrossing an elongated body of optically activable material through which the pulse of scanning excitation is being propagated. Wherever the beam encounters a region of the optionally activable material that is being excited by the pulse, the polarization plane of the beam is rotated. A polarization-sensitive means such as a birefringent crystal disposed in the path causes the rotated beam to be deflected so that it escapes one of the mirrors and emerges as an output beam, the position of which shifts with the passage of the scanning pulse along the path.

3,432,223
MODULATOR FOR A LIGHT BEAM
Teiji Uchida, Minato-ku, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 1, 1964, Ser. No. 356,381
Claims priority, application Japan, Apr. 10, 1963, 38/18,890
U.S. Cl. 350—150 **5 Claims**
Int. Cl. G02f *1/26, 1/28, 1/24*

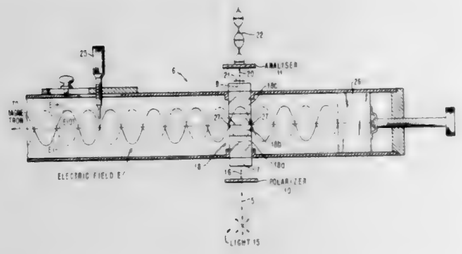
An optical modulator includes a crystal of large electro-optical effect having two parallel surfaces substantially perpendicular to an optical axis, a remote surface including a reflective film acting on light passing through the crystal. Means are included for applying a modulating signal across the crystal to rotate the plane of polarization of an incident light beam. A birefringence

prism is disposed between the light source and crystal for splitting the source beam into two rays directing one



of the beams to the crystal piece and directing the modulated reflected component of that beam along an optical path other than that from the source.

3,432,224
STANDING WAVE ELECTRO-OPTIC LIGHT MODULATOR
Robert A. Myers, New York, N.Y., and Peter S. Pershan, Florham Park, N.J., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 25, 1964, Ser. No. 391,854
U.S. Cl. 350—150 **11 Claims**
Int. Cl. G02f *1/26, 1/24, 1/28*



A light modulating device is provided that includes a resonant cavity containing a standing wave electric field. A relatively thick crystal, consisting of three sections with a center section being rotated with respect to the two end sections, is included in the cavity to change the polarization of light passing through the crystal. Increased depth of modulation is provided by the cumulative change in polarization as the light passes through each of the three crystal sections.

3,432,225
ANTIREFLECTION COATING AND ASSEMBLY HAVING SYNTHESIZED LAYER OF INDEX OF REFRACTION
Frank C. Rock, Santa Rosa, Calif., assignor to Optical Coating Laboratory, Inc., Santa Rosa, Calif., a corporation of California
Filed May 4, 1964, Ser. No. 364,479
U.S. Cl. 350—164 **15 Claims**
Int. Cl. G02b *1/10;* **B29d** *11/00*

Antireflection coating having four layers with the first and second layers being relatively thin and having a combined optical thickness of substantially one-quarter of the design wavelength, the third layer being one-half of the design wavelength and the fourth layer one-quarter of the design wavelength in thickness, the third layer hav-



ing a high index of refraction, the forth layer having a low index of refraction, with the first and second layers synthesizing a layer having a desired index of refraction which is intermediate the indices of refraction of the first and second layers.

3,432,226
PROJECTION OBJECTIVE HAVING LARGE NUMERICAL APERTURE AND HIGH MAGNIFICATION
Thomas S. Bird, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 13, 1966, Ser. No. 564,886
U.S. Cl. 350—214 **5 Claims**
Int. Cl. G02b *9/64*

1. An image forming optical projection system of the reversed telephoto type working at finite conjugates and having a high magnification and numerical aperture of substantially 115× and .33 respectively and a total useful field angle at least as great as 23° along with an excellent high resolution and very flat field over the entire format, said system having a collective front lens group optically aligned with a rear dispersive group, said collective group including:

a plane parallel cover glass lying substantially in contact with an object to be projected and designated I,

a positive meniscus lens member designated II and having a concave surface facing said object and being spaced at an axial distance S_1 therefrom, said member including a double concave lens member designated II*a* which lies in contact with a rear double convex lens member designated II*b*,

a double convex singlet lens member spaced rearwardly therefrom by an axial distance designated S_2, said singlet being designated III,

a double concave compound lens member designated IV spaced rearwardly of lens member III by an axial distance designated S_3, said member IV including a front positive meniscus lens element designated IV*a* which lies in contact with a rear double concave lens element IV*b*,

a positive meniscus lens member designated V having a concave surface facing lens member IV and spaced therefrom by an axial distance designated S_4,

a double convex lens member designated VI spaced rearwardly of lens V at an axial distance designated S_5,

a negative lens member designated VII and having a concave surface facing lens member VI and spaced therefrom at a very large axial distance designated S_6, and

a rearmost double convex singlet lens member designated VIII which is spaced at an axial distance designated S_7 from lens VII and at an axial projection distance of S_8 from the image produced by said system,

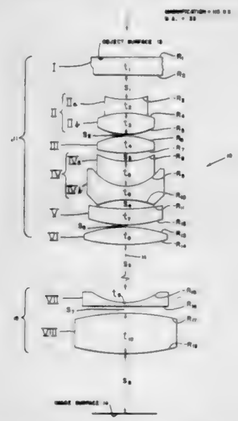
the values of the equivalent focal lengths F_I to F_{VIII} respectively of the successive lens members I to VIII being given substantially in the table herebelow in terms of F which represents the equivalent focal length of said system, wherein the minus (—) sign indicates negative focal length,

$$F_I=\infty$$
$$F_{II}=4.16F$$
$$F_{III}=1.63F$$
$$-F_{IV}=1.25F$$
$$F_V=.81F$$
$$F_{VI}=2.34F$$
$$-F_{VII}=1.99F$$
$$F_{VIII}=5.61F$$

the lens elements II*b*, III, IV*a*, V, VI and VII being made of glass of the same kind having a refractive index absolute value between 1.688 and 1.694, and having an Abbe number absolute value between 51.0 and 58.0.

the numerical difference between the refractive index absolute values for the lens elements II*a* and II*b* being substantially .029; and the numerical difference between the refractive index absolute values for the lens elements IV*a* and IV*b* being substantially .074,

the numerical difference between the Abbe number absolute values for lens elements II*b* and II*a* being substantially 15.5, and the corresponding difference between the Abbe number absolute values for lens elements IV*a* and IV*b* being substantially 18.2,



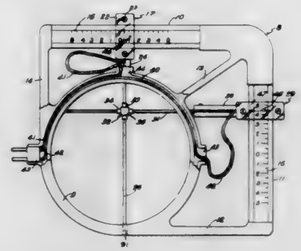
the successive lens members II to VIII having air spaces S_1 to S_8 therebetween rearwardly of cover glass I which have their values stated in terms of F in the table herebelow,

$$3.8F<S_1<5.9F$$
$$.011F<S_2<.034F$$
$$.164F<S_3<.169F$$
$$.189F<S_4<.194F$$
$$.0126F<S_5<.020F$$
$$.3.02F<S_6<3.10F$$
$$.108F<S_7<.121F$$
$$111.0F<S_8<113.0F$$

the optical parts I to VIII having respective axial thicknesses designated t_1 to t_{10} which have values in terms of F as given in the table herebelow,

$$.393F<t_1<.40F$$
$$.284F<t_2<.30F$$
$$.462F<t_3<.477F$$
$$.378F<t_4<.391F$$
$$.535F<t_5<.543F$$
$$.303F<t_6<.311F$$
$$.358F<t_7<.370F$$
$$.417F<t_8<.443F$$
$$.113F<t_9<.139F$$
$$.87F<t_{10}<.917F$$

3,432,227
KERATOMETER WITH ADJUSTABLE FIXATION TARGET ATTACHMENT FOR DETERMINING CORNEAL TOPOGRAPHY
Joseph W. Soper, % Soper Brothers, Inc., 234 Hermann Professional Bldg., Houston, Tex. 77025
Filed Sept. 11, 1962, Ser. No. 222,858
U.S. Cl. 351—13 **4 Claims**
Int. Cl. A61b *3/10*



1. In a device for surveying a human cornea and including a keratometer having

a projecting circular cell member;

a fixed optical target for establishing the visual axis of the cornea;

optical means interconnected with said cell member for establishing an optical axis coincident with said visual axis;

illuminating means for establishing a pair of spaced-apart reference locations on said cornea each spaced a preselected distance from said visual axis; and

measuring means for determining the length of the chordal distance between said two reference locations on the cornea;

the improvement in combination therewith comprising

a support frame for connection with said circular cell member and having an open circular portion to be concentrically positioned about said visual and optical axes;

first and second symmetrical scales mounted on said frame at right angles to each other and spaced from said circular portion,

said symmetrical scales each having a centrally located reference point horizontally and vertically aligned with said visual and optical axes;

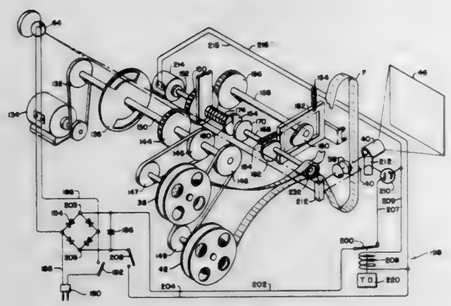
first and second indicator support members slidably mounted on said frame for respective movement along said first and second scales for indicating on a respective one of said scales the position of each of said indicator support members with respect to said optical and visual axes; and

first and second perpendicularly interesting indicator arms fixed respectively to and projecting from said first and second indicator support members to establish a selectively variable fixation point observable within said circular portion of said frame and selectively spaced from said optical axis for decentering said visual axis of the cornea from said optical axis.

3,432,228
STILL-MOTION PHOTOGRAPHIC APPARATUS
Rudolph L. Hellmund, 707 Central Ave., Wilmette, Ill. 60091
Original application Nov. 13, 1963, Ser. No. 323,463, now Patent No. 3,301,628, dated Jan. 31, 1967. Divided and this application Jan. 31, 1967, Ser. No. 635,932
U.S. Cl. 352—169 **6 Claims**
Int. Cl. G03b *21/38*

A motion picture camera which takes "stills" and identifies them by simultaneously exposing a portion of the film margin associated with the film frame and a motion

picture projector having a photosensitive scanner which when it senses one of the exposed portions automatically stops the film movement long enough for viewing of the associated "still" frame. The horizontal and vertical movements of the film claw which intermittently feed the film through the projector in timed sequence to the shutter are effected by separate driving elements driven by the pro-

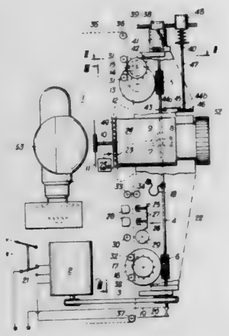


jector motor which also drives the shutter. The scanner operates a clutch so that one of the driving elements of the film claw is interrupted but not the other. The clutch also tensions a spring which introduces a substitute load on the motor when this occurs wherefore since the shutter is continuously operated to reduce the heat factor on the stopped film, changeover noise is minimized.

3,432,229
PROJECTOR FOR SUBSTANDARD FORMAT FILM

Otto Freudenschusz, Vienna, Austria, assignor to Karl Vockenhuber and Raimund Hauser, Vienna, Austria

Filed Aug. 12, 1966, Ser. No. 572,137
Claims priority, application Austria, Aug. 16, 1965, A 7,535/65
U.S. Cl. 352—176 **10 Claims**
Int. Cl. G03b *1/04*

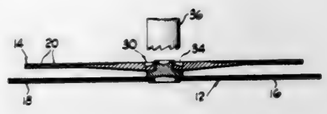


A motion picture apparatus has a feed sprocket and a takeup sprocket connected by a drive shaft having a worm gear on each end for driving one of the sprockets. One worm gear has a lefthand thread and the other worm gear has a righthand thread. The drive shaft may be shifted axially such that the worm gears will rotate the feed sprocket and the takeup sprocket slightly in opposite directions to form film loops on opposite sides of the film gate and intermittent drive mechanism. The sprockets and a portion of the film gate are mounted on a carrier plate which may be pivoted about the drive shaft in order to open the gate.

3,432,230
AUDIO-VISUAL UNIT

Marvin I. Glass, Chicago, and Gunars Licitis, Lombard, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership

Filed June 15, 1966, Ser. No. 558,223
U.S. Cl. 353—120 **6 Claims**
Int. Cl. G03b *31/00, 31/06, 31/04*

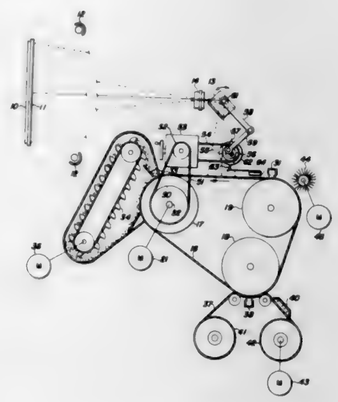


1. An audio-visual unit comprising a substantially plane frame structure having an opening area supporting a photographic transparency, and a sound record mounted on said frame structure for rotation relative thereto, said sound record being of translucent material and extending at least partially over the photographic transparency.

3,432,231
EXPOSURE CONTROL DEVICE

John F. Gardner, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed July 30, 1965, Ser. No. 476,134
U.S. Cl. 355—8 **4 Claims**
Int. Cl. G03g *5/00*

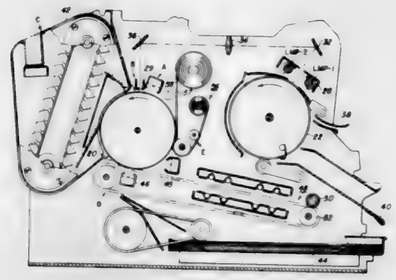


Method and apparatus for creating a full frame image of a stationary original object onto a moving photoreceptive surface including a mirror oscillable in timed synchronous movement with the movement of the photoreceptive surface and a high intensity flash lamp for intermittently illuminating the stationary original object to flash a light pattern image thereof onto the photoreceptive surface.

3,432,232
ILLUMINATION SYSTEM

Edgar M. Tompkins, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 500,145
U.S. Cl. 355—8 **1 Claim**
Int. Cl. H01j *17/22;* **G01d** *15/14*

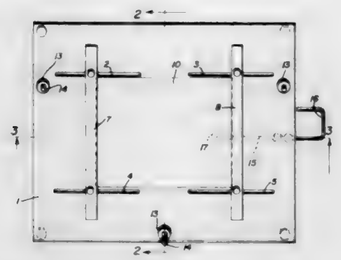


An illumination control system for a xerographic reproducing apparatus wherein a vapor control center within a fluorescent lamp which maintains proper pressure therein is heated by a heating element which maintains the vapor control center at a given temperature when the lamps are de-energized.

3,432,233
OPTICAL PHOTOGRAPHIC PRINTING APPARATUS

Robert C. Kauffman, 342 Windemere Ave., Lansdowne, Pa. 19050

Filed Mar. 11, 1966, Ser. No. 533,600
U.S. Cl. 355—72 **2 Claims**
Int. Cl. G03b *27/58*



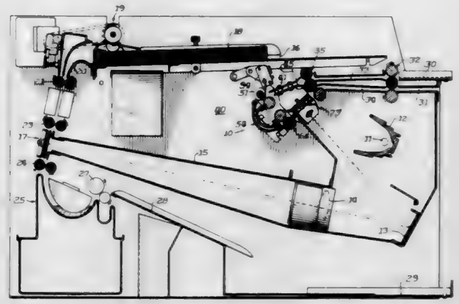
A print holding device for photographic printing having a rectangular flat print receiving member that is adjustable to any angle. Two parallel spaced, permanent magnets are carried on the upper surface of the member together with two freely movable permanent bar magnets so that holders for different sized prints are provided.

3,432,234
DOCUMENT TRANSPORT AND GUIDE FOR OFFICE COPIERS

Edwin S. Johnson, Glenview, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Feb. 7, 1966, Ser. No. 525,476
U.S. Cl. 355—75 **21 Claims**
Int. Cl. G03b *27/32, 41/02*

An original document transport and guide structure including an improved turn-around assembly and a scanning aperture device aligned with the exit side of said turn-around having a superimposed document backup hold down plate floatingly opposing the aperture to guide a moving document in a scanning plane. The document backup hold-down plate has spacer projections to provide a fixed minimum gap for guiding the passage of the document and is gravitationally biased toward the position of minimum spacing. The backup plate is yieldably against the gravitational bias to accommodate thick documents,

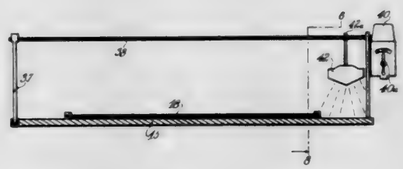


multiple document assemblies, paper splices, staples and the like. Light weight sheets as well as heavy or thick documents are thereby transportable in the device while maintaining the document in the focal plane of the scanning aperture device, without danger of jamming. Both the turn-around and aperture device are of modular construction, gravitationally supported on the frame of the machine and therefore readily removable for cleaning and maintenance.

3,432,235
MEANS FOR TRANSFERRING GRAPHIC MATERIAL

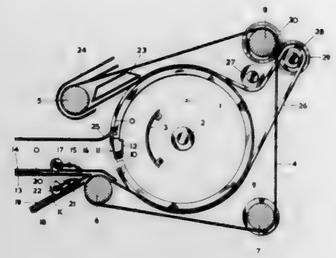
Ernest W. Blandin, 1402 N. Bourland Ave., Peoria, Ill. 61606

Filed Oct. 10, 1966, Ser. No. 585,670
U.S. Cl. 355—84 **1 Claim**
Int. Cl. G03b *27/10*



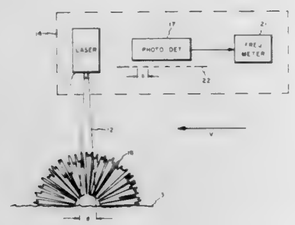
A contact printer for transferring a particular view drawn on a transparent subject sheet to a selected place on a photographically sensitized sheet. A mask having a sight opening exposes the particular view desired and a transparent sheet having an array of divisions thereon is laid upon the mask. The joint movement of the mask and subject sheet registers the sight opening with a division defining the view to be reproduced. The transparent sheet is a grid of thick material with the divisions being outlines scored in the upper surface of the grid, with the outlines being effaced by their distance from the sensitized sheet and the light passing sidewise through the grid in order not to print on the sensitized sheet.

3,432,236
PHOTOPRINTING APPARATUS
Johannes Cornelis Augustinus Vercoulen, Blerick, Netherlands, assignor to Chemische Fabriek L. van der Grinten N.V., Venlo, Netherlands, a corporation of Dutch law
Filed July 21, 1966, Ser. No. 566,801
Claims priority, application Netherlands, July 23, 1965, 6509596
U.S. Cl. 355—109 **5 Claims**
Int. Cl. G03b *27/12*



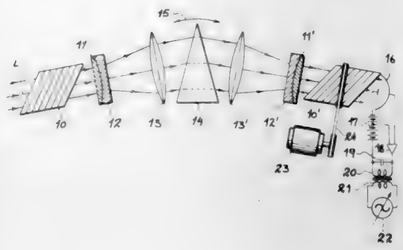
In exposing photoprint materials by laying a light-sensitive sheet upon an original sheet having its leading edge gripped to a rotating exposure cylinder and carrying the sheets together on the surface of the cylinder through an exposure zone while pressing them against said surface by a system of belts wrapped against said surface, the sheet-pressing belts are driven at a speed slightly (0.5 to 3%) higher than the speed of the cylinder surface to avoid detachment of the original from the cylinder.

3,432,237
VELOCITY MEASURING DEVICE
Robert A. Flower, White Plains, Gus Stavis, Briarcliff Manor, and George R. Gamertsfelder, Pleasantville, N.Y., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,146
U.S. Cl. 356—28 **3 Claims**
Int. Cl. G01p *3/36*



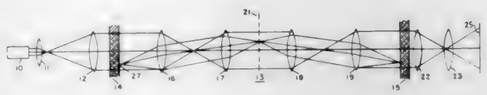
A source of radiation such as a laser directs a substantially monochromatic beam toward a reference surface. The reflected radiation is passed through an optical aperture or a plurality of slits located near the source and received by a photomultiplier tube which has its anode connected to a frequency meter, the output of which is a function of the relative velocity between the radiation source and a reflecting surface. It is also contemplated that other wave sources of limited bandwidth yielding radio waves, sound or light may be used. A pair of such systems having their velocity axes inclined at equal angles on opposite sides of a vehicle may be used with a suitable computer to obtain velocity and drift angle of the vehicle.

3,432,238
SPECTROMETRIC APPARATUS OF HIGH RESOLVING POWER
André Jean Girard, Chatillon-sous-Bagneux, France, assignor to Office National d'Etudes et de Recherches Aerospatiales, Chatillon-sous-Bagneux, France, a corporation of France
Continuation-in-part of application Ser. No. 31,690, May 25, 1960. This application Mar. 4, 1965, Ser. No. 437,102
Claims priority, application France, May 27, 1959, 759,826; June 1, 1959, 786,180; Apr. 20, 1960, 824,819; May 11, 1960, 826,874
U.S. Cl. 356—97 **14 Claims**
Int. Cl. G01j *3/06, 3/14*



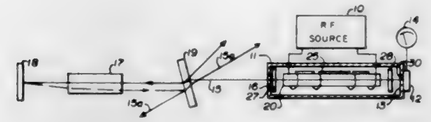
Spectrometric apparatus with input and output gates formed by birefringent or divergently juxtaposed lens pairs giving rise to interference patterns which, when brought to coincidence for monochromatic radiation of predetermined frequency, result in a minimum or maximum transmitted flux; relative rotation or other periodic displacement of the two lens pairs results in an alternating output of maximum amplitude for the critical wavelength.

3,432,239
OPTICAL INSTRUMENTS OF THE INTERFERENCE TYPE
Thomas E. Holland, Sunnyvale, Calif., assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,359
U.S. Cl. 356—112 **16 Claims**
Int. Cl. G01b *9/02;* **H01s** *3/00*



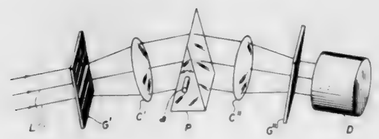
This disclosure depicts multiple pass interferometric apparatus providing enhanced resolution and sensitivity. In each of the disclosed embodiments, telescopic optical imaging means are provided within a Fabry-Perot resonant cavity fed from an externally located source of highly coherent quasi-monochromatic radiation, the imaging systems each being adapted to image each of the cavity end reflectors upon the other reflector. Embodiments are shown in which the imaging system within the cavity is arranged such that point-by-point optical perturbations of the multiply reflected wavefronts caused by an object under study appear at the output of the interferometer. A Schlieren embodiment is depicted.

3,432,240
LASER OPTICAL ALIGNING METHOD AND APPARATUS
William L. Jackson, Hayward, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 28, 1966, Ser. No. 538,916
U.S. Cl. 356—152 **4 Claims**
Int. Cl. G01b *11/26*



Apparatus for aligning optical laser systems to obtain optimum light amplification from said systems whereby a maximum of coherent light is utilized and there is no necessity for visual approximation to be made by an operator. An electrical current is generated in response to an optimum alignment of said systems.

3,432,241
RADIATION GATE FOR SPECTROMETRIC APPARATUS
André Jean Girard, Chatillon-sous-Bagneux, France, assignor to Office of National d'Etudes et de Recherches Aerospatiales, Chatillon-sous-Bagneux, France, a corporation of France
Continuation-in-part of application Ser. No. 31,690, May 25, 1960. This application Mar. 4, 1965, Ser. No. 437,088
U.S. Cl. 356—99 **25 Claims**
Int. Cl. G01j *3/14*

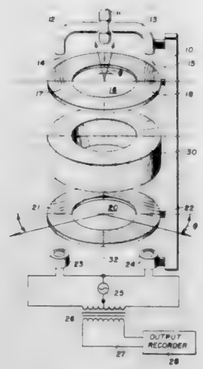


Radiation gate for spectrometric apparatus of the type wherein two such gates are disposed on opposite sides of a prism to project the image of the input gate upon the output gate in exactly registering relationship in the presence of monochromatic radiation of predetermined frequency; the device includes one or more rows of alternately transmissive (i.e. transparent or reflecting) and nontransmissive (i.e. opaque or nonreflecting) zones whose widths in the direction of succession vary progressively according to a generally hyperbolic law.

3,432,242
HIGH RESOLUTION OPTICAL PICK-OFF
Donald Luther Ensley, Hurst, Tex., assignor, by direct and mesne assignments, to Harvest Queen Mill & Elevator Company, Dallas, Tex., a corporation of Texas
Filed July 29, 1963, Ser. No. 298,375
U.S. Cl. 356—116 **5 Claims**
Int. Cl. G02f *1/18;* **H01j** *39/12*

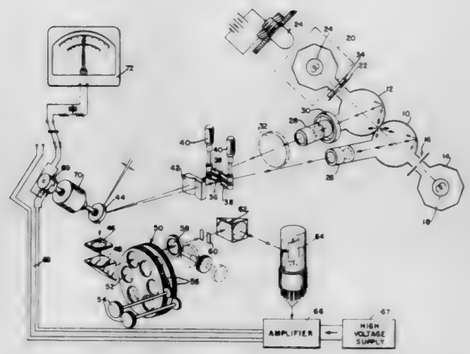
1. Means for measurement of relative rotation between two bodies wherein a polarized light source and a polarized light detector are spaced apart on a first body at a predetermined distance from the axis of rotation of a second body, the combination which comprises:

(a) an optically active ring of alternate sections of dextrorotatory material and laevorotatory material having a plurality of radial boundaries which lie in planes passing through the length of said ring and are tilted at acute angles with respect to a line extending between said source and said detector, and



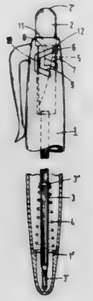
(b) means for supporting said ring on said second body for rotary movement about the axis through the path of the light beam whereby said light beam traverses different lengths of dextrorotatory and laevorotatory material to vary the light reaching said detector.

3,432,243
RATIO SPECTRORADIOMETER
George K. C. Hardesty, Box 156, Mayo, Md. 21106
Filed Oct. 10, 1963, Ser. No. 315,412
U.S. Cl. 356—176 **13 Claims**
Int. Cl. G01j *3/50;* **G01n** *21/22*



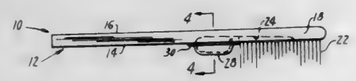
The disclosure depicts a ratio spectroradiometer which is especially adapted to compare the light from two separate sources. The device consists of at least two integrating spheres, for reference and sample source respectively, which provide diffuse illumination without interaction between the two sources to a comparison colorimeter.

3,432,244
WRITING INSTRUMENT
Helmut Karl Bross, Weichselgartenstrasse 40, Altenberg, near Nuremberg, Germany
Filed Aug. 1, 1966, Ser. No. 569,426
Claims priority, application Germany, Aug. 2, 1965, B 83,108
U.S. Cl. 401—113 **12 Claims**
Int. Cl. B43k *7/12*



A retractable writing instrument including a writing element movable in a casing and a control mechanism for controlling the position and movement of the element in accordance with the relationship between a cam and a plurality of guide edges which are inclined with respect to the longitudinal axis of the casing and which are positioned to control forward and retracted stop positions for the cam and to determine the path of cam movement in both directions between such stop positions.

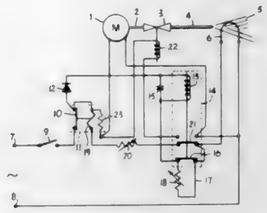
3,432,245
TOOTHBRUSH WITH DENTIFRICE HOLDER
Virginia Z. Hudson, 598 East Ave., Chico, Calif. 95926
Filed June 16, 1966, Ser. No. 558,044
U.S. Cl. 401—132 **1 Claim**
Int. Cl. A46 *11/00*



A toothbrush having bristles projecting laterally from a face formed thereon adjacent an end thereof, an elongated slot opening into said face and having its sides bounded by said bristles, a cap extending across an inner end portion of said slot and cooperating therewith to form a dentifrice receiving compartment, said cap having an end extending into said slot and weakened to rupture upon the application of pressure on said cap to cause said dentrifrice to be extruded therefrom into the outer end of said slot and, subsequently, onto said bristles.

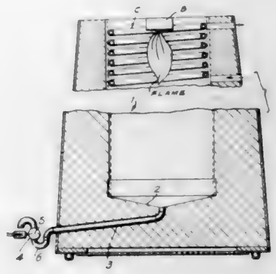
3,432,246
ELECTRICAL FLAME IGNITION AND SUPERVISING APPARATUS
Knud Julius Hallgreen, Langeso, near Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Mar. 2, 1967, Ser. No. 620,038
Claims priority, application Germany, Mar. 5, 1966, D 49,515
U.S. Cl. 431—27 **4 Claims**
Int. Cl. F23n *5/08*

Flame ignition and supervisory apparatus for use in conjunction with a burner and a source of fuel to the burner provided with an electrical ignition element for igniting fuel discharged from the burner and monitoring the existence of a flame at the burner once the burner is ignited. Ignition control and supervisory circuitry are connected to the element to electrically energize it and render it incandescent and continually electrically energize



it while flame continues to burn at the burner. The burner is disposed to monitor the flame and the control and supervisory circuitry controls an electromagnetically actuated valve controlling application of the fuel to the burner upon energization of the element and discontinuing supply of fuel to the burner when the element is deenergized in response to the absence of a flame.

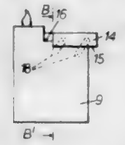
3,432,247
BOILER FOR HEATING COMBUSTIBLE FLUIDS
Wolfgang Sander, Heidelberg, Germany, assignor to Konus-Kessel Gesellschaft fur Warmetechnik m.b.H. & Co. K.G., Hockenheim, Germany
Filed June 13, 1967, Ser. No. 645,756
Claims priority, application Germany, June 13, 1966, K 59,640
U.S. Cl. 431—117 **5 Claims**
Int. Cl. F23d *5/12*; **B05b** *1/28*



A boiler for heating combustible fluids comprising a burner and a closed housing with a bottom which slopes downwardly toward a drain pipe provided with closure means which is closed during operation of the burner to prevent escape of gases and which is open when the burner is at rest to permit draining of accumulated fluid.

3,432,248
CIGARETTE LIGHTERS
William Retzler, Wickham, England, assignor to Colibri Lighters Limited, a British company
Filed Aug. 7, 1967, Ser. No. 658,820
Claims priority, application Great Britain, Sept. 8, 1966, 40,221/66
U.S. Cl. 431—149 **2 Claims**
Int. Cl. F23q *2/00*; **B65d** *43/14, 51/00*

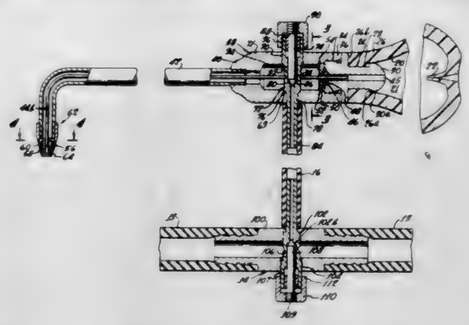
The invention is concerned with a cigarette lighter having an actuating member with a skirt which overlies and is flush with part of the lighter shell, the overlying part of the skirt and shell tapering in a direction away from the burner so that when the actuating member is



depressed and moves downwards away from the burner the skirt rides off the top and down over the sides of the shell.

3,432,249
HAND HELD GAS-BURNING DENTAL TOOL
Kenneth Helvoigt, 1325 Mariner Drive, Newport Beach, Calif. 92660
Filed June 9, 1967, Ser. No. 645,043
U.S. Cl. 431—252 **6 Claims**
Int. Cl. F23d *13/24*

A hand-held burner includes a squeeze bulb for supplying supplementary air through a relatively small diameter tube to the burner nozzle. A casing and an outer tube which leads from the casing surround the air tube. Gaseous fuel admitted into the casing by means of an adjustable valve is directed out the end of the large diameter tube where it mixes with air and burns. Air from the squeeze bulb hastens combustion to produce a hotter flame when desired.



CHEMICAL

3,432,250
CHEMICAL PROCESS FOR TREATING POLYMERS WITH ACIDS
Robert Miller, Columbia, S.C., and Milton Farber, Verona, and Frederick C. Loveless, Oakland, N.J., assignors to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Continuation-in-part of applications Ser. No. 177,720, Mar. 6, 1962, and Ser. No. 290,291, June 25, 1963. This application Mar. 16, 1964, Ser. No. 352,317
U.S. Cl. 8—29 **18 Claims**
Int. Cl. D06p *3/66, 3/20*; **C09b** *65/00*

The present invention relates to a shaped article of commerce comprising a composition of an intralinear polyester high polymer, between about 0.5 and 10% of a highly polar basic nitrogen containing polymer and the products of interaction of said basic nitrogen containing polymer with an acidic reagent capable of reacting with said basic polymer, the acidic reagent having been infused into the polyester after shaping.

3,432,251
PROCESS OF REMOVING DYESTUFF FROM FOAM BACKING
Sallie A. Fisher, Berwyn, Pa., assignor of three-fourths to Robinette Research Laboratories, Inc., Berwyn, and one-fourth to Techniservice Corporation, Lester, Pa., both corporations of Pennsylvania
No Drawing. Filed June 23, 1965, Ser. No. 466,427
U.S. Cl. 8—102 **11 Claims**
Int. Cl. D06l *3/00*

The treatment of dyed solid foam-backed textile material, such as carpeting, particularly selective removal of dyestuff from the foam backing thereof without significantly affecting the dyeing of the textile component, such as carpet yarn.

3,432,252
METHOD FOR PRODUCING RESILIENT COTTON FABRICS THROUGH PARTIAL ESTERIFICATION
John B. McKelvey, Ruth R. Benerito, and Ralph J. Berni, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Nov. 23, 1965, Ser. No. 509,410
U.S. Cl. 8—120 **8 Claims**
Int. Cl. D06m *13/00, 1/00*; **C07d** *51/18*

1. A method for increasing the resiliency and elongation of cellulosic textile materials by partial esterification without crosslinking the anhydroglucose molecules comprising the following steps in sequence:
(a) thoroughly drying the cellulosis material,
(b) charging to a reaction vessel an aprotic solvent of high dielectric constant and an acyl halide, said acyl halide being prepared from at least one member of the group consisting of alkanoic and alkenoic monobasic acids and containing from about 8 to 22 carbon atoms in the acyl chain,
(c) bringing the solvent and the acyl halide to reaction temperature,
(d) in a separate container bringing a tertiary aromatic amine to reaction temperature,
(e) adding the amine to the solvent solution of the acyl halide to form a reaction solution;
(f) immersing the dried cellulosic material into the reaction solution;
(g) maintaining a period of dwell at a temperature of 25° to 105° for 8 hrs. to 5 minutes;
(h) removing tertiary aromatic amine salts from the treated fabric by soaking the fabric at least three times in fresh pyridine;
(i) removing the solution of reactants by steeping the fabric three times in fresh boiling methanol;
(j) thoroughly washing the treated fabric in cold running water for at least 30 minutes;
(k) drying and equilibrating the treated cellulosic material; and
(l) determining the degree of substitution of the dried and equilibrated fabric.

3,432,253
FABRIC CLEANING PROCESS
Peter Ray Dixon, 334 N. Greenleaf, Whittier, Calif. 90601, and Alden D. Coppock, 15940 E. Annellen, Hacienda Heights, Calif. 91745
No Drawing. Filed Apr. 27, 1966, Ser. No. 545,544
U.S. Cl. 8—142 **2 Claims**
Int. Cl. D06l *1/02*; **D06f** *43/00*

A dry cleaning process which involves placing in an air impermeable bag a fabric to be cleaned and a quantity of substantially dry cleaning agent, sealing the bag to confine therein the fabric, the cleaning agent and a quan-

tity of cushioning air, tumbling the bag to cause the cleaning agent to clean the fabric, removing the cleaned fabric from the bag, and removing the cleaning agent from the fabric.

3,432,254

CORROSION PREVENTION

Adrian J. MacNab, San Francisco, and Richard S. Treseder, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,729

U.S. Cl. 21—2.5 **6 Claims**
Int. Cl. C23f *15/00*

The corrosion of metals containing substantial amounts of nickel by molten mixtures of antimony halide and aluminum halide is significantly reduced by the addition of a small amount of aluminum metal to the molten mixture with the additional advantage that the catalytic properties of the molten mixture is enhanced by the addition of aluminum.

3,432,255

HYDROCHLORINATION PROCESS FOR RECOVERY OF METAL VALUES

Ray S. Long, Concord, and Elmer C. Tveter, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 237,739, Nov. 14, 1962. This application Feb. 3, 1966, Ser. No. 524,823

U.S. Cl. 23—16 **6 Claims**
Int. Cl. C01g *1/06, 39/00, 29/00*

The present invention relates to a novel hydrochlorination process for winning molybdenum, tin, antimony, bismuth and like metal values from their ores and minerals. In the present process, a metal value containing source material, containing one or more of molybdenum, tin, antimony, bismuth and the like metal values, the chloride compounds of which readily are volatizable, is contacted with hydrogen chloride and an oxidizing gas at a temperature sufficiently high that the metal values are converted to volatile chloride compounds and removed from the reaction zone while simultaneously assuring that impurity metal values remain as a solid residue of oxides which are substantially non-volatile under the process temperatures.

3,432,256

PRODUCTION OF STANNOUS FLUOBORATE

Harold Paul Wilson, Sewickley, Pa., assignor to Vulcan Materials Company, Clark, N.J., a corporation of New Jersey

Filed May 3, 1966, Ser. No. 547,286

U.S. Cl. 23—59 **12 Claims**
Int. Cl. C01g *19/04;* **C01b** *35/00*

Stannous fluoborate is made by contacting an aqueous tin fluoborate solution which includes stannic fluoborate at a temperature between about 60° C. and the boiling point of the solution in the substantial absence of oxygen with an excess of metallic tin which is in a form having a specific surface area of at least 0.4 $cm.^2$/gram, whereby the tetravalent tin in the solution is reduced to divalent tin. The initial aqueous tin fluoborate solution may be made by first contacting aqueous fluoboric acid with an excess of metallic tin while passing an oxygen-containing fluid such as air through the aqueous acid.

3,432,257

USE OF SULFONIUM SALTS IN LIQUID/LIQUID METAL EXTRACTION

Ernst L. Th. M. Spitzer, and Johannes Radder, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,619
Claims priority, application Netherlands, Jan. 18, 1966, 6600609

U.S. Cl. 23—87 **8 Claims**
Int. Cl. C01b *9/00*

Iron, cobalt and copper are extracted from aqueous acidic halide-ion containing solutions of their salts (preferably HCl solutions) with an oleophilic sulfonium salt (e.g., di-n-octyl methyl or di-n-dodecyl methyl sulfonium chloride) dissolved in a liquid water-immiscible organic solvent for the sulfonium salt, particularly chlorohydrocarbons and chlorinated ethers, followed by recovering the metal values from the separated extract, as by hydrolysis and water extraction.

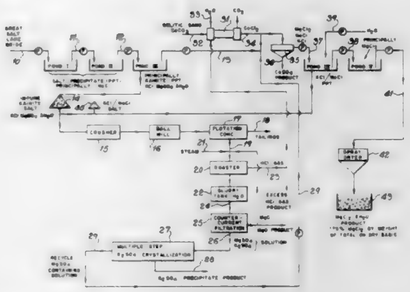
3,432,258

SELECTIVE RECOVERY OF SALTS FROM MIXED SALT SOLUTIONS

Lockwood W. Ferris, Salt Lake City, Utah, assignor, by mesne assignments, to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 2, 1964, Ser. No. 400,994

U.S. Cl. 23—91 **10 Claims**
Int. Cl. C01f *5/30;* **C01d** *5/06*



Methods for selectively recovering magnesium values and for additionally recovering potassium values from aqueous salt solutions containing chlorides and sulfates of sodium, potassium and magnesium, comprising: concentrating such solutions in one or more stages to precipitate predominantly sodium chloride salts, separated out, and the mother liquor further concentrated to precipitate the double salts kainite or picromerite, dependent on the temperature of concentration. For recovery of magnesium values, the mother liquor from the double salt precipitation is separated and desulfated with calcium chloride to produce a magnesium chloride enriched solution which on further concentration precipitates the salt carnallite, separated out and treated with water to dissolve magnesium chloride values, combined with the mother liquor and the latter concentrated to dryness to yield a predominantly magnesium chloride hydrate. For additional recovery of potassium values, the double salt, if picromerite is converted to kainite, and the kainite whether obtained by such conversion or by direct precipitation, is purified by flotation and roasted in the presence of steam at about 1250° F. to produce a calcinate containing potassium sulfate and magnesium oxide with evolution of HCl gas. The calcinate is water slurried to dissolve the potassium values, the magnesium oxide precipitate is separated, and the resulting solution concentrated to precipitate potassium sulfate. The evolved HCl gas is reacted with calcium carbonate to produce calcium chloride for the above-mentioned desulfation treatment.

3,432,259

MANUFACTURE OF SODIUM METAPHOSPHATE

Robert Harry Edwards, Whitehaven, and Gordon McLaren Biggar, St. Bees, England, assignors to Electric Reduction Company of Canada Ltd., Toronto, Ontario, Canada, a corporation of Canada

No Drawing. Filed July 12, 1965, Ser. No. 471,468
Claims priority, application Great Britain, July 14, 1964, 28,921/64

U.S. Cl. 23—106 **9 Claims**
Int. Cl. C01b *25/30*

A process for producing water soluble phosphates of sodium by reacting a mixture of sodium chloride and wet process phosphoric acid having an Na:P ratio of substantially 1:1 on a moving bed of sodium metaphosphate particles at a temperature of between 400° and 530° C., to produce a mixture of soluble and insoluble sodium condensed phosphates. This mixture of phosphates is treated to convert the insoluble sodium phosphates to soluble phosphates. These soluble phosphates are then dissolved in water and insoluble residues are separated therefrom.

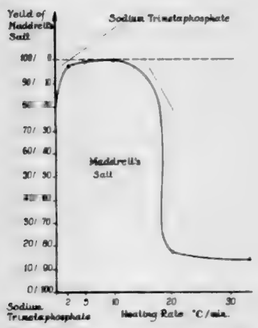
3,432,260

PROCESS FOR THE MANUFACTURE OF SODIUM TRIPOLYPHOSPHATE

Winfried Kern, Hurth, near Cologne, and Gero Heymer, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Dec. 29, 1967, Ser. No. 694,626
Claims priority, application Germany, Jan. 2, 1967, K 61,071

U.S. Cl. 23—106 **3 Claims**
Int. Cl. C01b *25/30*



Production of water-insoluble sodium tripolyphosphate, so-called Maddrell's salt, by thermal treatment of monobasic sodium phosphate comprising the steps of heating the monobasic sodium phosphate, after a short heating-up period to 150° C., at a constant rate between about 2 and 20 centigrade degrees per minute to a temperature of about 450° C., maintaining the hot material at that temperature for a period of time equal to about ⅓ of the time needed to reach that 450° C. temperature, and continuously removing resulting steam.

3,432,261

WATER-SOLUBLE POLYPHOSPHATE AND METHOD OF PREPARATION

George Ewart and John Stewart Raitt, Edinburgh, Scotland, assignors to Scottish Agricultural Industries Limited, Edinburgh, Scotland

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,675
Claims priority, application Great Britain, Mar. 25, 1965, 12,755/65

U.S. Cl. 23—107 **9 Claims**
Int. Cl. C01b *25/28;* **C02b** *5/00*

A novel water-soluble chain polymer polyphosphate having a high calcium sequestering power and suitable as a water softening agent is made by treating normally water-insoluble potassium metaphosphate with a boiling aqueous solution of a water-soluble salt, such as the chloride or nitrate, of ammonium, amine or alkali metal other than potassium, and subsequently precipitating the polyphosphate.

3,432,262

METHOD FOR THE PRODUCTION OF AMORPHOUS CADMIUM SULPHIDE

Leonard E. Ravich, Brookline, Mass., assignor to White Consolidated Industries, Inc., a corporation of Delaware

Application July 8, 1959, Ser. No. 825,801, now Patent No. 3,162,556, dated Dec. 22, 1964, which is a division of application Ser. No. 329,973, Jan. 7, 1953. Divided and this application Sept. 16, 1964, Ser. No. 412,271

U.S. Cl. 23—134 **1 Claim**
Int. Cl. C01g *11/00;* **C01b** *17/22*

A method of producing chemically pure cadmium sulphide wherein an aqueous solution of sodium thiosulphate containing cadmium sulfate is heated and maintained at its boiling point while maintaining the solution substantially neutral until a precipitate of cadmium sulphide and sulphur is formed, and wherein the sulphur is then separated from the cadmium sulphide. In another method a pure cadmium sulphide crystal is produced by vaporizing chemically pure cadmium sulphide without decomposition thereof and by effecting condensation of the thusly produced vapor upon a preformed cadmium sulphide seed at a temperature sufficiently high to produce crystalline growth. In a further method a monocrystalline electrical circuit component is produced by casting a preformed elongated crystal in a non-conductive base material and by cutting the assembly thus formed to predetermined lengths in planes generally transversely of the longitudinal axis of the crystal. In another method substantially identical radiation sensitive cells are produced by forming upon a relatively large plate like carrier a crystallitic deposit of uniform density by coating such deposit with a protective plastic layer, and by dividing such carrier into segments of substantially equal size.

3,432,263

HIGH PRESSURE SULFURIC ACID PROCESS

Ernest O. Ohsol, Wilmington, Del., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 28, 1966, Ser. No. 544,339

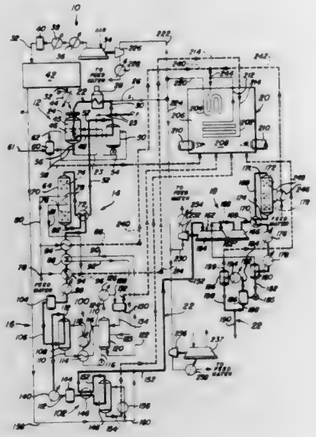
U.S. Cl. 23—168 **13 Claims**
Int. Cl. C01b *17/78*

A high pressure sulfuric acid process is provided, in which process air for sulfur combustion to sulfur dioxide is initially compressed, to provide a high pressure process gas which flows through the catalytic system and sulfur trioxide absorption at high pressure, with subsequent expansion of the residual gas through a power recovery turbine. The process includes multi-stage catalytic conversion at elevated pressure, with intermediate absorption of sulfur trioxide by scrubbing of the partially converted gas with concentrated sulfuric acid. The acid scrubbing solution also absorbs sulfur dioxide, which is removed from the product acid portion by stripping with air at elevated pressure. The resulting air stream containing desorbed sulfur dioxide values is added to the residual main process gas after the intermediate scrubbing step, and the combined gas stream is passed to further catalysis and final sulfur trioxide adsorption, followed by expansion of the residual gas through the power recovery turbine.

3,432,264
SULFURIC ACID PROCESS
Louis E. Bostwick, Forest Hills, and Bernard G. Mandelik, Armonk, N.Y., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 30, 1965, Ser. No. 476,001
U.S. Cl. 23—168 8 Claims
Int. Cl. C01b *17/76, 17/74, 17/72*

The present invention concerns an improved process for the manufacture of sulfuric acid wherein dynamic gas-liquid contacting means, for example, venturi tube gas-liquid contactors, are used in place of conventional packed towers to contact moist process air with concentrated sulfuric acid to dry the air and are preferably also used in place of conventional packed towers to contact sulfur trioxide with sulfuric acid to form additional sulfuric acid.

3,432,265
AMMONIA PRODUCTION PROCESS
Robert A. McCallister, Mountain Lakes, N.J., and Alan M. Sinclair, Milan, Italy, assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Apr. 13, 1967, Ser. No. 630,666
U.S. Cl. 23—197 8 Claims
Int. Cl. C01c *1/04*; C01b *2/30*



The partial oxidation of a carbonaceous fuel for the synthesis of ammonia in which a waste heat vapor generator is provided for introducing steam into the process. Heat is recovered by reheating steam from the process and returning the process gases to the vapor generator for combustion.

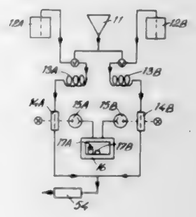
3,432,266
PROCESS FOR THE PRODUCTION OF CARBON OXYSULPHIDE
Robert Garlet and Louis Grandet, Toulouse, France, assignors to Office National Industriel de l'Azote, Toulouse, France
No Drawing. Filed May 27, 1965, Ser. No. 459,432
Claims priority, application France, May 27, 1964, 4,979
U.S. Cl. 23—203 5 Claims
Int. Cl. C01b *31/26*

Carbon oxysulfide (COS) is produced with high efficiency at relatively low temperatures (200° to 500° C.) by reacting carbon dioxide and carbon disulfide with the aid of a contact mass consisting essentially of magnesia having a density of about 2.0 to 2.5, in the absence or presence of catalytic vanadium oxide or thorium oxide for further accelerating the reaction rate, and separating unreacted CS_2 from the resultant COS. Cyclic operation and methods of preparing and regenerating the contact mass are also disclosed.

3,432,267
REGENERATION OF ANTHRAQUINONE WORKING SOLUTION USED IN THE PRODUCTION OF HYDROGEN PEROXIDE
Nathan Dean Lee, Lambertville, and Nelson Norman Schwartz, Trenton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 26, 1967, Ser. No. 641,458
U.S. Cl. 23—207 8 Claims
Int. Cl. C01b *15/02*

A degraded anthraquinone working solution (made up of an anthraquinone working compound dissolved in one or more solvents) used in the production of hydrogen peroxide is regenerated by treating it with ozone, extracting the resulting solution with an aqueous caustic solution, separating the aqueous caustic extract from the remaining working solution and contacting said solution with either activated alumina or activated magnesia.

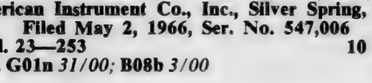
3,432,268
METHOD AND APPARATUS FOR TESTING CELL SUSPENSIONS
Peter Unger, 57 Skeppargatan, Stockholm, Sweden
Filed Aug. 12, 1965, Ser. No. 479,186
Claims priority, application Sweden, Aug. 28, 1964, 10,401/64
U.S. Cl. 23—230 6 Claims
Int. Cl. G01n *33/16*



A method and an apparatus for testing a suspension of agglutinable cells, particularly for blood grouping and antibody titration, in which a stream of the suspension is continuously mixed with a reagent and the ability of the resulting stream of the suspension and the reagent to transmit light is continuously measured in such a manner that fluctuations in the light transmission caused by individual cell agglutinates in the resulting stream are detected.

3,432,269
SPECIFIC FLUOROMETRIC DETECTION METHOD FOR CYANIDE
George G. Guilbault, Harford County, and David N. Kramer, Baltimore County, Md., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Apr. 7, 1966, Ser. No. 541,022
U.S. Cl. 23—230 9 Claims
Int. Cl. G01n *31/22*

1. A specific fluorometric method for the detection of sub-microgram quantities of cyanide which comprises:
(a) adding an unknown solution contained in a phosphate buffer and having a pH of 6.5 to 7.5 and a concentration up to 0.1 M to a solution of a reagent selected from the group consisting of p-benzoquinone, N-chloro-p-benzoquinoneimine, 2,5-dichloro-4-benzoquinone and a substituted quinone monoxime represented by the formula:

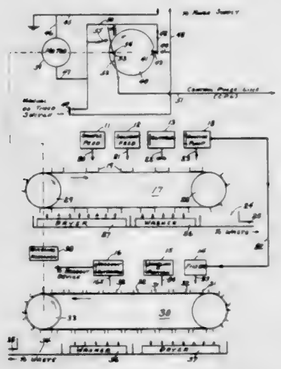


R is selected from the group consisting of H or CH_3, and R' is selected from the group consisting of CH_3, H, NO_2, OCH_3, and bromine
and a solvent taken from the group consisting of dimethylformamide and dimethylsulfoxide.
(b) registering the developed green fluorescent solution at excitation and emission wavelengths of 400 to 500 mu, respectively,
(c) recording the calibration plots of fluorescence readings versus cyanide concentration whereby the unknown concentration of cyanide may be determined.

3,432,270
METHOD FOR DETERMINING NITRITE CONCENTRATION IN ACIDIC ACCELERATED PHOSPHATING SOLUTIONS
Ferdinand P. Heller, Philadelphia, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
No Drawing. Filed July 25, 1966, Ser. No. 567,405
U.S. Cl. 23—230 2 Claims
Int. Cl. G01n *33/00*

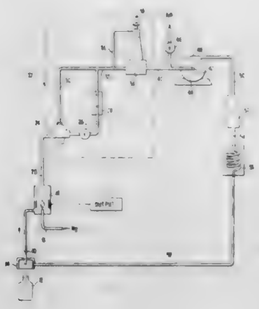
This invention relates to the art of producing phosphate coatings on metal surfaces by means of acidic accelerated phosphating solutions containing at least a nitrite as an accelerating agent. The invention is particularly concerned with methods for determining the concentration of such nitrite in phosphating solutions. The invention finds its principal utility in the operation of phosphate coating solutions containing both chlorate and nitrite, although it is also useful with phosphate coating solutions containing nitrite and nitrate, and with solutions containing nitrite alone as the principal accelerating agent.

3,432,271
AUTOMATIC ANALYTICAL APPARATUS
Joseph C. Wasilewski, Silver Spring, Md., assignor to American Instrument Co., Inc., Silver Spring, Md.
Filed May 2, 1966, Ser. No. 547,006
U.S. Cl. 23—253 10 Claims
Int. Cl. G01n *31/00*; B08b *3/00*



1. An analytical apparatus comprising endless belt conveyor means, spaced containers secured on said belt conveyor means, means to drive said belt conveyor means, sample feed means having sample discharge means located over a container on the belt conveyor means, reagent supply means having reagent discharge means located over a container on said belt conveyor means, readout extraction means having intake conduit means receivable in a container on said belt conveyor means for extracting treated sample material for testing, waste-receiving means subjacent an end of the belt conveyor means, and container-cleaning means mounted beneath the belt conveyor means for cleansing inverted emptied containers as they pass along the bottom of the belt conveyor means.

3,432,272
SAMPLE HANDLING SYSTEM FOR GASEOUS ORGANIC CONTAMINANT DETECTOR
Karl H. Emich, Decatur, Ill., assignor to National Distillers & Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed July 25, 1966, Ser. No. 567,551
U.S. Cl. 23—254 6 Claims
Int. Cl. G01n *31/10, 33/22*

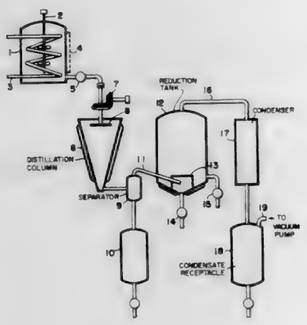


1. A sample handling system for a gaseous organic contaminant detection unit of the type utilizing constant flow from a sampler provided with a standard contaminant-free atmosphere to a detection cell of the flame ionization type, the system comprising:
(a) a flow control apparatus connected with the outlet of the detection cell,
(b) a pump with its inlet connected by a line with the flow control apparatus,
(c) a control opening in the line between the detection cell and the pump inlet for admitting additional air to the detection cell,
(d) means for removing organic contaminants from the products of combustion and additional air pumped by the pump, said means connected with the outlet of the pump, and
(e) a fluid conduit for connecting the contaminant removal means to a point adjacent the sampler to provide the standard contaminant-free atmosphere to the sampler.

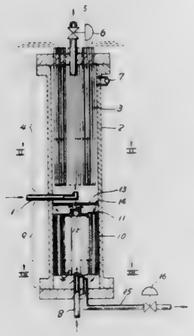
3,432,273
APPARATUS FOR PRODUCING HYDROQUINONE
Yuichi Kono, Shigeru Matsumoto, and Masaru Yoshikawa, Kanagawa-ken, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan
Original application Sept. 17, 1963, Ser. No. 309,554. Divided and this application Dec. 6, 1966, Ser. No. 599,544
Claims priority, application Japan, Oct. 17, 1962, 37/44,957
U.S. Cl. 23—263 1 Claim
Int. Cl. B01d *3/00*

An oxidation tank for oxidizing aniline to benzoquinone, a wet-wall type distillation column having an in-

verted cone shaped wall equipped with a heating jacket, a separator for separating benzoquinone from the mixture leaving the bottom of the distillation column, a reduction tank for reducing benzoquinone to hydroquinone with iron powders, and a condenser system for withdrawing steam from the reduction tank.

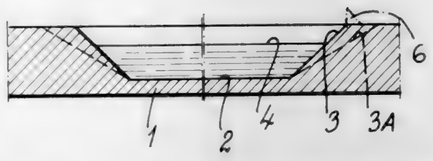


3,432,274
APPARATUS FOR THE CONTINUOUS PRODUCTION OF MELAMINE
Kazuo Abe, Tokyo, Ryo Kokubo and Yumizuru Yamada, Fuchu-machi, Nei-gun, Mizuhiko Nagakura, Ichikawa, and Koji Shima, Fuchu-machi, Nei-gun, Japan, assignors to Nissan Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed June 6, 1966, Ser. No. 555,487
Claims priority, application Japan, June 7, 1965, 40/33,363
U.S. Cl. 23—285 6 Claims
Int. Cl. B01j *3/02*; C07d *55/28*



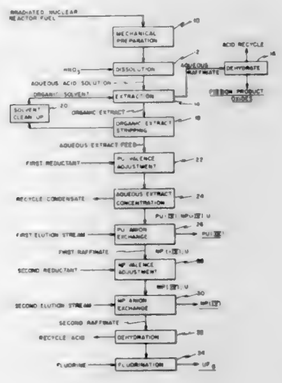
Apparatus for the continuous production of melamine comprising a reaction vessel divided into upper and lower reaction zones by a perforate first partition, a second perforate partition below said partition, pipes extending downwardly from certain of the perforations in said second partition, means for introducing molten urea near the bottom of said upper reaction zone, an outlet for gaseous reaction products near the top of said upper reaction zone, means for introducing gaseous ammonia near the bottom of said lower reaction zone at a point at least as high as the lower ends of certain passages, and means for withdrawing a lower reaction product from a point near the bottom of said lower reaction zone below the point at which said ammonia is introduced.

3,432,275
DISPLAY SLIDE FOR WET BIOLOGICAL PREPARATES
Hans Peter Olof Unger, 57 Skeppargatan, Stockholm, Sweden
Filed Aug. 26, 1965, Ser. No. 482,871
Claims priority, application Sweden, Aug. 31, 1964, 10,430/64
U.S. Cl. 23—292 5 Claims
Int. Cl. B01l *3/00*



A slide for testing or examining biological preparations, e.g., for blood typing. The slide consists of a plate made of a plastic material and provided with one or more shallow elongated recesses for the preparations. The inherently hydrophobic surfaces of the recesses are coated with a hydrophilic substance selected from the group consisting of polysorbates, polyvinyl-2-pyrrolidone and certain types of polyglycols or alkanediols.

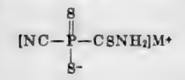
3,432,276
NEPTUNIUM RECOVERY PROCESS
William H. Reas, Monte Sereno, Calif., assignor to General Electric Company, a corporation of New York
Filed Nov. 17, 1966, Ser. No. 595,181
U.S. Cl. 23—338 8 Claims
Int. Cl. G21c *19/46*



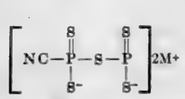
This invention relates to a process for reprocessing irradiated fuel from chain nuclear fission reactors, and in particular discloses an improved chemical process for separating neptunium from plutonium (even in the presence of uranium) in solutions of such materials formed by dissolution of such reactor fuel. In this process the bulk of the fission products formed by irradiation of the fuel are first separated as a mixture from the uranium and transuranics such as neptunium and plutonium by extraction with an organic solvent, and the plutonium and the neptunium are separated in sequence. This involves a unique procedure for plutonium and neptunium valence control which permits their efficient separation from one another.

3,432,277
DERIVATIVES OF PHOSPHINODITHIONIC ACID AND METHOD FOR THEIR PREPARATION
Herbert W. Roesky, Gottingen, Germany, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 3, 1966, Ser. No. 569,818
U.S. Cl. 23—357 9 Claims
Int. Cl. C01c *1/20*

Products having one of the formulas:

(I) 

and

(II) 

wherein M is hydrogen, an alkali metal cation, the ammonium cation, NH_4^+, or an onium cation R_4Y^+, in which Y is nitrogen or phosphorus, and R is a 1–6 carbon hydrocarbon radical free of aliphatic unsaturation are prepared in one or more steps from an alkali metal cyanide and phosphorus pentasulfide. The products are useful in the analytical determination of certain cations by gravimetric methods or in the removal of such cations from solution; and, because of their strong reducing power, they also find use as analytical reagents in the determination of the oxidizing strength of various oxidizing agents.

3,432,278
COMPOSITE METAL ARTICLE WITH A PLATINUM COATING
Raymond S. Richards, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed July 16, 1965, Ser. No. 472,417
U.S. Cl. 29—183.5 2 Claims
Int. Cl. B23p *3/20*



There is disclosed a corrosion resistant metal article comprising a base metal, a thin intermediate layer of an easily reduced metal, and an outer layer of platinum applied in molten droplet form by means of a plasma-jet spray or flame-spray. The thickness of the platinum layer is at least .007 inch, e.g., .007 to .015 inch. The base metal is iron, nickel, or alloys thereof. The easily reduced metal is copper, silver, or gold.

3,432,279
MOLDED MAGNETIC POWDERED METAL
Lewis I. Mendelsohn, Swampscott, and Robert E. Curran, Salem, Mass., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 30, 1967, Ser. No. 664,279
U.S. Cl. 29—192 5 Claims
Int. Cl. B22f *1/00*

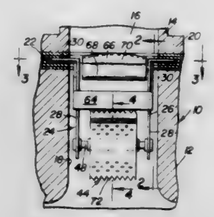
A moldable magnetic material having improved magnetic qualities including good residual induction is prepared by combining alnico material and single domain, low melting metal bonded material.

3,432,280
REFRACTORY METAL ARTICLES
Geirionydd Llewelyn and Raymond George Ubank, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Feb. 19, 1965, Ser. No. 434,009
Claims priority, application Great Britain, Feb. 19, 1964, 6,954/64
U.S. Cl. 29—197 8 Claims
Int. Cl. C23c *17/00*



A refractory article composed of at least 50% tantalum is provided with a protective surface layer by heating it in contact with a powdery mixture comprising chromium 20% to 50%, silicon 20% to 75% and aluminum 3% to 25% under time and temperature conditions to form a layer at least 0.001 inch thick, in the presence of an inert gas.

3,432,281
LIQUID FUEL ATOMIZING ATTACHMENT FOR INTAKE MANIFOLDS
Mark J. Meierbachtol, 1195 W. 2nd St., San Bernardino, Calif. 92410
Filed July 1, 1966, Ser. No. 562,269
U.S. Cl. 48—180 7 Claims
Int. Cl. F02m *17/00*

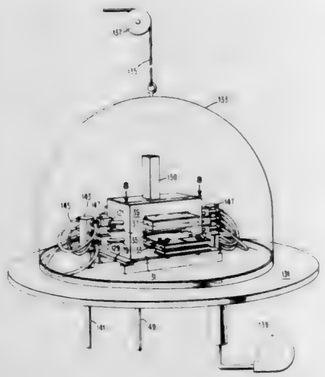


An elongated body journaled within an air and liquid fuel passage for rotation about an axis extending transversely through the central portion of the passage and transversely of the body centrally intermediate its opposite ends. The ends include portions tending to rotate the body in one direction in response to flow of an air-fuel mixture through the passage. A baffle plate is provided in one side of the passage upstream of the body for deflecting at least a portion of the mixture to the other side of the passage.

3,432,282
METHOD FOR ADJUSTING CONTACTS IN REED SWITCHES
Peter R. Schulz, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 9, 1962, Ser. No. 229,457
U.S. Cl. 65—32 12 Claims
Int. Cl. C03b *23/20, 23/12*

Process for adjusting the orientation of contacts in an

encapsulating tube by heating the tube until the tube material softens sufficiently to permit distortion and subsequently distorting said tube until the desired orientation of contacts therein is obtained.



3,432,283

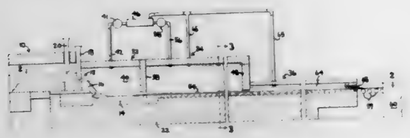
PROCESS FOR MANUFACTURE OF GLASS UTILIZING GAS PRESSURE FOR GLASS SIZING

William F. Galey, Saxonburg, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Filed July 30, 1965, Ser. No. 475,964

U.S. Cl. 65—99 **2 Claims**

Int. Cl. C03c *23/00, 19/00*



Molten glas is deposited on a liquid and is confined at its edges. A fluid pressure is applied to the confined glass which is different from a fluid pressure on the liquid outside of and in contact with molten glass on a different portion of the liquid. The confined glass is thus sized to thickness, and is then discharged from confinement, after which it is advanced along the liquid. The thickness of the advancing glass is maintained. The advancing glass is cooled to set the thickness and is then removed from the liquid.

3,432,284

MANUFACTURE OF FLOAT GLASS OF A THICKNESS GREATER THAN EQUILIBRIUM THICKNESS

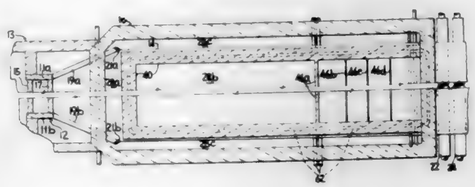
Joseph A. Gulotta, New Kensington, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Original application July 1, 1963, Ser. No. 291,816, which is a continuation-in-part of application Ser. No. 265,728, Mar. 18, 1963. Divided and this application Apr. 10, 1967, Ser. No. 629,458

U.S. Cl. 65—99 **1 Claim**

Int. Cl. C03b *18/00*

Glass is continuously fed onto the surface of a molten bath which is heavier than the glass and is constrained to restrict lateral flow thereof. Sufficient glass is fed onto the bath to form a layer of substantially uniform width and a substantially uniform thickness which is thicker than the equilibrium thickness obtainable when the glass is permitted to flow laterally unhindered. The layer is cooled for removal from the bath.



3,432,285

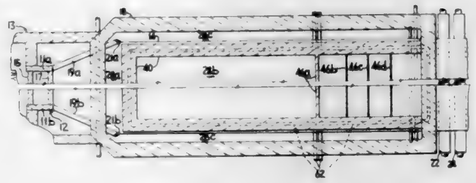
METHOD AND APPARATUS FOR INITIALLY RESTRICTING THE DIVERGENT FLOW OF FLOAT GLASS

Joseph A. Gulotta, New Kensington, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Continuation of application Ser. No. 291,816, July 1, 1963, which is a continuation-in-part of application Ser. No. 265,728, Mar. 18, 1963. This application Apr. 10, 1967, Ser. No. 629,707

U.S. Cl. 65—99 **5 Claims**

Int. Cl. C03b *18/00*



Glass is continuously fed onto the surface of a molten bath which is heavier than the glass and the glass flows laterally and forms a layer on the bath which layer is moved along the bath. The lateral flow of the glass is restricted to produce a layer of gradually increasing width in the direction of its movement until it has reached a desired width. The restriction of lateral flow of the glass is released when the layer of glass is molten.

3,432,286

CONTROL OF AQUATIC PLANTS WITH DITHIODIUNDECANOIC ACID

Dorsey R. Mussell, Clare, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,455

U.S. Cl. 71—66 **6 Claims**

Int. Cl. A01n *5/00, 23/00;* **C09k** *3/00*

A method useful for the control of aquatic plants is disclosed wherein a growth-inhibiting amount of 11,11'-dithiodiundecanoic acid or a salt thereof is introduced into water adjacent the submersed portions of an aquatic plant. Compositions useful in practicing the method are also disclosed.

3,432,287

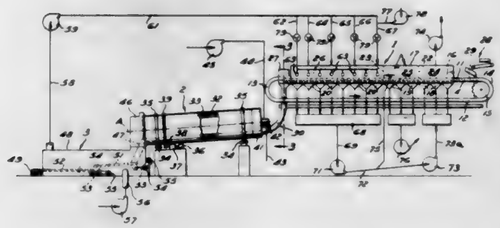
AGGLOMERATION METHOD AND APPARATUS

Melvin J. Greaves, Cleveland, Tage Werner, Rocky River, and Richard B. Greenwalt, Parma, Ohio, assignors to Arthur G. McKee & Company, Cleveland, Ohio, a corporation of Delaware

Filed Mar. 11, 1966, Ser. No. 533,475

U.S. Cl. 75—5 **18 Claims**

Int. Cl. C21b *1/10;* **F21b** *21/02;* **C22b** *1/16*



Method and apparatus for producing pellets from finely divided pelletizing material according to which green balls of pelletizable material are formed into a moving body in which the balls are at rest relative to each other, as on a traveling grate, and while in such moving body the balls are dried and then subjected to pelletizing conditions including high temperature sufficient to convert the balls into essentially completely heat-hardened pellets, after which the pellets without cooling are discharged into a tumbling zone as in a rotating kiln and tumbled under indurating temperatures for a period sufficient to render the pellets essentially uniform as to hardness before they leave the tumbling zone. The pellets thereafter are preferably discharged into a cooling zone. Preferably, heated air from the cooling zone is used as combustion air in the indurating zone, and heated gases from the indurating zone are used for drying purposes.

3,432,288

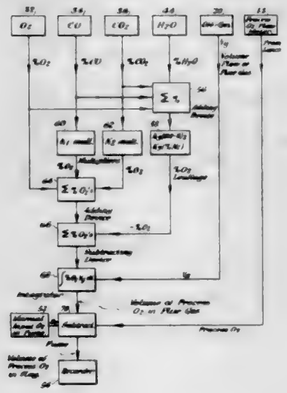
PROCESS CONTROL OF TOP-BLOWN OXYGEN CONVERTER

Victor P. Ardito, Lower Burrell, Harry L. Bishop, Pittsburgh, and Ray E. Woodcock, Tarentum, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Filed June 29, 1966, Ser. No. 561,569

U.S. Cl. 75—60 **9 Claims**

Int. Cl. G01n *7/00;* **C22c** *7/04*



A method of and apparatus for measuring the percentage of the total volume of process oxygen remaining in the slag of a molten bath during a basic oxygen converter process, and using the measurement to control the overall oxygen balance during the process. The measurement is accomplished by subtracting from the total volume of oxygen entering the vessel through the lance, the oxygen content, in terms of volume, of solid particles escaping the vessel and, the volume of process oxygen escaping in the flue gas.

3,432,289

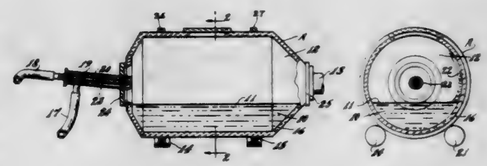
METHOD OF REFINING COPPER

Albert W. Spitz, 835 Glenside Ave., Wyncote, Pa. 19095, and Milton I. Schwab, % Franklin Smelting and Refining Co., Castor Ave. E. of Richmond St., Philadelphia, Pa. 19134

Filed Mar. 23, 1966, Ser. No. 541,448

U.S. Cl. 75—73 **19 Claims**

Int. Cl. C22b *15/06, 15/14*



The method of producing blister or fire refined copper from impure copper by charging the impure copper into a rotary furnace, forming a molten metal bath of the impure copper inside the furnace, rotating the furnace to create a falling film of molten metal, subjecting the falling film of molten metal to an atmosphere of substantially pure oxygen whereby the said film is oxidized, and returning the oxidized film to the bath to undergo oxygen exchange with the impurities contained therein to form a slag layer.

3,432,290

FERROUS MATERIAL

Edwin Bruce Farmer, Kenilworth, England, assignor to Brico Engineering Limited, Coventry, England, a British company

No Drawing. Filed May 2, 1966, Ser. No. 546,503

U.S. Cl. 75—123 **2 Claims**

Int. Cl. C22c *39/04, 39/26;* **C21d** *1/34*

The disclosure pertains to a ferrous material consisting essentially of from 1.5% to 4.0% carbon; from 3.3% to 6.0% silicon; from 0.0015% to 0.1% boron; from 0.2% to 5.0% manganese; 0.2% maximum sulphur; 0.6% maximum phosphorus; not more than 0.2% aluminum; not more than 0.2% bismuth; not more than 0.2% titanium and 2.0% maximum chromium, together with iron, the material having a microstructure in which the hypereutectoid carbon consists of free carbides and graphite in nodular form.

3,432,291

LOW ALLOY STEEL PARTICULARLY SUITABLE FOR COLD FORGING

George Mayer, Cobham, and Roger Kearsley Greenwood, Stourbridge, England, assignors to The International Nickel Company, Inc., a corporation of Delaware

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,080

Claims priority, application Great Britain, Dec. 18, 1964, 51,604

U.S. Cl. 75—124 **6 Claims**

Int. Cl. C22c *39/36*

A low alloy precipitation hardenable steel particularly adapted as a cold forging steel and containing correlated

amounts of nickel, carbon, aluminum, chromium, and/or copper, the total sum of the aluminum, chromium and copper being at least 1.4% but not more than about 3%. In the solution annealed condition the alloys are sufficiently soft that they can be cold forged, yet are chemically balanced so that upon precipitation hardening, a high level of yield strength is obtained.

3,432,292

METHOD OF PREPARING CHROMIUM-LITHIUM ALLOYS

Donald W. White, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 31, 1966, Ser. No. 590,552

U.S. Cl. 75—135 **3 Claims**
Int. Cl. C22c *1/04, 3/00, 27/00*

A method for alloying chromium with lithium to improve the oxidation resistance of the chromium metal in which chromium metal is placed in contact with lithium-hydride and the combination then heated to a temperature at least high enough to dissociate the lithium hydride into elemental lithium and nascent hydrogen and continuing the heating to diffuse the lithium into the chromium.

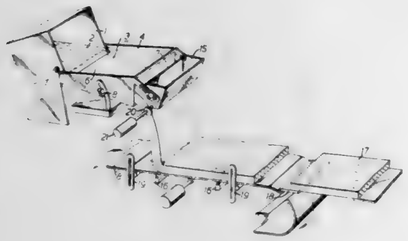
3,432,293

BEARING MATERIALS AND METHOD OF MAKING SAME

Anthony D. Michael, London, and George C. Pratt, Chorleywood, England, assignors to The Glacier Metal Company Limited, Middlesex, England, a company of Great Britain

Filed Jan. 6, 1966, Ser. No. 519,096

U.S. Cl. 75—138 **11 Claims**
Int. Cl. C22c *1/02, 21/00*



The invention is a method of casting a bearing lining of an alloy by injecting that component of the alloy having the higher specific gravity into a free falling stream of the other alloy component, and collecting and solidifying the stream of combined metals on a moving belt or backing for the bearing lining.

3,432,294

COBALT-BASE ALLOY

Harold L. Wheaton, Rolling Meadows, Ill., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Apr. 21, 1965, Ser. No. 449,825

U.S. Cl. 75—171 **8 Claims**
Int. Cl. C22c *19/02*

An alloy suitable for use under load at high temperatures and having an excellent combination of engineering characteristics. The alloy is a carbide-hardened cobalt-base material containing critical, related amounts of carbon, chromium, nickel, tungsten, tantalum, titanium and zirconium.



3,432,295

METHOD FOR MAKING ORIENTED FIBER OR WHISKER COMPOSITES

Louis Frank, and Harold N. Barr, Baltimore, Md., assignors to Hittman Associates, Inc., Baltimore, Md., a corporation of Maryland

Filed Dec. 8, 1966, Ser. No. 600,165

U.S. Cl. 75—206 **15 Claims**
Int. Cl. B22f *1/00, 9/00*

The preparation of oriented fiber reinforced, metallic matrix composite structures by extruding with a large area reduction a mixture of reinforcing fibers, metal powder, inert medium and binder, thence forming the oriented extrusions thus obtained in a preselected shape, and hot pressing the same to consolidate the structure.

3,432,296

PLASMA SINTERING

Neil Alexander McKinnon, North Balwyn, Victoria, Colin Earl Garnsworthy Bennett, Black Rock, Victoria, Lloyd Stuart Williams, Armadale, Victoria, and Frederick Kenneth McTaggart, East Hawthorn, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate

Filed Sept. 5, 1967, Ser. No. 665,634
Claims priority, application Australia, July 13, 1967, 24,560/67

U.S. Cl. 75—214 **13 Claims**
Int. Cl. B22f *1/00, 9/00*

A process for sintering particulate materials using the heating effect of a gas plasma. Materials which can be sintered include compacted, slip cast or extruded bodies of particulate metals, ceramics, intermetallic and metal-metalloid components, cermets and other refractory or semirefractory substances.

3,432,297

PHOTOMECHANICAL COLOR PROVING PROCESS

Wallace M. Autry, Rockville, and Clifford P. Chapman, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed July 21, 1965, Ser. No. 473,875

U.S. Cl. 96—27 **5 Claims**
Int. Cl. G03c *7/00*

This invention is an improvement in the Ozalid Dychrome Process for making multicolor photomechanical reproductions in which a light sensitive diazo oxide layer on a base is exposed to a color separation negative corresponding to one of the primary color aspects of the subject, the photo decomposed products in the exposed areas are removed, and the corresponding base areas are coated with a basic water soluble dye, the improvement comprising rendering the dye insoluble with a mordanting agent and impervious to subsequent contact with other dyes and processing chemicals. This improvement eliminates the prior procedure of removing the unexposed areas after coating the exposed areas and resensitizing the base for the next color exposure.

3,432,298

SILVER SALT DIFFUSION PROCESS

Harald von Rintelen, Werner Liebe and Werner Krafft, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,613
Claims priority, application Germany, Apr. 19, 1966, A 52,203

U.S. Cl. 96—29 **4 Claims**
Int. Cl. G03c *5/54*

Formation of silver sludge in developer-free alkaline processing baths for repeated silver salt diffusion processing, is retarded by 2,4-dimercaptopyrimidine having in the 6-position a hydrogen or alkyl of up to five carbon atoms.

3,432,299

PLANOGRAPHIC MANDRELS

Thomas R. Bates, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,177

U.S. Cl. 96—36 **14 Claims**
Int. Cl. G03c *5/00;* **C23b** *7/00*

Preparation of long-lasting planographic mandrels by producing a photo-resist image on a bimetal plate which is then etched in two stages, the first etching the surface metal, the second etching the base metal so that the surface metal forms a ledge over the etched areas of the base metal, and filling the etched areas with a dielectric material which is securely fixed into position by the surface metal ledge.

3,432,300

6-HYDROXY CHROMANS USED AS STABILIZING AGENTS IN A COLOR PHOTOGRAPHIC ELEMENT

Gregory J. Lestina and Warren A. Reckhow, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 3, 1965, Ser. No. 452,889

U.S. Cl. 96—74 **14 Claims**
Int. Cl. G03c *7/18, 7/00*

Dye stabilizing quantities of 6-hydroxy chroman characterized by having an alkyl group on one of the two positions ortho to the hydroxy, and hydrogen on the other ortho position, as well as on the meta position of the benzene ring of said compound are advantageously incorporated in hydrophilic colloid layers in which color photographic dye images are to be formed or to which diffusible dye images are to be transferred so that the 6-hydroxy chroman is contiguous to the dye image that is to be stabilized. Photographic elements containing the immediate 6-hydroxy chromans are processed without producing unwanted light absorption produced by the stabilizing agents outside of the invention and provide considerable improvement in the light stability of the image dyes in the layer containing the stabilizing agent.

3,432,301

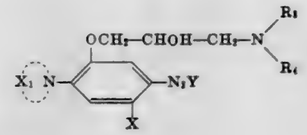
REPRODUCTION MATERIAL

Herbert Raubut and Oskar Süs, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,921
Claims priority, application Germany, Jan. 18, 1964, K 51,880
The portion of the term of the patent subsequent to Sept. 13, 1983, has been disclaimed

U.S. Cl. 96—91 **7 Claims**
Int. Cl. G03c *1/54;* **C07c** *113/04*

A diazotype reproduction material which comprises a support and a photosensitive layer coated on said support, said layer comprising a diazonium compound having the formula:



in which X_1 represents the members required to complete a heterocyclic ring selected from the group consisting of 5-membered and 6-membered heterocyclic rings, X is selected from the group consisting of hydrogen and alkyl, R_3 and R_4 are members of one of the groups selected from Group A in which R_3 is alkyl up to 4 carbon atoms and hydroxyalkyl with up to 4 carbon atoms, and R_4 is hydrogen, alkyl up to 4 carbon atoms, and hydroxyalkyl with up to 4 carbon atoms; and Group B in which R_3 and R_4 are members of the same 5- or 6-membered heterocyclic ring, and Y is the anion of an acid.

3,432,302

SILVER HALIDE EMULSIONS CONTAINING SUPERSENSITIZING DYE COMBINATIONS

Jean E. Jones and Norman W. Kalenda, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 458,067

U.S. Cl. 96—104 **20 Claims**
Int. Cl. G03c *1/28*

Photographic silver halide emulsions used in photographic elements are advantageously supersensitized by combinations of a chain substituted cyanine dye with a holopolar carbocyanine dye having a 4,5-dihydro-2-(1H)naphtho[1,2-d]thiazole nucleus and a naphtho[1,2-d]thiazole nucleus with a 5- to 6-membered acidic heterocycle nucleus as the holopolar group.

3,432,303

SILVER HALIDE EMULSIONS CONTAINING DYE COMBINATIONS FOR SUPERSENSITIZATION

Jean E. Jones and Norman W. Kalenda, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 458,068

U.S. Cl. 96—104 **18 Claims**
Int. Cl. G03c *1/28*

Photographic silver halide emulsions used in photographic elements are advantageously supersensitized by combinations of a cyanine dye, or a carbocyanine dye, or a chain-substituted carbocyanine dye with a 9-substituted dibenzo dihydro thiacarbocyanine dye.

3,432,304

PHOTOGRAPHIC EMULSIONS CONTAINING MERCURY COMPOUNDS AND AZAINDENES

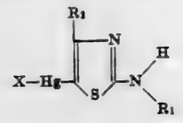
Wilhelm Saleck, Schildgen, Bergisch-Gladbach, Wolfgang Lässig, Cologne-Stammheim, and Rolf-Fred Posse, Cologne-Flittard, Germany, assignors to Agfa-Gevaert, Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 9, 1965, Ser. No. 470,879
Claims priority, application Germany, Aug. 8, 1964, A 46,798

U.S. Cl. 96—109 **9 Claims**
Int. Cl. G03c *1/34*

1. A photosensitive photographic material comprising a silver halide emulsion layer which is stabilized by an

azaindene and an aminothiazole mercury compound corresponding to the following formula:



wherein X represents an anion and R_1 and R_2 each represent a phenyl or naphthyl grouping.

3,432,305

PROCESS FOR IMPROVING TASTE IN FRUIT PRODUCTS BY ADDING CYCLAMIC ACID

Wayne Kenneth Kuhr and Albin Joseph Slakis, Waukegan, Ill., and Richard Lawrence Hughes, West Roxbury, and Anne Josephine Neilson, Cambridge, Mass., assignors, by mesne assignments, to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,895

U.S. Cl. 99—28 **11 Claims**

Int. Cl. A23l *1/00, 1/02, 1/40*

The process of enhancing the taste of fruit beverages, fruit juice, tomato soup and fruit concentrates by adding cyclamic acid between about .005 to .03% by weight to said fruit product.

3,432,306

PROCESS OF PREPARING CHEMICALLY ACIDIFIED MILK PRODUCTS

Joseph R. Edwards, Indianapolis, Ind., assignor to Diamond Shamrock Corporation, a corporation of Delaware

Continuation-in-part of applications Ser. No. 184,517, Apr. 2, 1962, Ser. No. 194,375, May 14, 1962, and Ser. No. 279,576, May 10, 1963. This application Mar. 8, 1966, Ser. No. 532,801

U.S. Cl. 99—54 **14 Claims**

Int. Cl. A23c *9/00*

Milk products such as buttermilk, yoghurt and sour cream, heretofore prepared by bacterial fermentation of milk are now prepared by chemical acidification. An edible organic colloidal stabilizer such as gum tragacanth is added to milk. The milk containing the stabilizer is then heated to temperatures between about 160° F. to about 225° F. to activate the stabilizer. Then a non-toxic acid such as lactic acid or an acid liberating compound is introduced to bring about a pH of from about 3.5 to about 6 without substantially diluting the butterfat content of the milk. The resulting products are characerized by enhanced uniformity of texture and taste, freedom from separation and enhanced shelf life.

3,432,307

METHOD AND APPARATUS FOR PREPARING A MIXED PRODUCT

Christiaan Marie van Ginneken, Jacob Obrichtlaan 14, Bussum, Netherlands, and Adriaan Johannes Josephus van Ginneken, Nederhoven 39, Amsterdam-Buitenveldert, Netherlands

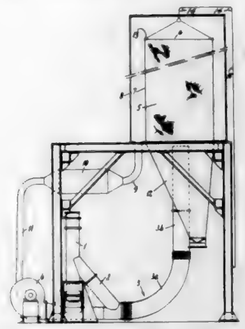
Filed June 15, 1965, Ser. No. 464,170

Claims priority, application Netherlands, June 17, 1964, 6406910; Sept. 11, 1964, 6410588

U.S. Cl. 99—56 **5 Claims**

Int. Cl. A23c *9/00, 11/00, 3/00*

A method and apparatus for preparing artificial calf milk in which a powdery material and melted fat is introduced into a mixer and thereafter transported by cool air in a conduit to a chamber, wherein the viscous liquid is substantially completely solidified. The mixture is discharged upwardly into the chamber and the mixture travels along a free unimpeded path, the solids being collected at the bottom of the chamber while the cooling air is recirculated in a closed circuit.



3,432,308

CONCENTRATION PROCESS

Richard G. Reimus and Anthony Saporito, Warren, Pa., assignors to Struthers Scientific and International Corporation

Original application Dec. 2, 1965, Ser. No. 511,173, now Patent No. 3,381,302, dated Apr. 30, 1968. Divided and this application Apr. 3, 1968, Ser. No. 718,510

U.S. Cl. 99—77 **1 Claim**

Int. Cl. A23f *3/02, 3/00*

Tea extract is concentrated by partially freezing ice therefrom and separating the ice from the concentrate. Prior to freezing the ice the liquid is chilled to above its freezing point and prefiltered to remove insoluble precipitate from the aqueous extract.

3,432,309

METHOD FOR PREPARING PRECOOKED RICE FLOUR

Lawrence Lynn and Roy M. Anderson, Houston, Tex., assignors to Riviana Foods Inc., a corporation of Delaware

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,486

U.S. Cl. 99—93 **7 Claims**

Int. Cl. A21d *6/00*

Preparation of gelatinized precooked rice flour by cooking whole or broken grain rice sufficiently to gelatinize the starch content thereof in an excess of water; washing to stop the cooking process and to remove loose starch therefrom, drying said rice and grinding the cooked, dried rice.

3,432,310

BREAD PACKAGE

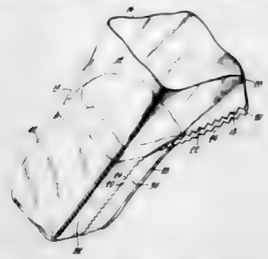
Richard C. Weeks, Wilton, Conn., assignor to Campbell Soup Company, Camden, N.J., a corporation of New Jersey

Filed Feb. 13, 1968, Ser. No. 705,089

U.S. Cl. 99—172 **4 Claims**

Int. Cl. B65b *25/16;* **B65d** *65/00, 75/00*

A bread wrapper and a method and apparatus for forming the same characterized by a wrapped, tightly fitting and tightly closed end-tied packaged which when opened expands at the open end to permit withdrawal and replacement of bread slices but which may be reclosed without affecting the tight wrapping of the loaf. The wrapper is characterized by a fin seal extending longitudinally along the overlapped side edge portions thereof, spaced between the line of overlap and the wrapper side edges. A subsequently formed conventional overlap seal of the overlapped edge portions provides a tightly wrapped package. The combination of the fin seal and overlap seal permits an expansion of the wrapper open end proportional to the spacing of the fin seal from the line of overlap. The present method of forming such a wrapper permits the formation of the essentially bag-shaped wrapper directly on the loaf to insure a tight package. The present apparatus provides a means for carrying out the method by a simple modification of conventional bread wrapping machinery.



3,432,311

DRIED MEAT PRODUCT AND METHOD OF MAKING SAME

Ernst Otto Gruner, Chicago, Ill. (434 Horacemann Ave., Winston-Salem, N.C. 27104)

No Drawing. Filed July 15, 1965, Ser. No. 472,356

U.S. Cl. 99—208 **8 Claims**

Int. Cl. A23b *1/04;* **B65f** *25/06*

Meat such as beef, pork, fowl and fish, each alone or as a mixture, is divided into a major part as chunks and a minor part as comminuted meat. Each part is mixed with preservative sodium chloride, and for cured meat, with curing salt. The parts are mixed and a confined form thereof is frozen, then softened by slight warming, sliced thin, and heated to at least 160° F. to bind the parts together. Then the cooled slices are dehydrated.

3,432,312

REFRACTORY MOLD COMPOSITION AND METHOD

Roy C. Feagin, Mountain Lakes, N.J., and Edward L. Dahowski, Oaklawn, and Peter Kosmos, Alsip, Ill., and Ronald R. Robb, Dover, N.J., assignors to Howmet Corporation, a corporation of Delaware

No Drawing. Filed Sept. 8, 1965, Ser. No. 485,928

U.S. Cl. 106—38.3 **18 Claims**

Int. Cl. C04b *31/30;* **B28b** *7/34*

A foundry mold having exceptionally high green strength is prepared from a molding composition containing (a) 15 to 50% by weight of a binder comprising a hydrolyzed methyl trialkoxy silane and water, (b) 0.001% to 0.5% by weight of a gelling agent and (c) the balance essentially is a fine refractory aggregate. The methyl trialkoxy silane has 4 to 10 carbon atoms, i.e., methyl trimethoxy silane, methyl triethoxy silane and methyl triisopropoxy silane. The suitable gelling agents include: triethanolamine, piperidene, pyridine, aminoquinone, hexamine, MgO, CaO, BaO, SrO, CoO, PbO, ZnO, CdO, Na_2CO_3, $CaCO_3$, H_2SO_4, HNO_3, HCl, HF, H_3PO_4, NH_4F, Na_2SiF_6, NaF, $BaCl_2$, $CoCl_2$, $PbCl_2$ and NH_4Cl.

3,432,313

PRODUCTION OF CERAMIC BODIES

Walter H. Gitzen, Belleville, and George MacZura, East St. Louis, Ill., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 22, 1964, Ser. No. 405,851

U.S. Cl. 106—46 **2 Claim**

Int. Cl. C04b *33/26*

Ceramic articles are made by mixing a fraction composed of alumina particles having a median particle size of 2.5–6 microns with another fraction composed of alumina particles having a median size of about 1 micron, pressure-molding the mixture, and firing the molded body.

3,432,314

TRANSPARENT ZIRCONIA COMPOSITION AND PROCESS FOR MAKING SAME

Khodabakhsh S. Mazdiyasni, Xenia, Charles Lynch, Fairborn, and Jonathan S. Smith II, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Aug. 2, 1966, Ser. No. 570,146

U.S. Cl. 106—57 **9 Claims**

Int. Cl. C03c *3/12*

A high density, polycrystalline fully stabilized cubic zirconia body characterized by having a fine, uniform grain size, negligible porosity and which is stable in oxidizing environments at temperatures above 2000° C. and is capable of transmitting visible and infrared radiation, consisting essentially of high purity zirconia and about 6 mole percent of a high purity metallic oxide selected from the group consisting of yttrium oxide, dysprosium oxide and ytterbium oxide as a stabilizing additive and the method for preparing the same comprising the steps of completely mixing dried, fine particulate, high purity (1) zirconia and (2) a metallic oxide selected from the group consisting of yttria oxide, dysprosium oxide, and ytterbium oxide, said metallic oxide being present in the amount of 6 mole percent weight of said zirconia, calcining the powder in air at 800° C. for 1 to 4 hours, grinding the resulting calcined material to a powder, cold pressing the powder at pressures from about 50,000 p.s.i. to 200,000 p.s.i. into compacted shapes, and sintering the compacted shape at 1450° C. for at least 16 hours.

3,432,315

MONOLITHIC REFRACTORY

George R. Henry, Bethel Park, and Thomas W. Lewis II, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,795

U.S. Cl. 106—59 **6 Claims**

Int. Cl. C04b *35/04*

A dead burned magnesite castable having a binder comprising a soluble sulfate compound, a soluble borate compound, and finely divided chromic oxide.

3,432,316

HYDRAULIC CEMENT MIX AND ADDITIVE

Thomas M. Kelly, Chagrin Falls, Richard B. Peppler, Cleveland Heights, and James A. Ray, Streetsboro, Ohio, assignors to Martin-Marietta Corporation, a corporation of Maryland

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,902

U.S. Cl. 106—90 **11 Claims**

Int. Cl. C04b *7/12, 7/00*

A hydraulic cement mix which includes portland cement, aggregate and sufficient water to effect hydraulic setting of the cement as well as an additive. The additive comprises a portion of the tobacco plant and this portion of the tobacco plant may take many forms which includes the aqueous extraction product of the tobacco plant alone or along with the insoluble material resulting from this treatment. A comminuted portion of the cured tobacco plant may also be used.

3,432,317
HYDRAULIC CEMENT MIX CONTAINING SACCHARIDE POLYMERS

Thomas M. Kelly, Chagrin Falls, Richard C. Mielenz, Beachwood, and Richard B. Peppler, Cleveland Heights, Ohio, assignors to Martin-Marietta Corporation, a corporation of Maryland

Continuation of applications Ser. No. 362,801, Apr. 27, 1964, and Ser. No. 362,976, Apr. 27, 1964. This application Jan. 25, 1967, Ser. No. 611,611

U.S. Cl. 106—92 17 Claims
Int. Cl. C04b *7/02, 19/02*

A hydraulic cement mix of cement, aggregate and sufficient water to effect hydraulic setting of the cement and an additive in an amount sufficient to increase the strength of the mix when hardened. The additive comprises saccharide polymers having a size of from three glucose units to on the order of twenty-five glucose units. In addition the additive may include a water soluble chloride and a water soluble amine and prior art materials may also be included as disclosed.

3,432,318
PREPARATION OF CALCIUM SULPHATE ALPHA-HEMIHYDRATE SLURRIES FOR CASTING IN MOULDS

Martin Granger Brown, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Oct. 4, 1965, Ser. No. 492,651
Claims priority, application Great Britain, Oct. 8, 1964, 41,105/64

U.S. Cl. 106—110 6 Claims
Int. Cl. B28b *1/00;* C04b *11/00*

There is provided a method for the production of cast gypsum products wherein a slurry of calcium sulphate α-hemihydrate is prepared and allowed to hydrate while simultaneously stirring the slurry sufficiently vigorously to prevent substantial sedimentation during stirring and continuing the stirring for a sufficient time to prevent substantial sedimentation after the cessation of stirring but for an insufficient time to cause the compressive strength of the cast product to fall below 800 lbs./sq. in. Thereafter the slurry is introduced into a mold for molding the product. In order to obtain good setting time and high compressive strengths, the stirring must be for a period of time between 3½ and 8½ minutes, preferably between 3½ and 7 minutes.

3,432,319
WAX EMULSIONS STABILIZED WITH A METHYL CELLULOSE ETHER

Eugene A. Jakaitis, Syosset, Francis W. Littler, Mineola, and Emilio A. Roblendano, New York, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,316
U.S. Cl. 106—170 5 Claims
Int. Cl. C09g *1/04*

Oil-in-water emulsions are provided comprising a paraffin wax, having a melting point within the range from about 100° F. to about 150° F., in an amount from about 5 to about 65 percent, by weight, and a methyl cellulose ether in an amount from about 0.2 to about 0.75 percent, by weight.

3,432,320
NONIONIC OIL-IN-WATER ASPHALT EMULSIONS

Armin C. Pitchford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,139
U.S. Cl. 106—277 4 Claims
Int. Cl. C08h *1726;* C08b *9/06*

A nonionic oil-in-water asphalt emulsion comprising a nonionic emulsifying agent of the general formula:

$$R-O-(C_2H_4O)_x-(CH-CH_2-O)_y-(C_2H_4O)_z-H$$
$$\quad\quad\quad

sion which will be placed upon the paper being at least as high as the thickness of the stencil,

removing the stencil, and

curing the resin on the surface of said paper under conditions to activate said blowing agent to form hard, raised thermoset characters which are securely bonded to the paper.

3,432,329

ERASURE-PROOF DEVELOPMENT OF ELECTROSTATIC IMAGES

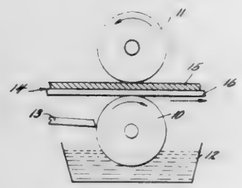
Walter August Van den Heuvel, Antwerp, Johan Eugeen Vanhaist, Wilrijk-Antwerp, Jozef Leonard Van Engeland, St. Katelijne-Wayer, and Noël Jozef De Volder, Aarsele, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium

Filed May 18, 1964, Ser. No. 368,313

Claims priority, application Netherlands, May 17, 1963, 292,921/63

U.S. Cl. 117—37 **2 Claims**

Int. Cl. B44d *1/40*



Erasure-proof images are produced on a photoconductive zinc oxide containing recording sheet by developing the electrostatic image on the sheet with an aqueous acidic liquid developer containing leuco compounds from which the corresponding dyes are formed by oxidation and hexacyanoferrate (III) ions. As the developer contacts the electrostatic image in the presence of the zinc ions in the sheet the dyes are oxidized by the hexacyanoferrate (III) ions and the dyes are firmly adsorbed to the formed zinc hexacyanoferrates. Agents may be added to the developing solution to lower the surface tension and to slow the drying rate. The dye and the hexacyanoferrate (III) ions may be applied in two separate steps.

3,432,330

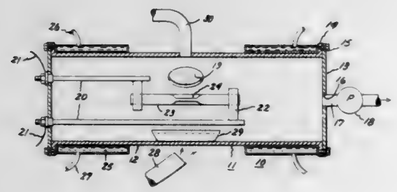
PYROLYTIC VACUUM DEPOSITION FROM GASES

Russell J. Diefendorf, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 25, 1961, Ser. No. 105,507

U.S. Cl. 117—46 **10 Claims**

Int. Cl. C23c *9/06;* **B44c** *1/02*



1. A deposition method which comprises providing a chamber, providing a deposition surface in said chamber, evacuating said chamber to a pressure in the range of 0.05 millimeter of mercury to 3 centimeters of mercury, heating said chamber to a temperature in the range of 1,400° C. to 2,000° C., providing a mixture of boron, carbon and nitrogen from materials containing boron, carbon and nitrogen, and flowing said mixture through said chamber whereby pyrolytic material is deposited on said surface.

3,432,331

METHOD FOR SURFACE TREATMENT OF GLASS ARTICLES

John E. Braddy, Delmont, Pa., and Bradley E. Wiens, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed June 25, 1965, Ser. No. 467,129

U.S. Cl. 117—46 **4 Claims**

Int. Cl. C23c *9/06;* **B44c** *1/02*

Spraying a hot glass surface which is at a temperature between about 900° F. and about 1200° F. with a mist in an oxygen-containing gas of a suspension of finely divided aluminum metal in a combustible organic fluid, the latter being spontaneously combustible with the oxygen content of the gas upon striking the hot glass surface to deposit a firmly adherent aluminum oxide coating on the glass surface which does not leave a visible deposit on the glass surface.

3,432,332

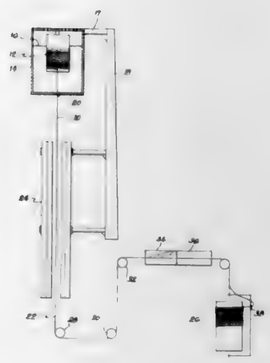
METHOD FOR THE IMPREGNATION OF FIBROUS GLASS

Alfred Marzocchi, Cumberland, R.I., and John A. Waugh, Huntingdon, Pa., assignors to Owen-Corning Fiberglas Corporation, a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 427,050

U.S. Cl. 117—62 **10 Claims**

Int. Cl. B44d *1/44;* **B05c** *3/12*



The invention is addressed to concepts for the rapid and continuous impregnation of endless bundles of glass fibers with a liquid impregnating composition. In one concept, the endless bundle of glass fibers is housed within a pressure vessel having an outlet orifice and which contains the liquid impregnating composition under pressure in a manner to cover the orifice whereby the glass fiber bundle is forced under pressure from the pressure vessel through the orifice in a manner which forcibly pushes the bundle through the orifice so that it becomes substantially completely impregnated with the liquid composition as it is displaced through the orifice. In the other concept, use is made of capillary action to force the impregnating composition into the innermost regions of the glass fiber bundle by pulling the bundle of glass fibers through a capillary tube with the fibers wet with the liquid impregnating composition wherein capillary action is generated to supply the tremendous forces for wetting out the interior of the glass fiber bundle.

3,432,333

COMPOSITE DIFFERENTIAL RELEASE TAPE

Alan R. Hurst, Hinsdale, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,378

U.S. Cl. 117—68 **15 Claims**

Int. Cl. B44d *1/10;* **B32b** *7/06;* **C09j** *7/04*

1. A composite differential release tape comprising: a substrate; a cured coating of a filled organopolysiloxane bonded to one side of said substrate; and a cured coating of an unfilled organopolysiloxane bonded to the opposite side of said substrate; said filled organopolysiloxane having incorporated therein finely divided particles of a filler in an amount sufficient to increase the release value of said cured filled organopolysiloxane coating to a value greater than the release value of said cured unfilled organopolysiloxane coating.

3,432,334

METHOD OF APPLYING OXIDATION PROTECTIVE COATINGS TO COLUMBIUM

David L. Yenawine, Moodus, and Emanuel C. Hirakis, Mansfield Center, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,554

U.S. Cl. 117—70 **5 Claims**

Int. Cl. C23d *5/00;* **C23c** *3/00;* **C03c** *3/18*

3. The method of protecting columbium and columbium base alloy parts against oxidation which consists in preparing a coating slurry consisting essentially of aluminum and chromium powder in the proportion of 90 w/o Al+10 w/o Cr, and fluoride-glass powder consisting of 60 w/o LiF+3.2 w/o CaF_2+17.6 w/o AlF_3+19.2 w/o NaF, coating the parts to be protected with the slurry, drying the coated parts at 250–300° F. for about 30 minutes, curing for one hour at 1800–1900° F., applying a coating of sealing glass, and curing at 1400–1800° F.

3,432,335

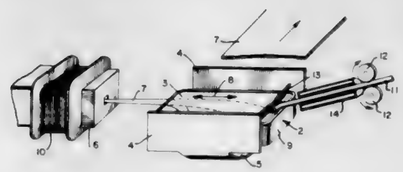
CYCLICALLY MOVING ELECTRON BEAM FOR UNIFORM VAPOR DEPOSITED COATING

Siegfried Schiller and Peter Lenk, Dresden-Weisser Hirsch, and Harry Förster, Dresden, Germany, assignors to Veb Lokomotivbau-Elektrotechnische Werke Hans Beimler, Henningsdorf, Kreis Dranienburg, Germany

Filed July 19, 1966, Ser. No. 566,431

U.S. Cl. 117—106 **6 Claims**

Int. Cl. C23c *13/02, 13/08*



A method for vapor depositing in a vacuum a uniform coating onto a substrate by cyclically deflecting and moving an electron beam onto a surface of the coating material held in a container to vaporize the material whereby the electron beam is maintained for longer periods of time in the ends of the container than in an intermediate portion situated between the container ends.

3,432,336

IMPREGNATION OF GRAPHITE WITH REFRACTORY CARBIDES

Kasimir Langrod, Sherman Oaks, and Robert L. Jones, Canoga Park, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,042

U.S. Cl. 117—118 **11 Claims**

Int. Cl. B44d *1/40;* **C04b** *35/56, 35/54*

A method of impregnating graphite with refractory metal carbides. A solution of a refractory metal salt, preferably an aqueous solution of an organic compound of a refractory metal such as an oxalate or acetate, is impregnated in the pores of a graphite member. The refractory metal salt is next hydrolyzed, preferably with a basic reagent which does not leave trace metal ions, to form the oxide or hydroxide. The hydrolyzed salt is then calcined at an elevated temperature in a non-oxidizing atmosphere, preferably at a temperature of about 1500–2400° C., in a vacuum or a noble gas, to yield the final product of a graphite body impregnated with a refractory metal carbide.

3,432,337

PROCESS FOR THE CURRENTLESS DEPOSITION OF COPPER-TIN LAYERS

Fritz Möller, Bensberg-Frankenforst, Heinz Groschopp, Dusseldorf-Holthausen, and Rudolf Wagenknecht, Cologne-Lindenthal, Germany, assignors to Gerhard Collardin GmbH, a corporation of Germany

No Drawing. Filed Aug. 3, 1965, Ser. No. 476,990

Claims priority, application Germany, Aug. 17, 1964, C 33,648

U.S. Cl. 117—130 **8 Claims**

Int. Cl. C23c *3/00;* **B44d** *1/34*

1. A process for the currentless deposition of copper-tin layers on the surfaces of iron and steel which comprises treating said surfaces at temperatures ranging from substantially 10 to substantially 40° C. for approximately 1 to 6 minutes with an aqueous solution of $CuSO_4.5H_2O$ and $SnSO_4$ in weight proportions of 2:1 to 1:2, said solution further containing 0.01 to 0.15 weight percent of a polyaminopolycarboxylic acid, and having a pH range of 0.5 to 6; followed by rinsing the surfaces with water.

3,432,338

ELECTROLESS NICKEL, COBALT AND NICKEL-COBALT ALLOY PLATING FROM FLUOBORATES SOURCES

Ralph E. Sickles, Canton, Ohio, assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 476,183, July 30, 1965. This application Apr. 17, 1967, Ser. No. 632,513

U.S. Cl. 117—130 **9 Claims**

Int. Cl. C23c *1/10;* **C09d** *5/00*

The invention hereinafter described relates to novel methods of autocatalytic or commonly called "electroless" plating of nickel, cobalt and their common alloys, and further employs fluoborate solutions and methods for their use in producing nickel, cobalt and alloy deposits by non-electrolytic means, such deposits having the qualities of superior corrosion resistance, zero-to-compressive internal stresses and excellent hardenability characteristics under ordinary heat-treating or accelerated aging processes.

3,432,339
PROCESS FOR COATING SUBSTRATES WITH POLYMERS

Samuel G. Howell, Cincinnati, Ohio, and Dale M. Akers, Florissant, Mo., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,929
U.S. Cl. 117—132 **9 Claims**
Int. Cl. B44c *1/08;* **B44d** *1/36*

A process for coating various substrates with polymers such as polyolefinic polymers alone or in combination with a rubber latex. Finely divided polyolefinic polymers having an average particle size of from about 2 to 30 microns are dispersed in an inert carrier liquid such as water. The resulting dispersion is applied to the surface of the substrate and then heated to evaporate the inert liquid. In accordance with one of the preferred embodiments, a minor amount of a rubber latex is dispersed along with the finely divided polyolefinic polymer.

3,432,340
ARTICLES COATED WITH VINYLIDENE CHLORIDE CONTAINING TERPOLYMERS

Pierre Mathis, Schaerbeek, and Pierre Demol, Brussels, Belgium, assignors to Solvay et Cie, Brussels, Belgium

No Drawing. Filed May 17, 1965, Ser. No. 456,493
Claims priority, application France, July 1, 1964, 980,354
U.S. Cl. 117—132 **7 Claims**
Int. Cl. B44c *1/08;* **C08d** *13/16;* **B44d** *1/36*

An article having the characteristics of impermeability to water vapor, gases and greases and only slight adherence at cold temperatures to like articles, such characteristics being associated with a novel coating upon a support, such coating comprising a terpolymer of vinylidene chloride, vinyl chloride and an alkyl itaconate.

3,432,341
PROTECTING FABRICS WITH A BACTERIOTOXIC-FUNGITOXIC APPLICATION OF α,ω-ALKYLENEBIS [TRIPHENYLPHOSPHONIUM SALT]

Herman Berenson, Trenton, N.J., Albert Carl Dornbush, Pearl River, N.Y., and Donald Clifford Wehner, Fairfield, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Aug. 23, 1965, Ser. No. 481,941, now Patent No. 3,364,107, dated Jan. 16, 1968. Divided and this application July 27, 1967, Ser. No. 656,335
U.S. Cl. 117—138.5 **2 Claims**
Int. Cl. A01n *9/00;* **C11d** *9/50*

The invention is directed to a method for protecting fabrics from bacterial and fungal attack comprising: applying a bacteriotoxic-fungitoxic amount of a compound of the formula:



wherein X represents an anion and where n is an integer of from 6 to 14, to said fabric to be protected from bacterial and fungal attack.

3,432,342
EPOXYALKYLDIOXANES AND THEIR USE AS TEXTILE FINISHING AGENTS

Samuel W. Tinsley, Charleston, W. Va., and Paul A. King, Warwick, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 9, 1965, Ser. No. 462,752
U.S. Cl. 117—139.4 **8 Claims**
Int. Cl. C08j *1/00;* **C07d** *15/12*

A composition is disclosed comprising epoxyalkyl dioxanes and their use as textile finishing agents. Specific epoxides that may be prepared and used in such a manner include 2,5-bis(1,2-epoxyethyl)-1,4-dioxane; 2,6-bis(1,2-epoxyethyl)-1,4-dioxane; 2 - (1,2-epoxyethyl)-5-vinyl-1,4-dioxane; 2-(1,2-epoxyethyl)-6-vinyl-1,4-dioxane; 2-allyl-3-(2,3-epoxypropyl)-1,4-dioxane and 2,3 - bis(2,3-epoxypropyl)-1,4-dioxane.

3,432,343
FIBERS AND FABRICS COATED WITH AN ALKYL PHOSPHITE-POLYOLEFIN WAX ADDUCT AND PROCESS THEREFOR

Isaac J. Levine, East Brunswick, and Arthur K. Ingberman, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

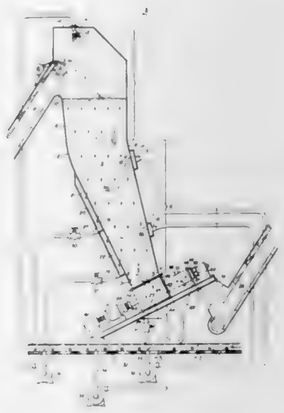
No Drawing. Continuation-in-part of applications Ser. Nos. 469,840 and 469,890, July 6, 1965. This application June 28, 1966, Ser. No. 561,005
U.S. Cl. 117—139.5 **11 Claims**
Int. Cl. C08j *1/44*

Textile fibers and fabrics are coated with a finishing agent comprising an alkyl phosphite-polyolefin wax adduct. In the process, the coated fibers and fabrics are subjected to a post heating step.

3,432,344
JUICE EXTRACTION APPARATUS AND SCREW PRESS

John Farmer, Oahu, Hawaii, assignor to Honiron, Inc., Honolulu, Hawaii, a corporation of Hawaii

Filed Nov. 4, 1964, Ser. No. 408,944
U.S. Cl. 127—3 **21 Claims**
Int. Cl. C13d *1/12*



Apparatus for extracting juice from disintegrated juice-containing material including a hopper having a lower part inclined toward a side and tapered toward its bottom, a plurality of vertically spaced injectors for injecting diluent liquid into the top and on to the upper side of the inclined portion of the hopper, a valved outlet on the lower side of the inclined portion for and spaced below each injector, and a multi-barrelled screw press at a bottom of the hopper for positively withdrawing the material therefrom, each barrel having an annular orifice variable in area by a plug shiftable axially on the related screw shaft, and interconnected means for shifting the plugs and equalizing the pressures in the barrels.

3,432,345
PRODUCTION OF FRUCTOSE FROM DEXTROSE

George T. Tsao, Granite City, Thornton H. Reid, Alton, and Fred L. Hiller and Lawrence H. Hubbard, Granite City, Ill., assignors to Union Starch & Refining Co., Inc., Columbus, Ind., a corporation of Indiana

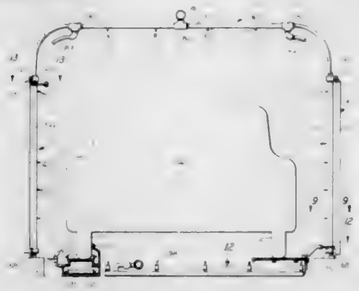
No Drawing. Filed Apr. 7, 1966, Ser. No. 540,854
U.S. Cl. 127—42 **6 Claims**
Int. Cl. C13k *9/00;* **C13d** *3/00*

1. A process of isomerizing a portion of the dextrose in an aqueous solution containing dextrose and containing less than about 33% of fructose based on the total amount of dextrose and fructose comprising adding 0.5 ml. to about 300 ml. of cyclohexylamine per 100 ml. of dextrose solution and incubating the solution at a temperature of 15° C. to about 60° C. for a period of about ½ hour to several weeks, the longer times being employed with the lower temperatures and being correlated with the temperatures to produce a solution containing more than the original percent of fructose but no more than 33% of fructose.

3,432,346
AUTOMOBILE WASHING METHOD

Mowatt M. Hurst, San Carlos, Calif., assignor, by mesne assignments, to S. C. Johnson & Son, Inc., Racine, Wis., a corporation of Wisconsin

Filed Apr. 24, 1963, Ser. No. 275,266
U.S. Cl. 134—34 **21 Claims**
Int. Cl. B08b *3/02*



1. The method of washing the upper surface of an automobile that includes the steps of:
(a) moving said automobile lengthwise of said automobile in one direction in a substantially horizontally extending path:
(b) impinging said upper surface with a downwardly directed jet of a cleaning liquid; and
(c) moving the point of discharge of said jet back and forth across said upper surface in a direction transversely of the length of said automobile along an arcuate path in a substantially horizontal plane simultaneously with movement of said automobile in said one direction whereby said upper surface will be periodically swept by said jet, the rate of movement of said point of discharge of said jet being sufficient to allow said jet to completely cover all of said upper surface of said automobile with said liquid as said automobile is moved along said path past said jet.

3,432,347
POLYMER COATING REMOVAL PROCESS

Harry Creston Mandell, Jr., Abington, Pa., and Edwin S. Roth, New Haven, Conn., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

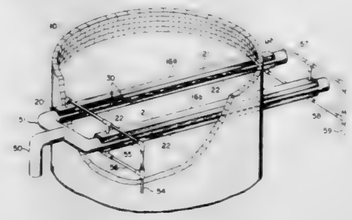
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,674
U.S. Cl. 134—38 **2 Claims**
Int. Cl. C23g *1/02;* **B08b** *3/08*

This patent application is directed to a process for stripping resins from metallic substrates using fluorosulfonic acid as the chemical resin stripping agent. The process will remove highly cross-linked resin coatings, such as, epoxies and urethanes, in a few minutes without corrosion of the substrate. Unsuccessful attempts to remove resins using other strong acids are described.

3,432,348
FLUID DISTRIBUTOR FOR VERTICAL VESSELS

John B. Jones, Jr., Denver, Colo., assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Nov. 28, 1966, Ser. No. 597,299
U.S. Cl. 134—42 **11 Claims**
Int. Cl. B08b *3/04*



1. The method of introducing fluids under pressure into material to be treated residing in shaft vessels comprising:
(a) passing a confined supply of fluid under pressure into a plurality of zones in a shaft vessel, each confined supply extending from wall to wall of said vessel generally along a horizontal plane;
(b) introducing fluid into the material in said vessel at selected points from orifices along said confined supply, and the amount of fluid introduced from every such point being sufficient to provide a uniform amount of fluid in relation to each unit of volume of material in a predetermined space horizontally about each point to thereby provide a uniform amount of fluid per unit-volume of material in a horizontal zone about said confined supply, said predetermined spaces extending along the entire extent of said confined supply internally of said vessel and arranged in abutting position from wall to wall of said vessel;
(c) and supplying said orifices with sufficient fluid to maintain the same pressure on the fluid entering each orifice.

3,432,349
ELECTRIC STORAGE CELL

William E. Tragert, Chagrin Falls, Ohio, assignor to General Electric Company, a corporation of New York

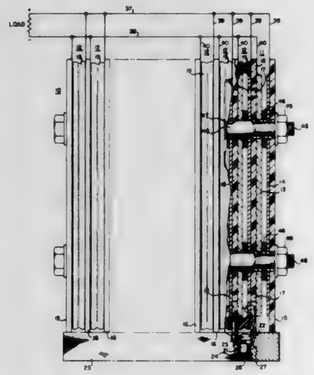
Continuation-in-part of application Ser. No. 422,891, Jan. 4, 1965. This application Nov. 20, 1967, Ser. No. 689,223
U.S. Cl. 136—6 **9 Claims**
Int. Cl. H01m *11/00*

An electric storage cell is disclosed having an anode and cathode composed of pools of mercury, a non-aqueous liquid electrolyte solvent in contact with the upper surfaces of the mercury pools and an ionizable compound of a metal selected from the group consisting of aluminum, lithium, sodium, magnesium and potassium in combination with a halogen or a cyano ion. Upon charging, the metal ions migrate to the cathode to form metal amalgams and the halogen or cyano ions migrate to the anode to form mercury halides or mercury cyanide. Upon discharge, the amalgams and the mercury compounds are decomposed, returning the respective ions to the electrolyte.

3,432,350
SEA WATER BATTERY

Burton J. Wilson, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 29, 1967, Ser. No. 650,140
U.S. Cl. 136—90 **6 Claims**
Int. Cl. H01m *23/02*



A sea water battery having a succession of cells which with the exception of the first are closed to influx of ambient sea water on immersion of the battery and in operation of the battery are opened in a delayed cell-sequence. A tensed resilient closure seals each of the cells at the periphery and is broken in operation of the battery through the partial flooding and activation of a closed cell with sea water from the immediately preceding cell which enters the closed cell through openings in its cathode and side wall and through an erosion-developed opening in the adjacently located consumable anode of the preceding cell.

3,432,351
PROCESS FOR PRODUCING ELECTRODES FOR GALVANIC BATTERIES

Robert L. Davee, Northboro, Mass., and Demetrios V. Louzos, Rocky River, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Continuation of application Ser. No. 613,949, Feb. 3, 1967. This application Jan. 2, 1968, Ser. No. 695,292
U.S. Cl. 136—67 **5 Claims**
Int. Cl. H01m *35/22, 43/02*

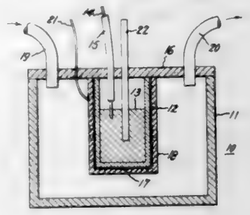
For use in galvanic batteries, electrodes are produced by a process wherein dry powders of an active material are fed to a pair of spaced pressure rollers together with a conductive carrier grid such as expanded metal, while at the same time filling the openings of the grid and compacting the dry powders therein and wherein the filled grid is then compressed between the pair of spaced pressure rollers to pressure bond the dry powders within the grid.

3,432,352
HIGH TEMPERATURE FUEL CELL HAVING A PALLADIUM FILM BETWEEN THE ANODE AND ELECTROLYTE

Donald W. White, Burnt Hills, and William E. Tragert and William A. Rocco, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 27, 1963, Ser. No. 283,257
U.S. Cl. 136—86 **3 Claims**
Int. Cl. H01m *27/06, 27/14, 27/30*

1. In a fuel cell comprising an electrically conductive cathode and a porous carbon anode separated by a solid oxygen-ion electrolyte, said electrode being used in a high temperature fuel cell, wherein at temperatures over about 800° C. direct current is generated by supplying a gaseous oxidant containing molecular oxygen at the

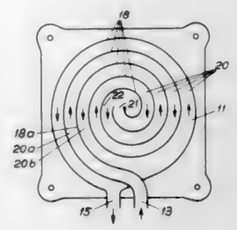


cathode and removing combustion products from the anode, the improvement comprising a porous film of palladium metal interposed between and in contact with the solid oxygen-ion electrolyte and the porous carbon anode.

3,432,353
FUEL CELL ELECTRODE

Otto von Krusenstierna, Stockholm, and Ingemar Lindholm and Gunnar Malmberg, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Feb. 28, 1966, Ser. No. 530,448
Claims priority, application Sweden, Mar. 3, 1965, 2,724/65
U.S. Cl. 136—86 **9 Claims**
Int. Cl. H01m *21/04, 27/02*



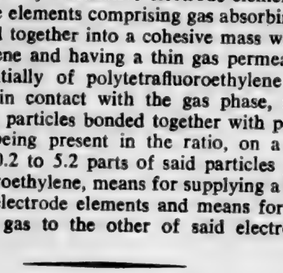
1. In a fuel cell comprising a pair of spaced electrode elements defining a space for a medium reacting at the electrode elements in the form of a fuel or an oxidant, the improvement in which said space is provided with an inlet and an outlet for a medium supplied to the space and partially consumed during its passage through the space, and means dividing the space into two channels running side by side and lying in the same plane, said dividing means comprising intermediate walls, the medium on both sides of each intermediate wall flowing in opposite directions in relation to said intermediate wall, the first end of the first channel constituting the inlet for the medium, the second end of the first channel being connected to the first end of the second channel, the second end of the second channel constituting the outlet for the medium.

3,432,354
ELECTROCHEMICAL POWER SUPPLY WITH MOVABLE ANODE MATERIAL

Ernest M. Jost, Plainville, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 15, 1966, Ser. No. 572,506
U.S. Cl. 136—86 **16 Claims**
Int. Cl. H01m *29/02, 15/02*

Electrochemical power supplies are described each of which includes a body of aqueous electrolyte, an electrically conductive cathode, a supply of elongate electrically conductive porous anode material and means for

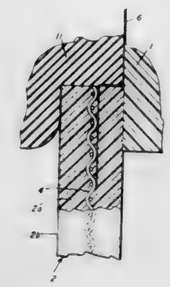


moving this anode material relative to the cathode and through the aqueous electrolyte.

3,432,355
POLYTETRAFLUOROETHYLENE COATED AND BONDED CELL STRUCTURES

Leonard W. Niedrach and Harvey R. Alford, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 24, 1962, Ser. No. 232,689
U.S. Cl. 136—86 **16 Claims**
Int. Cl. H01m *27/06*



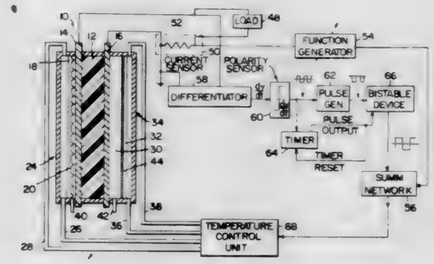
1. A gaseous fuel cell comprising an aqueous electrolyte solution which is positioned between and in direct electrical contact with a pair of gas permeable, hydrophobic, electronically conductive electrode elements, each of said electrode elements comprising gas absorbing metal particles bonded together into a cohesive mass with polytetrafluoroethylene and having a thin gas permeable film consisting essentially of polytetrafluoroethylene bonded to the surface in contact with the gas phase, said gas adsorbing metal particles bonded together with polytetrafluoroethylene being present in the ratio, on a volume basis, of from 0.2 to 5.2 parts of said particles per part of polytetrafluoroethylene, means for supplying a fuel gas to one of said electrode elements and means for supplying an oxidant gas to the other of said electrode elements.

3,432,356
REGULATED FUEL CELL SYSTEM

Clinton C. Christianson, West Peabody, Mass., assignor to General Electric Company, a corporation of New York

Filed Sept. 11, 1963, Ser. No. 308,105
U.S. Cl. 136—86 **13 Claims**
Int. Cl. H01m *27/14*

The invention is directed to a fuel cell system incorporating a regulating arrangement by which it is maintained near its optimum operating efficiency. A fluid impervious heat transfer element is mounted spaced from one electrode and cooled in a controlled manner so that the rate of moisture migration from the electrode to the element is controlled. In one form the controlling means monitors the output voltage of the system and in response to a voltage decline generates an electrical pulse. The pulse actuates a control between a first state in which the

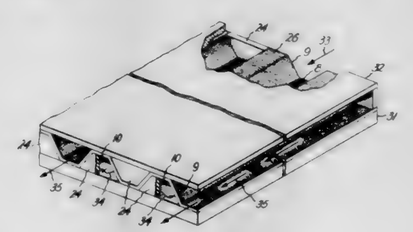


rate of moisture migration exceeds the rate of moisture production and a second state in which the rate of moisture migration lags the rate of moisture production. In another form of the system variation in the resistance of the electrolyte of the fuel cell produces a signal whose phase can be compared with a reference signal to regulate the rate of moisture removal.

3,432,357
FLUENT MATERIAL DISTRIBUTION SYSTEM AND FUEL CELL THEREWITH

Joseph P. Dankese, Dorchester, Mass., assignor to General Electric Company, a corporation of New York

Filed Sept. 28, 1964, Ser. No. 399,494
U.S. Cl. 136—86 **35 Claims**
Int. Cl. H01m *27/14*



To allow the uniform distribution of a fluent material to a transfer surface a perforate corrugated sheet is placed in contact with the surface. The sheet may have a high perforation density and may have tapered, nozzle shaped perforations. In a specific cell application, the corrugated sheet may be placed in contact with a catalytic body with plugs and imperforate elements being associated to direct a fluid reactant into impingement with the catalytic body.

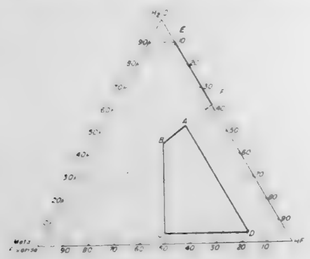
3,432,358
FUEL CELL ELECTROLYTE AND PROCESS OF USING

Elton J. Cairns, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 4, 1965, Ser. No. 422,903
U.S. Cl. 136—86 **9 Claims**
Int. Cl. H01m *27/14*

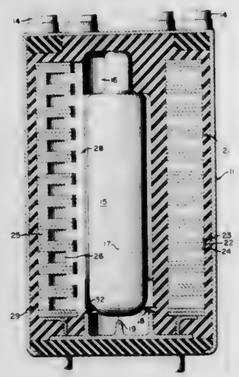
An aqueous solution of hydrofluoric acid is used as a fuel cell electrolyte in combination with a fuel cell using a hydrocarbon fuel. In operation, the fuel cell is operated at temperature of at least 80° C., but not exceeding the boiling point of the electrolyte at the ambient pressure

above the electrolyte in the fuel cell. In order to permit operation of the fuel cell at temperatures higher than the boiling point of the azeotrope of water and hydrogen



fluoride, cesium fluoride or rubidium fluoride is added to the electrolyte as a suppressor of the vapor pressure of the hydrogen fluoride.

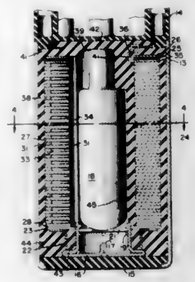
3,432,359
SETBACK ACTIVATED, SPIN FILLED GALVANIC BATTERY
Clark C. Cleveland, Bennington, Vt., and Harry F. French, deceased, late of Cleveland, Ohio, by Cleveland Trust Company, executor, and Howard S. Pattin, Lakewood, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 18, 1961, Ser. No. 111,115
U.S. Cl. 136—90 **1 Claim**
Int. Cl. H01m *17/06*



1. In a setback activated spin-filled galvanic battery having an electrolyte housing defining a chamber therein, a breakable electrolyte ampule within said chamber, and a cell structure to be filled by said electrolyte, the improvement comprising a serrated surface on the periphery of said chamber, whereby a fluid electrolyte is easily drained from beneath portions of the said ampule after breaking and the ampule is cushioned before breaking thereby.

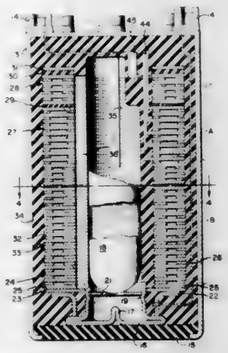
3,432,360
WATERPROOFED ELECTROLYTE ENTRY PORT AND FILL CHANNEL FOR GALVANIC BATTERY
Clark C. Cleveland, Bennington, Vt., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 21, 1961, Ser. No. 119,257
U.S. Cl. 136—90 **4 Claims**
Int. Cl. H01m *17/06*

1. The method of constructing a force-filled battery for use as a power source in a spinning projectile comprising the steps of stacking the battery cells in such a manner as to interpose arcuate absorbent separators between annular plates forming said cells for providing an entry port for each cell along a fill channel, coating the exterior of the cell stack with a molding compound, spraying the cell stack entry port and the fill channel with an insulating lacquer, pressing the cell stack into a battery casing, lining the cell stack with molding compound in



such a manner as to form an ampule cavity, bonding the stack liner to the inside of the cell stack with said insulating lacquer to prevent electrolyte communication by capillary action between said stack liner and the inner surfaces of said cell stack, inserting an electrolyte containing ampule and a support means therefor into the ampule cavity, and sealing the ampule cavity with a molding compound.

3,432,361
GALVANIC BATTERY ELECTRICAL CONTACT
Clark C. Cleveland, Bennington, Vt., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 27, 1961, Ser. No. 162,608
U.S. Cl. 136—90 **2 Claims**
Int. Cl. H01m *17/06*

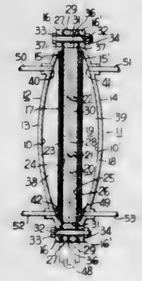


1. A reserve energizer for use as a power source in a spin type projectile comprising:
- an annular stack of plates including a first plurality of annular plates forming the B section of the energizer,
- a second plurality of annular plates forming the A section of the energizer,
- a third plurality of annular plates forming the C section of the energizer, said annular plates forming the B and C sections being coated with lead on one side and lead oxide on the other side,
- means supporting said first, second and third plurality of annular plates and for providing a terminal connection to the B section of the energizer,
- said means supporting including a stack support and a disc plated with one of a group of metals consisting of cadmium and silver, said disc being in electrical contact with said stack support and said B section of annular plates, said stack support being plated with one of a group of metals consisting of cadmium and silver, said stack support and said disc being plated with the same metal taken from each said group,
- an elastomer molding compound insulating material encapsulating said first, second and third plurality of annular plates,
- a cylindrical housing formed by said insulating material within a circular opening formed by said plurality of annular plates,
- an ampule containing a copius quantity of fluoboric acid electrolyte normally located in said cylindrical housing,
- a pair of diametrically opposed fill channels each wholly interrupting said insulating material and extending entirely through said insulating material in a direction normal to the plane of said plates, said channels located adjacent said inner periphery of the annular stack of plates for allowing the electrolyte to pass into the annular plates when released,
- and means for breaking the ampule and releasing the electrolyte in the cylindrical housing upon firing of the projectile whereby the electrolyte is forced along the fill channels into the annular stack by the spin of the projectile to activate the energizer.

3,432,362
ELECTRODE CATALYST FOR ELECTROCHEMICAL CELL PREPARED WITH ORGANOALUMINUM REDUCING AGENT
Wolfram R. Kroll, Linden, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 281,347, May 17, 1963. This application Apr. 11, 1967, Ser. No. 629,909
U.S. Cl. 136—120 **19 Claims**
Int. Cl. H01m *27/10*

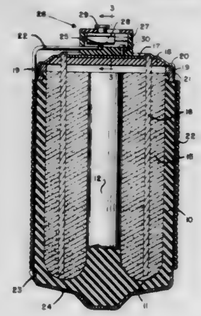
Transition metal compounds are treated with organometallic reducing agents in solution and subsequently hydrolyzed to recover a finely divided metal precipitate which is then deposited upon a suitable base material, the resulting product being useful as an electrode in electrochemical cells, e.g., fuel cells.

3,432,363
HIGH TEMPERATURE FUEL CELL ELECTROLYTE CARRIER
Edward Allan Gillis, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 12, 1963, Ser. No. 322,952
U.S. Cl. 136—153 **7 Claims**
Int. Cl. H01m *27/02, 43/06*



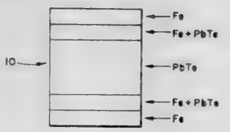
1. An electrolyte carrier matrix for molten electrolyte fuel cells comprising a thin, flat, malleable, porous support core, said core having a central portion and a peripheral portion; a heavy continuous layer of a porous refractory material adherent upon and completely covering each face of said central portion of said support core, and filling the pores in said central portion of said support core; and a vitreous nonporous refractory seal about said outer peripheral portion of said support core.

3,432,364
WARMING DEVICE
Rodolfo Rodriguez Balaguer, Fort Lauderdale, Fla., assignor, by mesne assignments, to Patent Holding Corporation, Fort Lauderdale, Fla., a corporation of Florida
Filed May 18, 1965, Ser. No. 456,619
U.S. Cl. 136—181 **2 Claims**
Int. Cl. A61f *7/06;* **H05b** *3/10;* **H01m** *21/06*



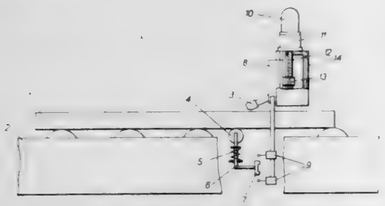
A hand holdable warming apparatus, comprising an inside-out magnesium anode dry cell battery having a dual cathode element formed by a green carbon cup and a central carbon rod, a coil of copper wire wound about the exterior of the cup throughout substantially its length, and means for connecting opposite ends of the wire to the battery anode and cathode.

3,432,365
COMPOSITE THERMOELECTRIC ASSEMBLY HAVING PREFORMED INTERMEDIATE LAYERS OF GRADED COMPOSITION
Norman H. Katz, Northridge, and Martin H. Binstock, Tarzana, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Feb. 7, 1963, Ser. No. 256,877
U.S. Cl. 136—237 **2 Claims**
Int. Cl. H01v *1/18*



1. A sintered composite thermoelectric assembly for a thermoelectric converter, consisting essentially of a central layer of a thermoelectric material, outer layers of a contact metal for contacting a heat source and a heat sink, and intermediate layers comprising a mixture of said contact metal and said thermoelectric material, wherein each of said intermediate layers is a distinguishable, preformed layer of graded composition, relatively rich in contact metal in the region bordering the contact metal and then graduating to a region relatively rich in thermoelectric material in the region bordering the thermoelectric material.

3,432,366
TORCH CONTROL
Horst K. Lotz, Frankfurt am Main, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 10, 1965, Ser. No. 486,406
Claims priority, application Germany, Sept. 19, 1964, M 62,498
U.S. Cl. 148—9.5 **7 Claims**
Int. Cl. B23k *7/10;* **B26f** *3/06;* **B23q** *15/00*

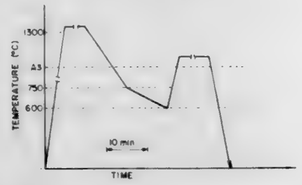


An automatic control of the distance of the nozzle of a torch from a workpiece by adjustment of the nozzle in response to signals received from scanning of the surface of the workpiece in a region unaffected by the flame from the nozzle, as adjusted.

3,432,367
PROCESS FOR THE REDUCTION OF HOT-ROLLED STRIP WITH VERY FINE STRUCTURAL GRAIN SIZE
Wilhelm Stich, Wattenscheid-Hontrop, and Adolf Sickbert, Wattenscheid-Eppendorf, Germany, assignors to Heppenstall Company, Pittsburgh, Pa.
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,702
U.S. Cl. 148—12 **3 Claims**
Int. Cl. C21d *7/13*

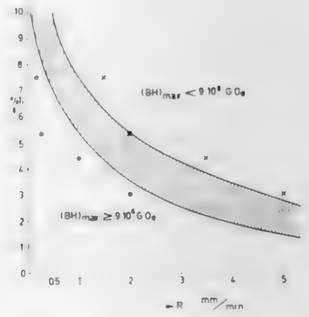
A method of forming a fine grain steel which is resistant to coarsening even during subsequent annealing by the steps of casting a coarse grain vacuum treated steel free from elements which lead to fine grain formation, solidifying said steel, rapidly reducing the solidified steel in cross-section at an elevated temperature and at a pressure sufficient to reduce the coarse grain structure to a desired fine grain structure, and immediately cooling the reduced steel to room temperature prior to the inception of any grain growth.

3,432,368
METHOD FOR MANUFACTURING NITRIDE-CONTAINING LOW-CARBON STRUCTURAL STEELS
Hajime Nakamura, Tokyo-to, Japan, assignor to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a Japanese company
Filed Feb. 21, 1966, Ser. No. 529,013
Claims priority, application Japan, Feb. 25, 1965, 40/10,837
U.S. Cl. 148—12 **7 Claims**
Int. Cl. C21c *1/28, 1/22;* **C21d** *7/14*



Method for manufacturing nitride-containing low carbon structural steel with carbon up to 0.25%, total nitrogen at least 0.012% of which at least 0.010 is present as nitride, either of aluminum alone or in combination with nitrides of one or more other elements, the method comprising (1) heating the steel to at least 1,300° C., (2) during cooling from said temperature, passing the temperature range of 1,250° to 1,050° C. in at the most ten minutes, (3) in further cooling passing the range of 750° to 600° C. in at least ten minutes or holding at any temperature within that range for at least ten minutes, (4) reheating the steel with or without cooling down to room temperature, and (5) heat treating the steel at a temperature above the A_3 transformation point. The steel so produced has improved mechanical properties, particularly low temperature toughness.

3,432,369
METHOD OF MAKING MAGNETICALLY ANISOTROPIC PERMANENT MAGNETS
Pieter Aarat Naastepad, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 10, 1966, Ser. No. 549,029
Claims priority, application Netherlands, June 9, 1965, 6507303
U.S. Cl. 148—101 **6 Claims**
Int. Cl. H01f *1/04*



1. A method of manufacturing rod-shaped magnetically anisotropic permanent magnet bodies having a cubic crystal structure and a (100) direction of the crystals oriented substantially axially from an alloy consisting of 16–42% of Co, 7–20% of Ni, 6–11% of Al, 0–10% of Cu, 1–10% of Ti, 0–4% of Nb, 0–8% of Ta, 0–1% of Si, 0–1% of S and the balance principally Fe comprising the steps of forming a melt of the said alloy, contacting the melt with an oxide-free seed having a cubic crystal structure, the (100) direction of which is oriented axially and which is miscible in the liquid phase of the melt, the seed during contact with the melt partially melting and forming a dendritic boundary surface with an axially oriented (100) direction of the crystal, and cooling the melt at a predetermined solidification rate R (mm./min.), which for a given temperature gradient G (° C./min.) at the solidification front is kept below a predetermined maximum value, which increases as the Ti-content decreases, whereby the resulting alloy after thermal treatment in a magnetic field has a $(BH)_{max.}$ value of at least 9.0×10^6 g.o.

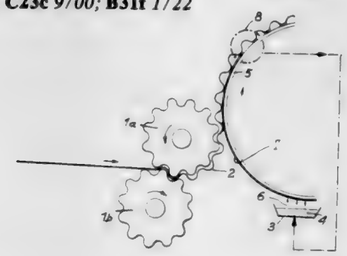
3,432,370
FLARE COMPOSITION CONTAINING ALKALI METAL NITRATE, MAGNESIUM, AND A COPOLYMER REACTION PRODUCT BINDER
Charles W. Bash and George A. Lane, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 24, 1967, Ser. No. 662,887
U.S. Cl. 149—19 **5 Claims**
Int. Cl. C06d *1/10*

An illuminating flare composition comprising an alkali metal nitrate as oxidizer, particulate light metal as fuel and crosslinked copolymer of an epoxy resin and a nitrate- or perchlorate salt of an amine terminated polyglycol as binder.

3,432,371
DRY EXPLOSIVE COMPOSITION CONTAINING PARTICULATE METAL OF SPECIFIC MESH AND GAUGE
Charles H. Grant, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 603,762, Dec. 22, 1966, which is a continuation-in-part of application Ser. No. 419,262, Oct. 16, 1964, which in turn is a continuation-in-part of application Ser. No. 299,115, July 31, 1963. This application Feb. 14, 1968, Ser. No. 705,281
U.S. Cl. 149—21 **9 Claims**
Int. Cl. C06b *1/04, 11/00, 1/00*

A novel dry explosive composition consisting essentially of: ammonium nitrate as oxidizer and a particulate light metal as fuel, said metal being within the range substantially of from about No. 4 to about No. 200 mesh and having a gauge of from about 0.25 mil to about 40 mils. Other inorganic oxidizers, fuels and explosive sensitizers can be incorporated into the composition.

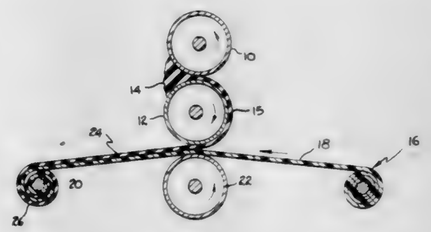
3,432,372
MANUFACTURE OF CORRUGATED CARDBOARD
Jean-Pierre Avot, Neuilly-sur-Seine, France, assignor to Societe Anonyme Anciens Etablissements Walton & Place, Pantin, Seine-Saint-Denis, France, a corporation of France
Filed Feb. 12, 1965, Ser. No. 432,155
Claims priority, application France, Feb. 14, 1964, 963,844; Mar. 7, 1964, 966,560
U.S. Cl. 156—151 **6 Claims**
Int. Cl. C23c *9/00;* **B31f** *1/22*



A method of manufacturing corrugated cardboard in which pre-heated corrugated sheet is brought into contact with a cover sheet on the surface of which have been electrostatically deposited a uniform layer of dry thermo-adhesive powder. The thermo-adhesive powder becomes partly jellified where it contacts the crests of the pre-heated corrugated sheet, thereby adhesively joining the cover sheet and corrugated sheet together at said crests. The sheets are then allowed to cool and the non-jellified thermo-adhesive powder on the cover sheet between the crests is thereafter recovered and recycled to the supply thereof.

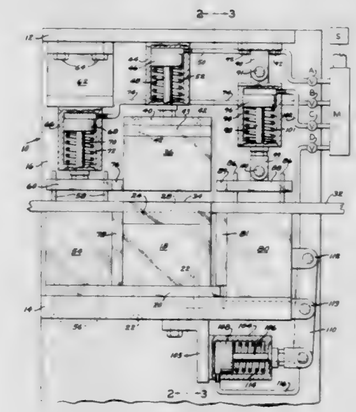
3,432,373
METHOD OF FORMING A LAMINATE AND WINDING SAME INTO A ROLL
Edward G. McMahon, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Nov. 27, 1964, Ser. No. 414,385
U.S. Cl. 156—184 **10 Claims**
Int. Cl. B32b *27/06;* **B31c** *13/00*

A method of preparing a laminate having enhanced utility in which an etched synthetic resinous material such as polytetrafluoroethylene is chemically bonded by a thermosetting bonding agent such as, for example, the thermosettable adhesive solid by Shell Oil Company as Epoxy 919, which thermosettable bonding agent also chemically bonds with a curable elastomeric material such as an uncured or paritally cured rubber, the process including the steps of (a) sufficiently bringing together



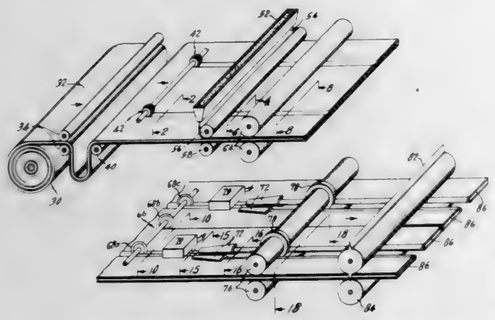
moving strips of each of the materials, (b) placing the thermosettable resin between the opposing faces of the materials, (c) applying sufficient pressure, to adhere the opposing faces but insufficient pressure to impair the permanent resiliency of the elastomer, and (d) thereafter curing the adhered lamina by typically employing calendering rolls and/or preferably post curing rolls of convolutions of the lamina by typically open steam curing.

3,432,374
MACHINE FOR BONDING ABUTTING STRIPS
Leslie M. Packard, Rosenberg, and Maynard R. Chance, Houston, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 29, 1964, Ser. No. 378,572
U.S. Cl. 156—366 **5 Claims**
Int. Cl. B32b *35/00*



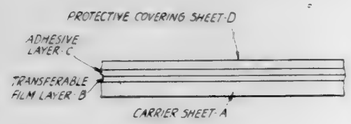
A machine for bonding halogenated olefin polymers which requires specific heat, time pressure and a specific bonding flux to achieve optimum bonds, between surfaces of unsintered olefin polymers. The machine includes structure for retaining strips of the polymer under a predetermined mechanical pressure from all sides thereof for a predetermined time at a specific temperature to achieve the desired bond.

3,432,375
METHOD OF RAW EDGE PROTECTION
Arnold Robert Rein, Menasha, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 13, 1964, Ser. No. 367,087
U.S. Cl. 156—202 15 Claims
Int. Cl. B31f *1/00*; B29c *24/00*



A method for making body blanks for a fibre container wherein the edges in the finished container will be protected against wicking. The blanks are made by cutting grooves in the top of a web of fibre material which has a protective layer on the bottom and then coating the upper surface with a thermoplastic film and cutting the web along the bottom of the grooves.

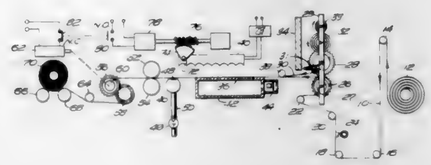
3,432,376
DRY TRANSFER SHEETS AND PROCESSES FOR USING THE SAME
Kenneth James Reed and Alan Lennox Lythgoe, London, England, assignors to Letraset Limited, London, England, a British company
Filed Jan. 28, 1964, Ser. No. 340,815
Claims priority, application Great Britain, Feb. 26, 1963, 7,763/63
U.S. Cl. 156—234 11 Claims
Int. Cl. B44d *1/20, 5/04, 5/02*



1. A scribable transfer sheet comprising essentially a carrier sheet, a thin transferable film layer carried by said carrier sheet on one face thereof and extending over a substantial portion of the area of said carrier sheet, an adhesive layer carried by said film layer, said film layer being fracturable upon scribing upon the face of said carrier sheet remote from said film layer thereby applying high localized pressure without cutting through said carrier sheet.

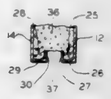
3,432,377
APPARATUS FOR CONTINUOUSLY LAMINATING WEBS
Stanley B. Huss, 89 Cliff Road, Portsmouth, N.H. 03801
Filed May 27, 1964, Ser. No. 370,640
U.S. Cl. 156—494 7 Claims
Int. Cl. B32b *31/20, 31/12*

A plastic web is laminated to a fabric web by applying adhesive to one of the webs and guiding them into superimposed relation, heating the plastic web sufficiently to soften it while applying a light vacuum to remove entrained air. The plastic web is longitudinally stretched with respect to the fabric web to insure a smooth application between the two webs during the lamination stage. A high suction is then applied through the fabric web to draw the heat-softened plastic web into intimate contact with



the fabric web. The two webs are fed between rollers which press the webs together and the laminated webs are then wound up on a take-up roll. Means are provided for removing the heat source from the web whenever the advance of the web is stopped for any reason. Also adjustment means are provided for selectively varying the angle at which the two webs are brought into face-to-face engagement.

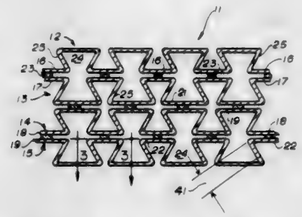
3,432,378
FOAMED CORE LAMINATED STRUCTURE AND METHOD
Frederick V. Gondeck, Lester E. Hickox, Thomas E. Kennedy, Arthur Perez, and James F. Thompson, Niles, Mich., assignors to Declark, Inc., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,291
U.S. Cl. 161—44 9 Claims
Int. Cl. B32b *3/30, 3/02*



A laminated core construction utilizes a supporting frame or form when inserting plastic material between two opposed, supported facings. The supporting form has a blocking means to form the edge construction between the facings that bends the ends of the facings to form two side-by-side channels. The blocking means, which is removed after setting of the core, extends between the two channels to form a generally U-shaped end portion with the laminated core structure providing the only connecting means between the two opposed facings.

3,432,379
THREE DIMENSIONAL FLEXIBLE DOVETAIL HONEYCOMB
Malkolm V. Anderson, Hayward, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 22, 1965, Ser. No. 502,687
U.S. Cl. 161—68 3 Claims
Int. Cl. B32b *3/12*

A honeycomb panel which is comprised of identical flexible strips, each creased to form a series of single dovetails that have a central segment with a limited central area bonded to an opposing matching central segment of dovetail of an adjacent strip to form double dovetail cells. Each single dovetail is made to be particularly flexible along the boundaries of the bonded area to provide maximum independent extension in directions in the



plane of the panel and maximum flexibility in directions normal to the panel.

3,432,380
WINDOWED FOAM PACKAGE
Walter O. Weber, Newark, Del., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,122
U.S. Cl. 161—124 9 Claims
Int. Cl. B32b *3/00, 5/18*



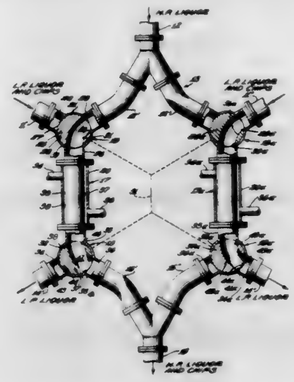
Foamed plastic containers having at least one transparent window are formed by compressing a portion of foamed wall of the container sufficient to increase the density of the foam to near that of the virgin plastic. The window is substantially thinner than the foam. Preferably, the compressing is done at a temperature of at least 150° F. and at a pressure of at least 500 p.s.i. Desirably, the foam has at least one external unfoamed nonporous skin of the polymer integral with the foam and it can have two external skins.

3,432,381
THERMAL INSULATION OF FIBROUS BRUCITE
John Oliver Collins, Jr., Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 266,813, Mar. 21, 1963. This application Aug. 19, 1966, Ser. No. 573,493
U.S. Cl. 162—152 5 Claims
Int. Cl. C04b *43/04*

An ablative type thermal insulation for transient thermal conditions comprising fibrous brucite and thermosetting resin.

3,432,382
STATIONARY POCKET FEEDER APPARATUS FOR DIGESTER
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 17, 1965, Ser. No. 456,328
U.S. Cl. 162—246 7 Claims
Int. Cl. D21c *7/06, 7/08*

Apparatus including a pair of valves for transferring wood chips from a first to a second liquor in a continuous pulping process. A screen is disposed either on the stationary valve housing or on the movable valve member of one of the valves to remove the chips from the first

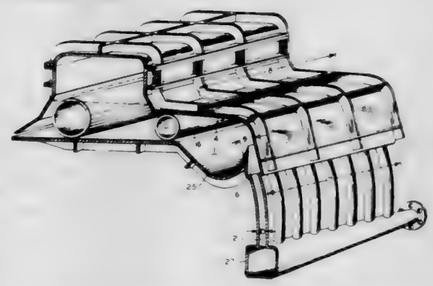


liquor and to transfer the same to the second liquor as the valves are changed from one position to another.

3,432,383
METHOD FOR CLEANING THE ORIFICES OF SHOWER TUBES BY APPLYING SUCTION AND BRUSHING
Frank H. Russell, Andover, Mass., assignor to Bolton-Emerson, Inc., Lawrence, Mass., a corporation of Massachusetts
Original application Jan. 17, 1963, Ser. No. 252,160, now Patent No. 3,228,611, dated Jan. 11, 1966. Divided and this application Apr. 5, 1965, Ser. No. 451,087
U.S. Cl. 162—272 2 Claims
Int. Cl. D21f *7/00*; B08b *3/02, 5/04*

A method for cleaning the orifices of shower tubes, of the type used in the paper art, including the steps of closing off the liquid inlet, opening the liquid outlet and applying a source of suction to one end of the tube to extract the contents by back flow and simultaneously brushing sediment from the inside faces of the shower orifices, so that sediment lodged in the orifices is sucked inwardly into the tube rather than forced outwardly into more firm contact within the orifice.

3,432,384
FINE-SPREADING AND RETARDING DEVICE FOR THE PULP SUSPENSION STREAM IN A PAPER-MAKING MACHINE
Hans Dahl, Ravensburg, Germany, assignor to Escher Wyss G.m.b.H., Ravensburg, Wurttemberg, Germany, a corporation of Germany
Filed June 7, 1965, Ser. No. 461,788
Claims priority, application Germany, June 13, 1964, E 27,215
U.S. Cl. 162—338 5 Claims
Int. Cl. D21f *1/06*



A cylindrical spreading chamber for a papermaking

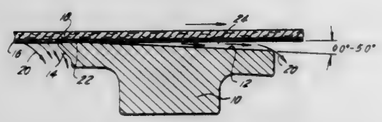
machine including a guide wall-arranged to direct a suspension of pulp in such a manner that the co-operative relationship between the cylindrical wall and the guide wall will enclose a whirling body of pulp.

3,432,385
WATER EXTRACTION DEVICES

Benjamin Adelbert Thorp, New Haven, Conn., assignor to Huyck Corporation, Rensselaer, N.Y., a corporation of New York

Filed Dec. 15, 1965, Ser. No. 513,948

U.S. Cl. 162—352 **10 Claims**
Int. Cl. D21f *1/58*



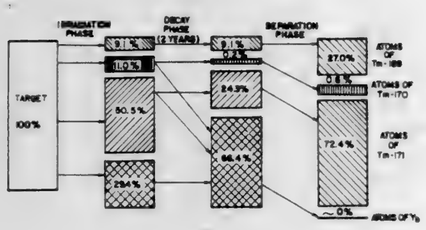
This invention relates to water extraction devices known as "hydrofoils," useful, for example, in the manufacture of paper. The hydrofoil blades are curved and are mounted on a closed box to which a supplementary vacuum is applied whereby the vacuum, and therefore the rate of water extraction from a paper web, for example, may be selectively varied over a range broader than was previously attainable.

3,432,386
METHOD OF PRODUCING A THULIUM HEAT SOURCE MATERIAL

Joseph J. Fitzgerald, Winchester, Mass., and Kenneth E. Mayo, Nashua, N.H., assignors to Sanders Nuclear Corporation, Nashua, N.H., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,841

U.S. Cl. 176—16 **8 Claims**
Int. Cl. G21g *1/02*



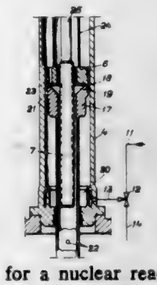
The invention relates to an economical method of producing thulium 171 with a high ratio of thulium 171 to thulium 170. The method comprises irradiating thulium 169 in a high flux neutron reactor to produce a mixture of radioactive isotopes comprising thulium 170 and thulium 171. The mixture formed is then allowed to decay. Due to the considerably longer half life of thulium 171, the ratio of thulium 171 to thulium 170 in the mixture increases. After a preselected decay time, decay products can be separated leaving a high purity thulium 171 thermal source.

3,432,387
CONTROL DEVICE FOR A NUCLEAR REACTOR

Erik Jönsson, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed June 21, 1965, Ser. No. 467,191
Claims priority, application Sweden, July 2, 1964, 8,043/64

U.S. Cl. 176—36 **4 Claims**
Int. Cl. G21c *7/08*



1. Control device for a nuclear reactor, comprising a reactor core housing, a substantially vertically movable neutron absorbing means insertable into said reactor core housing, said control means having a head member and a neutron absorbing member and a tube member joining said head member and said neutron absorbing member, a closed second housing having an upper and a lower wall and at least one side wall, said second housing enclosing said head member, a substantially vertically movable and mechanically driven member within said second housing, said second housing having in its lower wall pressure sealing means sealing against said tube member, thereby sealing said reactor core housing from said second housing, said mechanically driven member being located above said head member, said mechanically driven member and said head member having respectively first and second seat surfaces matching each other to form a tight seal when pressed together, said seal defining a low pressure space inside said seat surfaces, said tube member connecting said low pressure space to the interior of said reactor core housing, said head member having an effective pressure bearing area, said device further comprising means for feeding a pressure medium to said second housing outside said seat surfaces to exert a pressure higher than the pressure in said low pressure space on said pressure bearing area, said higher pressure being high enough to press said head member into abutting engagement with said mechanically driven member, and means for relieving said higher pressure to allow said head member to move downwards by action of gravity, said head member being spaced from said side wall of said second housing to provide a pressure medium containing space forming at least one flow passage for pressure medium displaced by said head member during said gravity induced downwards movement of said head member.

3,432,388
NUCLEAR REACTOR SYSTEM WITH FISSION GAS REMOVAL

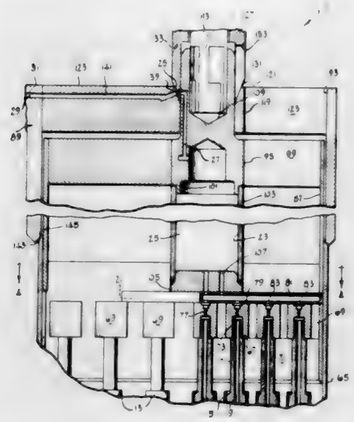
Peter Fortescue, La Jolla, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Continuation-in-part of application Ser. No. 645,578, June 9, 1967. This application Apr. 8, 1968, Ser. No. 725,558

U.S. Cl. 176—37 **16 Claims**
Int. Cl. G21c *19/20, 19/32*

A fluid-cooled nuclear reactor is described having a venting system for relieving pressure inside clad fuel pins.

A passageway network interconnects the interiors of otherwise sealed clad fuel pins in different fuel elements, and gas is admitted thereto to initially bring the internal pressure to within a given increment of the coolant pressure at startup. When fission products cause the internal pressure to increase, gas is vented to storage vessels to maintain the internal pressure proportional to the coolant pressure.

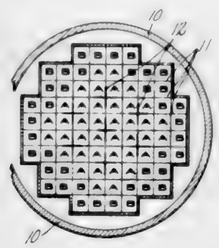


3,432,389
CORE DESIGN FOR NUCLEAR REACTOR

Fred M. Stern, Northridge, Calif., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,560

U.S. Cl. 176—40 **4 Claims**
Int. Cl. G21c *3/20, 3/04*



A first core for use in a heterogeneous nuclear reactor with which batch type refueling is to be utilized so as to produce an eventual equilibrium core. The zone of this core from which fuel is to be finally removed being provided with a stainless steel cladding and with a decreased enrichment compared to the zone into which fuel is to be initially introduced. The fuel in this latter zone being provided with a zirconium cladding.

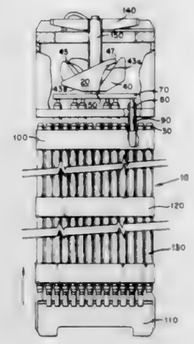
3,432,390
FUEL ASSEMBLY FOR A NUCLEAR REACTOR

Richard A. Dean, Monroeville, and Earl A. McCabe, Jr., Pittsburgh, Pa., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed July 28, 1967, Ser. No. 656,955

U.S. Cl. 176—78 **1 Claim**
Int. Cl. G21c *3/32*

A flow alteration means to substantially eliminate coolant flow redistribution between adjacent fuel assemblies and to mix the exiting coolant while effecting a low coolant pressure drop. A fixed flow impeding device upon which the coolant impinges is placed above the fuel element cluster before the upper core plate.



3,432,391
ATTENUATED INFECTIOUS CANINE HEPATITIS LIVE VIRUS VACCINE AND METHOD OF PRODUCING SAME

Merlin B. Hays, Fort Dodge, Iowa, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,504

U.S. Cl. 195—1.3 **6 Claims**
Int. Cl. C12k *7/00;* **A61k** *23/00*

1. A method of producing a modified live virus vaccine capable of protecting non-immune dogs from infectious canine hepatitis which comprises the steps of (1) growing a culture of bovine kidney cells in a nutrient medium capable of supporting in vitro growth of said cells; (2) inoculating said cell culture with an infectious canine hepatitis virus which has been attenuated by repeated passages through in vitro tissue cultured cells of canine and porcine origin until it is no longer capable of causing the development of clinical symptoms of infectious canine hepatitis when injected subcutaneously into susceptible dogs while still provoking the production of protective antibodies in said dogs and providing long-lasting immunity in said dogs against infectious canine hepatitis; (3) incubating said inoculated cell culture at a temperature of about 35–38° C. in the presence of a liquid nutrient medium capable of maintaining said cells in viable condition until said liquid medium contains infectious canine hepatitis virus at a titer of at least 10^{-4} $TCID_{50}$ as titrated against tissue cultured canine kidney cells; (4) harvesting the virus so produced; (5) inoculating therewith a fresh culture of bovine kidney cells; (6) repeating the passage of virus through bovine cells to a total of at least about four passages; and (7) recovering a virus-containing fluid capable of serving as a vaccine.

3,432,392
METHOD AND APPARATUS FOR MAKING COLLAGEN ARTICLES

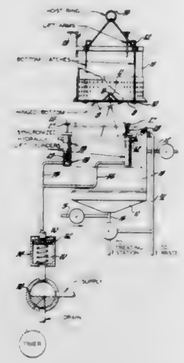
Leroy Bruce Cranstoun, Trenton, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

Filed Apr. 26, 1963, Ser. No. 276,016

U.S. Cl. 195—6 **4 Claims**
Int. Cl. C12d *13/06*

1. In a process for the extrusion of a homogeneous collagen dispersion to form a shaped article, the improvement which comprises suspending an open group of sep-

arated particles of animal tendon tissue at an agitating station in enzyme liquid whose specific gravity is less than the specific gravity of the tissue, while confining the group horizontally in a space containing only a portion of the liquid and while limiting the free liquid in said portion below the particles and while restricting the rate of flow of liquid from the confined space to the remainder of the liquid; then cyclically repeating the following steps:



raising the group suspended in liquid at a speed sufficiently low to prevent substantial packing of the suspended particles, then quickly increasing the depth of free liquid below the group so that the suspended particles sink gradually through the liquid, then arresting the sinking of the suspended particles, and then raising the group suspended in liquid as aforesaid; and subsequently transferring the tissue to a treating station.

3,432,393
PROCESS FOR THE PREPARATION OF HYDROXYCYCLOALKANONES
Paul Bellet, Paris, and Truong Van Thuong, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Apr. 19, 1966, Ser. No. 543,531
Claims priority, application France, Apr. 28, 1965, 15,005
U.S. Cl. 195—51 **6 Claims**
Int. Cl. C12b *1/00;* **C07c** *49/00*

The present invention relates to a process for the preparation of hydroxycycloalkanones and to the products resulting from this process. In particular, the invention relates to a process of obtaining optically active 1-hydroxycycloalkane-3-ones by microbiological reduction of symmetrical cycloalkane-1,3-diones.

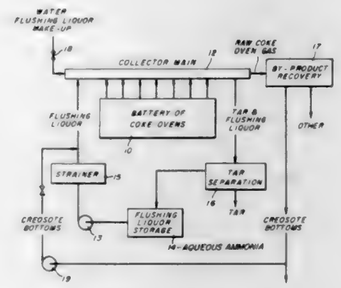
3,432,394
FERMENTATIVE PRODUCTION OF TETRACYCLINE
Ivan Villax, Lisbon, Portugal, assignor to International Rectifier Corporation, Los Angeles, Calif., a corporation of California
No Drawing. Continuation of application Ser. No. 425,612, Jan. 14, 1965. This application Aug. 15, 1967, Ser. No. 661,497
U.S. Cl. 195—80 **1 Claim**
Int. Cl. C12k *3/00*

A process is disclosed for the microbiological production of tetracycline. The process comprises cultivating a *Streptomyces lusitanus* microorganism in an aqueous nutrient medium containing assimilable sources of carbon and nitrogen and chlorine ion-yielding salt and recovering tetracycline values from the fermentation broth. In the process the production of chlorotetracycline is substantially entirely suppressed and the produciton of tetracycline is enhanced.

3,432,395
SALICYLATE METHOD FOR THE QUANTITATIVE DETERMINATION OF AMMONIA NITROGEN
John Reardon, Reseda, Calif., assignor to Uni-Tech Chemical Manufacturing Company, Sun Valley, Calif., a corporation of California
No Drawing. Filed June 8, 1966, Ser. No. 555,985
U.S. Cl. 195—103.5 **20 Claims**
Int. Cl. C12k *1/00;* **C09k** *3/00*

A color changing composition for the colorimetric quantitative determination of nitrogen in biological fluids including an enzyme which reacts with the nitrogen in the fluid to liberate ammonia, an alkali metal salt of salicylic acid mixed with a salt of nitroprussic acid, and a chlorine donor which yields hypochlorite in alkaline solution. The liberated ammonia reacts with the salicylate and hypochlorite produced in the presence of nitroprusside to form an emerald green chromatic substance, the intensity of which cn be measured colorimetrically.

3,432,396
METHOD OF CLEARING TAR ACCUMULATIONS FROM A COKE-OVEN COLLECTOR MAIN
Homer B. Coleman and Robert E. Gardner, Jr., Birmingham, Ala., assignors to United States Steel Corporation, a corporation of Delaware
Filed July 7, 1966, Ser. No. 563,481
U.S. Cl. 201—2 **3 Claims**
Int. Cl. C10b *43/08*

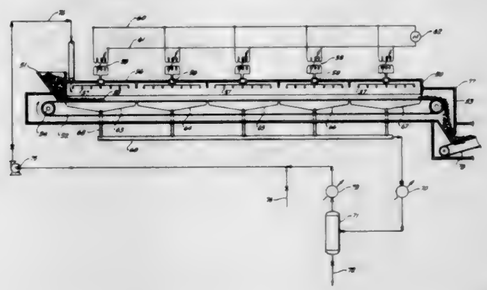


1. In a byproduct coking operation in which volatile matter and gases release from coal pass through a collector main, and substantially aqueous ammonia flushing liquor is introduced continuously to said main and carries away most of the tar, but some heavy viscous tar accumulates in said main over a period, the combination therewith of a method of clearing accumulations of tar from said main comprising introducing creosote bottoms to the flushing liquor going into said main in an amount to provide about 0.5 to 0.8 percent by volume of creosote bottoms in the flushing liquor, the creosote bottoms being at a temperature of about 190 to 210° F.

3,432,397
METHOD OF RETORTING SOLIDS
Clyde H. O. Berg, 5 Euclid Ave., Long Beach, Calif. 90803
Filed Feb. 23, 1965, Ser. No. 434,498
U.S. Cl. 201—32 **13 Claims**
Int. Cl. C10b *49/06, 49/02*

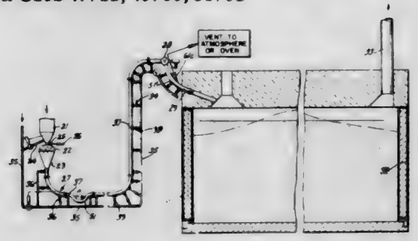
A method for heating a mass of solid particles arranged into a compact, gas-permeable bed where radiant heat is

directed onto one surface of the bed of solid particles comprising directing a flow of a relatively low temperature gas stream onto the heated surface of the bed of solid



particles and withdrawing a resulting gas stream from one or more surfaces of the bed that are shielded from the radiant heat.

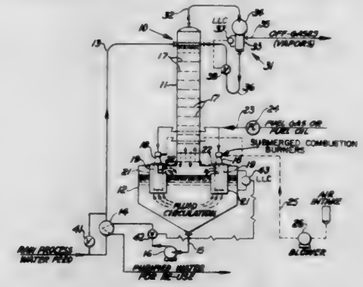
3,432,398
CHARGING COKE OVEN WITH HOT COARSELY COMMINUTED COAL
Lawrence D. Schmidt, New York, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed July 14, 1964, Ser. No. 382,609
U.S. Cl. 201—38 **9 Claims**
Int. Cl. C10b *47/22, 45/00, 31/02*



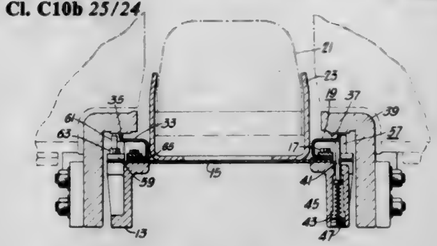
A method of charging coking chambers or coke oven battery with hot coarsely comminuted coal particles, the particles being introduced into the chamber through a pipeline through which they are carried by a carrier gas under superatmospheric pressure, the gas being the means for inducing flow of the hot coal through the pipeline, the pressure being controlled carefully to maintain a certain coal-to-carrier-gas weight ratio and venting the line at least once before the oven, so that the oven feels a charge which has a high coal-to-carrier-gas weight ratio, which is brought to the oven at a relatively low pressure.

3,432,399
STILL AND COLUMN WITH SUBMERGED COMBUSTION BURNERS IN THE STILL
Hermann C. Schutt, Framingham, Mass., assignor to The Fluor Corporation, Ltd., Los Angeles, Calif., a corporation of California
Filed Jan. 30, 1967, Ser. No. 612,721
U.S. Cl. 202—153 **1 Claim**
Int. Cl. B01d *3/32, 3/16*

Still and column apparatus for treating water contaminated with organic chemicals e.g., hydrocarbons, alcohols, ethers, aldehydes and amino compounds. The apparatus comprises a column connected at the top with a reflux condenser and communicating at the bottom with a tank-still containing the contaminated water to be treated, the tank-still being equipped with submerged combustion burners arranged at opposite sides of the still and adapted to heat the water therein, the combustions products and volatilized materials being discharged upwardly of the column, the column comprising vertically stacked trays each formed by spaced apart parallel angle irons.



3,432,400
COKE OVEN DOOR
Linwood G. Tucker, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed May 1, 1967, Ser. No. 634,997
U.S. Cl. 202—248 **3 Claims**
Int. Cl. C10b *25/24*

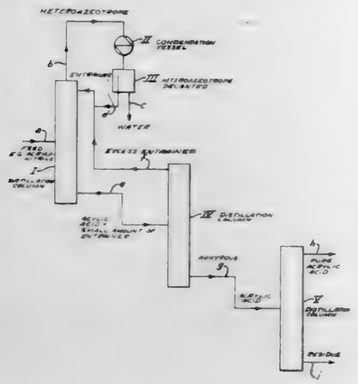


A coke oven door is comprised of a marginal door frame having transverse members that support door latching mechanisms and a centrally open portion. A diaphragm covers the centrally open portions and is fastened to the marginal door frame. A plurality of door side stops are mounted to each longer side of the door frame, wherefore when the door is latched the door side stops engage the door jamb and limit the deflection of the door frame as well as the amount of stress placed on the peripheral sealing frame. Further, because the diaphragm is relatively thin there is less metal in contact with the conventional door plug and, consequently, the door frame receives less heat from the door plug with the result that there is less distortion of the door due to heat.

3,432,401
PROCESS FOR PRODUCTION OF GLACIAL ACRYLIC ACID BY AZEOTROPIC DISTILLATION WITH A WATER ENTRAINER
Claude Tcherkawsky, Saint-Avold, Moselle, France, assignor to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France
Filed Mar. 18, 1964, Ser. No. 352,829
Claims priority, application France, Mar. 21, 1963, 928,802
U.S. Cl. 203—15 **5 Claims**
Int. Cl. C7c *51/46;* **B01d** *3/36, 3/34*

A process for preparing glacial acrylic acid by treating a solution of from 10% to 80% acrylic acid with

an entrainer that is chemically inert towards the acrylic acid and which is capable of capturing at least 3% water and which has a distillation temperature at least 5° C.

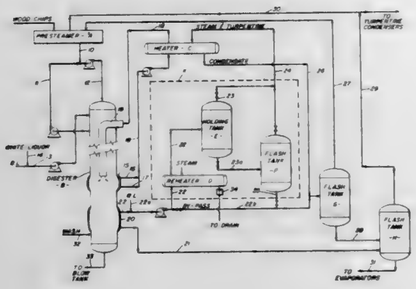


different than that for the acrylic acid. The entrainer and water form a heteroazeotrope which is distilled from said acid at a temeprature not over 120° C. and thereafter glacial acrylic acid is obtained by distillation.

3,432,402
RECOVERY OF TURPENTINE FROM BLACK LIQUOR

Richard Herrlinger, Panama City, Fla., Claude James Kirkland, Ridgewood, N.J., and Leo Frank Ciesielski, Panama City, Fla., assignors to Arizona Chemical Company, a corporation of Delaware

Filed Jan. 19, 1967, Ser. No. 610,392
U.S. Cl. 203—37 **5 Claims**
Int. Cl. B01d *3/00;* **C07c** *7/04*



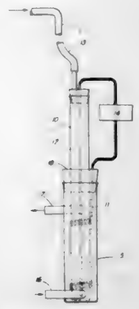
Process for increasing the yield of turpentine by-product from the continuous digestion (Kamyr) sulfate paper process which comprises reheating (typically to 330–400° F.) the black liquor from the Kamyr digester, flashing the reheated black liquor, and condensing the resulting volatized turpentine.

3,432,403
METHOD FOR DETERMINING COMPONENTS IN HYDROCARBON STREAMS

John R. Glass, Mickleton, N.J., and David Liederman, Anvil Points, Colo., assignors to Mobil Oil Corporation, a corporation of New York

Filed Jan. 14, 1965, Ser. No. 425,528
U.S. Cl. 204—1 **8 Claims**
Int. Cl. G01n *27/00;* **B01k** *1/00*

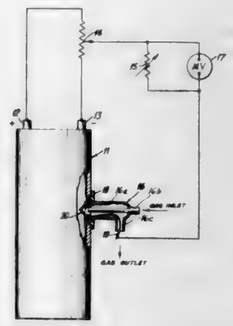
Electroreactive components in a nonconducting liquid stream are determined by continuously conveying a non-aqueous electrolyte from a reference electrode through a porous separator to a detecting electrode in contact with the separator. The nonconducting liquid stream is conveyed past the detecting electrode and the flow of the electrolyte is maintained at a sufficient pressure to prevent the passage of the nonconducting liquid stream through the porous separator. The potential across the electrode is monitored to provide a representation of the electroreactive components content in the nonconducting liquid stream.



3,432,404
METHOD AND APPARATUS FOR CONTINUOUSLY DETERMINING THE OXYGEN CONTENT OF GASES

Emerich Erdös and Jiri Bareš, Prague, Czechoslovakia, assignors to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia

Filed May 7, 1965, Ser. No. 453,951
Claims priority, application Czechoslovakia, Apr. 23, 1964, 2,375/64
U.S. Cl. 204—1 **8 Claims**
Int. Cl. B01k *3/04;* **G01m** *7/00*



In an apparatus for continuously determining the oxygen content in gases there is provided a hollow electrode closed by a graphite base; the outside of said base is exposed to an electrolyte, while its inside is exposed to the flow of a gas whose oxygen content is to be determined. To establish a circuit, the inside of said base is connected to an auxiliary electrode extending into said electrolyte. The intensity of the current flowing in said circuit is a function of the oxygen content of said gas.

3,432,405
SELECTIVE MASKING METHOD OF SILICON DURING ANODIZATION

David J. Pilling, Los Altos, and Maurice E. Dumesnil, Palo Alto, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1966, Ser. No. 550,140
U.S. Cl. 204—15 **7 Claims**
Int. Cl. C23b *5/48*

1. A method for selectively anodically oxidizing silicon wafers in the fabrication of semiconductor devices which comprises:

coating the silicon surface with a continuous metal oxide-silicate film, selectively removing the metal oxide-silicate film from the areas on the silicon wafer surface to be anodically oxidized, and anodically oxidizing the unprotected areas.

3,432,406
PHOTOCONDUCTOGRAPHIC MATERIAL AND PROCESS OF PREPARATION

Donald R. Eastman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester N.Y., a corporation of New Jersey

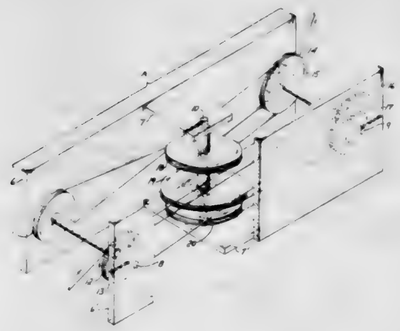
No Drawing. Continuation-in-part of application Ser. No. 45,949, July 28, 1960. This application Sept. 25, 1964, Ser. No. 399,375
The portion of the term of the patent subsequent to Oct. 13, 1981, has been disclaimed
U.S. Cl. 204—18 **6 Claims**
Int. Cl. B44c *1/04*

Novel photoconductographic elements are prepared by coating an electrically conductive support with a mixture containing zinc oxide in a polymeric binder and contacting the surface of the coating with a ferrocyanide or a ferricyanide salt.

3,432,407
METHOD OF ANODIZING ALUMINUM WIRE

Anthony J. Ricci, 2436 Hillcrest Road, Drexel Hill, Pa. 19026

Continuation-in-part of application Ser. No. 264,649, Mar. 12, 1963. This application May 1, 1967, Ser. No. 635,105
U.S. Cl. 204—28 **3 Claims**
Int. Cl. C23b *5/58, 5/50, 5/62*



There is described method and apparatus for providing improved anodized aluminum wire. Aluminum wire, as it is passed through an anodizing bath, is passed over and around a plurality of pulleys which are located in the bath. The pulleys are of various sizes and lie in planes which are at right angles or very substantial angles to each other. The anodic coated wire as it passes around and over the various pulleys is subjected to stresses which tend to crack or break the coating, thereby exposing the underlying metal to further action of the anodizing bath. An improved anodized coil is prepared by initially bending the anodized wire on different sized pulleys and then winding the wire into a coil having a diameter intermediate the size of the different sized pulleys.

3,432,408
CHROMIUM PLATING ELECTROLYTE AND METHOD FOR PREVENTING MIST THEREIN

Henry Brown, Huntington Woods, Donald H. Becking, Birmingham, and Sylvester P. Valayil, Detroit, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware

No Drawing. Filed Aug. 3, 1966, Ser. No. 569,833
U.S. Cl. 204—51 **10 Claims**
Int. Cl. C23b *5/06;* **B01k** *1/00*

6. In a method to suppress mist and spray from aqueous acid hexavalent chromium plating baths, the improvement which comprises the addition to said bath of from 0.002 to about 0.5 gram/liter of a surface-active compound represented by the formula



where R_2 is an alkyl group containing 12–22 carbon atoms inclusive; each of R_4 is selected from the group consisting of hydrogen, hydroxy, chloro, and methyl and ethyl radicals; n is an integer from 1 to 5 inclusive; and A is an organic radical selected from the group consisting of



where R_1 and R_3 are selected from the group consisting of hydrogen and alkyl and cycloalkyl groups containing 1–18 carbon atoms wherein the sum of carbon atoms in R_1 and R_3 is no more than 18, and where



is a heterocyclic radical wherein only nitrogen and carbon atoms are joined in a 5 to 6 membered ring.

3,432,409
ELECTROLYTIC PROCESS FOR MAKING TETRAALKYLAMMONIUM POLYBROMIDES

Mathias John Schuler, Pitman, N.J., and Kenneth Cleon Smeltz, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 377,312, June 23, 1964. This application June 10, 1965, Ser. No. 463,001
U.S. Cl. 204—72 **12 Claims**
Int. Cl. C07c *87/30;* **B01k** *3/00*

5. The process for making water-insoluble tetraalkylammonium polybromides, which comprises,

(A) passing an electrolyzing direct electric current through

(B) an anolyte which consists essentially of a solution of

(1) from about 1% to about 50% by weight of at least one tetraalkylammonium monobromide wherein each alkyl group contains 1–2 carbon atoms

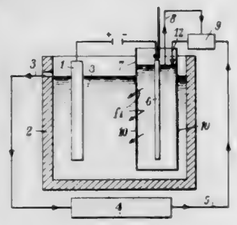
(2) in water

(C) while maintaining said anolyte at a temperature of from about 40° C. to about 80° C. until there is formed below the aqueous solution a distinct layer

of water-insoluble, liquid tetraalkylammonium polybromide which contains at least 4 bromine atoms per tetraalkylammonium group, and

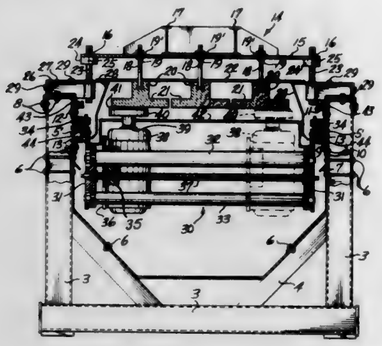
(D) separating said layer of tetraalkylammonium polybromide from the aqueous solution.

3,432,410
METHOD OF PRODUCING PURE NICKEL BY ELECTROLYTIC REFINING
Charles Cuenot, Sainte Suzanne, France, assignor to Le Nickel, Société Anonyme, Paris, France
Filed Nov. 27, 1964, Ser. No. 414,091
Claims priority, application France, Nov. 27, 1963, 955,190
U.S. Cl. 204—112 **16 Claims**
Int. Cl. C22d *1/14*



Ferronickel anodes are corroded in a nickel chloride anolyte containing nickel, calcium and sodium, which is purified outside the electrolytic cell, fed as a catholyte into the cathodic compartment of the cell where nickel is deposited on the cathode and returned to the anodic compartment by diffusion through pervious cloths, said catholyte being recycled in said cathodic compartment so as to sweep the cathode faces when the cathodic current density ranges from 1,500 to 4,500 amps/sq. ft. This process, being essentially all chloride, results in a nickel deposit of high purity (about 99.95% by weight).

3,432,411
METHOD OF OPERATING AN ELECTROLYTIC CHLORINE PRODUCTION CELL
Harold H. Houtz and Allen E. Carl, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 8, 1965, Ser. No. 512,459
U.S. Cl. 204—128 **3 Claims**
Int. Cl. B01k *3/00, 3/08;* **B23c** *1/00*



To decrease the power requirements of a chlorine production cell due to uneven erosion-caused irregularities in the anodes, the anode supporting frame is periodically removed from the cell and placed in a resurfacing machine. Since a number of anodes are suspended from the supporting frame, they can all be resurfaced as a unit to establish coplanar surfaces. The resurfacing machine supports the anode supporting frame in the position that it assumes in the cell.

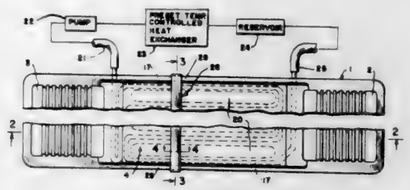
3,432,412
PHOTOCHEMICAL PRODUCTION OF POLY-(1,4-PHENYLENE ETHERS)
Hans-Dieter Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed May 3, 1966, Ser. No. 547,179
U.S. Cl. 204—158 **10 Claims**
Int. Cl. C07c *43/20, 41/00;* **B01j** *1/10*

1. The process of making poly-(1,4-phenylene ether) which comprises irradiating, with light having a wavelength in the range of 300–500 mμ, but not substantially below 300 mμ, a solution of (a) a phenoxyphenol selected from the group consisting of 4-phenoxyphenol and 4-(4'-phenoxyphenoxy)phenol and (b) a photosensitizer selected from the group consisting of benzophenone, acetophenone, benzaldehyde, benzil, benzoin, biacetyl and 4,4'-bis-(dimethylamino)-benzophenone and (c) in an inert, liquid, aromatic hydrocarbon solvent which is substantially transparent to the wavelength of the light used for irradiation.

3,432,413
METHOD FOR CARRYING OUT CHEMICAL REACTIONS USING MICROWAVE ENERGY
John W. Vanderhoff, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,347
U.S. Cl. 204—159.22 **11 Claims**
Int. Cl. C08f *1/16,* **C08d** *1/12, 1/02*

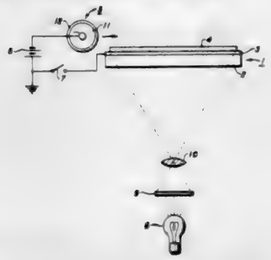
A method for conducting chemical reactions in two-component systems comprising an inert diluent and a reactive component capable of reacting with itself is provided by subjecting a mixture of the reactive component and the diluent, in which the diluent has a polarity differing from that of the reactive component, to pulsed electromagnetic radiation on the radio-frequency to microwave range, said electromagnetic radiation having a potential capable of causing dielectric heating, the pulse duration and frequency being adjusted to avoid thermal activation; the method being particularly useful for the polymerization of vinyl monomers.

3,432,414
ELECTROPHORETIC PROCESS WITH CONTINUOUS SCANNING
Royden N. Rand, Pittsford, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Apr. 1, 1965, Ser. No. 444,616
U.S. Cl. 204—180 **7 Claims**
Int. Cl. B01k *5/00*



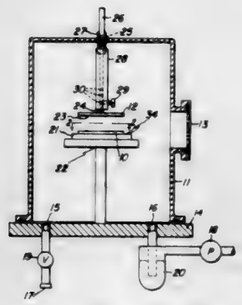
A method for making electrophoresis separations and measurements thereof is disclosed wherein an electrophoretic medium is confined in a horizontal migration layer interconnected with two end reservoirs to exhibit a common surface level. Sample is placed on the migration layer and a direct current potential is applied across the layer for a predetermined time to migrate the sample while maintaining pH factor constant. The migrated sample is scanned by a radiation detector to generate signals responsive to the amount the sample migrated.

3,432,415
ELECTROPHORETIC IMAGING PROCESS USING PHOTOSENSITIVE XANTHENONIUM SALTS
Santokh S. Labana, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,178
U.S. Cl. 204—181 **19 Claims**
Int. Cl. B44c *1/04;* **B01k** *5/00;* **G03g**



1. The method of electrophoretic imaging comprising subjecting a layer of a suspension to an applied electric field between at least two electrodes, at least one of which is at least partially transparent and simultaneously exposing said suspension to an image through said partially transparent electrode with activating electromagnetic radiation whereby a pigment image made up of particles is formed on at least one of said electrodes; said suspension comprising a plurality of finely divided photosensitive particles of at least one color, at least a portion of said particles comprising a composition which is a lake of a 3,6-bis(amino)-9,2'-carboxyphenyl xanthenonium salt.

3,432,416
HIGH PURITY NIOBIUM FILMS FORMED BY GLOW DISCHARGE CATHODE SPUTTERING
John R. Rairden III, Niskayuna, and James T. Furey, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 3, 1966, Ser. No. 583,618
U.S. Cl. 204—192 **2 Claims**
Int. Cl. C23c *15/00*



1. A method of depositing high purity niobium films on a substrate which comprises positioning at least one substrate within a chamber, positioning a niobium member within said chamber in proximate position with said substrate, introducing an inert gaseous atmosphere into said chamber, preheating said substrate to a temperature in excess of 25° C., electrically energizing said niobium member at a potential to produce rapid sputtering of said member and elevate the surface temperature of said member above 800° C., increasing the thermal content of said substrate to produce a temperature in the range of from 535° C. to 690° C. upon the surface of the substrate remote from said niobium member, and condensing on said heated substrate a film exhibiting superconductivity.

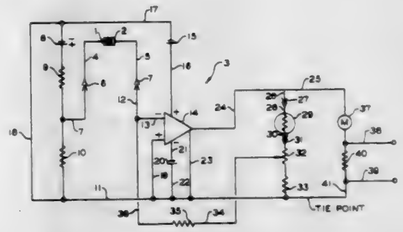
3,432,417
LOW POWER DENSITY SPUTTERING ON SEMICONDUCTORS
Pieter D. Davidse and Leon I. Maissel, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 31, 1966, Ser. No. 554,131
U.S. Cl. 204—192 **19 Claims**
Int. Cl. C23c *15/00*

1. The method for sputtering a film over a bare semiconductor surface comprising:

providing an atmosphere capable of supporting a glow discharge between anode and cathode electrodes within a chamber; and

applying power density less than about 4 watts per square inch across said anode and cathode to produce a sputtered film of between about 500 and 1500 Angstrom units over said semiconductor surface within said chamber whereby said surface remains substantially free from damage.

3,432,418
POLAROGRAPHIC ANALYZER
Louis D. Kleiss, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,797
U.S. Cl. 204—195 **16 Claims**
Int. Cl. B01k *3/00;* **B01d** *13/02*

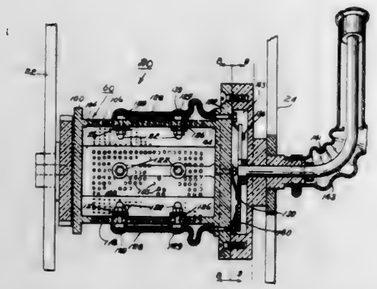


Polarographic analyzers employing a floating input direct current operational amplifier grounded through a common tie point internally of the circuit of the analyzer, employing means such as a thermistor for compensating for large changes in the output signal caused by temperature sensitivity of the analyzer probe, and employing an analyzer probe of a structure wherein the sensor is supported in a casing by two supports which carry therebetween a sealing means for the casing.

3,432,419
VARIABLE, COMMUTATING CONTACT ELECTROPLATING BARREL
Nicholas P. Vitacco, Chicago, Ill., assignor to Belke Manufacturing Company, Chicago, Ill.
Filed July 22, 1965, Ser. No. 474,129
U.S. Cl. 204—213 **6 Claims**
Int. Cl. C23b *5/78*

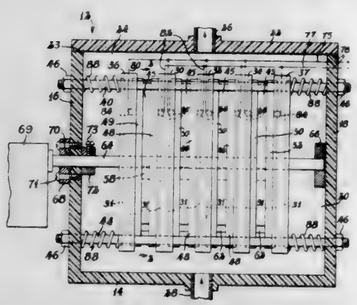
This invention concerns an electroplating barrel of hexagonal shape, the sides of which are perforated so that

the solution in which the barrel is immersed can penetrate into the barrel while the latter is revolved. Electrical contact buttons are respectively carried by the barrel sides and are connected by suitably insulated conductors to brushes extending in a hermetic chamber having insulated walls and carried at one end of the barrel. These



brushes rotate with the barrel and are adapted to selectively contact a rigidly mounted segmental commutator plate extending in the chamber and connected to a source of electrical power outside the barrel. Flexible covering surrounds the connection between the commutator and the source of power.

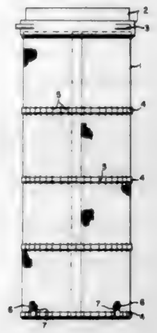
3,432,420
ELECTROLYTIC CELL ASSEMBLIES
Pei-Tai Pan, Beloit, Wis., assignor to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 13, 1965, Ser. No. 425,252
U.S. Cl. 204—216 **26 Claims**
Int. Cl. B23p *1/20;* **B01k** *3/20*



An electrolytic cell assembly in which the electrodes are movable, rotary scraper means are disposed between the electrodes and means are provided for biasing the electrodes against the scraper means.

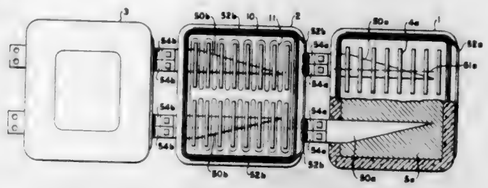
3,432,421
FUSED SALT ELECTROLYTIC CELL WITH DIAPHRAGMS HAVING INSULATIVE SPACERS
John R. Cillag, Niagara Falls, N.Y., and James D. Campbell III, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,165
U.S. Cl. 204—247 **16 Claims**
Int. Cl. B01k *3/10*

1. In a fused salt electrolytic cell adapted to contain fused salt electrolyte, comprising an anode, a cathode and a conductive diaphragm positioned between said anode and cathode, the improvement comprising at least one insulative spacer body positioned within said electrolyte whereby to prevent physical contact of said diaphragm with said anode and said cathode, said spaced body comprising a core material having thereon an insulative skin



which is inert towards said fused salt electrolyte under the conditions of use, said core material consisting essentially of a substance from the group consisting of aluminum nitride, silicon nitride, silicon and mixtures of two or more thereof.

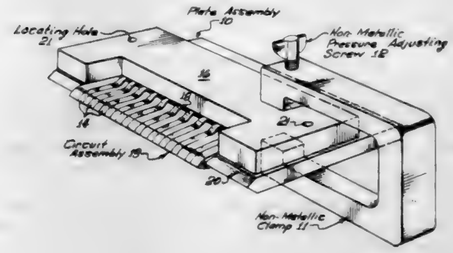
3,432,422
CURRENT CONDUCTING MEMBERS FOR ELECTROLYTIC CELL
John E. Currey, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 154,509, Nov. 24, 1961. This application Oct. 21, 1966, Ser. No. 588,620
U.S. Cl. 204—258 **3 Claims**
Int. Cl. B01k *3/00*



Triangular shaped copper anode and/or cathode bus bars are provided for deposited diaphragm-type electrolytic cells for the electrolysis of alkali metal chloride brines. Slotted L-shaped inter-cell connecting bus bars are provided for horizontal and vertical alignment of adjacent cells. Likewise, more than one such inter-cell connection is made to each copper anode bus bar to provide for simplified removal of one cell from a series without the use of a conventional jumper bar.

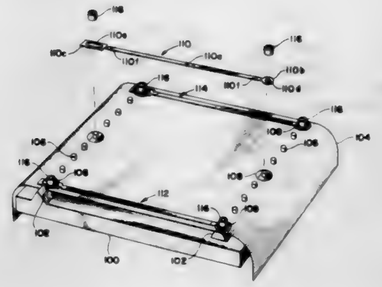
3,432,423
ELECTROPLATING APPARATUS
Arnold L. Zavitz, Upland, Calif., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Oct. 7, 1966, Ser. No. 585,005
U.S. Cl. 204—297 **6 Claims**
Int. Cl. C23b *5/70*

1. An assembly for holding circuit assemblies and the like to be immersed in a chemical plating bath comprising: a non-metallic upper plate-like member, a contact plate-like member, an insulation plate-like member, and a non-metallic backup plate-like member, said contact plate-like member being located intermediate said upper plate-like member and said insulation plate-like member, said insulation plate-like member being located adjacent said backup plate-like member, said contact plate-like member being provided with means adapted for interconnecting same with an associated electrical power source and provided with at least one resilient finger-like member



adapted to contact an associated circuit to be plated, means for aligning said plate-like members, means adapted for aligning said backup plate-like member and an associated circuit to be plated, and non-metallic means for releasably securing said plate-like members with respect to one another.

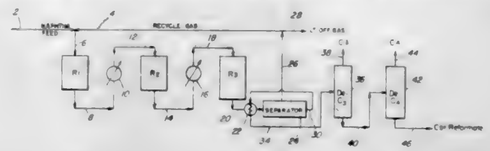
3,432,424
IMMUNOELECTROPHORESIS ANTISERUM STRIPS
Zvonimir Juan Zec, Palo Alto, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Aug. 23, 1965, Ser. No. 481,837
U.S. Cl. 204—299 **10 Claims**
Int. Cl. B01k *5/00*



A strip formed from a material capable of absorbing a substantial amount of a suitable antiserum is disposed on the surface of an electrophoresis support membrane and includes at least one end having a slot formed therein with the size of the slot being somewhat larger than the pin over which it fits to compensate for expansion of the strip upon application of the antiserum.

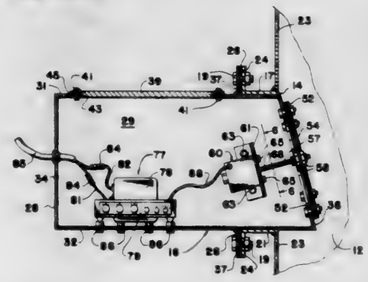
3,432,425
UPGRADING OF NAPHTHA
Ernest A. Bodkin, Wenonah, and John Maziuk, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Filed May 4, 1966, Ser. No. 547,667
U.S. Cl. 208—80 **5 Claims**
Int. Cl. C10g *35/06, 23/02*

A combination of processing steps is identified for upgrading C_5+ naphtha boiling hydrocarbon materials in a combination of reforming steps arranged to effect more selective and desired dehydrogenation of naphthenes, hydrocyclization of paraffins and isomerization of hydrocarbons to branched and ring compounds in conjunction



with the selective removal by a dual function catalyst of low octane normal paraffins without significantly reducing the amount of high octane producing components of the naphtha charge.

3,432,426
OIL PROCESSOR APPARATUS AND METHOD OF SEPARATING OIL MIXTURE COMPONENTS
Laurence D. Megel, Box 65, Vona, Colo. 80861
Filed Feb. 24, 1966, Ser. No. 529,752
U.S. Cl. 208—187 **3 Claims**
Int. Cl. C10g *33/06*



An apparatus is connected to an oil container to separate fluid mixture components by vibratory impulses. The apparatus has a flexible diaphragm mounted on the container, a solenoid connected to the diaphragm and a power supply means connected to the solenoid to provide vibration to the diaphragm. The apparatus is useful for conglomerating and separating water particles suspended in oil.

3,432,427
RECLAIMING SALINE WATERS
David E. Moore, Tulsa, Okla. (Box 351, Palacios, Tex. 77465)
No Drawing. Filed Mar. 10, 1965, Ser. No. 429,123
U.S. Cl. 210—4 **4 Claims**
Int. Cl. C02c *1/04, 1/14*

Process for treating saline and brackish waters which comprises contacting said waters in a contacting zone with aqueous solutions of micro-organisms produced by a digestion treatment of animal excrement in water to elute micro-organisms therefrom followed by a series of micro-organisms propagation-dilution steps.

3,432,428
POLYPHOSPHATE GLASSES AND WATER TREATMENT USES THEREOF
Louis F. Wirth, Jr., Western Springs, and Reed S. Robertson, Glen Ellyn, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 24, 1965, Ser. No. 466,853
U.S. Cl. 210—29 **4 Claims**
Int. Cl. C02b *1/40*

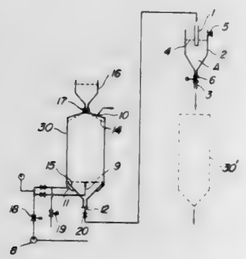
Vitreous polyphosphate compositions slowly dissolved by water to protect ferrous metals against corrosion; compositions comprising vitreous, homogeneous fusion

product of metal oxide-molecularly dehydrated polyphosphate glasses wherein metal oxides are alkali metal oxide and zinc oxide plus at least one oxide of Mg, Ca, Mg, Al and Si.

3,432,429
METHOD FOR MAINTAINING THE TRANSFER AMOUNT OF SOLID PARTICLES IN A CONTINUOUS SOLID-LIQUID CONTACT APPARATUS AT A CONSTANT LEVEL AND APPARATUS THEREFOR

Kazuhiko Mihara, Tokyo, Takashi Yamashiki, Yokohama, and Mitsuo Takano, Kawasaki-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

Continuation-in-part of application Ser. No. 273,724, Apr. 17, 1963. This application Dec. 11, 1967, Ser. No. 689,624
Claims priority, application Japan, Apr. 27, 1962, 37/21,072; Feb. 6, 1963, 38/4,727, 38/4,728
U.S. Cl. 210—33 **3 Claims**
Int. Cl. C02b *1/76, 1/72, 1/64*



A method for transferring a constant quantity of solid particles from a first vessel to a second vessel in which a slurry is fed under pressure from the first vessel with a chamber from which supernatant liquid is withdrawn and the solid particles are accumulated in the chamber, after which the slurry feed is interrupted and the entire quantity of solids in the chamber is fed to the second vessel.

3,432,430
CLARIFICATION OF AQUEOUS SYSTEMS

Winifred Jane Levy, Northwich, and John Prescott Newport and Reginald John William Reynolds, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,227
Claims priority, application Great Britain, Mar. 11, 1965, 10,378/65
U.S. Cl. 210—51 **10 Claims**
Int. Cl. B01d *21/22;* **C02b** *1/20*

Turbidity and color are removed from raw water and other aqueous systems such as sewage by adding very small amounts, for example 1–5 parts per million, of partially quaternised homopolymers of vinyl esters of α-halogenated aliphatic carboxylic acids, or copolymers of vinyl esters of α-halogenated aliphatic carboxylic acids and other polymerisable monomers in which some of the α-halocarboxylate groups are quaternised. It is not necessary to add inorganic flocculating agents to assist the organic compounds. The preferred ester is vinylchloroacetate and the preferred quaternising agent is pyridine and the degree of quaternisation is generally less than about 60% and preferably 10–30% in the products suitable for treating water and 30–60% in those for treating sewage. Other quaternising agents include triethylamine, bipyridyl and thiourea, and vinyl acetate is suitable for copolymerising with vinyl chloroacetate.

3,432,431
GREASE

Bill Mitacek, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,851
U.S. Cl. 252—16 **4 Claims**
Int. Cl. C10m *5/10*

A grease is improved as to at least one desirable property thereof without substantially further thickening same by cold dispersing in the grease at least one powdered polymer.

3,432,432
PERFLUOROPOLYETHER GREASES THICKENED WITH METAL-FREE PHTHALOCYANINE

John L. Dreher, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Feb. 10, 1967, Ser. No. 615,089
U.S. Cl. 252—25 **9 Claims**
Int. Cl. C10m *3/26, 7/30*

Grease comprising perfluoropolyether base and, in quantities sufficient to produce proper grease consistency, metal-free phthalocyanine,

---

3,432,433
LUBRICANT COMPOSITIONS

Eugene Wittner, Florissant, Mo., and Kenneth T. Wendler, Alton, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 507,668, Nov. 15, 1965. This application Sept. 8, 1967, Ser. No. 666,499
U.S. Cl. 252—32.5 **10 Claims**
Int. Cl. C10m *1/44, 1/34*

Lubricating compositions containing minor amounts each of an arylamine, an alkyl amine salt of monohaloalkylphosphonic acid and a s-triazine have excellent oxidation stability.

3,432,434
ALKYL AROMATIC HYDROCARBON EMULSION LUBRICANT FOR METAL ROLLING

Eldon L. Armstrong, Mullica Hill, and Robert H. Davis, Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 19, 1967, Ser. No. 639,639
U.S. Cl. 252—49.5 **12 Claims**
Int. Cl. C10m *3/10, 3/04*

Emulsions containing 5% to 99% by weight of water and 95% to 1% of an alkyl aromatic composition provide effective non-staining roll oil lubricants, especially for rolling nonferrous metals, such as aluminum alloys. The aromatic compounds include those having from 1 to 3 rings with the number of alkyl groups ranging from 1 up to the available number of substitutions on the rings, each alkyl group having 3 to 20 carbon atoms. The compounds contain a total of from 12 to 40 carbon atoms.

3,432,435
FERRIMAGNETIC PRESSURE TRANSDUCER

Frank F. Stucki, Palo Alto, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Original application May 27, 1964, Ser. No. 370,498, now Patent No. 3,307,405, dated Mar. 7, 1967. Divided and this application June 27, 1966, Ser. No. 574,489
U.S. Cl. 252—62.61 **5 Claims**
Int. Cl. C04b *35/26;* **H01f** *1/10*

A method for making ferrite cores sensitive to pressures or stresses applied thereto involves magnetically annealing the ferrite cores by heating the cores comprised of nickel ferrite to about 750° C. and applying a magnetic field of the order of 800 milliampere turns to the core, increasing the field to about 1200 milliampere turns, and then reducing the field to the first mentioned value and then allowing the core to slowly cool while maintaining the first mentioned magnetic field value.

3,432,436
HALOGENATED FLUIDS

Donald H. Nail, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,369
U.S. Cl. 252—78 **9 Claims**
Int. Cl. C09k *3/28, 3/02*

Fire resistant fluid composition, useful as hydraulic fluids, compressor lubricants, and heat transfer fluids, having a wide liquid range comprising a chlorinated diphenyl ether and a chlorinated biphenyl.

3,432,437
FIRE RESISTANT HYDRAULIC FLUID AND LUBRICANT COMPOSITIONS

Donald H. Nail, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,415
U.S. Cl. 252—78 **10 Claims**
Int. Cl. C09k *3/02, 3/28*

Fire resistant fluids, useful as hydraulic fluids and heat transfer media, having improved liquid range and low temperature characteristics, e.g., viscosity and pour point, which comprise a mixture of a phosphate ester, a chlorinated diphenyl ether and a chlorinated biphenyl.

3,432,438
REDUCING ACID AQUEOUS MEDIUMS CONTAINING BIVALENT TIN CHELATES

Horst G. Langer, Cochituate, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

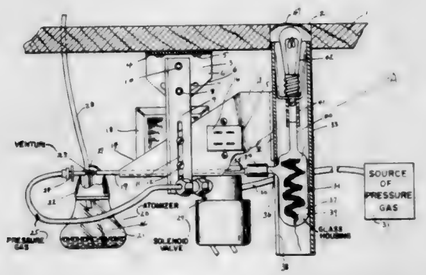
No Drawing. Continuation of application Ser. No. 341,113, Jan. 29, 1964. This application May 5, 1967, Ser. No. 636,547
U.S. Cl. 252—188 **7 Claims**
Int. Cl. C09k *3/00*

A reducing acid aqueous medium useful for organic reductions which includes a bivalent tin chelate reactable with water to generate hydrogen, said bivalent tin chelate being in acid form.

3,432,439
SMOKE GENERATING APPARATUS

John J. Dickman, Lemay, Mo., assignor to Missouri Research Laboratories, Inc., St. Louis, Mo., a corporation of Missouri

Filed Jan. 9, 1967, Ser. No. 608,106
U.S. Cl. 252—359 **6 Claims**
Int. Cl. B01f *3/04;* **A63j** *5/00*



An apparatus for producing smoke by subjecting a liquid fuel to an electrically heated resistance coil; there being means for delivering predetermined quantities of the liquid fuel to the coil under preselected pressure for controlling the characteristics of the emitted smoke.

ERRATUM

For Class 252—392 see:
Patent No. 3,432,527

3,432,440
EPOXY CURING AGENTS COMPRISING A FLUOBORATE SALT AND A HYDROLYZABLE ESTER

David A. Shimp and Wayne F. McWhorter, Louisville, Ky., and Norman G. Wolfe, New Albany, Ind., assignors to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Feb. 11, 1965, Ser. No. 431,974
U.S. Cl. 252—429 **4 Claims**
Int. Cl. C08g *51/74*

Curing techniques for epoxy resins and new curing agents utilized therein, said curing agents comprising an aqueous solution of a fluoborate salt, carrier vehicle and a hydrolyzable ester of a strong acid.

3,432,441
CATALYSTS FOR THE PRODUCTION OF FLUOROALKENES AND FLUOROALKAPOLYENES

Lloyd E. Gardner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,475
U.S. Cl. 252—441 **4 Claims**
Int. Cl. B01j *11/64*

A catalyst suitable for converting an acetylenic hydrocarbon to a fluoroalkene, a fluoroalkadiene, or a fluoroalkatriene by contacting said acetylenic hydrocarbon with HF, is formed by treating a finely divided alumina with a liquid solution of ammonium fluoride, ammonuim bifluoride, or hydrogen fluoride, thereafter draining said solution from said alumina, repeating the treating and draining steps, and therafter heating the impregnated catalyst to a temperature in the range of 300 to 1000° F. for a period of time in the range of 2 to 24 hours.

3,432,442
THIOHETEROPOLY ACID ANHYDRIDES AS CRUDE OIL HYDROREFINING CATALYSTS

William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,618
U.S. Cl. 252—435 **6 Claims**
Int. Cl. B01j *11/82;* **C10g** *23/02*

A catalyst for the hydrorefining of petroleum crude oil comprising the anhydride of a thioheteropoly acid having the formula

$$P_2S_5 \cdot n(X)_mS_3$$

in which n is 12, 18 or 24; X is Mo, W, Cr or V; and m is 1 when X is Mo or W, or 2 when X is Cr or V.

3,432,443
CATALYST FOR STEAM REFORMING OF HYDROCARBONS

Phineas Davies and David Owen Hughes, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,302
Claims priority, application Great Britain, Sept. 19, 1963, 36,914/63
U.S. Cl. 252—459 **21 Claims**
Int. Cl. B01j *11/24;* **C07c** *5/30*

A method of producing a catalyst for the reaction between steam and hydrocarbons to give hydrogen and carbon oxides which includes making a precursor composition comprising a reducible cobalt compound and a

refractory support material and reducing the cobalt compound at least partly to metallic cobalt, the composition before reduction being heated under substantially non-reducing conditions at a temperature above 600° C. The heat treatment increases porosity of the composition. This results in a catalyst of increased activity with a greater capacity to take up alkali added by impregnation.

3,432,444

METHOD OF CURING EPOXY RESINS EMPLOYING DIFLUOROAMINO COMPOUNDS AS CATALYSTS

Orval E. Ayers, Chester W. Huskins, and Herbert A. Carter, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Oct. 10, 1962, Ser. No. 229,765
U.S. Cl. 260—2 **7 Claims**
Int. Cl. C08g *51/84, 30/00*

1. A process for curing epoxy resins having a plurality of epoxy groups per molecule with each epoxy group having an oxygen atom bonded to two commonly bonded carbon atoms, said process comprising the blending of said epoxy resins with a difluoroamino compound selected from the group consisting of propionyl difluoroamide, 2,3-bis (difluoroamino) propyl formate, 2,3-bis (difluoroamino) propionitrile, 2,3-bis (difluoroamino) propyl allyl ether, and 1,2,3-tris (difluoroamino) propane, which acts as a catalyst.

3,432,445

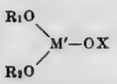
CATALYST COMPOSITIONS BASED ON BIVALENT METALS AND THE APPLICATION THEREOF, PARTICULARLY FOR THE POLYMERIZATION OF CYCLIC ETHERS

Maseh Osgan, Rueil-Malmaison, Hauts-de-Seine, Jean-Pierre Silly, Croissy-sur-Seine, Yvelines, and Philippe Teyssie, Le Vesinet, Yvelines, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France

No Drawing. Filed May 2, 1966, Ser. No. 546,566
Claims priority, application France, June 6, 1965, 16,167
U.S. Cl. 260—2 **14 Claims**
Int. Cl. C08g *23/06, 23/14*

For the polymerization of cyclic ethers, there is employed at the catalyst a reaction product prepared by contacting:

(a) A trivalent metal compound having the formula



(b) A bivalent metal compound having the formula YO—M—Z wherein M′ is a trivalent metal, M is a bivalent metal, Z is selected from the group consisting of OR_3 and acyloxy groups; X and Y are different, one of which is R_4 and the other is an acyl group, said groups R_1, R_2, R_3 and R_4 being monovalent hydrocarbon groups, and separating at least 1% of the theoretical amount of the ester byproduct XOY of the reaction of (a) with (b).

3,432,446

POROUS APPLICATOR PREPARED BY BONDING THERMOPLASTIC FIBROUS FLOCK PARTICLES AT POINT OF CONTACT WITH THE AID OF A PLASTICIZER

Leonard T. Coppeta, North Andover, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,456
U.S. Cl. 260—2.5 **3 Claims**
Int. Cl. C08f *47/08;* **C08j** *1/14;* **C08g** *53/08*

The invention is a pad or porous body consisting of an assembly of non-oriented thermoplastic, flock fibers, the body having interstitial voids of capillary dimensions, the fibers carrying a plasticizer bonding them into a cohesive bibulous body, and liquid in the voids and wetting the fibers, the liquid being dispensable from said body to a contacting surface.

3,432,447

FOAMABLE POLYETHYLENE/STYRENE BODIES

William A. Patterson and Henry G. Schirmer, Spartanburg, S.C., and Stanley N. Weissman, Cedar Grove, N.J., assignors to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,340
U.S. Cl. 260—2.5 **1 Claim**
Int. Cl. C08f *47/08;* **C08g** *53/08;* **C08j** *1/14*

1. A cellular body of a polymer of ethylene containing 10 to 30 weight percent of polystyrene having a smooth glossy surface and small uniformly distributed, discrete cells substantially spherical in shape and having an average cell size in the range of 0.200 to .075 millimeter and less, said polymer having a percent gel of from about 30 to about 80.

3,432,448

METHOD OF PRODUCING HYDROPHILIC POLYURETHANE FOAM EMPLOYING A MONOALKOXY-POLYETHYLENE GLYCOL

Joerg Sambeth, Veyrier, Geneva, and Alexis Archipoff, Carouge, Geneva, Switzerland, assignors to Elekal, Paris, France

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,573
Claims priority, application Switzerland, Oct. 14, 1964, 13,339/64
U.S. Cl. 260—2.5 **3 Claims**
Int. Cl. C08g *22/44, 22/14*

Hydrophilic polyurethane foams produced by reacting at least one polyisocyanate with polypropylene glycol and at least one monoalkoxypolyethylene glycol of the formula $RO(CH_2—CH_2—O)_nH$ wherein R is methyl or ethyl and *n* is an integer of 3 to 30 inclusive. The reaction is effected at ambient temperature in the presence of water, a catalyst consisting of a mixture of stannous octoate and triethylene-diamine or N-ethylmorpholine, and at least one surface active agent.

3,432,449

FOAMABLE PLASTISOL COMPOSITION AND METHOD OF FOAMING SAME

Kenneth M. Deal, Norwalk, and Raymond R. Waterman, Monroe, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 11, 1966, Ser. No. 571,724
U.S. Cl. 260—2.5 **24 Claims**
Int. Cl. C08f *47/08*

The invention relates to an unfoamed plastisol composition comprising polyvinyl chloride, a plasticizer, an organic non-soap surfactant and a foam stabilizer selected from the group consisting of potassium acid phthalate, sodium acid phthalate and sodium phthalate, and the method of foaming said composition.

3,432,450

USE OF BROMINATED SALICYLANILIDE AS A FIRE RETARDANT FOR POLYMERIC MATERIALS

Zvi Enrico Jolles, Harlow, England, assignor to Berk Limited

No Drawing. Filed Apr. 25, 1967, Ser. No. 633,403
Claims priority, application Great Britain, Apr. 29, 1966, 18,987/66
U.S. Cl. 260—2.5 **9 Claims**
Int. Cl. C08f *47/08;* **C09k** *3/28;* **C08g** *22/44*

Natural and synthetic organic polymeric materials are rendered non-flammable by the incorporation of a small proportion of a brominated salicylanilide as fire retardant. Preferred brominated salicylanilides contain 2 to 7 bromine atoms per molecule and, optionally, one or more chlorine atoms. A second fire retardant derived from antimony, arsenic or bismuth, preferably antimony oxide, is also preferably used.

3,432,451

POLYOLEFIN-MODIFIED POLYURETHANES AND PROCESS OF MAKING SAME

Rene Kales, New York, N.Y., assignor to Hertz, Warner Affiliated Corp., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 3,250, Jan. 19, 1960. This application Mar. 8, 1965, Ser. No. 438,077
U.S. Cl. 260—23 **17 Claims**
Int. Cl. C08f *21/04;* **C09d** *3/60, 3/72*

Polyolefin-modified polyurethanes are prepared by dissolving a polyolefin in a fatty acid ester having at least one free hydroxyl group, and reacting a polyisocyanate with the resulting solution. The modified polyurethanes are useful as surface coatings and adhesives.

3,432,452

FOAMABLE POLYVINYL CHLORIDE COMPOSITIONS AND PROCESS OF MAKING FOAMS THEREFROM

Harold R. Hersh, Cherry Hill, N.J., and John E. Boyce, East Lansdowne, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,273
U.S. Cl. 260—2.5 **10 Claims**
Int. Cl. C08f *47/10, 29/18*

This invention relates to foamable polyvinyl chloride compositions and to the foams prepared therefrom which utilize as the blowing agent component a mixture of:

(1) From about 15 to about 25 percent, based upon the total weight of (1) and (2), of a high temperature blowing agent which evolves gas at a temperature from about the gelation temperature to about 20° F. above the gelation temperature of said plastisol, and

(2) From about 75 to about 85 percent, based upon the total weight of (1) and (2), of a low temperature blowing agent which evolves gas at a temperature ranging from about 30° F. to about 60° F. below the gelation temperature of said plastisol.

The preferred compositions also utilize a particular combination of high and low solvating plasticizers. The polyvinyl chloride foams prepared by this invention have good porosity coupled with high physical strength.

3,432,453

DE-IONIZING TREATMENT FOR PHENOLIC RESINS USING A SOLUBLE AMMONIUM SALT

Kurt Paul Gladney, Sarnia, Ontario, and Hendrik Herman Jan Deuzeman, Watford, Ontario, Canada, assignors to Fiberglas Canada Limited, Toronto, Ontario, Canada

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,457
Claims priority, application Canada, Oct. 5, 1964, 913,213
U.S. Cl. 260—29.3 **9 Claims**
Int. Cl. C08g *51/24, 37/08*

In the formation of a resin solution, the removal of residual magnesium, calcium, strontium and barium catalyst ions is effected by treatment with an ammonium salt having an ion which forms an insoluble salt with the residual metal ion at a pH of from 4.5 to 6.5 and subsequently raising the pH to above 7 by the addition of ammonia.

3,432,454

VISCOUS AQUEOUS COMPOSITIONS COMPRISING A POLYMER CONTAINING N-VINYL MORPHOLINONE AND A POLYMER CONTAINING SULFO OR CARBOXYL GROUPS OR THEIR SALTS

Billy B. Hibbard, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 53,343, Sept. 1, 1960. This application Mar. 24, 1965, Ser. No. 442,479
U.S. Cl. 260—29.6 **9 Claims**
Int. Cl. C08f *47/16, 31/04;* **A61k** *27/00*

An intimate mixture of aqueous dispersions of a polyvinyl morpholinone and an organic polymer having recurring sulfo or carboxyl groups or their salt derivatives is of viscosity higher than the mean of the separate viscosities of the starting aqueous solutions. At very low solids content these compositions have greatly exalted viscosities in the resulting aqueous mixture which may then carry other mechanical and chemical additives of a wide range.

3,432,455

EMULSION POLYMERIZATION OF UNSATURATED MONOMERS

Vincent M. Rasicci, Avon Lake, Ohio, assignor to Standard Brands Chemical Industries, Inc., Dover, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 292,445, July 2, 1963. This application Feb. 8, 1967, Ser. No. 614,564
U.S. Cl. 260—29.7 **18 Claims**
Int. Cl. C08d *1/09;* **C08f** *1/13*

A process for producing synthetic polymer latex having low viscosity and a large particle size in which unsaturated monomers are polymerized in an aqueous emulsion containing cations of certain polyvalent metals and an anionic surfactant, and the latex obtained thereby.

To produce a particularly stable latex, the emulsion is preferably prepared by use of limited amounts of an emulsifier which is a soluble salt of the polyvalent metal and the anionic surfactant. The emulsion may also be prepared by the use of limited amounts of an inorganic salt of the polyvalent metal and an emulsifier containing the anionic surfactant, but a less stable latex is produced.

3,432,456

POLYURETHANES PREPARED FROM DIHYDRAZIDES

Harald Oertel and Heinrich Rinke, Leverkusen, and Wilhelm Thoma, Cologne-Flittard, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 8, 1961, Ser. No. 129,964
Claims priority, application Germany, Aug. 12, 1960, F 31,869
The portion of the term of the patent subsequent to Feb. 21, 1984, has been disclaimed
U.S. Cl. 260—30.2 **12 Claims**
Int. Cl. C08g *22/04, 53/14, 53/16*

Polyurethane polymer solutions and fibers, foils and coatings obtained from the solutions are prepared by reacting in a polar solvent that will dissolve polyacrylonitrile (1), a substantially linear isocyanate terminated polymer having a molecular weight of from about 700 to about 5,000 and prepared by reacting (a) an excess of an organic diisocyanate with (b) an organic compound containing reactive hydrogen atoms that are reactive with —NCO groups with (2) a dihydrazide having at least two active hydrogen atoms and the formula

$$R—NH—NR'—A—(Z—A)_n—NR'—NH—R$$

wherein A is —CO, —CS—, or $—SO_2—$, R and R′ are hydrogen, alkyl or aryl, Z is alkylene, arylene, cycloalkylene, —NH—, —NH—NH—, —OYO—, or

$$—NH—Y—NH—$$

refractory support material and reducing the cobalt compound at least partly to metallic cobalt, the composition before reduction being heated under substantially non-reducing conditions at a temperature above 600° C. The heat treatment increases porosity of the composition. This results in a catalyst of increased activity with a greater capacity to take up alkali added by impregnation.

3,432,444

METHOD OF CURING EPOXY RESINS EMPLOYING DIFLUOROAMINO COMPOUNDS AS CATALYSTS

Orval E. Ayers, Chester W. Huskins, and Herbert A. Carter, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Oct. 10, 1962, Ser. No. 229,765
U.S. Cl. 260—2 **7 Claims**
Int. Cl. C08g *51/84, 30/00*

1. A process for curing epoxy resins having a plurality of epoxy groups per molecule with each epoxy group having an oxygen atom bonded to two commonly bonded carbon atoms, said process comprising the blending of said epoxy resins with a difluoroamino compound selected from the group consisting of propionyl difluoroamide, 2,3-bis (difluoroamino) propyl formate, 2,3-bis (difluoroamino) propionitrile, 2,3-bis (difluoroamino) propyl allyl ether, and 1,2,3-tris (difluoroamino) propane, which acts as a catalyst.

3,432,445

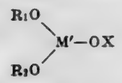
CATALYST COMPOSITIONS BASED ON BIVALENT METALS AND THE APPLICATION THEREOF, PARTICULARLY FOR THE POLYMERIZATION OF CYCLIC ETHERS

Maseh Osgan, Rueil-Malmaison, Hauts-de-Seine, Jean-Pierre Silly, Croissy-sur-Seine, Yvelines, and Philippe Teyssie, Le Vesinet, Yvelines, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France

No Drawing. Filed May 2, 1966, Ser. No. 546,566
Claims priority, application France, June 6, 1965, 16,167
U.S. Cl. 260—2 **14 Claims**
Int. Cl. C08g *23/06, 23/14*

For the polymerization of cyclic ethers, there is empolyed at the catalyst a reaction product prepared by contacting:

(a) A trivalent metal compound having the formula



(b) A bivalent metal compound having the formula YO—M—Z wherein M′ is a trivalent metal, M is a bivalent metal, Z is selected from the group consisting of OR_3 and acyloxy groups; X and Y are different, one of which is R_4 and the other is an acyl group, said groups R_1, R_2, R_3 and R_4 being monovalent hydrocarbon groups, and separating at least 1% of the theoretical amount of the ester byproduct XOY of the reaction of (a) with (b).

3,432,446

POROUS APPLICATOR PREPARED BY BONDING THERMOPLASTIC FIBROUS FLOCK PARTICLES AT POINT OF CONTACT WITH THE AID OF A PLASTICIZER

Leonard T. Coppeta, North Andover, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,456
U.S. Cl. 260—2.5 **3 Claims**
Int. Cl. C08f *47/08;* **C08j** *1/14;* **C08g** *53/08*

The invention is a pad or porous body consisting of an assembly of non-oriented thermoplastic, flock fibers, the body having interstitial voids of capillary dimensions, the fibers carrying a plasticizer bonding them into a cohesive bibulous body, and liquid in the voids and wetting the fibers, the liquid being dispensable from said body to a contacting surface.

3,432,447

FOAMABLE POLYETHYLENE/STYRENE BODIES

William A. Patterson and Henry G. Schirmer, Spartanburg, S.C., and Stanley N. Weissman, Cedar Grove, N.J., assignors to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,340
U.S. Cl. 260—2.5 **1 Claim**
Int. Cl. C08f *47/08;* **C08g** *53/08;* **C08j** *1/14*

1. A cellular body of a polymer of ethylene containing 10 to 30 weight percent of polystyrene having a smooth glossy surface and small uniformly distributed, discrete cells substantially spherical in shape and having an average cell size in the range of 0.200 to .075 millimeter and less, said polymer having a percent gel of from about 30 to about 80.

3,432,448

METHOD OF PRODUCING HYDROPHILIC POLYURETHANE FOAM EMPLOYING A MONOALKOXY-POLYETHYLENE GLYCOL

Joerg Sambeth, Veyrier, Geneva, and Alexis Archipoff, Carouge, Geneva, Switzerland, assignors to Elekal, Paris, France

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,573
Claims priority, application Switzerland, Oct. 14, 1964, 13,339/64
U.S. Cl. 260—2.5 **3 Claims**
Int. Cl. C08g *22/44, 22/14*

Hydrophilic polyurethane foams produced by reacting at least one polyisocyanate with polypropylene glycol and at least one monoalkoxypolyethylene glycol of the formula $RO(CH_2—CH_2—O)_nH$ wherein R is methyl or ethyl and *n* is an integer of 3 to 30 inclusive. The reaction is effected at ambient temperature in the presence of water, a catalyst consisting of a mixture of stannous octoate and triethylene-diamine or N-ethylmorpholine, and at least one surface active agent.

3,432,449

FOAMABLE PLASTISOL COMPOSITION AND METHOD OF FOAMING SAME

Kenneth M. Deal, Norwalk, and Raymond R. Waterman, Monroe, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 11, 1966, Ser. No. 571,724
U.S. Cl. 260—2.5 **24 Claims**
Int. Cl. C08f *47/08*

The invention relates to an unfoamed plastisol composition comprising polyvinyl chloride, a plasticizer, an organic non-soap surfactant and a foam stabilizer selected from the group consisting of potassium acid phthalate, sodium acid phthalate and sodium phthalate, and the method of foaming said composition.

3,432,450

USE OF BROMINATED SALICYLANILIDE AS A FIRE RETARDANT FOR POLYMERIC MATERIALS

Zvi Enrico Jolles, Harlow, England, assignor to Berk Limited

No Drawing. Filed Apr. 25, 1967, Ser. No. 633,403
Claims priority, application Great Britain, Apr. 29, 1966, 18,987/66
U.S. Cl. 260—2.5 **9 Claims**
Int. Cl. C08f *47/08;* **C09k** *3/28;* **C08g** *22/44*

Natural and synthetic organic polymeric materials are rendered non-flammable by the incorporation of a small proportion of a brominated salicylanilide as fire retardant. Preferred brominated salicylanilides contain 2 to 7 bromine atoms per molecule and, optionally, one or more chlorine atoms. A second fire retardant derived from antimony, arsenic or bismuth, preferably antimony oxide, is also preferably used.

3,432,451

POLYOLEFIN-MODIFIED POLYURETHANES AND PROCESS OF MAKING SAME

Rene Kales, New York, N.Y., assignor to Hertz, Warner Affiliated Corp., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 3,250, Jan. 19, 1960. This application Mar. 8, 1965, Ser. No. 438,077
U.S. Cl. 260—23 **17 Claims**
Int. Cl. C08f *21/04;* **C09d** *3/60, 3/72*

Polyolefin-modified polyurethanes are prepared by dissolving a polyolefin in a fatty acid ester having at least one free hydroxyl group, and reacting a polyisocyanate with the resulting solution. The modified polyurethanes are useful as surface coatings and adhesives.

3,432,452

FOAMABLE POLYVINYL CHLORIDE COMPOSITIONS AND PROCESS OF MAKING FOAMS THEREFROM

Harold R. Hersh, Cherry Hill, N.J., and John E. Boyce, East Lansdowne, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,273
U.S. Cl. 260—2.5 **10 Claims**
Int. Cl. C08f *47/10, 29/18*

This invention relates to foamable polyvinyl chloride compositions and to the foams prepared therefrom which utilize as the blowing agent component a mixture of:

(1) From about 15 to about 25 percent, based upon the total weight of (1) and (2), of a high temperature blowing agent which evolves gas at a temperature from about the gelation temperature to about 20° F. above the gelation temperature of said plastisol, and

(2) From about 75 to about 85 percent, based upon the total weight of (1) and (2), of a low temperature blowing agent which evolves gas at a temperature ranging from about 30° F. to about 60° F. below the gelation temperature of said plastisol.

The preferred compositions also utilize a particular combination of high and low solvating plasticizers. The polyvinyl chloride foams prepared by this invention have good porosity coupled with high physical strength.

3,432,453

DE-IONIZING TREATMENT FOR PHENOLIC RESINS USING A SOLUBLE AMMONIUM SALT

Kurt Paul Gladney, Sarnia, Ontario, and Hendrik Herman Jan Deuzeman, Watford, Ontario, Canada, assignors to Fiberglas Canada Limited, Toronto, Ontario, Canada

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,457
Claims priority, application Canada, Oct. 5, 1964, 913,213
U.S. Cl. 260—29.3 **9 Claims**
Int. Cl. C08g *51/24, 37/08*

In the formation of a resin solution, the removal of residual magnesium, calcium, strontium and barium catalyst ions is effected by treatment with an ammonium salt having an ion which forms an insoluble salt with the residual metal ion at a pH of from 4.5 to 6.5 and subsequently raising the pH to above 7 by the addition of ammonia.

3,432,454

VISCOUS AQUEOUS COMPOSITIONS COMPRISING A POLYMER CONTAINING N-VINYL MORPHOLINONE AND A POLYMER CONTAINING SULFO OR CARBOXYL GROUPS OR THEIR SALTS

Billy B. Hibbard, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 53,343, Sept. 1, 1960. This application Mar. 24, 1965, Ser. No. 442,479
U.S. Cl. 260—29.6 **9 Claims**
Int. Cl. C08f *47/16, 31/04;* **A61k** *27/00*

An intimate mixture of aqueous dispersions of a polyvinyl morpholinone and an organic polymer having recurring sulfo or carboxyl groups or their salt derivatives is of viscosity higher than the mean of the separate viscosities of the starting aqueous solutions. At very low solids content these compositions have greatly exalted viscosities in the resulting aqueous mixture which may then carry other mechanical and chemical additives of a wide range.

3,432,455

EMULSION POLYMERIZATION OF UNSATURATED MONOMERS

Vincent M. Rasicci, Avon Lake, Ohio, assignor to Standard Brands Chemical Industries, Inc., Dover, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 292,445, July 2, 1963. This application Feb. 8, 1967, Ser. No. 614,564
U.S. Cl. 260—29.7 **18 Claims**
Int. Cl. C08d *1/09;* **C08f** *1/13*

A process for producing synthetic polymer latex having low viscosity and a large particle size in which unsaturated monomers are polymerized in an aqueous emulsion containing cations of certain polyvalent metals and an anionic surfactant, and the latex obtained thereby.

To produce a particularly stable latex, the emulsion is preferably prepared by use of limited amounts of an emulsifier which is a soluble salt of the polyvalent metal and the anionic surfactant. The emulsion may also be prepared by the use of limited amounts of an inorganic salt of the polyvalent metal and an emulsifier containing the anionic surfactant, but a less stable latex is produced.

3,432,456

POLYURETHANES PREPARED FROM DIHYDRAZIDES

Harald Oertel and Heinrich Rinke, Leverkusen, and Wilhelm Thoma, Cologne-Flittard, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 8, 1961, Ser. No. 129,964
Claims priority, application Germany, Aug. 12, 1960, F 31,869
The portion of the term of the patent subsequent to Feb. 21, 1984, has been disclaimed
U.S. Cl. 260—30.2 **12 Claims**
Int. Cl. C08g *22/04, 53/14, 53/16*

Polyurethane polymer solutions and fibers, foils and coatings obtained from the solutions are prepared by reacting in a polar solvent that will dissolve polyacrylonitrile (1), a substantially linear isocyanate terminated polymer having a molecular weight of from about 700 to about 5,000 and prepared by reacting (a) an excess of an organic diisocyanate with (b) an organic compound containing reactive hydrogen atoms that are reactive with —NCO groups with (2) a dihydrazide having at least two active hydrogen atoms and the formula

$$R—NH—NR'—A—(Z—A)_n—NR'—NH—R$$

wherein A is —CO, —CS—, or $—SO_2—$, R and R′ are hydrogen, alkyl or aryl, Z is alkylene, arylene, cycloalkylene, —NH—, —NH—NH—, —OYO—, or

$$—NH—Y—NH—$$

wherein Y is alkylene or phenylene and *n* is 0 to 1, the dihydrazide (2) being present in a quantity of from about 100 mol percent to about 110 mol percent of that required to react with the NCO groups of the linear isocyanate terminated polymer (1).

3,432,457

RESINOUS COMPOSITION COMPRISING BENZYLIC ETHER RESIN, POLYISOCYANATE, AND TERTIARY AMINE

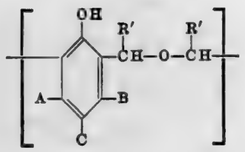
Janis Robins, St. Paul, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Continuation-in-part of application Ser. No. 569,106, Aug. 1, 1966. This application July 12, 1967, Ser. No. 652,669

U.S. Cl. 260—30.4 **16 Claims**

Int. Cl. C08g *5/06, 51/04*

Novel resin compositions comprising mixtures of a benzylic ether resin containing repeating units of the structure



wherein A, B, and C are hydrogen, hydrocarbon radicals, oxyhydrocarbon radicals or halogen and R′ is a hydrogen or hydrocarbon radical of 1 to 8 carbon atoms, with polyisocyanate and catalytic concentrations of a metal ion. The resin compositions are capable of curing at room temperature and are useful as coating and binder compositions.

3,432,458

THICKENED POLYMERIZABLE UNSATURATED POLYESTER RESIN COMPOSITIONS AND FIBROUS SUBSTANCES IMPREGNATED THEREWITH

Fred K. C. Kwan, Chicago, Ill., and Richard C. Ross, Port Washington, and Glenn R. Svoboda, Grafton, Wis., assignors to Freeman Chemical Corporation, Port Washington, Wis., a corporation of Delaware

Filed Oct. 23, 1967, Ser. No. 677,246

U.S. Cl. 260—33.4 **7 Claims**

Int. Cl. C08f *21/02, 45/34, 45/10*

A thickened polymerizable unsaturated polyester resin composition which is essentially dry to the touch at room temperature and which will flow upon heating prior to curing. The polyester resin is thickened by addition of both (a) an alkaline earth oxide such as MgO and CaO and (b) a polyhydric alcohol selected from the class consisting of diethylene glycol, dipropylene glycol, ethylene glycol, propylene glycol and glycerine. The thickened composition is used by applying it to fibrous reinforcing materials such as glass fiber rovings, fabrics, and randomly oriented glass fiber mats.

3,432,459

STABILIZABLE POLY-α-OLEFIN INTERMEDIATES

Gregory J. Listner, Franklin Park, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Continuation-in-part of application Ser. No. 293,823, July 9, 1963. This application Jan. 31, 1964, Ser. No. 341,614

U.S. Cl. 260—33.8 **7 Claims**

Int. Cl. C08f *29/02, 45/58*

An intermediate poly-α-olefin composition containing a chlorinated polyphenyl compound and thus adapted to receive significant amounts of anti-oxidants, ultra violet light absorbers and others stabilizers.

3,432,460

ANTIOZONANTS

Ronald B. Spacht, Hudson, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 468,118, June 29, 1965. This application Feb. 19, 1968, Ser. No. 706,712

U.S. Cl. 260—45.9 **12 Claims**

Int. Cl. C08c *11/46*

Low melting mixtures of ring alkylated diphenyl-paraphenylene diamines and their use in the stabilization of polymers.

3,432,461

FLAME-PROOFING ADDITIVES AND RESINS CONTAINING THE SAME

George R. Hill and Donald G. Needham, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 8, 1966, Ser. No. 563,688

U.S. Cl. 260—45.75 **7 Claims**

Int. Cl. C08f *45/58, 29/02;* **C09k** *3/28*

Polymers are rendered both nonflammable and noncorrosive by the addition of at least one halogenated organic flameproofing compound, at least one tin compound such as di-n-butyl tin maleate or di-n-butyl tin glutaconate, and at least one metal oxide such as antimony trioxide.

3,432,462

PROCESS FOR STABILIZING POLYMERS

William W. Gignilliat and John W. Wilder, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 449,881, Apr. 21, 1965. This application Apr. 10, 1968, Ser. No. 720,337

U.S. Cl. 260—45.85 **10 Claims**

Int. Cl. C08f *45/58, 29/02*

A method for uniformly incorporating additives into polyolefins by immersing substantially crystalline polyolefins in solid divided form, which have previously been rendered porous, in a solvent solution of at least one additive whereby said additive is adsorbed onto said polyolefin.

3,432,463

ROOM TEMPERATURE VULCANIZABLE ORGANOPOLYSILOXANE ELASTOMER STOCKS

Paul Hittmair, Ernst Wohlfarth, and Siegfried Nitsche, Burghausen, Upper Bavaria, and Manfred Wick, Munich, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

No Drawing. Filed Sept. 22, 1967, Ser. No. 669,675

Claims priority, application Germany, Sept. 26, 1966, W 42,471

U.S. Cl. 260—46.5 **5 Claims**

Int. Cl. C08g *47/06, 31/09*

A one-component room temperature vulcanizable silicone rubber stock based on an essentially linear diorganosiloxane polymer having at least one potentially reactive site on each terminal silicon atom admixed with an aluminum alcoholate.

3,432,464

POLYHYDROXY AROMATIC COMPOUNDS IN POLYAMIDE CEMENTS AS ADHESION PROMOTERS

Chester W. Fitko and Abraham Ravve, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,664

U.S. Cl. 260—47 **11 Claims**

Int. Cl. C09j *3/16;* **B32b** *15/00*

An adhesive is prepared by admixing a synthetic linear polyamide of the nylon type with a small amount of the reaction product of an aromatic polyhydroxy carboxylic acid and an aliphatic diamine and heating the admixture to an elevated temperature for a time sufficient to permit reaction between the polyamide and the aromatic polyhydroxy carboxylic acid-aliphatic diamine reaction product.

3,432,465

POLYFUNCTIONAL EPOXIDES AND THEIR POLYMERS

William De Acetis, Berkeley, and Edgar J. Smutny, San Francisco, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 14, 1965, Ser. No. 456,001

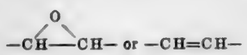
U.S. Cl. 260—47 **9 Claims**

Int. Cl. C07d *1/18;* **C08f** *7/12;* **C08g** *30/00*

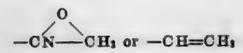
Novel epoxides are disclosed. These novel epoxides have the general formula

$$R—[O—CH_2—A—(CH_2)_3—B]_n$$

wherein R is the residue obtained by removing one or more OH— groups from a phenol, each A is



each B is



with at least one of the groups A or B being an epoxy group and *n* is an integer from 1 to 4.

3,432,466

PROCESS OF MAKING POLY-(2,6-DIARYL-1,4-PHENYLENE ETHERS)

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,733

The portion of the term of the patent subsequent to May 26, 1981, has been disclaimed

U.S. Cl. 260—47 **10 Claims**

Int. Cl. C08g *23/18, 23/16*

Oxygen is reacted with a 2,6-diarylphenol at an elevated temperature to produce poly-(2,6-diaryl-1,4-phenylene ethers) using an amine-basic cupric salt complex as the oxygen carrying intermediate. These polymers are useful for making films, fibers, molded objects, electrical insulation, protective coatings, etc.

3,432,467

POLYESTERS OF IMPROVED DYEABILITY CONTAINING TERTIARY AMINES

Trevor Davies, Anthony Julian East, and Michael King McCreath, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

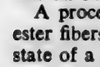
No Drawing. Filed May 17, 1965, Ser. No. 456,554

Claims priority, application Great Britain, May 20, 1964, 20,753/64

U.S. Cl. 260—47 **7 Claims**

Int. Cl. C08g *39/02;* **D01n** *5/10;* **D06p** *3/34*

A process for the preparation of polyester or copolyester fibers by forming an intimate mixture in the molten state of a polyester or copolyester containing up to 0.8% by weight of nitrogen in the form of an amine of the formula:



where each of the groups —R, —R′ and —R″ is one of the following groups: alkyl, aryl, aralkyl, alkaryl and cycloalkyl, and melt-spinning the mixture to form fibers.

3,432,468

HEAT-RESISTANT POLYTHIOETHERS AND METHOD FOR THEIR PRODUCTION

Rudolf Gabler, Zollikerberg, Switzerland, assignor to Inventa A.G. fur Forschung und Patentverwertung, Zurich, Switzerland

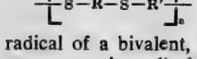
No Drawing. Filed Mar. 27, 1967, Ser. No. 625,986

Claims priority, application Switzerland, Mar. 28, 1966, 4,421/66

U.S. Cl. 260—47 **4 Claims**

Int. Cl. C08g *23/00, 33/00*

Heat-resistant, linear, thermoplastic polythioethers having the generic formula



wherein R is a radical of a bivalent, binuclear aromatic thiol and R′ is an aromatic radical having a strongly negative substituent in at least one of the ortho- or para-positions. These compounds are produced by condensation of the alkali- or alkaline earth metal salt of an aromatic dithiol with a bivalent aromatic halogen compound.

3,432,469

PROCESS FOR PRODUCING HIGH MOLECULAR WEIGHT POLYMERS FROM IMPURE 2,6-XYLENOL

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 2, 1967, Ser. No. 613,439

U.S. Cl. 260—47 **7 Claims**

Int. Cl. C08g *23/18, 23/20*

Impact of impurities in commercially available 2,6-xylenol on molecular weight of poly(2,6-dimethyl-1,4-phenylene ethers) made therefrom is overcome by a two step process whereby a low molecular weight polymer is first formed, isolated from the reaction mixture and then further polymerized to a higher molecular weight polymer.

3,432,470

PROCESS FOR THE PRODUCTION OF POLYOXYMETHYLENES BY CATALYTIC POLYMERIZATION OF MONOMERIC FORMALDEHYDE

Hans von Portatius, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed May 10, 1965, Ser. No. 455,048

Claims priority, application Germany, May 11, 1964, C 32,862

U.S. Cl. 260—67 **8 Claims**

Int. Cl. C08g *1/20, 1/02*

A process for the production of polyoxymethylenes comprising adding formaldehyde to an inert solvent maintained at a temperature ranging from −100° to +90° C., said solvent containing an amine polymerization catalyst having at least two amino groups selected from the group consisting of primary-secondary amino groups, primary-tertiary amino groups and secondary-tertiary amino groups. Suitable amines have the following structural formula:

(I) $R_1—NH—R_2—NH_2$	Secondary-primary.
(II) $R_1—NH—R_2—NH—R_3—NH_2$	Secondary-secondary-primary.
(III) 	Tertiary-primary.
(IV) 	Tertiary-secondary-primary.
(V) 	Tertiary-secondary.

wherein R_1, R_4 and R_5 are aliphatic radicals containing 1 to 18 carbon atoms, and R_2 and R_3 are selected from the group consisting of ethylidene, propylidene, butylidene and pentylidene radicals.

3,432,471

POLYOXYMETHYLENE-NORBORNYLENE COPOLYMERS

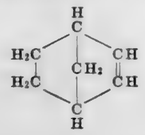
Calvin N. Wolf, Princeton, N.J., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of applications Ser. No. 319,662, Oct. 29, 1963, and Ser. No. 428,245, Jan. 26, 1965. This application Apr. 25, 1967, Ser. No. 633,414

U.S. Cl. 260—67 **26 Claims**

Int. Cl. C08g *1/18*

A composition of matter, as well as a process for preparing same, which comprises an interpolymer of a formaldehyde and norbornylene which latter has the formula



The amount of norbornylene in the interpolymer ranges from about 0.1–20 weight percent, based on the interpolymer. Molecular weights of the interpolymers range from 5,000 to about 200,000 and are suitable for molding, drawing fibers, and particularly for films. Melting points range from about 140°–190° C. The interpolymers may be thermally stabilized by end-capping them with a material selected from the group consisting of (1) an organic acid anhydride; (2) an etherification agent selected from the group consisting of orthoesters, vinyl ethers, and epoxides; and (3) an isocyanate selected from the group consisting of aliphatic and cyclic isocyanates.

3,432,472

DYEABLE POLYMERS

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,990

U.S. Cl. 260—75 **31 Claims**

Int. Cl. C08f *45/14, 47/00;* **C08g** *53/00*

A dyeable composition comprising a fiber and film-forming synthetic resinous polymer that is normally difficult to dye with basic dyes, and a salt of an oxyacid of sulfur or phosphorus.

3,432,473

PROCESS FOR THE PRODUCTION OF ALIPHATIC OR CYCLOALIPHATIC POLYESTERS OF CARBONIC ACID

Wolfgang Seeliger, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed May 10, 1965, Ser. No. 454,667

Claims priority, application Germany, May 14, 1964, C 32,892

U.S. Cl. 260—77.5 **5 Claims**

Int. Cl. C08g *17/13;* **C07c** *69/00*

A method of producing high molecular weight rubber-like polyesters of carbonic acid by reacting aliphatic or cycloaliphatic diols containing 4 to 40 carbon atoms or glycols with 2 to 20 alkoxy groups, each group containing 2 to 40 carbon atoms, with phosgene in the presence of a chlorformic acid ester of a monovalent aliphatic alcohol containing 1 to 4 carbon atoms to form a precondensate having the formula

$$HO—R—(O—CO—OR)_x—O—CO—OR'$$

removing the volatile constituents, and then continuing the condensation, preferably in the presence of an alkaline catalyst, to form the polycondensate.

3,432,474

PROCESS FOR FORMING NON-FOAMED POLYURETHANE ELASTOMERS USING METAL DIORGANO DITHIOCARBAMATES AS LATENT CURING CATALYSTS

Frank G. Lombardi, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,106

U.S. Cl. 260—77.5 **6 Claims**

Int. Cl. C08g *22/04*

Polyurethane elastomers are produced by reacting a prepolymer with a reactive curing agent in the presence of a latent curing catalyst comprising a metal diorganodithiocarbamate. The elastomers are useful as gaskets, backing for carpeting and other cast and molded articles.

3,432,475

RADIATION RESISTANT POLYURETHANES

William J. McKillip, Minneapolis, and Peter E. Throckmorton, Prior Lake, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Oct. 19, 1966, Ser. No. 587,695

U.S. Cl. 260—77.5 **13 Claims**

Int. Cl. C08f *22/22*

Radiation resistant polyurethanes wherein the polyol component therefor comprises either a diol or pentol derivative of a saturated four-member heterocyclic nucleus in which the sole heterocyclic atom is either sulfur or selenium.

3,432,476

SYNTHETIC LINEAR COPOLYTEREPHTHALAMIDES AND SHAPED ARTICLES MADE THEREFROM

Michichika Kuwabara and Kiyoshi Nawata, Hino-shi, Kiyokazu Tsunawaki, Mitaka-shi, and Seizaburo Sakakibara, Hino-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,183

Claims priority, application Japan, Dec. 30, 1963, 38/71,684

U.S. Cl. 260—78 **6 Claims**

Int. Cl. C08g *20/00, 20/20*

Linear, isomorphous copolyamides constituted of 90–40 mol percent preferably 80–55 mol percent, of hexamethylene-β-alkyl-adipamide and 10–60 mol percent preferably 20–45 mol percent of hexamethylene terephthalamide which are useful for the production of shaped articles in the form of fibers, filaments and films.

3,432,477

POLY(TRANS-1,2-CYCLOBUTYLENE ADIPAMIDE) AND FIBERS THEREOF

Peter William Foster, Geneva, Switzerland, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 4, 1965, Ser. No. 461,507

U.S. Cl. 260—78 **2 Claims**

Int. Cl. C08g *41/02, 20/00;* **D01d** *5/10*

Poly(trans-1,2-cyclobutylene adipamide) suitable for the preparation of textile fibers.

3,432,478

POLYHYDROXY-CONTAINING UNSATURATED POLYESTERS AND THEIR PREPARATION

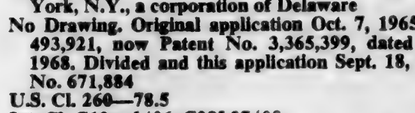
Clayton A. May, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 330,618, Dec. 16, 1963. This application Nov. 13, 1964, Ser. No. 411,101

U.S. Cl. 260—78.5 **18 Claims**

Int. Cl. C07c *69/52;* **C08f** *15/16, 19/10*

Hydroxy-containing unsaturated polyesters of the general formula



wherein n is an integer of 2 to 10, R is a polyvalent radical derived by removing carboxyl groups from a polycarboxylic acid and R_2 is a monovalent radical derived from removing carboxyl groups from an ethylenically unsaturated monocarboxylic acid. Cured products obtained by heating the above-noted polyesters alone or in admixture with a monomer containing a $CH_2=C<$ groups are also disclosed.

3,432,479

REACTION PRODUCT OF MONOAMINE, POLYAMINE AND POLYMER OF A MONOVINYL MONOMER AND MALEIC ANHYDRIDE

Joseph A. Verdol, Dolton, and Donald J. Carrow, Markham, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 7, 1965, Ser. No. 493,921, now Patent No. 3,365,399, dated Mar. 26, 1968. Divided and this application Sept. 18, 1967, Ser. No. 671,884

U.S. Cl. 260—78.5 **6 Claims**

Int. Cl. C10m *1/36;* **C08f** *27/08*

There are disclosed reaction products of monoamine and polyamine with a polymer resin of a monovinyl compound such as styrene, and maleic anhydride. The monoamine may be, for instance, octadecylamine or hexadecylamine, while the polyamine may be, for instance, diethylaminopropylamine, diethylenetriamine or tetraethylenepentamine. The reaction products are oil-soluble and exhibit detergent properties when included in a base lubricating oil.

3,432,480

METHOD FOR SULFONATING CIS 1,4-POLYBUTADIENE

Charles A. Stratton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 8, 1966, Ser. No. 570,860

U.S. Cl. 260—79.3 **5 Claims**

Int. Cl. C08d *5/02;* **C08f** *27/07*

Cis 1,4-polybutadiene is sulfonated. The product is formed by admixture of a solution of SO_3 in ethyl phosphate, preferably dissolved in ethylene chloride, and a solution of cis 1,4-polybutadiene dissolved in dried ethylene chloride. Polymer sulfonate acid is recovered by filtering and water washing, following which it is neutralized and dried and powdered. Sulfonated cis 1,4-polybutadiene is useful in a method of drilling a well. It possesses good water loss additive properties.

3,432,481

HYDROGENATION PROCESS

William O. Webber, Baytown, Tex., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,884

U.S. Cl. 260—82 **6 Claims**

Int. Cl. C08f *27/25, 15/42*

1. In the liquid phase catalytic hydrogenation of petroleum resins in a hydrocarbon solvent,

the improvement of adding water or ammonium hydroxide in amounts, based on resin plus solvent, between 0.1 and 50.0 weight percent but not in excess of the solubility of said water or ammonium hydroxide in the petroleum resins and hydrocarbon solvent under the reaction conditions employed for hydrogenation,

whereby the color of the hydrogenated petroleum resin product is improved.

3,432,482

PROCESS FOR THE PREPARATION OF POLYMER

Toshio Ohfuka, Katsumi Shirode, and Yasushi Ichikawa, Fuji-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed May 27, 1965, Ser. No. 459,430

Claims priority, application Japan, May 29, 1964, 39/30,055; June 30, 1964, 39/36,456

U.S. Cl. 260—85.5 **6 Claims**

Int. Cl. C08f *1/62, 1/11, 3/76*

A polymer is prepared by forming an aqueous dispersion containing an ethylenically unsaturated polymerizable compound, hydroxyurea-N-sulfonic acid or a water-soluble salt thereof in an amount of 0.01–10%, based on the weight of said polymerizable compound and 0.01–30%, based on the weight of said polymerizable compound of at least one inorganic oxidizable sulfoxy compound, adjusting the aqueous dispersion to a pH of 1–7 and maintaining same at 10–100° C.

3,432,483

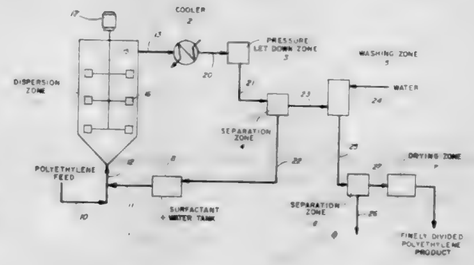
CONTINUOUS PROCESS FOR PREPARING FINELY DIVIDED POLYMERS

Leo C. Peoples and Charles W. Beatty, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Feb. 18, 1965, Ser. No. 433,690

U.S. Cl. 260—87.3 **12 Claims**

Int. Cl. C08f *1/09, 3/20*



A continuous process for the preparation of finely divided thermoplastic polymer such as polyethylene which comprises dispersing the polymer in water in the presence of a surfactant. More specifically, the process is carried out by feeding the polymer along with water and a surfactant to the lower portion of a dispersion zone, agitating the resulting admixture, to form a dispersion of a polymer, and withdrawing this dispersion from a point below the upper liquid level in the dispersion zone. The withdrawn dispersion is then cooled to solidify the finely divided polymer particles, reducing the pressure of the cool dispersion to ambient conditions, and then separating the finely divided polymer particles from the dispersion.

3,432,484

PREPARATION OF THERMOPLASTIC POLYMERS BY LOW TEMPERATURE POLYMERIZATION OF VINYL MONOMERS

Frank J. Welch, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Sept. 27, 1961, Ser. No. 141,009, now Patent No. 3,254,033, dated May 31, 1966. Divided and this application Sept. 29, 1965, Ser. No. 491,428

U.S. Cl. 260—88.7 17 Claims

Int. Cl. C08f *1/76, 1/60*

The invention relates to a method of preparing thermoplastic polymers of improved properties by polymerizing vinyl monomers at low temperatures, i.e., temperatures of about —50° C. to 0° C., in the presence of certain novel catalyst compositions. The catalysts comprise a mixture of a peroxydicarbonate and a sulfinic acid salt of an N,N-dialkylaniline. Advantages of the process include elimination of premature catalyst decomposition, excellent control over rate of reaction, reduction of undesirable side reactions, and increased crystallinity of the polymer product.

3,432,485

CHROMIUM CONTAINING MIXED AZO DYES

Reinhard Neier, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.) Basel, Switzerland

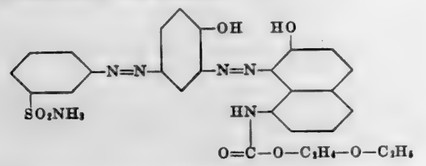
No Drawing. Filed July 21, 1966, Ser. No. 566,744

Claims priority, application Switzerland, July 23, 1965, 10,400/65

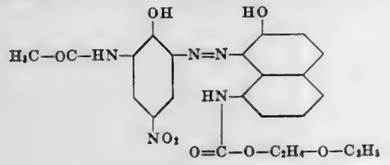
U.S. Cl. 260—145 5 Claims

Int. Cl. C09b *31/00*

1. The 1:2 chromium mixed complex of 1 mol of the azo compound of the formula



and 1 mol of the azo compound of the formula



3,432,486

SYNTHESIS OF FURAN COMPOUNDS INCLUDING PHARMACOLOGICALLY ACTIVE FURYL STEROIDS

Hitoshi Minato, 2–3–9 Matsugaedori, Toyonaka-shi, Osaka, Japan

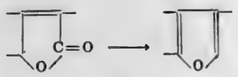
No Drawing. Filed Mar. 24, 1966, Ser. No. 537,027

Claims priority, application Japan, Apr. 1, 1965, 40/19,357

U.S. Cl. 260—210.5 28 Claims

Int. Cl. C07c *167/00, 173/00;* C07d *5/16*

An α,β-unsaturated γ-lactone is reduced according to the following scheme:



The reduction is effected with a compound of the formula

$$M_nAlR_mH_{(n+3)-m}$$

wherein M is an alkali metal, R is a lower alkyl or lower alkoxy group, *n* is zero or 1 and *m* is zero to 3. when *n* is zero, and is zero to 4 when *n* is 1. Obtained furanes are useful pharmacologically.

3,432,487

PROCESS FOR EXTRACTION AND CONCENTRATION OF HYDROPHILIC SUBSTANCES

Gilbert V. Levin, Chevy Chase, Md., assignor to E. I. du Pont de Nemours and Company, a corporation of Delaware

No Drawing. Filed May 16, 1966, Ser. No. 550,103

U.S. Cl. 260—211.5 9 Claims

Int. Cl. C07d *51/50;* B01d *11/00*

Detecting certain hydrophilic substances, e.g., the nucleotide adenosine triphosphate, can be used to determine the presence of living organisms. However, these substances must first be extracted from the organisms and concentrated. A process for extracting and concentrating the following hydrophilic substances; nucleotides, nucleosides, flavins, water soluble vitamins and water soluble cofactors involves mixing a material containing such substance with water and one of the following organic liquid extractants: ketones, alcohols, aldehydes, esters, nitroparaffins and phenols; and separating and recovering the aqueous phase containing the hydrophilic substance.

3,432,488

SOLUBLE SILYLATED CELLULOSE AND METHOD OF PREPARING SAME

Herman L. Finkbeiner and Johann F. Klebe, Schenectady, N.Y., assignors to General Electric Company, a corporation of Delaware

No Drawing. Filed Sept. 9, 1966, Ser. No. 578,160

U.S. Cl. 260—212 8 Claims

Int. Cl. C08b *15/00;* D06m *1/00;* C07f *7/02*

Cellulose is reacted with a triorganosilylhydrocarbonamide or a triorganodisilazane employing as a solvent, an alkyl pyrrolidone or a hexaalkylphosphoramide to produce silylated cellulose. These silylated celluloses are useful in producing films for packaging, protection, insulation and the like.

3,432,489

DISACCHARIDE POLYSULFATE ALUMINIUM COMPOUND AND METHOD

Yoshihiro Nitta, Komae-machi, Masaya Namekata, Kawasaki-shi, Eiichi Tomita, Kodaira-shi, Tokyo, and Yusaku Hirota, Mitaka-shi, Tokyo, Japan, assignors to Chugai Seiyaku K.K., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 25, 1966, Ser. No. 589,242

Claims priority, application Japan, Nov. 5, 1965, 40/67,508

U.S. Cl. 260—234 8 Claims

Int. Cl. C07c *47/18;* C07f *5/06;* A61k *27/00*

New compounds having peptic ulcer inhibiting action and no side effects are produced by reacting aluminium ion with a disaccharide polysulfate or its salt to produce a disaccharide polysulfate-aluminium compound containing 7–13% sulphur and 11–24% aluminium per molecule.

3,432,490

2-(β-HEXAMETHYLENE IMINO ETHYL) CYCLOHEXANONE - 2 - CARBOXYLIC ACID BENZYL ESTER AND SALTS THEREOF

Albert Frank, Kundl, Tyrol, Alfred Kraushaar, Kufstein, Tyrol, Hans Margreiter, Radfeld, Tyrol, and Roland Schunk, Kundl, Tyrol, Austria, assignors to Biochemie G.m.b.H., Kundl, Tyrol, Austria, a corporation of Austria

No Drawing. Filed Nov. 5, 1963, Ser. No. 321,423

Claims priority, application Austria, Nov. 8, 1962, A 8,802/62

U.S. Cl. 260—239 6 Claims

Int. Cl. C07d *41/04;* A61k *27/00*

6. A compound selected from the group consisting of 2-(β-hexamethylene imino ethyl) cyclohexanone-2-carboxylic acid benzyl ester and its acid addition salts with pharmaceutically acceptable, substantially non-toxic acids.

3,432,491

BENZENE SULFONYL SEMICARBAZIDES

Ernst Jucker, Ettingen, Adolf Lindenmann and Erhard Schenker, Basel, and Fulvio Gadient, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

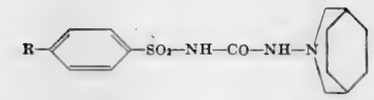
No Drawing. Filed Oct. 25, 1966, Ser. No. 589,241

Claims priority, application Switzerland, Oct. 27, 1965, 14,813/65

U.S. Cl. 260—239.6 14 Claims

Int. Cl. C07d *41/08;* A61k *27/00*

This invention is directed to heterocyclic sulphonyl semicarbazide derivatives of the formula:



in which R signifies a hydrogen or halogen atom, an alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, or acyl radical having from 1 to 4 carbon atoms, or the nitro, amino or acetylamino radical, and their alkali metal, alkaline earth metal, and ammonium salts. These compounds are useful in the treatment of diabetes mellitus.

3,432,492

6,7-CYCLOPENTANONO AND 6,7-CYCLOPENTANO STEROIDS

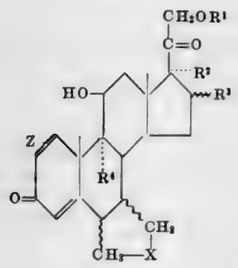
John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,199

U.S. Cl. 260—239.55 20 Claims

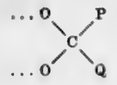
Int. Cl. C07c *173/00, 169/34, 169/22*

1. A steroid of the pregnane series having the following formula:



wherein

X is a methylene or carbonyl group;
Z is a carbon-carbon single bond or a carbon-carbon double bond;
R^1 is hydrogen, tetrahydropyran-2′-yl, tetrahydrofuran-2′-yl or a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms;
R^2 is hydrogen, hydroxy or a hydrocarbon carboxylic acyloxy group containing less than 12 carbon atoms;
R^3 is hydrogen, α-methyl, β-methyl, α-hydroxy or a α-hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms;
R^2 and R^3 together is the group



wherein P is hydrogen or lower alkyl and Q is lower alkyl or aryl of up to 8 carbon atoms; and
R^4 is hydrogen or fluoro.

3,432,493

SUBSTITUTED SULFANILAMIDES

James Harold Short, Lake Forest, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 27, 1966, Ser. No. 560,799

U.S. Cl. 260—239.75 5 Claims

Int. Cl. C07d *51/44;* A61k *27/00*

This invention relates to sulfanilamide compounds having the general formula



wherein R represents 2-amino-6-loweralkyl-4-pyrimidinyl, 4-amino-6-hydroxy-2-pyrmidinyl, 6-amino-4-pyrimidinyl, 2-amino - 6 - (p-sulfamylanilino)-4-pyrimidinyl, 2-anilino-6-loweralkyl - 4 - pyrimidinyl, 2,6-diloweralkoxy-4-pyrimidinyl, and 2-amino-4-S-triazinyl and their acid addition salts. These sulfanilamides are useful in increasing the flow of blood in coronary vessels of a warm-blooded animal.

3,432,494

ARYL ALKYL ARSINIC ACIDS AND SALTS THEREOF

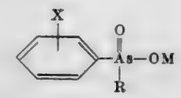
Max Eugene Chiddix, Easton, Pa., and Edward Oliver Leonard, Bound Brook, N.J., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,213

U.S. Cl. 260—242 11 Claims

Int. Cl. A01n *9/24;* C07f *9/76*

1. Aryl alkyl arsinic acid compounds having the general formula:



wherein X represents a member selected from the group consisting of hydrogen, chlorine and methoxy radicals; wherein R represents a member selected from the group consisting of allyl, 2-hydroxy lower alkyl and 2-phenyl-2-hydroxyethyl radicals; and wherein M represents a member selected from the group consisting of hydrogen, an alkali metal, an alkaline earth metal, an ammonium ion and an amine salt moiety.

3,432,495

ARYL HYDROXYALKYL ARSINIC ACIDS AND SALTS THEREOF

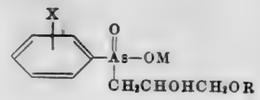
Max Eugene Chiddix, Easton, Pa., and Edward Oliver Leonard, Bound Brook, N.J., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,214

U.S. Cl. 260—242 11 Claims

Int. Cl. A01n *9/24;* C07f *9/76*

1. Aryl hydroxyalkyl arsinic acid compounds having the general formula:



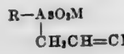
wherein X represents a member selected from the group consisting of hydrogen, chlorine and methoxy radicals; wherein R represents a member selected from the group consisting of phenyl, propyl, allyl, 2-propynyl and 2,4-dichlorophenyl radicals and M represents a member selected from the group consisting of hydrogen, an alkali metal, an alkaline earth metal, an ammonium ion and an amine salt moiety.

3,432,496
ALKYL ALKENYL ARSINIC ACIDS AND SALTS THEREOF

Max Eugene Chiddix, Easton, Pa., assignor to GAF Corporation, a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,240
U.S. Cl. 260—242 3 Claims
Int. Cl. C07f 9/72; A01n 9/24

1. Alkyl alkenyl arsinic acid compounds having the general formula:



wherein R represents a lower alkyl radical, R' represents a member selected from the group consisting of hydrogen and a methyl radical and M represents a member selected from the group consisting of hydrogen, an alkali metal, an alkaline earth metal, an ammonium ion and an amine salt moiety.

3,432,497
2-AMINO-5,6-DIHYDRO-4H-1,3,4-OXADIAZINES

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 30, 1966, Ser. No. 583,452
U.S. Cl. 260—244 5 Claims
Int. Cl. C07d 87/52

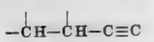
2 - amino-5,6-dihydro-4H-1,3,4-oxadiazine compounds are prepared by the reaction of a substituted hydrazino alcohol and cyanogen bromide at a temperature of from about 0°–40° C. The novel compounds have activity as sedatives, tranquilizers and analgesic agents.

3,432,498
ISOMERIZATION OF ACETYLENIC COMPOUNDS TO CONJUGATED DIOLEFINS

Abraham N. Kurtz, Charleston, W. Va., and Henry F. Hamil, Portland, Tex., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 19, 1965, Ser. No. 473,158
U.S. Cl. 260—247 2 Claims
Int. Cl. C07c 11/22; C07d 87/26

Acetylenic compounds containing the



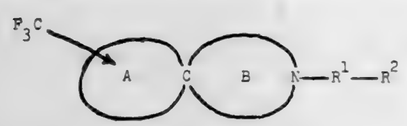
grouping are isomerized to conjugated diolefins by a liquid phase reaction employing an alkali metal, an alkali metal hydride, an alkali metal hydrocarbon, an alkali metal hydroxide or an alkali metal alcoholate as a catalyst and an organic sulfoxide or an N,N-disubstituted amide as a reaction solvent.

3,432,499
TRIFLUOROMETHYLAZASPIRANES AND AZASPIRANE DIONES

Leonard M. Rice, Baltimore, Md., and Charles H. Grogan, Falls Church, Va., assignors to Geschickter Fund for Medical Research, Inc., Washington, D.C., a corporation of the District of Columbia

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,246
U.S. Cl. 260—247.5 3 Claims
Int. Cl. C07d 99/04, 27/06, 29/20

Trifluoromethylazaspiranes of the general formula:



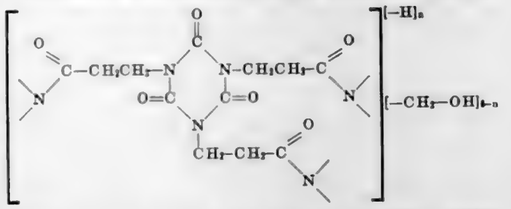
and acid addition and quaternary salts thereof.

3,432,500
DERIVATIVES OF ISOCYANURIC ACID

Daniel Porret, Binningen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,554
Claims priority, application Switzerland, Oct. 6, 1965, 13,802/65
U.S. Cl. 260—248 3 Claims
Int. Cl. C07d 55/38; C08g 9/28

Derivatives of isocyanuric acid of the general formula



where n = 3, 4, 5 or 6 are useful in improving textiles and in the manufacture of lacquers in molding powders.

3,432,501
PROCESS FOR THE PREPARATION OF MELAMINE

Ferdinand Weinrotter and Alfred Schmidt, Linz, Walter Müller, Leonding, near Linz, and Walter Böhler, Linz, Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz (Danube), Austria

Filed Apr. 4, 1967, Ser. No. 628,434
Claims priority, application Austria, Apr. 5, 1966, A 3,218/66
U.S. Cl. 260—249.7 4 Claims
Int. Cl. C07d 55/28

Superior and technically useful results are obtained in the synthesis of melamine from urea or the like in the presence of ammonia, if the synthesis is effected with the aid of crystalline aluminum oxide of small internal surface (80 to 150 square meters per gram), more especially γ-Al_2O_3, as catalyst. After prolonged operation (e.g. about 90 days), such catalysts with small internal surface retain substantially their original activity.

3,432,502
PREPARATION OF PYRAZINOYLGUANIDINE AND PYRAZINAMIDOGUANIDINE PRODUCTS

Peter I. Pollak, Scotch Plains, and Roger J. Tull, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 25, 1966, Ser. No. 574,909
U.S. Cl. 260—250 5 Claims
Int. Cl. C07d 51/66, 51/76; A61k 27/00

The preparation of a (3,5-diamino-6-halopyrazinoyl) guanidine or a (3,5-diamino-6-halopyrazinamido)guanidine by the reaction of a 3,5-diamino-6-halopyrazinoic acid hydrazide with a guanidine or an aminoguanidine is described. The end products possess diuretic and saluretic properties but do not enhance potassium excretion.

3,432,503
METHOD OF REDUCING THE CHOLINESTERASE ACTIVITY OF PHOSPHORIC ACID ESTERS

John F. Ferguson, Ardsley, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 421,601, Dec. 28, 1964. This application Sept. 23, 1966, Ser. No. 581,438
U.S. Cl. 260—251 8 Claims
Int. Cl. A01n 9/36; C07f 9/08

The cholinesterase activity of O,O - diethyl - O - (2-isopropyl - 4 - methyl - 6 - pyrimidyl)-thiophosphate and other phosphoric acid ester insecticides is reduced by refluxing these esters in an inert organic solvent with a basic material such as sodium hydroxide.

3,432,504
SALTS OF FURAN CARBOXYLIC ACIDS WITH THIAMINE AND ITS SALTS

Wolfgang Goetze-Claren, New York, N.Y. (Via Mangili 30, Rome, Italy)

No Drawing. Filed June 28, 1966, Ser. No. 561,065
U.S. Cl. 260—256.6 9 Claims
Int. Cl. C07d 99/12; A61k 15/12

There are disclosed the salts of thiamine, its salts, its O-phosphorus acid esters, and their salts with 2-furan carboxylic acid and 2,5-furan dicarboxylic acid. Also are disclosed pharmaceutical compositions and methods of using these compounds in treating vitamin B_1 deficiencies.

3,432,505
PROCESS FOR MAKING 1-HYDROXY-6-ALKOXYPHENAZINE-5,10-DIOXIDES

William Rosenbrook, Jr., Waukegan, and Arthur Charles Sinclair, Lake Bluff, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,838
U.S. Cl. 260—267 6 Claims
Int. Cl. C07d 5/00

A novel process for making a series of 1-hydroxy-6-alkoxyphenazine-5,10-dioxides by reacting 1,6-dihydroxyphenazine-5,10-dioxide with an alkylating agent in the presence of a weakly basic aqueous solution at an elevated temperature and extracting the desired product from the reaction mixture.

3,432,506
MANUFACTURE OF 2,4-(1H,3H)-PYRIDINEDIONES

Kent C. Brannock, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,352
U.S. Cl. 260—289 7 Claims
Int. Cl. C07d 33/46, 31/32

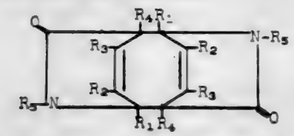
Preparation of 2,4-(1H,3H)-pyridinediones by reacting certain imines with certain substituted malonyl chlorides.

3,432,507
CERTAIN DIAZATRICYCLODODECADIENONES AND THEIR PREPARATION

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

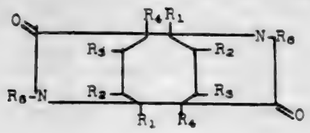
No Drawing. Continuation-in-part of application Ser. No. 210,194, July 16, 1962. This application Dec. 4, 1963, Ser. No. 328,107
U.S. Cl. 260—293 7 Claims
Int. Cl. C07d 29/02; B01j 1/10

1. A compound of the formula:



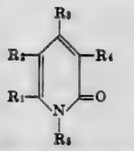
wherein R_1 is selected from the group consisting of hydrogen, methyl, and ethyl; R_2 is selected from the group consisting of hydrogen, methyl, and ethyl; R_3 is selected from the group consisting of hydrogen, methyl, and ethyl; R_4 is selected from the group consisting of hydrogen, methyl and ethyl; and R_5 contains 3 to 12 carbon atoms, inclusive, and is selected from the group consisting of alkenyl, cycloalkenyl, aralkenyl, and $(alkoxy)_n$-aralkenyl wherein n is an integer of from 1 to 3, inclusive, said cycloalkenyl and aralkenyl being hydrocarbon.

4. The process of producing compounds of the formula:



II

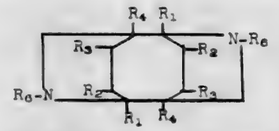
wherein R_1 is selected from the group consisting of hydrogen, methyl, and ethyl; R_2 is selected from the group consisting of hydrogen, methyl, and ethyl; R_4 is selected from the group consisting of hydrogen, methyl and ethyl; and R_5 contains 3 to 12 carbon atoms, inclusive, and is selected from the group consisting of alkenyl, cycloalkenyl, aralkenyl, and $(alkoxy)_n$-aralkyl wherein n is an integer of from 1 to 3, inclusive, said cycloalkyl and aralkyl being hydrocarbon which comprises irradiating a compound of the following formula:



IV

wherein R_1, R_2, R_3, and R_4 are as given above and R_5 contains 3 to 12 carbon atoms, inclusive, and is selected from the group consisting of alkenyl, cycloalkenyl, aralkenyl, and $(alkoxy)_n$-aralkenyl wherein n is an integer of from 1 to 3, inclusive, said cycloalkenyl and aralkenyl being hydrocarbon, with ultraviolet radiation and hydrogenating the resulting dimer with hydrogen in the presence of a catalyst effective to saturate an olefinic double bond.

6. The process for producing compounds of the formula:



III

wherein R_1, R_2, R_3, R_4, R_5, and R_6 are as in claim 4 which comprises irradiating a compound of Formula IV wherein R_1, R_2, R_3, R_4 and R_5 are as in claim 4, with ultraviolet radiation, hydrogenating the resulting dimer with hydrogen in the presence of a catalyst effective to saturate an olefinic double bond, and reducing the resulting compound with lithium aluminum hydride.

3,432,508
N-ALKYLATED PIPERIDINES

Stephen Wolownik, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,340
U.S. Cl. 260—293.2 7 Claims
Int. Cl. C07d 29/10

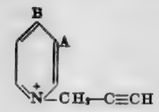
Preparation of N-alkylated piperidines and N-alkylated C-substituted piperidines by hydrogenating a mixture of the corresponding pyridine with an aldehyde or a ketone in the presence of a palladium catalyst.

3,432,509
CERTAIN QUATERNARY N-PROPARGYL PYRIDINIUM SALTS

Frank Passal, Detroit, Mich., assignor to M&T Chemical Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 24, 1964, Ser. No. 347,046, now Patent No. 3,296,103, dated Jan. 3, 1967. Divided and this application June 16, 1966, Ser. No. 574,843
U.S. Cl. 260—295 7 Claims
Int. Cl. C07d 31/34, 31/44; C23b 5/08

In accordance with certain of its aspects, this invention relates to novel pyridinium compounds having a cation of the structure



wherein A and B may each be selected from the group consisting of hydrogen, carboxamido-$CONH_2$, acetyl-$COCH_3$, and carbomethoxy-$COOCH_3$, and at least one of A and B is other than hydrogen, and to the use of pyridinium compounds as primary brighteners in the electrodeposition of nickel.

3,432,510

PYRIDINECARBOXYLIC ACID ESTERS OF PYRIDINEDIMETHANOLS

Carl Peter Krimmel, Wauconda, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 18, 1966, Ser. No. 565,746

U.S. Cl. 260—295.5 **2 Claims**

Int. Cl. C07d *31/36*

Esters of pyridinedimethanols and pyridinecarboxylic acids are described herein. The esters are prepared by the reaction of a pyridinedimthanol with a pyridinecarboxylic acid halide. These compounds possess anti-atherogenic activity and they inhibit germination of seeds of trifolium.

3,432,511

PROCESSING OF PLASTIC MATERIALS

Victor G. Reiling, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York

No Drawing. Original application Nov. 7, 1961, Ser. No. 150,659, now Patent No. 3,247,116, dated Apr. 19, 1966. Divided and this application May 5, 1965, Ser. No. 462,465

U.S. Cl. 260—92.1 **2 Claims**

Int. Cl. C10m *7/28*; **C08f** *3/24, 27/28*

Polytetrafluoroethylene is degraded by heating it in the range of 785° to 880° F. until the tensile strength of the material is reduced. Thereafter, the degraded material is comminuted into a fine powder which may be dispersed in a carrier by blending without causing agglomeration thereof. Various carriers include varnish, alkyd resins, shellac, sodium silicate and the like and operate as a binder to adhere the degraded polytetrafluoroethylene to a surface to impart antifriction properties thereto.

3,432,512

CYANOALKYLATED HYDROXYALKYLATED POLYVINYL ALCOHOL AND DERIVATIVES

Benjamin D. Halpern, Jenkintown, Pa., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed July 22, 1965, Ser. No. 474,176

U.S. Cl. 260—91.3 **4 Claims**

Int. Cl. C08f *3/34*; **C08b** *3/38, 1/92*

This invention relates to a polymeric compound which is prepared by reacting polyvinyl alcohol with an alkylene oxide and thereafter cyanoalkylating the primary alcohol group of the hydroxyalkylated alcohol.

3,432,513

OLEFIN POLYMERIZATION PROCESS FOR PRODUCING HIGHLY ISOTACTIC POLYMERS

Donald B. Miller, Gifford G. McClaflin, Wayne R. Sorenson, and Homer L. Hackett, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,193

U.S. Cl. 260—93.7 **3 Claims**

Int. Cl. C08f *1/56*

A polymerization process for producing highly isotactic polymers from ethylenically unsaturated monomers containing three or more carbon atoms which comprises contacting said monomers with the following compounds added sequentially

(1) halogen containing compound having the following structural formula



where X is a halogen atom, R_1 is aryl, alkyl, aralkyl, alkaryl, hydrogen or halogen, and R_2 is aryl, alkyl, aralkyl, alkaryl, hydrogen or halogen;

(2) an organo-aluminum compound; and

(3) at titanium metal halide.

3,432,514

POLYOLEFIN COMPOSITIONS AND THEIR PREPARATION

George O. Cash, Jr. and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,636

U.S. Cl. 260—93.7 **6 Claims**

Int. Cl. C08f *47/00, 29/02, 1/88*

Poly-alpha-olefin compositions having an improved crystalline structure with improved physical and optical properties are obtained by employing as crystallinity promoters a combination of certain metal alkoxides and certain organic carboxylic acids.

3,432,515

METHOD OF PRODUCING BUTADIENE POLYMER HAVING HIGH PERCENTAGE OF CIS-1,4-CONFIGURATION

Eitaro Okuya, Yokkaichi-shi, Mie-ken, Adio Sakaguchi, Gifu-shi, Gifu-ken, and Kouei Komatsu, Tatsuhiko Kikuchi, Hidetoshi Yasunaga, and Kenichi Andueda, Yokkaichi-shi, Mie-ken, Japan, assignors to Japan Synthetic Rubber Co. Ltd., Tokyo, Japan

No Drawing. Filed June 23, 1966, Ser. No. 559,709

Claims priority, application Japan, July 2, 1965, 40/39,235

U.S. Cl. 260—94.3 **16 Claims**

Int. Cl. C08f *1/34*

A process of producing a butadiene polymer having a high percentage of cis-1,4-configuration, which comprises contacting butadiene in the presence of a hydrocarbon solvent at a temperature between —20° C. and 150° C. under an inert gas atmosphere with a catalyst prepared by mixing (1) a compound of cobalt, (2) a halide of aluminum, and (3) an organotin compound having the general formula R'_4Sn wherein R' is an alkyl radical having 1 to 3 carbon atoms and a temperature between 0° C. and 120° C. under an inert gas atmosphere.

3,432,516

PROCESS FOR THE STEREOSPECIFIC POLYMERIZATION OF ISOPRENE

Walter Marconi and Alessandro Mzaael, Milan, Marcello de Maide', San Donato Milanese, and Salvatore Cucinella, Milan, Italy, assignors to Snam Progetti S.p.A., Milan, Italy, a company of Italy

No Drawing. Continuation of application Ser. No. 169,621, Jan. 29, 1962. This application Sept. 8, 1966, Ser. No. 577,833

Claims priority, application Italy, Feb. 4, 1961, 1,984/61; Nov. 21, 1961, 18,075/61; Nov. 24, 1961, 18,193/61

U.S. Cl. 260—94.3 **5 Claims**

Int. Cl. C08d *1/14, 3/12*

Essentially stereospecific polymers of isoprene of 1,4 configuration are produced by bringing isoprene into contact with a catalyst system consisting of a titanium tetrahalide and a co-catalyst represented by the formula $HAlX_2$ wherein each X is a halogen atom or an aminic radical bound to the aluminum through the nitrogen atom or a nitrogen-containing heterocyclic radical bound to the aluminum through the nitrogen atom.

3,432,517

METHOD FOR POLYMERIZING BUTADIENE; A CATALYST FOR USE IN SAID METHOD AND A METHOD FOR PRODUCING THE CATALYST

Kenichi Ueda, Hidetoshi Yasunaga, and Kouei Komatsu, Yokkaichi-shi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 22, 1965, Ser. No. 450,175

Claims priority, application Japan, June 6, 1964, 39/31,956

U.S. Cl. 260—94.3 **10 Claims**

Int. Cl. C08d *1/14*; **B01j** *11/84*

A process for producing cis-1,4-polybutadiene by contacting butadiene with a catalyst consisting of (A) a nickel salt of a carboxylic acid, (B) a boron halide or a halide of a metal of Groups IV and V of the Periodic Table and (C) an organoaluminum compound of the formula: $AlR_1R_2R_3$, wherein at least one of R_1, R_2 and R_3 is an alkoxy radical and at least one of R_1, R_2 and R_3 is a radical capable of forming an Al-C or Al-H bond. Said organoaluminum compounds include diethylaluminum monoethoxide, diethylaluminum monooctyloxide, diisobutylaluminum monoisobutoxide, etc.

3,432,518

POLYMER HYDROGENATION

Lyle R. Kallenbach, College Station, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,816

U.S. Cl. 260—94.9 **9 Claims**

Int. Cl. C08f *43/03*; **B01j** *11/84*

Unsaturated polymers and copolymers of 1-olefins are hydrogenated in the presence of a catalyst consisting of (a) a metal, metal hydride or organometal compound of Groups I–A, II–A or III–A and (b) a Group VIII metal salt of a hydrocarbon-substituted phosphorus acid. A preferred catalyst is triisobutylaluminum and nickel diphenyl phosphinate.

3,432,519

CERTAIN 3-SUBSTITUTED-5-THIOPHOSPHORYL-METHYL-1,2,4-OXADIAZOLES

Jean Metivier and Michel Sauli, Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed May 13, 1966, Ser. No. 549,792

Claims priority, application France, May 18, 1965, 17,463; Feb. 22, 1966, 50,596

U.S. Cl. 260—307 **7 Claims**

Int. Cl. C07d *85/52*; **A01n** *9/36*

The invention provides new 3-substituted-5-thiophosphorylmethyl-1,2,4-oxadiazoles which are useful as insecticides and acaricides.

3,432,520

PREPARATION OF 2-IMIDAZOLONE DERIVATIVES BY CATALYTIC CYCLIZATION

Enos Charles Pesterfield, Jr., Briarcliff Manor, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,474

U.S. Cl. 260—309.6 **10 Claims**

Int. Cl. C07d *49/34*; **C07c** *127/16*

1,5-substituted-2-imidazolones optionally substituted in the 4-position are prepared from N-mono-substituted-N'-propargyl ureas under basic conditions. The compounds are useful as analgesics, antipyretics, anti-inflammatories, and CNS depressants.

3,432,521

4-ACYLOXY-5-PYRAZOLONES

Anthony Loria, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Dec. 26, 1962, Ser. No. 247,302, now Patent No. 3,311,476, dated Mar. 28, 1967. Divided and this application Aug. 10, 1966, Ser. No. 584,936

U.S. Cl. 260—310 **6 Claims**

Int. Cl. C07d *49/16, 49/14*; **G03c** *7/32*

4-acyloxy-5-pyrazolones are two-equivalent magenta dye-forming couplers used advantageously in color photography.

3,432,522

PYRROLE-2-CARBOXAMIDO ALKYLENE AMIDINES

Nicole Marie Preau, Sevres, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

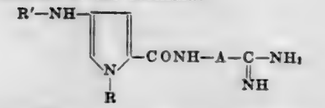
No Drawing. Filed Mar. 30, 1964, Ser. No. 355,901

Claims priority, application France, Apr. 4, 1963, 930,453; Oct. 18, 1963, 951,101; Feb. 24, 1964, 964,894

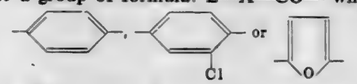
U.S. Cl. 260—326.3 **5 Claims**

Int. Cl. C07d *27/26*

1. An amidine of the formula:



and its acid addition salts, wherein A represents a straight or branched alkylene group containing up to 5 carbon atoms, R represents a lower alkyl group, and R' represents carbamoyl, mono(lower alkyl) carbamoyl, di(lower alkyl)carbamoyl, unsubstituted lower aliphatic carboxylic acyl, such a group substituted by an amidino group, benzoyloxycarbonyl, benzoyl, nicotinoyl, isonicotinoyl, picolinoyl, or a group of formula: Z—X—CO— where X is



and Z is nitro, amino formamido, acetamido, ureido, amidino, guanidino, amidinoacetamido, guanidinoacetamido, 3-guanidinopropionamido, or 4-guanidinobutyramido.

3,432,523

11,11a - DIHYDRO - 2 - (LOWER ALKYL) - 6 - HYDROXY - 6H - BENZO[5,6]CYCLOHEPT - [1,2,3-cd]INDOLIN-1-ONES

Janis Plostnieks, Philadelphia, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Filed May 2, 1967, Ser. No. 635,348

U.S. Cl. 260—326.5 **5 Claims**

Int. Cl. C07d *27/56*; **A61k** *27/00*

11,11a-dihydro-2- (lower alkyl) - 6-hydroxy-6H-benzo [5,6]cyclohept-[1,2,3,-cd]indolin-1-ones useful as central nervous system depressants.

3,432,524

NITRO-SUBSTITUTED DIOXOLANES AND THEIR METHOD OF PREPARATION

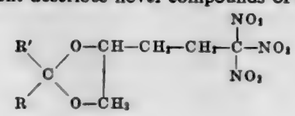
Gustave B. Linden, Short Hills, N.J., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Original application Nov. 26, 1963, Ser. No. 326,288, now Patent No. 3,306,929, dated Feb. 27, 1967. Divided and this application Nov. 4, 1966, Ser. No. 632,835

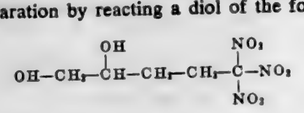
U.S. Cl. 260—340.9 **3 Claims**

Int. Cl. C07d *13/04*

This patent describes novel compounds of the formula



wherein R is hydrocarbyl and R' is hydrogen, lower alkyl, lower aryl, lower alkaryl or lower aralkyl; and their method of preparation by reacting a diol of the formula



with a carbonyl compound of the formula



in the presence of an acid esterification catalyst. These compounds contain a plurality of nitro groups and are inherently useful as high explosives.

3,432,525

PROCESS FOR THE PRODUCTION OF ALKALINE EARTH METAL SALTS OF TOCOPHEROL DIBASIC ACID HEMIESTERS

Shizumasa Kijima, Hino-shi, Tokyo, and Takeshi Konita, Saitama, Japan, assignors to Eisai Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,344
Claims priority, application Japan, May 24, 1965, 40/30,189
U.S. Cl. 260—345.5 **6 Claims**
Int. Cl. C07d *7/22;* **A61k** *15/10*

A process for the preparation of alkaline earth metal salts of tocopherol dibasic acid hemiesters in which a tocopherol dibasic acid hemiester is neutralized with a solution of lithium hydroxide in a lower alcohol and is then reacted with either the chloride or the nitrate of an alkaline earth metal. The alkaline earth metal salts of tocopherol dibasic acid hemiesters are substantially equivalent on a molecular basis to α-tocopherol and exhibit vitamin E activity.

3,432,526

5,9 - EPOXY - 6,7,8,9 - TETRAHYDRO - 5H - BENZOCYCLOHEPTEN-5-OLS AND PROCESS FOR PREPARING SAME

Eugene E. Galantay, Morristown, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed June 23, 1966, Ser. No. 559,727
U.S. Cl. 260—345.9 **3 Claims**
Int. Cl. C07d *7/18, 7/04*

6-amino - 6,7,8,9 - tetrahydro-5H-benzocyclohepten-5-ols are useful as therapeutics. These compounds are prepared from 6,7,8,9 - tetrahydro-5H-benzocyclohepten-5-ones which are in turn prepared from appropriate 5,9-epoxy-6,7,8,9-tetrahydro-5H-benzocyclohepten-5-ols, e.g., 5,9-epoxy-9-phenyl-6,7,8,9-tetrahydro - 5H - benzocyclohepten-5-ol, which compounds are prepared by reacting an appropriate 5,6,7,8-tetrahydro-5H-benzocyclohepten-5,9-dione with an aryl argano-metallic agent.

3,432,527

CORROSION INHIBITOR COMPOSITION AND METHOD

Robert E. Malec and Roy J. Betty, Jr., Chicago, Ill., assignors to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Nov. 5, 1964, Ser. No. 409,271
U.S. Cl. 252—392 **5 Claims**
Int. Cl. C23f *11/14, 11/10*

A method for combating corrosion, particularly in oil and gas well operations using the novel synergistic composition of the naphthenic acid salts of polyamines in admixture with a mixture of heterocyclic nitrogenous compounds as contained in the crude, semipurified or purified by-products having a boiling point of about 200° F. to 750° F. resulting from the refining of gilsonite.

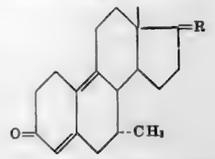
3,432,528

7α-METHYL-19-NOR-ANDROSTADIENES

Georg Anner, Basel, and Peter Wieland, Oberwil, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 22, 1966, Ser. No. 567,065
Claims priority, application Switzerland, July 30, 1965, 10,790/65; Sept. 10, 1965, 12,624/65; June 27, 1966, 9,278/66
U.S. Cl. 260—397.3 **10 Claims**
Int. Cl. C07c *169/10, 169/12, 173/00*

Compounds of the formula



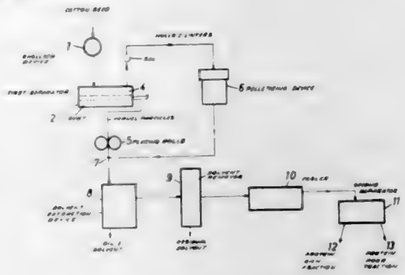
in which R represents an oxo group, a free or an esterified or etherified hydroxyl group in β-position, together with a hydrogen atom or together with a saturated or unsaturated, substituted or unsubstituted lower aliphatic hydrocarbon radical. The compounds show androgenic and anabolic, antigonadotropic and gestagenic action and are also useful as intermediates.

3,432,529

METHOD AND APPARATUS FOR THE EXTRACTION OF OIL FROM COTTONSEED

Wilhelm Depmer, 86 Kielmannseggstrasse 2, Hamburg-Wandsbek-Marienthal, Germany

Filed Oct. 14, 1966, Ser. No. 586,900
Claims priority, application Germany, Oct. 15, 1965, D 48,434
U.S. Cl. 260—412.4 **5 Claims**
Int. Cl. C09f *5/02*



A method and an arrangement for the extraction of oil from cottonseed in which the cottonseed kernels are separated from the hulls and linters and flaked, whereas the hulls and linters are pelletized, whereafter the pelletized hulls and linters are mixed with the flaked kernels and oil is extracted from the mixture.

3,432,530

π-ALLYL TRANSITION METAL COMPOUNDS

Günther Wilke Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany

No Drawing. Continuation-in-part of applications Ser. No. 272,881, Apr. 15, 1963, and Ser. No. 387,990, Aug. 6, 1964, and division and a continuation-in-part of application Ser. No. 387,826, Aug. 6, 1964, now Patent No. 3,379,706, dated Apr. 23, 1968. This application Aug. 25. 1967, Ser. No. 663,229
Claims priority, application Germany, Apr. 18, 1962, St 19,116; Aug 10, 1963, St 20,974, St 20,975, St 20,976
U.S. Cl. 260—429 **20 Claims**
Int. Cl. C07f *7/00, 9/00, 15/04*

Production of π-allyl transition metal compounds by the reaction of a water-free transition metal compound with an allyl compound of a metal of Groups I*a*, II*a*, II*b*, or III*a* of the Periodic System under substantially anhydrous conditions at a temperature of about −100 to +100° C., in the presence of a protective gas and carbonyl-free π-allyl transition-metal products produced thereby. The resulting compounds have utility as catalysts for reactions of unsaturated hydrocarbons.

3,432,531

PROCESS FOR PREPARATION OF ALKYLTIN COMPOUNDS

Joseph G. Natoli, Parlin, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 16, 1964, Ser. No. 375,665
U.S. Cl. 260—429.7 **18 Claims**
Int. Cl. C07f *7/22*

In accordance with certain of its aspects, the novel process of this invention for preparing an alkyl organotin compound by the reaction of an alkyl halide, magnesium, and tin tetrahalide may comprise maintaining a reaction mixture containing less than all of said alkyl halide, adding to said reaction mixture in amount substantially equivalent to said alkyl halide, adding ether-catalyst to said reaction mixture in amount of 5–75 mole percent of the alkyl halide, adding to said reaction mixture the remainder of said alkyl halide together with tin tetrahalide in total amount of about 1 mole per 3.4–5.1 moles of total alkyl halide, and agitating said reaction mixture during said addition whereby said reaction mixture is maintained substantially uniform thereby forming a high yield of alkyl organotin compounds.

3,432,532

HALO-CHROMIUM SALTS OF ACIDS OF PHOSPHORUS AND THEIR ESTERS

James Ping King, Elkins Park, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,609
U.S. Cl. 260—438.5 **11 Claims**
Int. Cl. C07f *11/00, 9/28*

A halo-chromium salt of an acid of phosphorus or its ester of the formula $ZCr(OPR_1R_2O)_2$, where Z is chlorine, bromine or iodine and R_1 and R_2 are inert organic groups, is prepared by contacting a halogenating agent having at least one active atom Z as defined above with a complex of the formula $Cr(OPR_1R_2O)_3 \cdot X$ where X is an organic molecule selected from the group consisting of lower aliphatic alcohols, furan, tetrahydrofuran, thiophene, tetrahydrothiophene and dioxane. The halo-chromium salts are converted to coordination polymers by hydrolysis. The polymers, which were previously known, are useful as coatings, films, and fibers, and as grease thickeners and oil viscosity stabilizers.

3,432,533

PERFLUOROALKYL AND PERFLUOROACYL FERROCENES

Harold Rosenberg, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Oct. 28, 1966, Ser. No. 591,058
U.S. Cl. 260—439 **6 Claims**
Int. Cl. C07f *15/02*

The specification discloses novel (perfluoroalkyl)ferrocenes and (perfluoroacyl)ferrocenes which are useful as films and coatings and which are prepared by a modification of the Friedel-Crafts reaction.

3,432,534

METHOD FOR PREPARING ORGANO-ANTIMONY HALIDES

Nathaniel L. Remes, Livingston, and John J. Ventura, East Brunswick, N.J., assignors to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,456
U.S. Cl. 260—446 **16 Claims**
Int. Cl. C07f *9/90, 9/92*

In accordance with certain of its aspects, the process of this invention for preparing a compound of the formula R_xSbA_{3-x} wherein R is selected from the group consisting of alkyl, aryl, and alkenyl; A is a halogen having an atomic weight greater than 19; and *z* is 1–2, comprises mixing together substantially stoichiometric quantities of R^xSbA_{3-z} and $RySbA_{3-y}$ wherein *x* is 2–3; *y* is 0–1; and *x*, *y*, and *z* are different integers thereby forming a reaction mixture; maintaining said reaction mixture at a temperature of 20–100° C. thereby forming R_xSbA_{3-z}; and recovering said R_xSbA_{3-z} from said reaction mixture. These organoantimony compounds are useful as stabilizers, pharmacological agents, biocidal agents or used to prepare other organoantimony derivatives.

3,432,535

TWO-STEP PROCESS FOR THE OXIDATION OF ALUMINUM ALKYLS

James Howard Taylor and Clarence Martin Eidt, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Feb. 19, 1964, Ser. No. 345,994
U.S. Cl. 260—448 **12 Claims**
Int. Cl. C07f *5/06*

In the oxidation of aluminum alkyls to aluminum alkoxides, the formation of undesirable by-products is suppressed by conducting the oxidation at a first temperature in the range of from 15 to 30° F. for a time sufficient to achieve at least an 80% conversion of the aluminum alkyl to the alkoxide form and thereafter continuing the oxidation at a temperature in the range of from about 90 to 130° F. for a time sufficient to completely oxidize the reaction product.

3,432,536

ORGANOPOLYSILOXANE FLUIDS SUBSTITUTED WITH METHYLOLATED AMIDOALKYL GROUPS

Edward T. Simoneau, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 27, 1965, Ser. No. 459,449
U.S. Cl. 260—448.2 **6 Claims**
Int. Cl. C07f *7/10*

Organopolysiloxane fluids which are substituted with methylolated amidoalkyl groups are made by treating an amidoalkyl substituted polysiloxane fluid with formaldehyde. Textiles treated with a methylolated amidoalkyl polysiloxane are water repellent and have improved hand.

3,432,537

PROCESS FOR SPLITTING SILANES

Paul Alfred Eugene Guinet and Robert Raphael Putbet, Lyon, Rhone, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed June 10, 1966, Ser. No. 556,569
Claims priority, application France, June 14, 1965, 20,688
U.S. Cl. 260—448.2 **5 Claims**
Int. Cl. C07f *7/12, 7/02*

1. Process for splitting silicon-silicon bonds in polysilanes which comprises heating a polysilane with hydrogen halide and an N,N-disubstituted amide.

3,432,538
METHOD FOR PREPARATION OF CYCLIC DIORGANOSILOXANES

James W. Curry, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

No Drawing. Filed July 1, 1966, Ser. No. 562,094
U.S. Cl. 260—448.2 4 Claims
Int. Cl. C07d *103/02*; C07f *7/08*

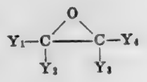
This specification discloses a method of preparing cyclic diorganosiloxanes characterized by reacting, at ambient temperature and without heating, tertiary butyl alcohol and dimethyl dichlorosilane. The resulting cyclic diorganosiloxanes are purified by distillation. Other tertiary alcohols and other diorganodihalosilanes are disclosed.

3,432,539
ICOSAHEDRAL DODECAHYDRODODECABORANE DERIVATIVES AND THEIR PREPARATION

William C. Drinkard, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 220,910, Aug. 31, 1962. This application June 30, 1965, Ser. No. 468,580
U.S. Cl. 260—462 14 Claims
Int. Cl. C07f *5/02*; C08g *33/18*

A process for preparing derivatives of icosahedral dodecaborane which comprises reacting an acid hydrate of icosahedral dodecaborane ($H_2B_{12}H_{12}\cdot nH_2O$) with an epoxide having a structural formula,



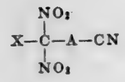
wherein Y_1, Y_2, Y_3 and Y_4 are hydrogen or monovalent radicals. Useful epoxides are those which will react with benzene in the presence of an aluminum chloride catalyst at temperatures of less than 100° C. to form a substituted benzene. Of the icosahedral dodecahydrododecaborane derivatives of this process, some have detergent properties, some are used as pigments or dyes and others for the formation of films, fibers, and coatings.

3,432,540
1-CHLORO-1,1-DINITRO-3-CYANO PROPANE

Marvin H. Gold, Sacramento, and Henry J. Marcus, West Covina, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Original application Nov. 26, 1963, Ser. No. 326,286. Divided and this application Nov. 4, 1966, Ser. No. 616,148
U.S. Cl. 260—465.7 1 Claim
Int. Cl. C07c *121/14*; C06c *1/02*; C06b *7/00*

This patent described nitrile compounds having the formula



wherein A is an alkylene radical, preferably having from 1 to about 20 carbon atoms; and X is chloro or bromo. These compounds are prepared by reaction of terminal gem-dinitro nitriles with molecular chlorine or bromine. These compounds are useful as plasticizers for propellants.

3,432,541
9,15-DIHYDROXYPROST-13-ENOIC ACID AND ESTER AND PREPARATION THEREOF

Jehan F. Bagli, Valois Gardens, Montreal, Quebec, and Tibor Bogri, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 8, 1965, Ser. No. 485,935
U.S. Cl. 260—468 4 Claims
Int. Cl. C07c *61/04, 61/32, 61/36*

1. 9ξ,15ξ-dihydroxyprost-13-enoic acid.

3,432,542
POLYMERIC SULFUR COMPOUNDS FROM ALLENE

Derek L. Ransley, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,461
U.S. Cl. 260—481 9 Claims
Int. Cl. C07c *149/20, 149/00*

Sulfur containing polymers are produced by the liquid phase reaction of allene with a bis-thiol. The reaction occurs in the liquid phase under free radical catalysis and at a temperature below about 150° C.

3,432,543
REDUCTION OF CHLORINATED BY-PRODUCTS IN ETHYLENE-BASED VINYL ACETATE CATALYST SOLUTION

Jerald Edson Dirks and Gene Jordan Fisher, Corpus Christi, Tex., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 23, 1966, Ser. No. 551,915
U.S. Cl. 260—497 2 Claims
Int. Cl. C07c *67/04, 69/02*

1. In the process for the removal of copper (II) oxalate formed in the manufacture of vinyl acetate by the reaction of ethylene with acetic acid in the presence of a noble metal of Group VIII of the Periodic Table and a copper (II) salt wherein a portion of the catalyst solution containing copper (II) oxalate is treated with hydrochloric acid to free oxalic acid from at least a portion of the copper (II) oxalate and the oxalic acid is thermally decomposed by heating to a temperature ranging from about 170–220° C. for a period of 120–10 minutes, the improvement which comprises reducing the formation of chlorinated by-products formed during the copper-oxalate treatment by the oxidation of acetic acid by copper (II) by adding to said portion of the catalyst solution a compound more easily oxidizable by copper (II) than acetic acid selected from the group consisting of aldehydes of 2–6 carbon atoms.

3,432,544
PROCESS FOR REMOVING FORMIC ACID FROM MIXTURES RICH IN ACETIC ACID

Kurt Sennewald, Knapsack, near Cologne, Heinz Erpenbach, Surth, near Cologne, Wilhelm Vogt, Knapsack, near Cologne, and Herbert Joest, Cologne-Sulz, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Mar. 21, 1967, Ser. No. 624,704
Claims priority, application Germany, Mar. 31, 1966, K 58,884
U.S. Cl. 260—499 7 Claims
Int. Cl. C07c *67/06*

A mixture, which is formed of acetic acid and formic acid and which may also contain further organic impurities and water, is freed from the formic acid by decomposition of that acid, at elevated temperature, i.e., by passing the mixture in vapor form over a noble metal, carrier catalyst, the catalyst being formed of palladium, gold and sodium acetate deposited on silicic acid as the carrier.

3,432,545
3-ARYLOXY-1-AMINO-2-PROPANOLS AND SALTS THEREOF

Ralph Howe, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 18, 1964, Ser. No. 390,465
Claims priority, application Great Britain, Sept. 10, 1963, 35,690/63
U.S. Cl. 260—501.17 6 Claims
Int. Cl. C07c *93/00, 93/02*

1. A laevorotatory propanolamine derivative selected from the group consisting of laevorotatory compounds of the formula:

$$Ar.O.CH_2.CHOH.CH_2.NHR$$

wherein R is selected from the group consisting of alkyl of 3 to 5 carbon atoms, hydroxyalkyl of 3 to 5 carbon atoms, allyl, cyclopentyl, benzyl, β-phenethyl, 1-methyl-3-phenylpropyl and 1,1-dimethyl-3-phenylpropyl and Ar is selected from the group consisting of naphthyl, methylnaphthyl, di-methylphenyl and phenoxyphenyl; and the non-toxic pharmaceutically-acceptable salts of said compounds.

3,432,546
MANUFACTURE OF PERACETIC ACID

Kenneth Oringer, Westfield, Gerald T. Gallagher, Trenton, Donald S. Bunin, Metuchen, and Bernard K. Easton, Pennington, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 3, 1964, Ser. No. 408,486
U.S. Cl. 260—502 4 Claims
Int. Cl. C07c *73/12*

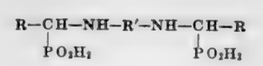
A method for the production of an aqueous peracetic acid solution by the reaction of hydrogen peroxide with acetic anhydride in the presence of an alkaline catalyst comprising continuously introducing the reactants into a tubular reaction zone at a rate to produce a turbulent flow designated by a Reynolds number of 5,000 to 30,000 and a residence time in the reaction zone of 30 seconds to 5 minutes at a temperature of 80° to 140° F.

3,432,547
BIS-AMINOPHOSPHINIC ACIDS USEFUL AS ANTI-BACTERIAL AGENTS

Andrew T. Guttmann, Lakewood, Ohio, and Eric Jungermann, La Grange, and Warner M. Linfield, Evanston, Ill., assigors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 21, 1963, Ser. No. 303,683
U.S. Cl. 260—502.5 3 Claims
Int. Cl. C07f *9/48*

1. A compound having the formula



wherein R is selected from the group consisting of phenyl, naphthyl and halogen substituted phenyl and R′ is an alkylene radical having 2 to 4 carbons.

2. Ethylenediamine - N,N′ bis[α(m,p - dichlorobenzylphosphonous acid)].

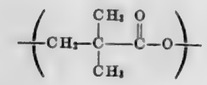
3. Ethylenediamine - N,N′ bis[α(o-chlorobenzylphosphonous acid)].

3,432,548
PROCESS FOR PRODUCING α,α, DIMETHYL-β-HALOPROPIONIC ACIDS

Roe Calvin Blume, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,404
U.S. Cl. 260—539 3 Claims
Int. Cl. C07c *53/32*; C08g *53/22*

α,α-Dimethyl-β-halopropionic acids are recovered from polyesters consisting of the recurring structural unit



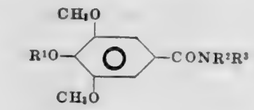
by hydrolysis with hydrochloric or hydrobromic acids.

3,432,549
PHARMACOLOGICALLY ACTIVE NEW SUBSTITUTED BENZAMIDES

Endre Kasztreiner, József Borsi, László Vargha, Boris Dumbovich, Erika Mészáros, and Géza Szilágyi, Budapest, Hungary, assignors to Egyesult Gyogyszer- es Tapszergyar, Budapest, Hungary

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,547
Claims priority, application Hungary, Apr. 22, 1965, GO–951
U.S. Cl. 260—559 6 Claims
Int. Cl. C07c *103/22, 103/30*; A61k *27/00*

Benzamide derivatives of the formula



wherein

R^1 is alkyl of from 6 to 18 carbon atoms;

R^2 and R^3 stand for hydrogen, alkyl of from 1 to 6 carbon atoms, phenyl, benzyl, cyclopropyl or cyclohexyl, and R^2 and R^3 together with the amide nitrogen may form a heterocyclic ring, such as morpholino, cycloheptamethyleneimino and azetidino rings.

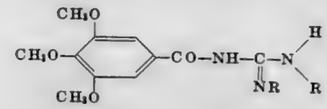
The novel compounds have a pronounced anticonvulsant effect.

3,432,550
3,4,5-TRIMETHOXYBENZOYLGUANIDINES

Aldo Garzin, Milan, Italy, assignor to Istituto Chemioterapico Italiano S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed May 23, 1966, Ser. No. 551,880
U.S. Cl. 260—559 5 Claims
Int. Cl. C07c *103/22*

As compositions of matter guanidines of the formula



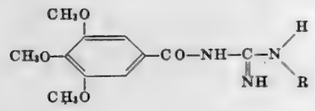
wherein R is ethyl or butyl and an acid addition salt thereof. Exemplary of the guanidines are 3,4,5-trimethoxybenzoyl-N,N′-diethyl guanidine and 3,4,5-trimethoxybenzoyl-N,N′-dibutyl guanidine. The compositions are useful as tranquilizers and sedatives for laboratory animals such as rats, mice, cats and dogs.

3,432,551
3,4,5-TRIMETHOXYBENZOYLGUANIDINES

Aldo Garzia, Milan, Italy, assignor to Istituto Chemioterapico Italiano S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed May 23, 1966, Ser. No. 551,919
U.S. Cl. 260—559 **5 Claims**
Int. Cl. C07c *103/20, 103/22;* **A61k** *27/00*

As compositions of matter guanidines of the formula



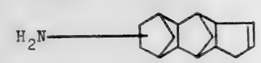
wherein R is an alkyl radical having one to three carbon atoms and an acid addition salt thereof. The compositions are useful as hypotensive agents for laboratory animals such as rats, mice, cats and dogs.

3,432,552
DIHYDROTRICYCLOPENTADIENYLAMINE AND PREPARATION THEREOF

Hans Kiefer, Paul Raff, and Ludwig Schuster, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 24, 1966, Ser. No. 552,440
Claims priority, application Germany, June 9, 1965, B 82,322
U.S. Cl. 260—563 **3 Claims**
Int. Cl. C07c *87/40, 85/00*

1. A dihydrotricyclopentadienylamine having the formula:



2. A process for the production of dihydrotricyclopentadienylamine which comprises reacting each mole of tricyclopentadiene with at least five moles up to twenty moles of hydrocyanic acid and an excess of sulfuric acid of up to two moles in the presence of one to three moles of a di-n-alkyl ether at a temperature of from −5° to +35° C. and hydrolyzing the resultant N-dihydrotricyclopentadienylformamide.

3,432,553
PROCESS FOR MANUFACTURING 1,3-DIAMINOPROPANOL-(2)

Heinz Enders, Stadtbergen-Augsburg, and Gunter Pusch, Leitershofen-Augsburg, Germany, assignors to Chemische Fabrik Pfersee G.m.b.H., Augsburg, Germany, a firm of Germany

No Drawing. Continuation-in-part of application Ser. No. 537,316, Mar. 25, 1966. This application Sept. 28, 1966, Ser. No. 582,497
U.S. Cl. 260—585 **3 Claims**
Int. Cl. C07c *91/00, 85/04*

Process for manufacturing 1,3-diaminopropanol-(2) by reacting in a first stage one mole of epichlorhydrin with more than 26 moles of ammonia in form of aqueous ammonia solution containing at least 24% of ammonia at below 30° C. until the termination of the exothermic reaction during a time of a few minutes up to 6 hours. In a second stage strong alkali in a quantity which is at least equivalent to the chlorine content is added, the temperature being below 30° C. and the reaction time amounting to ¼ up to 6 hours, and isolating the diaminopropanol.

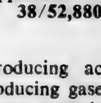
3,432,554
2,2-BIS(DIFLUOROAMINO)-ALKANES BY REACTING ALIPHATIC KETONE WITH DIFLUORAMINE AND BF_3

John Peters, Saltcoats, and James Grigor, Coatbridge, Scotland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,885
Claims priority, application Great Britain, Nov. 8, 1961, 40,085/61; Nov. 30, 1961, 42,969/61, 42,970/61
U.S. Cl. 260—583 **10 Claims**
Int. Cl. C07c *87/22, 85/08*

1. Process for the preparation of bis difluoramino compounds comprising reacting an acyclic aliphatic ketone having a formula RR'CO with boron trifluoride and difluoramine, wherein R is selected from the group consisting of methyl and ethyl groups and R' is an alkyl group containing not more than 4 carbon atoms.

6. A compound having the general formula:



wherein R is selected from the group consisting of methyl and ethyl groups and R' is an alkyl group containing not more than 4 carbon atoms.

3,432,555
PROCESS FOR PRODUCING AMINE OXIDES

Henry Mahnken, West New York, N.J., assignor to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 5, 1967, Ser. No. 628,546
U.S. Cl. 260—583 **6 Claims**
Int. Cl. C07c *85/00*

This relates to the preparation of amine oxides by the reaction of tertiary aliphatic amines with hydrogen peroxide in aqueous composition, wherein the amine, water and a chelating agent are initially heated to a temperature above 80° C., at which time an approximately stoichiometric amount of the hydrogen peroxide is added to the mixture. There is then an exothermic reaction during which the temperature rises. When the amine contains aliphatic groups lower than C_{18}, the mixture remains fluid. But when it contains an aliphatic group of C_{18} or above, gelling takes place at this time. When gelling does take place, the gel is, thereafter, spontaneously broken down and the mixture becomes fluid. As it cools, the product remains fluid until, at about 60° C., it again becomes increasingly viscous until, at about room temperature, it becomes a paste.

3,432,556
PROCESS FOR PRODUCING ACETONE

Yukio Igarashi, Niigata-shi, Makoto Komatsu, Tokyo, and Susumu Fujiyama and Kazuo Okamoto, Niigata-shi, Japan, assignors to Japan Gas-Chemical Company, Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,575
Claims priority, application Japan, Sept. 30, 1963, 38/52,880
U.S. Cl. 260—597 **11 Claims**
Int. Cl. C07c *49/08*

A process for producing acetone from propylene which comprises introducing gaseous propylene alone or together with an oxygen containing gas into an acidic aqueous solution containing mercuric ions, nitrate ions and ferric ions as a catalyst, and oxidizing the propylene to acetone selectively in liquid phase. The ratio of nitrate ions to mercuric ions is from 20:1 to 300:1 and the ratio of ferric ions to mercuric ions is from 0.01:1 to 0.1:1.

3,432,557
ALDOLING PROCESS

Ronald H. Wile, Bay City, Tex., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,295
U.S. Cl. 260—603 **7 Claims**
Int. Cl. C07c *45/00*

In processes in which an alkaline aldoling catalyst is employed to convert a carbonyl compound to the corresponding aldol, followed by dehydrating the aldol with an acid catalyst, catalyst remaining in the product withdrawn from the aldoling reaction step is an undesired contaminant which affects the dehydration reaction adversely. These adverse effects are eliminated by subjecting the crude aldol reactor effluent, containing the alkaline catalyst and in the presence of water, to a decantation operation, under controlled temperature conditions, whereby the alkaline catalyst is removed in an aqueous phase containing only a minimal quantity of the aldol.

3,432,558
ORGANIC CATALYTIC OXIDATION AND CATALYSTS THEREFOR

Lloyd B. Ryland, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

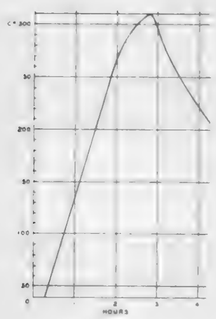
No Drawing. Original application Jan. 12, 1960, Ser. No. 1,874, now Patent No. 3,380,931, dated Apr. 30, 1968. Divided and this application Nov. 21, 1967, Ser. No. 708,454
U.S. Cl. 260—604 **4 Claims**
Int. Cl. C07c *45/04*

Alpha, beta-unsaturated aldehydes are produced by reacting a monoolefin with oxygen in the presence of an oxidation catalyst consisting essentially of an oxide of a metal of the left hand column of Group VI of the Periodic System of the Elements, an oxide of bismuth is an amount corresponding to from about 1 to about 20 bismuth atoms per 10 atoms of said Group VI metal, and an oxide of arsenic in an amount corresponding to from about 0.1 to about 6 atoms of arsenic per 10 atoms of said Group VI metal.

3,432,559
PROCESS FOR PREPARING QUATERNARY PHOSPHONIUM HALIDES

Ludwig Maier, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed May 25, 1966, Ser. No. 552,849
Claims priority, application Switzerland, June 4, 1965, 7,974/65
U.S. Cl. 260—606.5 **9 Claims**
Int. Cl. C07f *9/54, 9/02*



1. A process of preparing quaternary phosphonium halides of the general formula

$$[R_4P]^+X^-$$

Wherein R is lower alkyl having 1 to 3 carbon atoms, comprising reacting white phosphorus with an alkyl halide of the formula

RX

wherein R is defined as above and X represents a chlorine, bromine or fluorine atom, under pressure at a temperature in the range of 220° to 400° C.

3,432,560
METHOD FOR PREPARATION OF ALKANEDIOLS

Alfred W. Martin, James W. Walker, William T. McNair, Jr., and Coy H. Hood, Corpus Christi, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 23, 1965, Ser. No. 489,738
U.S. Cl. 260—635 **8 Claims**
Int. Cl. C07c *31/18, 69/66*

In a process for producing 1,6-hexanediol by hydrogenating a feedstock comprising esters of an acid mixture comprising adipic acid and hydroxycaproic acid obtained by the partial oxidation of cyclohexane, an ester feedstock having a very low free acid content is obtained by (a) adding to said acid mixture at least a stoichiometrically equivalent quantity of a terminal alkanediol having 4 to 8 carbon atoms; (b) subjecting the resulting mixture of acids and alkanediol to a concentration step wherein the mixture is heated, the bulk of any water present is removed as a vapor, and a partial esterification of the acids with the alkanediol takes place; and (c) passing the product of the concentration step through a series of heated reaction zones which are operated under vacuum and in which the esterification of the acids with the alkanediol is completed. From the heated reaction zones there is withdrawn a vapor comprising water of reaction and organic materials which are more volatile than the alkanediol. The vapor withdrawn from each zone is not allowed to pass subsequently through the liquid contained in any other zone.

3,432,561
PREPARATION OF ALKYL CHLORIDES BY THE REACTION OF ALKYL ALCOHOLS WITH PHOSPHORUS TRICHLORIDE

Zaven A. Dadekian, Suffern, and David S. Wilbourn, Croton-on-Hudson, N.Y., assignors to Baird Chemical Industries, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 28, 1966, Ser. No. 544,337
U.S. Cl. 260—652 **9 Claims**
Int. Cl. C07c *17/16*

Alkyl chlorides are formed by chlorinating alkyl alcohols in the liquid phase with a molar excess of PCl_3. The temperature is maintained at less than 80° C. while the PCl_3 is added. Thereafter, the temperature is increased at least 10° to a range of from 80 to 150° C. for at least two hours.

3,432,562
DEHYDROFLUORINATION PROCESS AND PRODUCTS

Lloyd E. Gardner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,070
U.S. Cl. 260—653.5 **5 Claims**
Int. Cl. C07c *21/18*

Dehydrofluorination of trifluoroalkanes to produce a high yield of difluoroalkenes by contacting in the vapor-phase with an aluminum fluoride-containing catalyst.

3,432,563

PREVENTION OF "POPCORN" POLYMER IN THE MANUFACTURE OF RUBBER LATEX

Fred I. Metzler, 721 Yerrick Road, Akron, Ohio 44212

No Drawing. Continuation-in-part of application Ser. No. 281,015, May 16, 1963. This application May 16, 1967, Ser. No. 638,763

U.S. Cl. 260—666.5 2 Claims
Int. Cl. C07c *15/10, 7/18*

Discloses a method of preventing, inhibiting or suppressing the undesirable polymerization of olefinic monomers resulting in the formation of popcorn polymer in the recovery system of a polymerization process. Prevention is achieved by introducing into the presence of the monomers a nonacidic solution of the reaction product of an acidic salt of hydroxylamine and the salt of an alkaline metal in which the aqueous solution has a pH or less than 12.

3,432,564

MOLECULAR REARRANGEMENT OF CYCLOALKADIENIC COMPOUNDS

James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,128

U.S. Cl. 260—666 7 Claims
Int. Cl. C07c *5/06, 5/24, 5/14*

The molecular rearrangement of cycloalkadienic compounds is effected by treating the compounds with hydrogen in contact with certain catalytic compositions of matter comprising alumina spheres which have been commingled with a platinum-group metal and a sulfur-containing organic acid at conditions which include a temperature in the range of from about 0° to about 400° C. and a pressure in the range of from about 5 to about 2000 pounds per square inch.

3,432,565

PROCESS FOR THE HYDROGENATION OF UNSATURATED HYDROCARBONS

Herman W. Kouwenhoven and Cornelis Th. Douwes, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,179

Claims priority, application Netherlands, June 1, 1965, 6506907

U.S. Cl. 260—667 7 Claims
Int. Cl. C07c *5/10, 5/14;* C10g *23/02*

Process to hydrogenate unsaturated hydrocarbons using one or more Group VIII metals supported on low bulk density alumina.

3,432,566

CAROTENOID COMPOUNDS

Albert J. Chechak and Charles D. Robeson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,654

U.S. Cl. 260—668 1 Claim
Int. Cl. *15/04*

As a new composition of matter, the compound 1-(2, 6,6 - trimethylcyclohex - 1 - enyl) - 14 - phenyl - 3,7,10-trimethyltetradec - 1,3,5,7,9,11,13 - heptaene. This compound is useful as a food colorant and as a skin and egg yolk pigmenting additive for poultry feed.

3,432,567

ALKYLARYL PRODUCTION

Edwin Kermit Jones, Kenilworth, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 424,206, Jan. 8, 1965, This application Oct. 31, 1966, Ser. No. 590,490

The portion of the term of the patent subsequent to Apr. 4, 1984, has been disclaimed

U.S. Cl. 260—671 12 Claims
Int. Cl. C07c *3/50, 5/18;* C11d *1/22*

1. A process for the production of an alkyl aromatic compound which comprises dehydrogenating a straight-chain paraffin having from about 10 to about 15 carbon atoms per molecule to a straight-chain mono-olefin by contacting said straight-chain paraffin at dehydrogenating temperature with a non-acid dehydrogenation catalyst containing a support having an alkali metal or alkali metal compound thereon in concentrations of from about 0.1 to about 10 percent by weight at dehydrogenation conditions, monoalkylating the straight chain mono-olefin with an alkylatable aromatic compound under alkylation conditions and recovering the alkyl aromatic compound.

3,432,568

UPGRADING OF HYDROCARBONS IN THE PRESENCE OF A MIXED ALUMINO-SILICATE AND METAL CATALYST

Joseph N. Miale, Trenton, N.J., and Paul B. Weisz, Media, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 20, 1966, Ser. No. 558,612

U.S. Cl. 260—676 3 Claims
Int. Cl. C07c *5/30*

A process for low temperature hydroisomerization of saturated aliphatic and cyclic hydrocarbons by contacting the same with a mixed dual-functional catalyst comprising (1) hydrogen mordenite and (2) a dehydrogenation component supported on a thermally stable carrier.

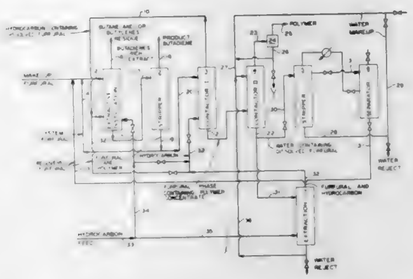
3,432,569

RECOVERY OF FURFURAL FROM FURFURAL POLYMER BY SUCCESSIVE EXTRACTIONS WITH A HYDROCARBON AND WITH WATER

John M. Folz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,469

U.S. Cl. 260—680 6 Claims
Int. Cl. C07d *5/22;* C07c *45/24;* B01d *11/00*



A method for the recovery of furfural from furfural polymer is disclosed wherein furfural can be recovered from furfural polymer by contacting the polymer with water. However, before the polymer is contacted with water, it is contacted with a liquid hydrocarbon to remove furfural therefrom. This results in a polymer containing less furfural which will float and which now can be treated with water to recover a water phase containing furfural and a floating polymer from which substantially all furfural has been removed.

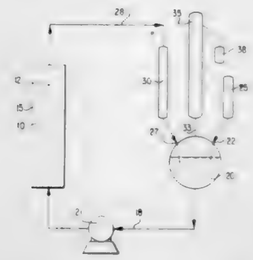
3,432,570

PROCESS OF SHIFTING THE DOUBLE BOND IN MONO-OLEFINS TO A TERMINAL, NON-TERTIARY POSITION

William D. Hoffman, Park Forest, Emmett H. Burk, Jr., Hazel Crest, and Robert M. Eichhorn, Chicago Heights, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of applications Ser. No. 530,283, Feb. 28, 1966, and Ser. No. 127,917, July 31, 1961. This application Aug. 4, 1967, Ser. No. 658,320

U.S. Cl. 260—683.2 22 Claims
Int. Cl. C07c *5/28*



Terminal, non-tertiary, branched chain mono-olefins are prepared from other mono-olefins having the same carbon atom arrangement but having the olefinic bond in either an internal (i.e., non-terminal) location, or attached to a tertiary carbon atom, or both, by vaporizing and contacting the feed with HBr at a temperature of about 800 to 1050° F. Selective isomerization results, displacing the olefinic bond to a terminal, non-tertiary position. A preferred source of HBr for the reaction is tertiary alkyl bromide which disassociates at reaction temperatures to HBr and tertiary mono-olefins.

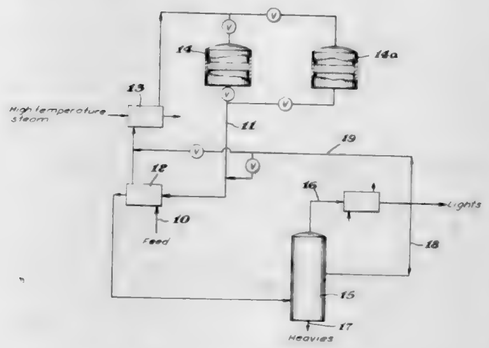
3,432,571

PROCESS FOR PRODUCING DIMERS OF TERTIARY OLEFINS

Charles R. Noddings and Robert D. Cleary, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 4, 1966, Ser. No. 547,668

U.S. Cl. 260—683.15 6 Claims
Int. Cl. C07c *3/10, 3/16*



Tertiary olefins containing 4 to 5 carbon atoms per molecule are dimerized and more particularly removed from admixture with normal olefins by passing the gaseous mixture over montmorillonite clay exchanged after acid activation with chromium or phosphorous in the absence of water vapor to effect the dimerization of the tertiary olefins to produce a stream lean in tertiary olefins at 100° to 200° C. under 70 to 250 p.s.i.g. and at olefin space velocity of about 150 to about 600 v./v./hr. (S.T.P.).

3,432,572

CODIMERIZATION PROCESS

James J. Tazuma, Stow, and Mario D. Zadra, Barberton, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 347,673, Feb. 27, 1964. This application Sept. 1, 1966, Ser. No. 576,565

The portion of the term of the patent subsequent to Feb. 21, 1984, has been disclaimed

U.S. Cl. 260—683.15 8 Claims
Int. Cl. C07c *3/20, 11/02*

There is disclosed a process wherein ethylene is codimerized with a dissimilar olefin by use of a catalyst system which is an alkali metal supported on pellets composed of at least 85% magnesia and having a pellet density of between 0.25 and 0.75 gram per cubic centimeter and which have been heat treated between 500° and 1000° C. prior to having the alkali metal deposited on them.

3,432,573

OLEFINS AND PROCESS FOR PURIFYING THEM

Karl Diether Keil, Neuenhain, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 27, 1966, Ser. No. 582,231

Claims priority, application Germany, Sept. 30, 1965, F 47,317

U.S. Cl. 260—683.15 10 Claims
Int. Cl. C07c *7/00, 3/10*

In a process for the polymerization of olefins having from 2 to 4 carbon atoms wherein an olefin monomer is polymerized in the presence of a catalyst, the improvement comprising employing as the monomer an olefin purified by contacting said olefins with reduced basic copper carbonate precipitated on a kieselguhr carrier.

3,432,574

SCHIFF BASES PREPARED BY REACTING UNSATURATED CARBONYL COMPOUNDS WITH AMINE-TERMINATED POLYMERIC FATS

Marwan R. Kamal, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,872

U.S. Cl. 260—834 16 Claims
Int. Cl. C08g *45/06*

The invention relates to Schiff's bases formed by reaction of (a) olefinically unsaturated carbonyl compounds with (b) polyprimary amines wherein polymeric fat compounds are used to form such amines; and epoxy resin compositions, coatings or films and methods of forming or curing the same employing such Schiff's bases as curing agents.

3,432,575

POLYOCTAMETHYLENE OXALAMIDE BLENDED WITH A SECOND FIBER FORMING LINEAR POLYCARBONAMIDE

Joseph Zimmerman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 199,375, June 1, 1962. This application July 10, 1962, Ser. No. 208,939

U.S. Cl. 260—857 9 Claims
Int. Cl. C08g *41/04*

Tire cords may be prepared from fibers of a blend of 10–40% polyoctamethylene oxalamide, with 90–60%

linear polycarbonamides having T_g's less than 120° C. The linear polycarbonamides are examplified by poly (tetramethylene suberamide, hexamethylene suberamide, ε-caproamide, n-heptylamide, caprylamide, pelargonamide, decanomide, undecanoamide, m-xylylene adipamide, m-xylylene pimelamide, m-xylylene suberamide, m-xylylene azelamide, m-xylylene sebacamide, hexamethylene adipamide, and hexamethylene sebacamide).

3,432,576
GRAFT COPOLYMERS PREPARED BY POLYMERIZING VINYL CHLORIDE IN THE PRESENCE OF VINYL ACETATE POLYMERS
Ludwig A. Beer, Agawam, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 16, 1964, Ser. No. 397,021
U.S. Cl. 260—878 **4 Claims**
Int. Cl. C08f *15/40*

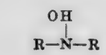
A graft blend is prepared by polymerizing a vinyl halide formulation having dispersed therein a copolymer of vinyl acetate and octyl acrylate containing at least 50 percent by weight of vinyl acetate.

3,432,577
GRAFT POLYMERIZATION
George E. Serniuk, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed July 31, 1964, Ser. No. 386,780
U.S. Cl. 260—879 **10 Claims**
Int. Cl. C08f *15/40*

A method for forming a graft copolymer by reacting a polar vinyl monomer with a complexing agent and then reacting this product with a preformed polymer in the presence of a free radical generator. The physical properties of the preformed polymer, such as oil solubility, or ability to be crosslinked, are selectively modified by means of this process.

3,432,578
CONJUGATED DIENE POLYMER COMPOSITIONS STABILIZED WITH CERTAIN HYDROXYLAMINES
Jon W. Martin, Los Alamitos, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,637
U.S. Cl. 260—880 **7 Claims**
Int. Cl. C08d *11/04;* **C08f** *45/60, 15/04*

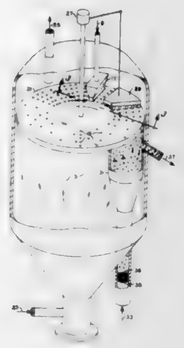
Conjugated diene polymers are stabilized against the adverse effects of ultraviolet light by adding a small amount of a hydroxylamine of the formula



wherein R is selected from aryl and aralkyl radicals.

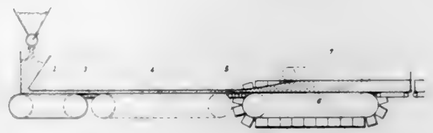
3,432,579
PROCESS FOR PRODUCING LOW-DENSITY PELLETS FROM SLURRIES CONTAINING FILM-FORMING MATERIALS
Fred J. Zavasnik, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,406
U.S. Cl. 264—14 **4 Claims**
Int. Cl. C08f *47/10;* **C08g** *53/08;* **B22d** *23/08*

A pressurized solution of a volatile solvent and a film-forming polymeric material is cooled to form a slurry; the slurry is subdivided into individual pellets having solvent entrapped therein; the solvent at the surface of the pellets is partially vaporized to produce a self-sustaining structure; the pellets are then dried in a fluidizing medium



to cause surface shrinkage resulting in the bursting of the pellets; and blown low-density pellets are recovered.

3,432,580
METHOD AND MEANS FOR PRODUCING FOAMED SILICATE ARTICLES
Walter Heidrich and Klaus Körner, Urach, Wurttemberg, Germany, assignors, by mesne assignments, to Synfibrit G.m.b.H. & Co., Urach, Germany, a corporation of Germany
Filed Jan. 13, 1966, Ser. No. 536,234
U.S. Cl. 264—43 **11 Claims**
Int. Cl. B29d *27/08*

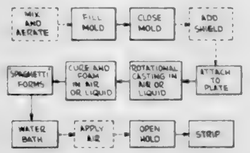


Foamed silicates, such as foam glass, are produced by compressing a mixture consisting of small particles of silicate and foam producing substance, loading it upon an impermeable band and sintering the mixture while moving it through an oven, then exposing all outer surfaces of the sintered mass to outside air to facilitate gas removal and completing the foaming while shaping the mass.

3,432,581
MAKING FOAMED ARTICLES AND ARTICLES PRODUCED THEREBY
Jacob J. Rosen, New York, N.Y., assignor to Dublon, Incorporated, Newark, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 611,392, Jan. 24, 1967. This application Oct. 31, 1967, Ser. No. 679,476
U.S. Cl. 264—45 **30 Claims**
Int. Cl. B29h *7/20;* **B29d** *27/00;* **B29c** *5/04*

Methods for producing foamed articles from an unfoamed, but foamable, plastic composition, specifically foamable polyvinyl chloride plastisol, wherein the final product is formed of a continuous foam structure including a cellular inner portion and a substantially enveloping, generally smooth, outer skin integral therewith. Preferred techniques include mixing and aerating a plastic

composition, distributing a gelled layer of the plastic composition on the mold surface by rotational casting and subsequently curing and foaming the same while venting portions of the mold to a surrounding environment having a pressure less than that existing in the mold cavity at least during the latter portion of the foaming phase to preclude damage to the surface of the article and to form the generally smooth, integral outer skin.

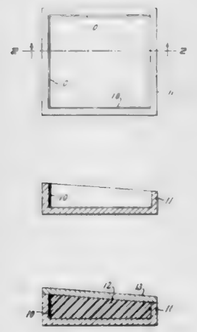


3,432,582
APPARATUS AND METHOD FOR COATING PIPE
Richard B. Bender, P.O. Box 11302, Fort Worth, Tex. 76109
Filed July 20, 1966, Ser. No. 566,608
U.S. Cl. 264—47 **4 Claims**
Int. Cl. B29h *9/00*



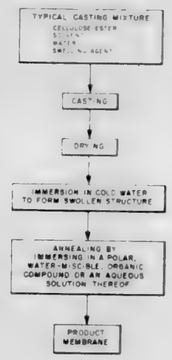
Apparatus and a method of coating pipe with a synthetic foam resin including a tubular die and a length of film positioned to receive the pipe to be coated and the said film, and means applying resin foam around the pipe and in the film as they pass through the die. A preferred form of the invention includes a follower receiving ends of lengths of pipe whereby the coating operation may be continuous.

3,432,583
METHOD OF MOULDING
John R. Robertson, Currie, Midlothian, Scotland, assignor to Uniroyal Limited, a corporation of Scotland
Filed May 13, 1965, Ser. No. 455,628
U.S. Cl. 264—46 **3 Claims**
Int. Cl. B29h *7/20;* **B29d** *17/00*



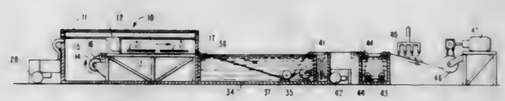
The invention relates to a method of moulding plastic materials or the like to form articles, for example, seat cushions having high density hard surfaces at the front and side portions therof and having softer central portions. A pre-cured foam sheet material may be utilized to line the front and side portions of the mould, only the edges of the sheet being sealed against leakage of subsequently applied liquid foam around the edges of the sheet to the outer surfaces of the sheet. Liquid ingredients for foam are poured into the central portion of the mould, foam and penetrate the pre-cured foam sheet, and in the central portion of the mould form liquid foam which is then cured.

3,432,584
PROCESS FOR THE MANUFACTURE OF A REVERSE OSMOSIS MEMBRANE HAVING A NONHEATING ANNEALING STEP
Charles R. Cannon, Baldwin Park, Paul A. Cantor, Covina, and William M. King, Walnut, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
No Drawing. Filed Feb. 17, 1966, Ser. No. 528,064
U.S. Cl. 264—49 **8 Claims**
Int. Cl. B29d *27/00*



In the manufacture of a reverse osmosis membrane, the swollen gel structure of the newly cast membrane is freed of its excess water to give a tight membrane by immersion in an organic solvent containing extraction liquid.

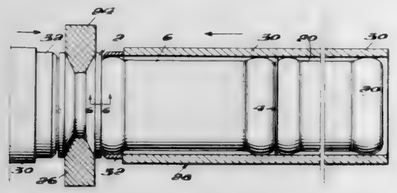
3,432,585
METHOD AND APPARATUS FOR CONTINUOUS FABRICATION OF DESALINATION MEMBRANE
Ellwood R. Watson, Glendora, Gene V. Rowley, Pomona, and Charles R. Wunderlich, Azusa, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Apr. 18, 1966, Ser. No. 543,369
U.S. Cl. 264—49 **13 Claims**
Int. Cl. B29d *7/02*



This disclosure concerns a method and apparatus for continuously fabricating desalination membrane material of cellulose acetate in an elongated web form, wherein the membrane material so produced is of high uniformity and is suitable for use in desalination processes operating on the principle of reverse osmosis. In practicing

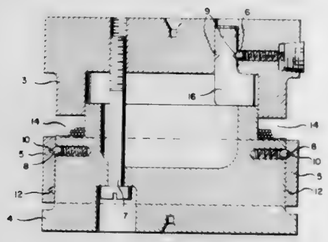
the method, a film-forming casting solution of cellulose acetate is continuously deposited along the surface of a moving elongated belt which is directed into a refrigerated water bath to subject the coating of casting solution on the belt to the refrigerated water bath. The coating gells to form a film which is automatically stripped from the belt and directed into a heated water bath, with the film being thereafter wound on a take-up roll and stored under water in a continuing sequence.

3,432,586
PROCESS FOR FORMING PLASTIC CONTAINERS
Hans G. Stenger, Plainfield, N.J., assignor, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Filed July 29, 1966, Ser. No. 568,517
U.S. Cl. 264—94 **9 Claims**
Int. Cl. B26d *3/00*



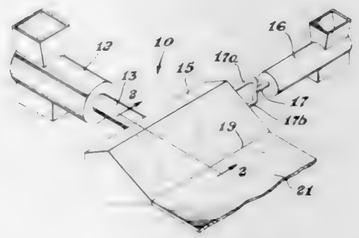
In a process for making wide mouth plastic containers, a molded hollow blank has its opposite ends closed and an intermediate or neck portion joins two potential container body portions. The neck portion has a pair of radially extending flanges spaced longitudinally apart. A holder is applied to the blank between the flanges and a knife is passed coaxially over the blank from one end to penetrate one of the flanges. Another knife is passed over the blank from the other end also coaxially to penetrate the other flange, whereby the neck portion of the blank between the flanges is separated from the blank thereby to form two container bodies.

3,432,587
PROCESS FOR PREPARING POLYTETRAFLUOROETHYLENE GASKETS
Byron H. Shinn, Bolton, and Herbert E. Todd, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,189
U.S. Cl. 264—120 **7 Claims**
Int. Cl. B27j *5/00*



A process is provided for forming polytetrafluoroethylene (PTFE) filaments into a desired gasket shape through a procedure affording uniform fiber orientation, with the longest dimension of the linear PTFE polymer chain being presented at the gasket surface through the entire periphery of the gasket. For example, the PTFE filaments may be wound on a mold under tension. The filaments are then compacted in the mold into a desired gasket shape, sintered to bond the filaments into a monolithic gasket unit, and cooled at a predetermined rate to produce the desired degree of crystallinity in the final gasket product.

3,432,588
METHOD FOR THE PREPARATION OF A FILAMENTARY REINFORCED RESINOUS ARTICLE HAVING IMPROVED SURFACE CHARACTERISTICS
Peter Breidt, Jr., Midland, and Lloyd E. Lefevre, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,527
U.S. Cl. 264—171 **5 Claims**
Int. Cl. B29f *3/10*



Fiber reinforced plastics are provided with a smooth surface by simultaneously extruding a core of reinforced plastic and a surface layer of nonreinforced plastic.

3,432,589
PROCESS FOR MANUFACTURING REGENERATED CELLULOSE FILAMENTS
Nicolas B. Drisch, Paris, France, assignor to Chimiotex, S.A., Geneva, Switzerland, a corporation of Switzerland
Continuation-in-part of applications Ser. No. 595,563, Nov. 15, 1966, and Ser. No. 637,986, May 12, 1967. This application Feb. 16, 1968, Ser. No. 706,030
Claims priority, application Ireland, Nov. 6, 1967, 1,326/67
U.S. Cl. 264—197 **15 Claims**
Int. Cl. D01d *3/28*

A process for the production of alkali resistant regenerated cellulose filaments which comprises spinning into a dilute acid spinning bath at a temperature below 40° C., a viscose which contains a cellulose whose DP is at least 400, having a gamma index of between 60 and 100 and a viscosity greater than 300 poises wherein gel filaments are produced then subjecting the gel filament to a first 30–80% stretching operation outside the bath, and simultaneously subjecting said filaments to a squeezing action so as to remove from the gel filaments the adhering acid bath, the gamma index (γ_1) of the thus stretched and extracted gel filaments being between 28 and 40, their swelling index G being between 5 and 8; and the acid concentration *a* of the liquid extracted from the gel filaments being between 6 and 9.5 g./liter, and thereafter subjecting the extracted gel filaments to a second 0–100% stretching operation in air then relaxing the filaments of from 8 to 20% of their length, and finally completing the regeneration of the filaments in a hot dilute acid bath.

The invention further relates to a process for producing novel alkali resistant cellulose regenerated filament having a new fibrillary arrangement different from that of other alkali resistant cellulose regenerated filaments, characterized by a crossed position of the fibrils constituting the filament, having an orientation angle of about 35° to about 47° and an organization degree of from about 0.42 to about 0.48; in addition this invention related to an alkali resistant regenerated cellulose filament having a conditioned tenacity of about 3.5 to 7 g./den., a conditioned elongation of about 30–14%, a wet tenacity of

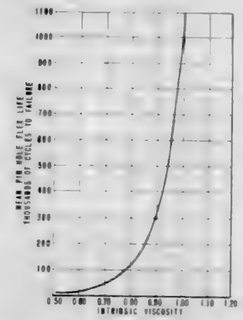


about 2.7–6 g./den. a wet elongation of about 40–16%, a work product in the conditioned state of about 70 to about 115 and a work product in the wet state of about 70 to about 115; further, this invention relates to a process for producing alkali resistant regenerated cellulose filaments having a loop tenacity of about 1.2 to about 2.1 g./den., a water filtration number of about 3 to about 10 and a dyeing index of about 1.15. In addition this invention relates to a process for producing the corresponding acetylated cellulose filaments.

3,432,590
PROCESS FOR SPINNING ELASTIC POLYPROPYLENE FIBERS
Jon D. Papps, Severna Park, Md., assignor to National Plastic Products Company, Inc., Odenton, Md., a corporation of Maryland
No Drawing. Filed July 10, 1963, Ser. No. 294,198
U.S. Cl. 264—210 **13 Claims**
Int. Cl. D01d *5/12*

1. The method of forming elastic polypropylene filaments comprising (1) melt spinning high melt index polypropylene under low thermodegradation conditions and at a temperature between about 325° F. and 550° F. at a jet velocity rate between about 1 and 40 ft. per minute, (2) stretching the filaments at a high rate sufficient to produce a draw-down ratio of between about 60 and 300 to 1, (3) cold drawing the filaments less than 2× to produce an opaque hue and to effect orientation, (4) heat setting the filaments in a relaxed state, and (5) finally cold drawing the filaments, to produce an opaque hue, an amount between about 1.01 and 2× at a temperature between room temperature and the lowest temperature at which the particular M.I. polypropylene can be stretched and substantially less than 285° F. to effect orientation.

3,432,591
BIAXIALLY ORIENTED HEAT SET FILM OF HIGH MOLECULAR WEIGHT POLYETHYLENE TEREPHTHALATE
Carl John Heffelfinger, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 373,574, June 8, 1964. This application Oct. 21, 1966, Ser. No. 588,588
U.S. Cl. 264—289 **3 Claims**
Int. Cl. B29d *17/02;* **C08g** *17/04*



A durable self-supporting film structure of polyethylene terephthalate is provided which is biaxially oriented, heat-set having an intrinsic viscosity greater than 0.82 and a density between about 1.370 and about 1.400.

3,432,592
INJECTION-MOULDED ORAL MEDICAMENT IN SOLID FORM
Peter Speiser, Forch, Zurich, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,182
Claims priority, application Switzerland, Aug. 31, 1962, 10,404/62
U.S. Cl. 424—19 **16 Claims**
Int. Cl. A61k *27/00, 9/00*

1. An injection-moulded medicament in solid form for peroral use, which contains (A) a predetermined, perorally effective, individual dosage quantity of a member selected from the group consisting of (1) an active substance and (2) a mixture of active substances admixed in (B) an individual, injection-moulded, solid, peroral, unit-dosage vehicle in the form of tablets, pills, dragees, capsules, rodlets and the like, said vehicle consisting essentially of a member selected from the group consisting of (1) a thermoplastic synthetic resin and (2) a mixture of thermoplastic synthetic resins, said resin or resins being inert in relation to the active substances, physiologically tolerable and at least partly soluble in the digestion juices and having a softening point within the range of about 80° C. to about 160° C.

3,432,593
DELAYED AND SUSTAINED RELEASE TYPE PHARMACEUTICAL PREPARATION
Mark Shepard, Miami, Fla., assignor to Key Pharmaceuticals, Inc., Miami, Fla., a corporation of Florida
No Drawing. Filed Sept. 18, 1963, Ser. No. 309,885
U.S. Cl. 424—20 **15 Claims**
Int. Cl. A61k *27/12*

A sustained release granule, capsule, or tablet has the active medicament adsorbed on a complex colloidal magnesium aluminum silicate. The individual granules may be further provided with one or more suitable retardant coatings, each of which provides a predetermined period of sustainment.

3,432,594
COATINGS FOR RECTAL CAPSULES AND PROCESS FOR THEIR MANUFACTURE

Kurt Bauer, Neu-Allschwil, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,692
Claims priority, application Switzerland, Dec. 31 1964, 16,892/64
U.S. Cl. 424—33 **5 Claims**
Int. Cl. A61k *9/04*

Coatings for rectal or vaginal capsules consisting of a nontacky, hydrophilic substance capable of forming gels with water, or of a mixture of such substances.

3,432,595
MELANOMA CELL LINE OF CANINE ORIGIN, ITS PROPAGATION AND USE, AND VACCINES DERIVED THEREFROM

Louis Kasza, Columbus, Ohio, assignor to The Ohio State University, Columbus, Ohio, an institution of Ohio

No Drawing. Filed June 30, 1965, Ser. No. 468,582
U.S. Cl. 424—89 **10 Claims**
Int. Cl. A61k *23/00*

Viable canine melanoma "cell line M" cells on a synthetic growth-supporting medium together with a viable virus normally unindigenous to the canine "cell line M" cells, but to which the canine "cell line M" cells are susceptible, growing in the culture of canine "cell line M" cells as host; method for the propagation of such normally unindigenous virus by growing on the canine "cell line M" culture; vaccines comprising a canine virus propagated in such a viable canine melanoma "cell line M" cell culture; method of producing a vaccine comprising propagating a canine virus in a viable canine melanoma "cell line M" cell culture on a synthetic medium and harvesting the virus; method of immunizing animals against canine viruses comprising administering vaccines made in such manner; and method of attenuating a virus comprising culturing the same on a canine melanoma "cell line M" cell culture, harvesting the virus, and repeating the procedure until the virus is attenuated.

3,432,596
METHOD FOR PRODUCING HIGHLY PURE HIRUDINE

Fritz Markwardt, Erfurt, Gerhard Schäfer and Horst Topfer, Radebeul, and Peter Walsmann, Erfurt, Germany, assignors to VEB Arzneimittelwerk Dresden, Radebeul, Germany

No Drawing. Continuation-in-part of application Ser. No. 395,940, Sept. 11, 1964. This application Oct. 13, 1967, Ser. No. 675,034
U.S. Cl. 424—95 **3 Claims**
Int. Cl. A61k *17/18;* **C07g** *7/00*

This invention relates to the method of producing highly pure hirudine from leeches, and more particularly to the purification of hirudine obtained by fractionation methods from leeches by a specific method involving gel filtration using heavily cross-linked dextrans.

3,432,597
HYDROGENATED MOENOMYCIN AND PROCESS OF PREPARATION

Ulrich Schacht, Hofheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,216
Claims priority, application Germany, Sept. 3, 1965, F 47,079/65
U.S. Cl. 424—118 **7 Claims**
Int. Cl. A61k *21/00;* **C07g** *11/00*

Hydro-moenomycin complex, hydro-moenomycin A, hydro-moenomycin B, hydro-moenomycin C, and a process for their preparation by the catalytic hydrogenation of moenomycin precursors.

3,432,598
ANTIBIOTIC SL 2266

Hans-Peter Sigg, Binningen, and Christian Stoll, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz AG), Basel, Switzerland

Continuation-in-part of application Ser. No. 598,090, Nov. 30, 1966. This application Nov. 30, 1967, Ser. No. 686,958
Claims priority, application Switzerland, Dec. 6, 1965, 16,791/65
U.S. Cl. 424—122 **2 Claims**
Int. Cl. C07g *11/00;* **A61k** *21/00*

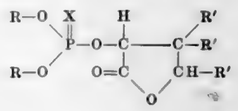
A new antibiotic SL 2266, and its salts, is provided. It is prepared by cultivating a new strain of the fungus species *Sordaria araneosa*. The antibiotic has fungistatic activity and is used as a disinfectant in e.g., wash solutions. It also has an inhibiting effect on the increase of tumour cells in vitro and may be used to restrict offshoots from the tumours in the transplantation of tumours.

3,432,599
ORGANOPHOSPHORUS INSECTICIDES

Johannes T. Hackmann, Herne Bay, Kent, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 20, 1960, Ser. No. 43,979
Claims priority, application Great Britain, July 22, 1959, 25,156/59
U.S. Cl. 424—203 **8 Claims**
Int. Cl. A01n *9/36;* **C07f** *9/08*

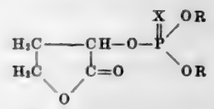
1. A heterocyclic compound of the formula:



wherein:

(a) R′ is a member of the group consisting of hydrogen and methyl,
(b) R is alkyl of from 1 to 6 carbon atoms,
(c) X is selected from the group consisting of oxygen and sulfur.

8. A method of controlling insects which comprises contacting the insects with a toxic amount of a compound of the formula



wherein X is a member selected from the group consisting of oxygen and sulfur, and R is lower alkyl.

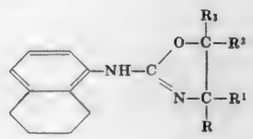
3,432,600
PARTIALLY REDUCED 2-(1-NAPTHYLAMINO) OXAZOLINE, INDANYLETHYLUREAS, AND INDANYLAMINOOXAZOLINE

John Harvey, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

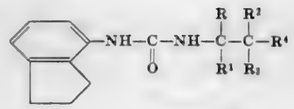
No Drawing. Filed Sept. 30, 1963, Ser. No. 313,756
U.S. Cl. 424—272 **15 Claims**
Int. Cl. A61k *27/00;* **C07c** *127/16;* **C07d** *85/36*

1. A compound selected from the group consisting of those of the formulas:

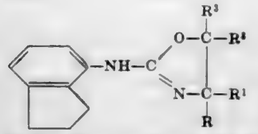
(1)



(2)



(3)



where R, R¹, R² and R³ are each selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms with the carbons in R, R¹, R² and R³ totalling a maximum of 8 carbons; and where R⁴ is selected from the group consisting of halogen, alkylsulfonyloxy wherein said alkyl has 1–4 carbons, and arylsulfonyloxy wherein said aryl is of 6–8 carbons; and where up to three hydrogen atoms of the reduced naphthyl group and the indanyl group of said compound can be replaced by a substituent selected from the group consisting of halogen, alkyl of 1–4 carbons, alkoxy of 1–4 carbons, alkylthio of 1–4 carbons, trifluoromethyl and trifluoromethoxy; and pharmaceutically acceptable acid addition salts of said compounds of Formulas 1 and 3.

15. A pharmaceutical composition containing a pharmacologically active amount of a compound according to claim 1 in a pharmaceutically acceptable carrier.

3,432,601
CONTROL OF POWDERY MILDEW WITH NITRONAPHTHONITRILES

Itsuki Okuda, Shimizu, Eiichi Yoshinaga, Ogasa-gun, and Takeo Tsuboi and Masaru Kado, Shimizu, Japan, assignors to Kumiai Chemical Industry Co., Ltd., Tokyo, Japan

No Drawing. Filed May 23, 1967, Ser. No. 640,473
Claims priority, application Japan, July 28, 1966, 41/49,071
U.S. Cl. 424—304 **8 Claims**
Int. Cl. A01n *9/20;* **C07c** *121/62*

A fungicidal and bactericidal composition comprising as an active ingredient nitronaphthonitrile, in the presence of an inert diluent.

3,432,602
ORAL ALKYL GLYCEROL ETHER IMPROVEMENT IN RADIATION, RADIOMIMETIC, OR CYTOSTATIC TUMOR THERAPIES

Astrid Helena Brohult and Sven Fritiof Abraham Brohult, Bromma, Bo Erik Hallgren, Gotegorg, and Johan Axel Brohult, Bromma, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Continuation of application Ser. No. 530,357, Feb. 28, 1966. This application Dec. 20, 1967, Ser. No. 692,246
U.S. Cl. 424—307 **7 Claims**
Int. Cl. A61k *27/00*

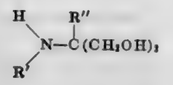
An improvement in the use of alkyl glycerol ethers in conjunction with radiation therapy in the treatment of tumors is disclosed characterized by the premedication of patients prior to radiation therapy. The use of alkyl glycerol ethers concurrently with radiation therapy is also discussed.

3,432,603
PROCESS FOR WEIGHT REDUCTION

Bernard L. Zenitz, Colonie, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,958
U.S. Cl. 424—325 **13 Claims**
Int. Cl. A61k *17/00*

3. A process for weight reduction in mammals which comprises administering to a mammal a weight-reducing amount of a compound of the formula:



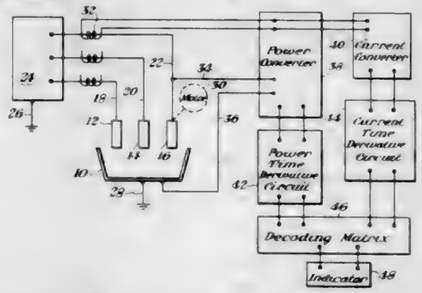
where R′ represents alkyl, R″ represents lower-alkyl, and the sum of the number of carbon atoms in R′ and R″ is between 11 and 20, inclusive.

ELECTRICAL

3,432,604
AUTOMATIC DETERMINATION OF ARC FURNACE OPERATING STATE

Samuel S. Harbaugh, Natrona Heights, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Filed Feb. 13, 1967, Ser. No. 615,789
U.S. Cl. 13—13 **6 Claims**
Int. Cl. H05b *7/18*

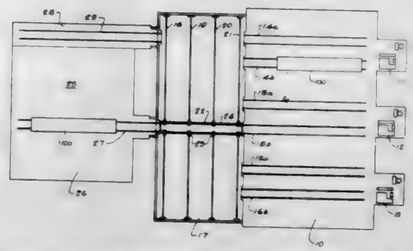


An apparatus for determining the operating state of an electric arc furnace wherein each of four bistable units is energized in response to a change in condition of the operating state to wit: arc power increase, arc power decrease, arc current increase, and arc current decrease. Each of the bistable units has a relay connected to the output thereof, the actuation of one or more relays energizing means to provide an indication of the operating state of the furnace on its curve of arc melting power vs. arc current.

3,432,605
SILICON CARBIDE FURNACES AND PLANTS

Wilbur T. Bolkcom, Pittsburgh, and William E. Knapp, Allison Park, Pa. (both % American Metallurgical Products Co., 9800 McKnight Road, Pittsburgh, Pa. 15237)

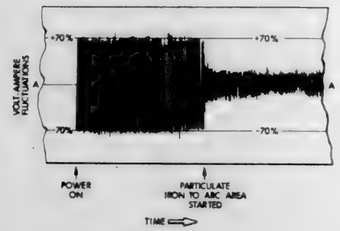
Filed Feb. 23, 1967, Ser. No. 618,034
U.S. Cl. 13—20 **10 Claims**
Int. Cl. H05b *3/02, 3/62*



A silicon carbide manufacturing plant for manufacturing silicon carbide in a movable furnace at one area,

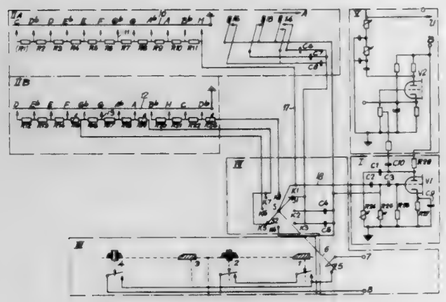
discharging the furnace in a second area and loading in a third area. An electrical power source is provided having a main trackway adjacent the power source with a furnace car movable to and from said power source and removably connected thereto through electrodes on end panels on the car.

3,432,606
STABILIZED ARCS IN ELECTRIC FURNACES
Joseph J. Kocischin, Kenilworth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,207
U.S. Cl. 13—33 **7 Claims**
Int. Cl. H05b *1/00*



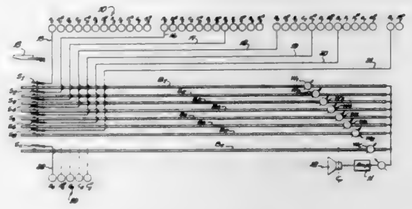
The stability and efficiency of the arcs in an electric furnace are improved by continuous addition of fine iron-containing particles in the vicinity of the arcs.

3,432,607
BASS CONTROL OF ELECTRONIC MUSICAL INSTRUMENTS
Sune Hearley Bergman, Molndal, Sweden, assignor to Joh Mustad AB, Goteborg, Sweden, a corporation of Sweden
Filed Aug. 9, 1965, Ser. No. 478,096
Claims priority, application Sweden, June 17, 1964, 9,897/64
U.S. Cl. 84—1.17 **5 Claims**
Int. Cl. G10h *3/06, 1/02*



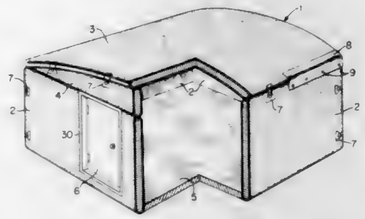
The device has a source of bass tones, a key-board for the selection of bass tones from said source and a pedal device for the initiation of the selected bass tones. Means are arranged to be controlled by the pedal device and successively to bring different selected bass tones to be reproduced in a sound reproducer. Said means perform the automatic alternation between the different bass tones defined in the device for selection of bass tones so that the last mentioned device does not have to be operated for each bass tone which one desires to reproduce but only be operated for each group of bass tones between which groups there will then be obtained an automatical change by means of said means for bass notes in electronic musical instruments.

3,432,608
COMPLEMENTARY HARMONIC SYSTEM FOR FLUTE TYPE ORGANS
Donald J. Leslie, Pasadena, Calif., assignor, by mesne assignments, to Columbia Broadcasting System, Inc.
Continuation of application Ser. No. 315,425, Oct. 7, 1963, which is a continuation of application Ser. No. 190,199, Apr. 23, 1962, which in turn is a continuation of application Ser. No. 857,371, Dec. 4, 1959. This application May 17, 1965, Ser. No. 461,586
U.S. Cl. 84—1.21 **7 Claims**
Int. Cl. G10h *3/00*



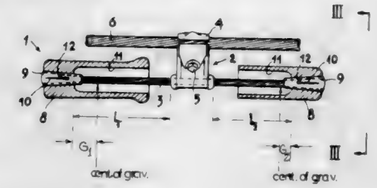
In a typical flute organ, the seventh, ninth and higher harmonics are missing. Accordingly, string and reed tones cannot effectively be provided. To remedy this deficiency, I provide a supplemental set of composite generators, one for each note, together with means for variably coupling the signals produced thereby to the electrical output channel.

3,432,609
PACKAGEABLE SHELTER WITH RADIO FREQUENCY SHIELDING
William C. Duvall, Akron, William R. Ludwick, Copley, and Albert E. Brion, Jr., Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 25, 1966, Ser. No. 597,098
U.S. Cl. 174—35 **8 Claims**
Int. Cl. H05k *9/00*



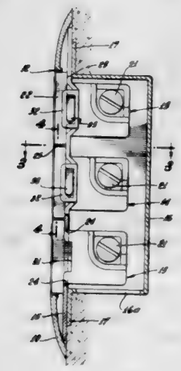
The technical disclosure, shown in this application, is a packageable shelter made from an assembly of dual wall inflatable fabric panels connected togeher by strap type fasteners. All these panels have a coating of radio reflective material such as silver-coated nylon cloth. All the joints of this shelter, where to adjacent panels are connected together either to form the walls, the roof, or the floor of the shelter, are provided with strips of radio reflective wire screen, such as Monel wire, to provide radio reflective continuity at all the joints and throughout the entire structure. Each panel edge has a connection strip of such wire screen which is clamped in metal-to-metal contact with a similar connection strip on the adjacent panel. A similar type joint is used to connect the door frame to the wall panels and the wall panels to the floor to provide radio reflective continuity at these joints.

3,432,610
VIBRATION DAMPERS FOR SUSPENDED MEMBERS
Rodolfo Claren, Milan, Italy, assignor to A. Salvi & Co. S.p.A., Milan, Italy, a corporation of Italy
Filed Aug. 21, 1967, Ser. No. 661,928
Claims priority, application Italy, Jan. 14, 1967, 11,471/67
U.S. Cl. 174—42 **9 Claims**
Int. Cl. H02g *7/14*



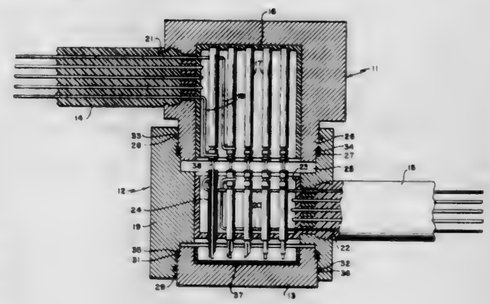
An improved vibration damper is described to the conventional Stockbridge damper having a pair of inertia members secured to opposite ends of a resilient member (e.g. a length of stranded steel cable), the latter having a clamp for attaching same to a suspended elongated member (e.g. an electrical cable) subject to aeolian vibration. In the improved damper, the pair of inertia members are of a mass and of a moment of inertia substantially different from each other and are secured to the resilient member at a location such that the axial length of the resilient member for one of the inertia members is different from the axial length of the resilient member for the other inertia member. Preferably, the ratio of the masses and also of the moments of inertia with respect to the two inertia members is less than 0.875 or greater than 1.15, and the corresponding ratio of the axial length of the resilient member is less than 0.93 or greater than 1.08.

3,432,611
ELECTRICAL DEVICE MODULINE
Jack H. Gaines, Seal Beach, and Russell C. Edmisson, Bellflower, Calif., assignors to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed June 30, 1966, Ser. No. 561,960
U.S. Cl. 174—66 **8 Claims**
Int. Cl. H05k *5/03*



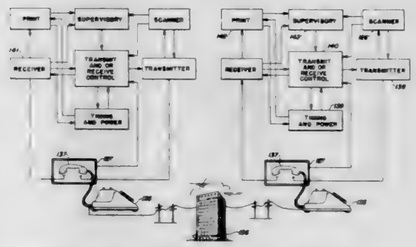
An electrical device including a face plate having an elongated slot and a series of strap carried electrical device module bodies having flanged rectangular heads aligned in substantially edge-to-edge engagement within the slot to be self-locking against relative shifting within and in the direction of the plane of the face plate.

3,432,612
UNDERWATER CONNECTOR
Walter J. Spiegel and Peter J. Tamburro, Morris County, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 26, 1966, Ser. No. 568,072
U.S. Cl. 174—88 **6 Claims**
Int. Cl. H02g *15/08, 15/24*



A multiple contact watertight cable connector having a pin receiving female part which has a removable cap to provide ready access for securing the connection between the cable sections. This securing is provided for by having the pin from the male member extend through the female members to be readily accessible from the capped end of the female member.

3,432,613
FACSIMILE TRANSCEIVER SYSTEM WITH SUPERVISOR LOGIC CONTROL
Waldemar Saeger, La Canada, Robert W. Reynolds, Los Angeles, Leland Dale Green, Sierra Madre, Armand R. Tanguay, Pasadena, and George T. Shimabukuro, Monterey Park, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,203
U.S. Cl. 178—6 **11 Claims**
Int. Cl. H04n *3/00, 7/00*



1. An image signal transceiver comprising:
logic means for generating periodic timing pulse patterns,
timing means responsive to selected ones of said timing pulse patterns for generating a plurality of repetitive timing signals in phase with said timing pulses,
selectively energizable facsimile transmitter scanning means responsive to said timing means for generating video signals corresponding to the information content of an original document to be transmitted,

selectively energizable facsimile receiver printer means responsive to received signals for generating a facsimile corresponding to received video signals,

first control means responsive to the detected presence of a document to be transmitted for energizing said transmitter scanning means, and,

second control means responsive to the detected absence of an original document to be transmitted and to received video signals for energizing said facsimile receiver printer means.

3,432,614

APPARATUS FOR RECORDING VIDEO AND AUDIO SIGNALS WITH MEANS FOR FACILITATING SYNCHRONOUS CUTTING

Franciscus Theodorus Backers and Johannes Hendrik Wessels, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 200,153, June 5, 1962. This application May 17, 1967, Ser. No. 639,247
Claims priority, application Netherlands, June 15, 1961, 266,006
U.S. Cl. 178—6.6 **3 Claims**
Int. Cl. H04n *5/76, 5/78*



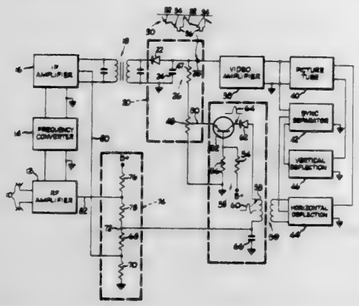
A rotating helically scanning video head is provided within a stationary drum having a recording tape wrapped around it. A stationary audio head is positioned on the drum with respect to the tape and rotating head such that the time differential along the tape length between the recorded video signal and the recorded audio signal is imperceptibly small, of the order of 0.1 second.

3,432,615

KEYED AGC CIRCUIT UTILIZING COMPOSITE VIDEO SIGNAL SUPPLIED FROM DETECTOR

Sam P. Stamatis, Chicago, Ill., assignor to Wells-Gardner Electronics Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 15, 1965, Ser. No. 496,407
U.S. Cl. 178—7.3 **13 Claims**
Int. Cl. H04n *3/16, 5/38;* **H04b** *1/16*



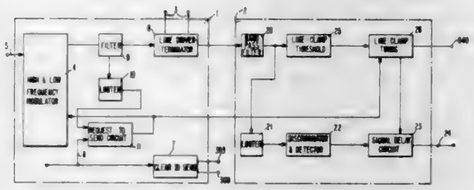
A gain control circuit for controlling the gain of a television receiver is developed from the video detector output independent of the video amplifier by direct connection to the resistor load of the detector circuit. A small portion to the resistor load of the detector output signal is applied as the input control signal to the emitter-base circuit of a transistor of the N-P-N type which is forward biased so as to be always conducting when voltage is applied to the collector of the transistor. Pulses derived from the horizontal sweep circuit are applied to the collector to produce pulses of collector current at the times the horizontal synchronizing pulses appear in the detected video signal. The magnitude of the collector current pulses is therefore dependent upon the magnitude of the horizontal synchronizing pulses. The collector current pulses are passed through a capacitor and series rectifier. A negative control signal is developed on the capacitor which may then be used to control the gain of the television receiver.

3,432,616

DATA TRANSMISSION APPARATUS UTILIZING FREQUENCY SHIFT KEYING

William G. Crouse, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 15, 1965, Ser. No. 448,521
U.S. Cl. 178—66 **24 Claims**
Int. Cl. H01l *27/12*



A frequency modulated keying transmitter comprises a triangular waveform modulator, the frequency of which depends solely upon the resistors and capacitor of a parallel voltage divider-integrator circuit. A differential amplifier which responds to the divider-integrator voltages and a high speed switch which applies one or the other of two charge potentials to the divider-integrator cause the integrator to charge positively and negatively about an average potential level.

Means including a pair of oppositely poled diodes translate the triangular waveform into sinusoidal signals. Since tuned circuits are not used, the signals can be turned off rapidly and changed in frequency without ringing.

A linear shunt feedback amplifier having a low output impedance in the order of 1 ohm drives the output transmission line by way of a very low inductance transformer without degeneration in low frequency response characteristics. High-valued resistors couple the transformer secondary winding to the line.

The drive amplifier also serves as an input amplifier for signals received over the line from other transmitters.

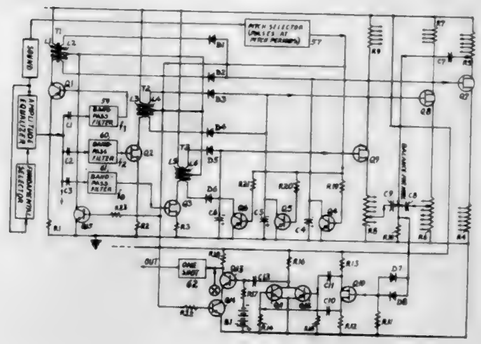
3,432,617

SPEECH SOUND WAVE ANALYSIS

Meguer V. Kalfaian, 962 Hyperion Ave., Los Angeles, Calif. 90029

Filed May 3, 1965, Ser. No. 452,737
U.S. Cl. 179—1 **3 Claims**
Int. Cl. H04m *1/00;* **G01r** *23/16, 27/02*

1. In an information identifying system wherein a specific information contained in a complex wave to be analyzed is determined by selecting a specific group of waves from the complex wave and comparing the combination of both the frequency and amplitude ratios of the selected waves with respect to each other in the selected group with that of a standard combination of a group of frequency and amplitude ratios representative of said specific information, said system including means for translating the said selected group of waves into a respective group of unidirectional voltage components in proportional quantities, whereby utilizing the last said components in the process of said ratio comparisons, the system for comparing the amplitude ratios of the said translated group of unidirectional voltage components with those of a group of standard combination of ratios comprising a group of voltage polarizing means, and associated impedance means, respectively; means for applying



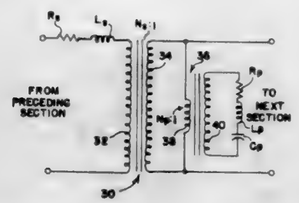
said group of voltage components to said group of voltage polarizing means, respectively; impedance-dividing pre-adjusted taps on said impedance means, the ratio divisions of said pre-adjustments being in a standard arrangement to represent the specific combination of the quantity ratios of the said group of voltage components, as results from the arrival of a specific information in the said complex wave; and coupling means from said pre-adjusted taps to a common output terminal in such cancelling amplitudes and polarities as to effect a signal below a threshold of minimum amplitude at said common output representing the said identifiable information.

3,432,618

METHOD AND SYSTEM OF ANALYZING THE INNER EAR

John L. Stewart, Menlo Park, Calif., assignor to Santa Rita Technology, Inc., Menlo Park, Calif., a corporation of Arizona

Filed July 12, 1965, Ser. No. 471,074
U.S. Cl. 179—1 **5 Claims**
Int. Cl. H04m *1/00*



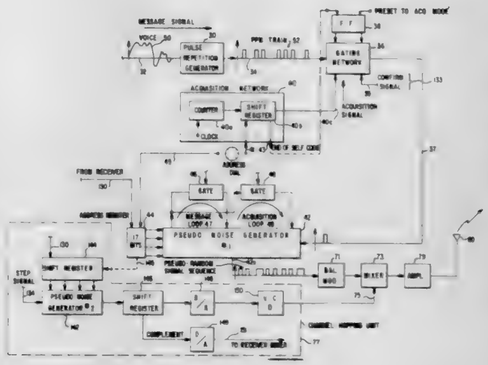
An electrical impedance network that modifies electric signals applied to it in a manner analogous to the modification of audio signals applied to the inner ear of a mammal by the middle ear. The network is constituted by a plurality of passive elements so proportioned with respect to one another that various points in the network correspond with great accuracy to the neutral location on the cochlea. A physical model is hydrodynamically analyzed as a step intermediate the animal ear and the electrical network simulating the ear. Included in the network are non-linear elements that simulate cochlear non-linearities of the type exploited by bats, porpoises, and the like in practicing echolocation.

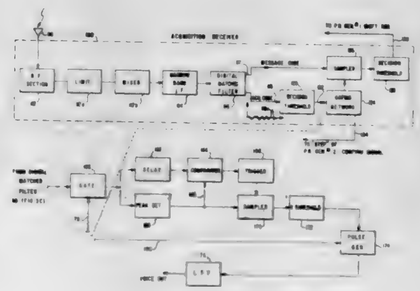
3,432,619

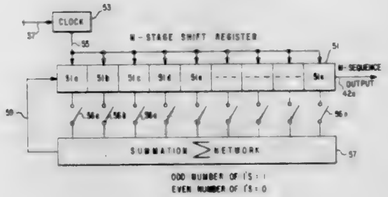
RANDOM-ACCESS COMMUNICATION SYSTEM EMPLOYING PSEUDO-RANDOM SIGNALS

Herman L. Blasbalg, Baltimore, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 31, 1963, Ser. No. 298,877
U.S. Cl. 179—15 **17 Claims**
Int. Cl. H04j *5/00, 7/00;* **H04b** *1/44*





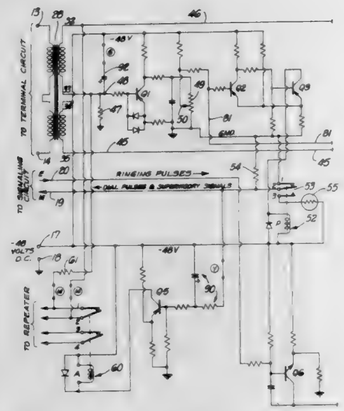


1. A multiple-subscribed, random-access communication system, wherein each subscriber is asigned a quasi-orthogonal, pseudo-random, signal waveform, comprising:

a plurality of transceivers, one for each subscriber, each transceiver including at least one pseudo-random signal waveform recognition device responsive only to the pseudo-random sequence of signals which identify the portion of an *m*-sequence allocated to said transceiver associated with said subscriber; and

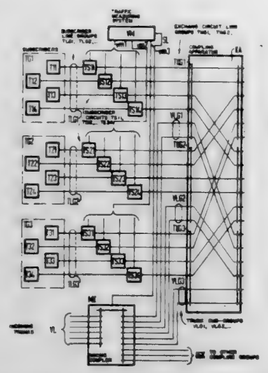
means at each transceiver for asynchronously encoding any message destined for one of said subscribers in terms of a portion of said *m*-sequence to which the signal recognition device at that subscriber is responsive.

3,432,620
DIAL LONG LINE CIRCUIT
Ronald V. Munro, Woodland Hills, Calif., assignor to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,455
U.S. Cl. 179—16 **10 Claims**
Int. Cl. H04m *3/02*



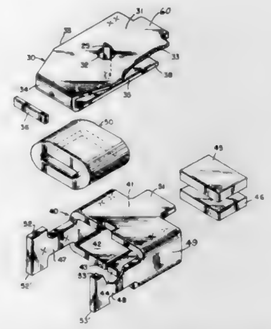
Long line circuit for coupling subscriber to switching equipment. Controls ringing at subscriber's set by means of amplifiers and relays. Generates supervisory signals for off-hook state and dial pulsing. Provides circuit options which can be selected to coincide with particular associated equipment.

3,432,621
TRAFFIC LOAD EQUALIZATION ARRANGEMENT
Norbert Bininda, Munich-Solln, Germany, Alfred Wendt, deceased, late of Munich, Germany, by Frau Alfred Wendt, sole heir, Leo-Graetz Strasse 3, Munich, Germany; said Bininda assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Mar. 4, 1965, Ser. No. 479,024
U.S. Cl. 179—18 **4 Claims**
Int. Cl. H04m *3/00, 7/00;* **H04q** *3/66*



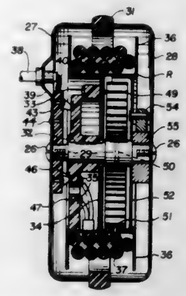
In a communication exchange installation, traffic equalization for exchange circuit links is provided by detecting traffic load in groups of lines subject to uncontrollable traffic loads and connected to corresponding groups of exchange circuit links and, in response thereto, controlling the traffic load in a group of trunks connected in subgroups to corresponding ones of said groups of exchange circuit links.

3,432,622
SUB-MINIATURE SOUND TRANSDUCERS
George J. Sebesta, Huntington Bay, and Richard W. Carlisle, Greenburgh, N.Y., assignors to Dyna Magnetic Devices, Inc., Hicksville, N.Y., a corporation of New York
Filed May 10, 1965, Ser. No. 454,377
U.S. Cl. 179—115 **9 Claims**
Int. Cl. H04r *7/04, 7/16*



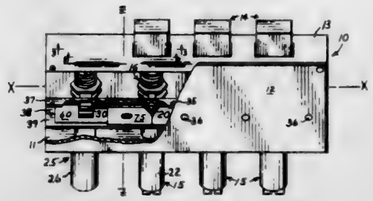
A transducer arrangment for miniature constructions, as microphones or receivers, with compact efficient electromagnetic configuration. Contains an endless loop or band, with two magnet blocks in spaced array therein. The armature is in U-form supported at one end by the band, and its free end in operative position between the magnets. Two members extend from the pole-piece band generally parallel to the armature for significant magnetic coaction. Also, the two members are formed to precisely locate the transducer in its casing, and to pre-position the diaphragm thereon.

3,432,623
REEL CONSTRUCTION HAVING IMPROVED RATCHET AND PAWL
Charles H. Blanch, Maple Heights, and Henry F. Olzak, Independence, Ohio, assignors to Alert Stamping and Mfg. Co., Inc., Bedford Height, Ohio, a corporation of Ohio
Filed Jan. 20, 1967, Ser. No. 610,573
U.S. Cl. 191—12.2 **10 Claims**
Int. Cl. H02g *11/02*



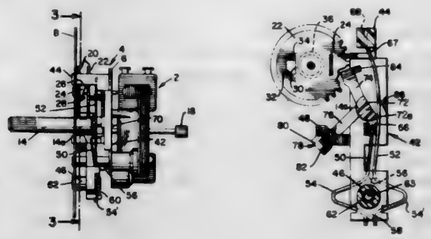
A reel construction having a ratchet and pawl of the so-called "gravity-operated" type wherein the pawl includes a riding portion having a length sufficient to bridge across a recess of the ratchet and to prevent over-pivoting away from the ratchet during pay-out rotation of the reel.

3,432,624
SHOCK RESISTANT MULTIPLE SWITCH ASSEMBLY
Carl E. Martin, Post Falls, Idaho, assignor to Clare-Pendar Co., Post Falls, Idaho, a corporation of Idaho
Filed Aug. 11, 1967, Ser. No. 660,027
U.S. Cl. 200—5 **8 Claims**
Int. Cl. H01h *1/24*



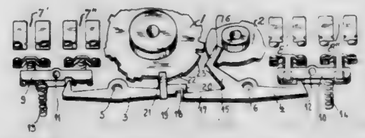
The disclosure describes a multiple switch assembly **10** having a plurality of parallel plunger assemblies **14** for actuating respective switches **15**. Radial arms **20** extend from the plunger assemblies for movement therewith. An inertia device **25** is mounted parallel with the plunger assemblies **14**. The inertia device **25** has a plunger **27** with a radial arm **30**. Two holding bars **42** and **60** are slidably mounted transverse to the plunger assemblies **14**. The bars **42** and **60** have a plurality of hook slots **45** and **62** formed therein respectively for receiving the arms **20**. The hook slots **45** have inwardly projecting shoulders **50** that oppose the inwardly projecting shoulders **67** of the hook slots **62**. The bars **42** and **60** are resiliently biased to move the shoulders **50** and **67** to intersect the path of the arms **20**. Lock slots **54** and **72** are formed in the bars **42** and **60** respectively for receiving the arm **30** to prevent movement of the bars **42** and **60** when shock forces are exerted on the assembly **10** parallel to the axes of plunger assemblies **14**.

3,432,625
TIMER SWITCH
Samuel Polonsky, Medway, and Bartley E. King, Norwood, Mass., assignors to General Electric Company, a corporation of New York
Filed Apr. 13, 1967, Ser. No. 630,553
U.S. Cl. 200—35 **10 Claims**
Int. Cl. H01h *7/08, 43/00*



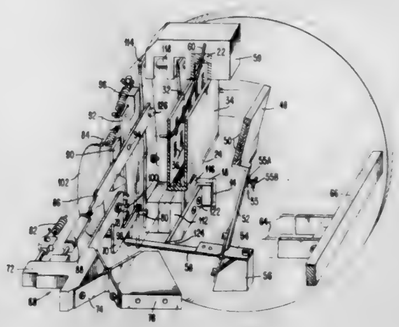
A timer switch assembly having a selector shaft which is biased to a closed circuit "on" condition by one of a pair of elongated switch contact wires, and which may be maintained in either such "on" condition or in an "automatic-off" open circuit condition against this bias by a timer controlled latch member or in an "off" open circuit condition against this bias by a manually positionable latch member.

3,432,626
PROGRAMMING APPARATUS
Paul Bossard and Michel Chauvigne, Cluses, France, assignors to Carpano & Pons, Cluses, France, a French company
Filed Oct. 10, 1966, Ser. No. 585,648
Claims priority, application France, Oct. 14, 1965, 34,928
U.S. Cl. 200—38 **7 Claims**
Int. Cl. H01h *19/60, 19/62*



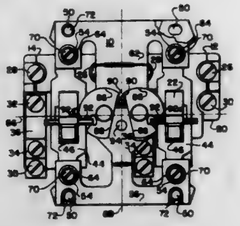
Programmer having a first series of cams rigidly mounted on a motor driven shaft and a second series of cams mounted on a second motor driven shaft with the remainder of the second series on a manually actuated shaft. Two sets of interrupters controlling the programmed operations are manipulated by two sets of levers sensing the cam profiles and activating the interrupters in dependence upon the cam profiles. The two sets of levers coact by a pivotal connection between corresponding levers of the two sets to effect desired interaction between the first and second series of cams in activating the interrupters.

3,432,627
RECORD READING DEVICE
Morris Krakinowski, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 17, 1964, Ser. No. 419,028
U.S. Cl. 200—46 **23 Claims**
Int. Cl. H01h *43/08*



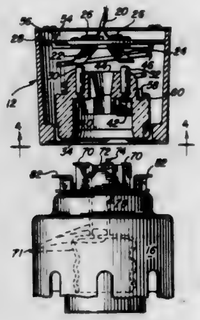
A record reading device composed of a matrix of reed relays for reading a record having seelcted index positions which are opaque to a magnetic field in certain of the matrix positions. Reed relay energizing means maintains all of the relays in the matrix energized until said record is fully inserted in the device, whereupon a latch means engages the record for a predetermined period of time to insure accurate reading of said record before the record may be removed.

3,432,628
INTERLOCK STRUCTURE FOR TWO MANUALLY OPERATED TOGGLE SWITCHES
Jordan F. Puetz, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed June 20, 1967, Ser. No. 647,541
U.S. Cl. 200—50 7 Claims
Int. Cl. H01h 9/20



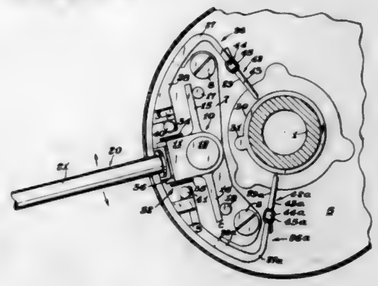
An inexpensive interlock structure having a minimum number of parts arranged to prevent concomitant operation of the handles of a pair of manually operated overload type switches to circuit closing positions and the movement of the handle of one of the switches when the other switch is tripped in response to an overload current. The switches each have a pin extending from the switch operating handle and the interlock structure has a mounting plate arranged to position the switches on a support so the pin on each switch handle extends into a notch in one of a pair of identical disc-like members that are rotated on the mounting plate. Each of the members has surfaces arranged so that a rotative movement of one of the members by one of the handles will cause a surface on the said one member to move into a position interfering with the rotative movement of the other member of the pair and prevent movement of the handle of the other switch.

3,432,629
AUTOMATIC DISCONNECT SOCKET ASSEMBLY
Milton Scott Field, Deerfield, and Edward B. Bilson, Chicago, Ill., assignors, by mesne assignments, to Alm Corp., Chicago, Ill., a corporation of Illinois
Filed Mar. 3, 1967, Ser. No. 620,537
U.S. Cl. 200—51.07 3 Claims
Int. Cl. H01r 19/54



A lighting equipment fixture installation having a lamp-holding socket disconnectable from a spring-biased base or contact-establishing socket such that when the lamp socket is disconnected from the base socket, the base socket is pushed outward of the base or hood in which the same is reciprocable causing the exposed terminals of the base socket to be rendered electrically dead.

3,432,630
DIRECTION SIGNAL OPERATING APPARATUS
Peter J. Dryer, Warren, and Albert R. De Lorme, Detroit, Mich., assignors, by mesne assignments, to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Mar. 15, 1965, Ser. No. 439,716
U.S. Cl. 200—61.34 8 Claims
Int. Cl. H01h 3/16



1. Direction signal operating apparatus comprising support means; first contact means carried by said support means; an actuator member; means mounting said actuator member on said support means for rocking movement about an axis from a neutral position to an operating position on either side of said neutral position; second contact means carried by said actuator member for engagement with said first contact means in response to movement of said actuator member to either operating position; operating means connected to said actuating member for moving the latter from said neutral position to either operating position; resilient finger means carried by said actuator member for rocking movement therewith; and stop means carried by said support means for engagement by said finger means in response to movement of said actuator member toward either operating position by said operating means, the resilience of said finger means resisting but permitting movement of said actuator member to either operating position and restoring said actuator member to said neutral position upon release of said operating means.

3,432,631
ALARM AND SAFETY LOCK DEVICE
Abe Deutscher, 83—06 Edgerton Blvd., Jamaica, N.Y. 11432, and Vincent H. Muttart, Placentia, and Jack W. Gilbert, Newport Beach, Calif.; said Muttart and said Gilbert assignors to said Deutscher
Filed Dec. 19, 1966, Ser. No. 602,995
U.S. Cl. 200—61.67 26 Claims
Int. Cl. H01h 27/06, 9/28

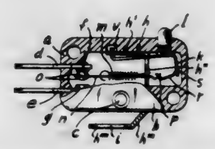
1. In a locking device, the combination of: a frame; a bolt movable in said frame between an extended locking position and a retracted unlocking position; bolt actuating means operably connected to said bolt for moving said bolt between said extended and retracted positions; said bolt actuating means including a cam member slidable in one direction moving said bolt from said retracted to said extended position and slidable in the opposite direction moving said bolt from said extended to said retracted position, a cam on said cam member having first and second dwell portions and an intermediate actuating portion, cam follower means engaged with said cam movable progressively through said first dwell and said actuating and said second dwell portions when moved in a first direction and progressively through said second dwell and said actuating and said first dwell portions when moved in a reverse second direction, said cam follower means sliding said cam member in said one direction when moving through said cam actuating portion in said first direction and sliding said cam member in said opposite direction when moving through said cam actuating portion in said second direction, said cam follower means being free of sliding said cam member during any movement through said cam first and second dwell portions; and means for moving said cam follower means in said first and second directions.

12. In a locking device, the combination of: a frame securable to a mounting surface; a bolt movable on said frame between an extended locking position and a retracted unlocking position; first bolt actuating means operably connected to said bolt operable for moving said bolt between said bolt positions; said first bolt actuating means including lock means associated therewith requiring unlocking of said lock means for movement of said bolt by said first bolt actuating means from said extended to said retracted position; second bolt actuating means operably connected to said bolt operable for moving said bolt between certain of said bolt positions; and said second bolt actuating means including an operating lever extending generally parallel to said mounting surface, means mounting said operating lever selectively movable from a first position spaced a maximum distance from said mounting surface to a second position spaced a minimum distance from said mounting surface upon a force being applied against said operating lever and toward said mounting surface, said operating lever remaining generally parallel to said mounting surface throughout said operating lever movement, means operably connecting said operating lever to said bolt for moving said bolt from said extended to said retracted position upon said operating lever being moved from said first to said second position.

17. In a locking device, the combination of: a frame; a bolt movable on said frame between an extended locking position and a retracted unlocking position; first bolt actuating means operably connected to said bolt for moving said bolt between said extended and retracted positions; second bolt actuating means operably connected to said bolt for moving said bolt at least from said extended to said retracted position; alarm actuating means operably connected to said frame for operating an alarm including an alarm lever normally engaged with said bolt when said bolt is in extended position, means mounting said lever movable by said bolt from an alarm nonoperating position to an alarm operating position upon movement of said bolt from said extended toward said retracted position with said lever engaged with said bolt, means mounting said lever movable between bolt engaging and nonengaging positions; and means operably connecting said first bolt actuating means and said lever of said alarm actuating means for moving said lever from said bolt engaging to said nonengaging position when said bolt is in extended position and said first bolt actuating means is operated to move said bolt from said extended to said retracted position.

25. In a locking device, the combination of: a frame; a bolt movable in said frame between an extended locking position and a retracted unlocking position; first bolt actuating means operably connected to said bolt for moving said bolt between said extended and retracted positions; second bolt actuating means operably connected to said bolt for moving said bolt from said extended to said retracted position and being incapable of moving said bolt from said retracted to said extended position; means operably associated with said bolt for retaining said bolt in each of bolt extended and retracted positions except during movement of said bolt by one of said first and second bolt actuating means; alarm means operably associated with said bolt actionable for operating an alarm when said bolt is moved from said bolt extended to retracted position by said second bolt actuating means and being free of actuation for operating said alarm when said bolt is moved from said bolt extended to said retracted position by said first bolt actuating means; an auxiliary latch movable on said frame between an extended latching position and a retracted unlatching position; latch actuating means operably connected between said second bolt actuating means and said latch for moving said latch from said extended to said retracted position upon said second bolt actuating means being operated to move said bolt from said bolt extended to said retracted position; and means operably connected to said latch for automatically moving said latch back from said latch retracted position to said extended position upon release of said second bolt actuating means after movement of said bolt by said second bolt actuating means from said bolt extended to said retracted position.

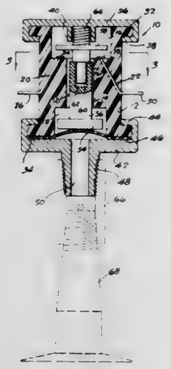
3,432,632
ELECTRICAL SNAP ACTION SWITCH
Werner Schenke, Wehingen, Germany, assignor to Firma J. & J. Marquardt, Riethelm, near Tuttlingen, Germany
Filed Sept. 22, 1966, Ser. No. 581,306
Claims priority, application Germany, Sept. 23, 1965, Sch 37,766
U.S. Cl. 200—67 4 Claims
Int. Cl. H01h 21/24, 21/40



An electrical switch includes a housing with an interior cavity having a pair of spaced fixed contacts therein. The switch mechanism includes an actuating angle lever which is povotally mounted at its one end and, includes two portions at right angles to each other one of which extends across the housing cavity. A movable contact arm extends through the cavity and through a slot in a support angle, and between two stop elements formed by the housing, and it includes a contact button formation on each side disposed between the fixed contacts. A tipping member is articulated to the lower end of the portion of the angle lever, which extends across the cavity, and to the movable contact arm. A spring is secured at one end to the supporting angle, which extends across the cavity, and at its opposite end to the contact arm. The single spring element both aids in the snap actuation of the contact by the depression of a ram member against the angle lever and it also permits the return of the contact to a neutral position after the actuating ram member is released. In addition, the movable contact is moved

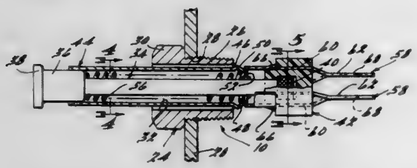
through an arcuate path so that there is a wiping action between the movable contact and the associated one of the fixed contacts during the actutation of the switch, so that the contacts are cleaned by this action.

3,432,633
FLUID PRESSURE SWITCH UTILIZING AN AXIALLY MOVABLE FLOATING DISK ASSEMBLY
Gustave A. Scherb, 1369 Mary L Road, Clearwater, Fla. 33515
Filed July 28, 1967, Ser. No. 656,725
U.S. Cl. 200—83 **5 Claims**
Int. Cl. H01h *35/40*



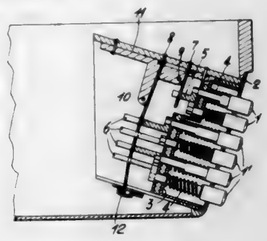
A fluid pressure indicator switch which closes an alarm circuit when a pressure level transmitted to it drops below a prescribed norm. A flexible diaphragm normally closes the entrance into the switch housing, which is attached to a device having a pressurized chamber. The diaphragm rests against an axially floating disk assembly within the switch housing, biased toward the diaphragm by a coil spring under compression. Pressurized fluid is tapped from the pressurized chamber and impinged upon the diaphragm, which if normal, will enable the diaphragm to provide a sufficient force against the spring-biased floating disk assembly to prevent it from bridging a pair of electrical contacts in the switch housing to establish an electric circuit and sound an alarm. Should the pressure be insufficient, the circuit will be established.

3,432,634
SELF-ADJUSTING CLOSURE ACTUATED SWITCH ASSEMBLY
Michael J. Basso, Detroit, Mich., assignor of thirty-five percent to John D. Scofield
Filed Aug. 12, 1965, Ser. No. 479,176
U.S. Cl. 200—159 **4 Claims**
Int. Cl. H01h *3/12, 3/14, 13/50*



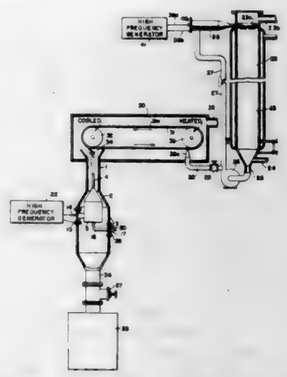
In a switch assembly, an elongated tubular support member constructed of an electrically conductive material; a plunger member reciprocable relative to said support member between contact opening and closing positions; at least two terminal members for attachment to electrical conductor means; terminal carrying means constructed of a non-conductive material and adapted to secure said terminal members on said plunger member; a body member supporting said support member for adjustable sliding movement longitudinally of said body member; and spring means for resiliently urging said plunger member toward said contact closing position wherein said terminal members are concomitantly engaged with said support member.

3,432,635
SWITCHES AND MECHANISM FOR FORMING CHORDS IN ELECTRONIC MUSICAL INSTRUMENTS
Paolo Settimio Soprani, Via Bainsizza 2, Ancona, Italy
Filed Apr. 27, 1965, Ser. No. 451,153
Claims priority, application Italy, Feb. 4, 1965, 939/65
U.S. Cl. 200—166 **4 Claims**
Int. Cl. H01h *13/76*



A chord-selecting device for electronic musical instruments comprising a keyboard or button-board for (bass) note and chord control buttons, parallel metal springs positioned to be selectively deflected by the buttons to close electric circuits carrying different audio frequencies, and common conductors positioned transversely of the springs to be contacted selectively by the springs that are deflected.

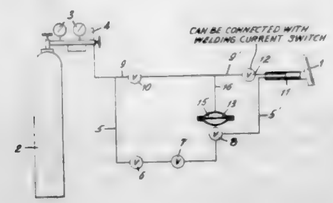
3,432,636
METHOD OF AND APPARATUS FOR PRODUCING DRY CONCENTRATES FROM LIQUID MATERIALS
Ralph G. Sargeant, Lakeland, Fla., assignor to Pet Incorporated, St. Louis, Mo., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,243
U.S. Cl. 219—10.65 **4 Claims**
Int. Cl. H05b *3/60*



The apparatus makes use of high frequency electric current, commonly called "radio frequency," and a special electrode structure by which the energy is applied to

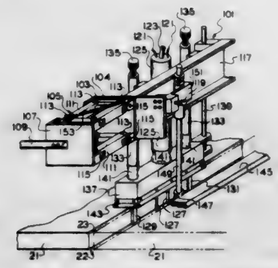
drying the granular or powdered material. The apparatus includes a vertically disposed cylindrical shell into the open top of which the partially dried material is fed. A tubular electrode extends concentrically up into this cylindrical shell, and provision is made for regulating the flow of the product in such manner that the portion of the electrode within the shell is maintained completely embedded in the mass of material being dried and moving downward through the shell.

3,432,637
GAS SHIELDED ARC WELDING TORCH WITH AUTOMATIC ADJUSTABLE SHIELDING GAS FEED
Ernst Witting, Frankfurt, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed June 23, 1964, Ser. No. 377,220
U.S. Cl. 219—74 **8 Claims**
Int. Cl. B23k *9/16*



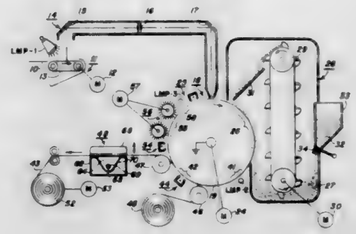
A gas shielded arc welding apparatus includes a control for automatically adjusting the after-flow of gas. A supply conduit and a parallel branch extending therefrom are connected between a gas supply and a welding torch for controlling the flow of gas to the workpiece. A diaphragm operated valve is connected to the branch for opening and closing the conduit. A shutoff valve is provided in the branch downstream of the diaphragm valve whereby gas will continue to flow in the conduit upon the closing of the shut-off valve until sufficient pressure is developed in the branch to close the diaphragm valve. Various valves are included in the control for regulating the gas supply and after-flow.

3,432,638
APPARATUS FOR GUIDING ELECTRODES
Jerome W. Nelson, Houston, Tex., and Wallace J. Lewis, Sacramento, Calif., assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Original application Oct. 20, 1965, Ser. No. 498,734, now Patent No. 3,328,556, dated June 27, 1967. Divided and this application June 16, 1967, Ser. No. 646,715
U.S. Cl. 219—125 **2 Claims**
Int. Cl. B23k *9/12*



An electrode guiding apparatus for automatic welding along a joint between metal plates having a welding head moveably mounted on a two-direction parallelogram linkage to allow horizontal and vertical movement of the head and having guide rods extending from the welding head into the joint to sense variations in joint depth and width and thereby maintain the proper contact-to-work distance at all times. The electrodes are moveably mounted within the welding head to maintain a selected lateral position with respect to the sidewalls of the joint.

3,432,639
FUSING APPARATUS
Henry E. Hull, Harold E. Trumbull, and Gordon G. Zeidman, Columbus, Ohio, assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 3, 1966, Ser. No. 583,756
U.S. Cl. 219—216 **4 Claims**
Int. Cl. H05b *1/02, 3/00, 11/00*



1. Apparatus for fusing a resinous powder image onto a support surface on which the image has been loosely formed comprising in combination:

(a) support means for advancing a support base containing a loosely adhering resinous powder image on its surface in a predetermined path,

(b) contiguous walls forming a partially esclosed chamber positioned adjacent to the support base path, the interior portion of said chamber being shaped to reflect radiation in a direction toward one surface of the support base,

(c) heater means disposed within said chamber and extending transverse to the support base path and adapted to emit radiation toward one surface of said support base for heating same,

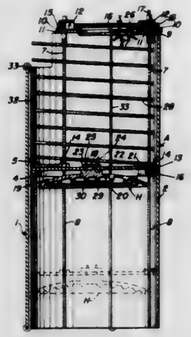
(d) a displaceable wall member positioned opposite said chamber, on the other side of the support base and adapted to reflect radiation received toward the other surface of the support base, said wall member being movable in a direction perpendicular to the support base and defining a substantially enclosed housing with said contiguous walls when in a rest position; and

(e) control means responsive to the fusing temperature for varying the spacing of said movable wall member relative to the support base.

3,432,640
INFRARED HEATING METHOD FOR MOLDING MACHINES AND THE LIKE
Richard K. Shelby, Downers Grove, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application Dec. 26, 1963, Ser. No. 333,508, now Patent No. 3,325,629, dated June 13, 1967. Divided and this application Jan. 20, 1967, Ser. No. 627,577
U.S. Cl. 219—354 **6 Claims**
Int. Cl. H05b *3/46*

The method of heating sheets of thermoplastic material to a desired temperature range for molding operations where the sheet is passed beneath downwardly facing dish-shaped heaters located in individual housings where the

web is heated by infrared radiation which has an intensity curve which peaks within the wave length range of 3.2 to 3.5 microns and where the thermoplastic material is graft styrene-butadiene and a polystyrene combination.



3,432,641
PORTABLE HEATING DEVICE

Robert J. Welke, 365 Helme Ave., Adrian, Mich. 49221

Filed Mar. 10, 1966, Ser. No. 533,370
U.S. Cl. 219—433 1 Claim
Int Cl. F27d *11/00*



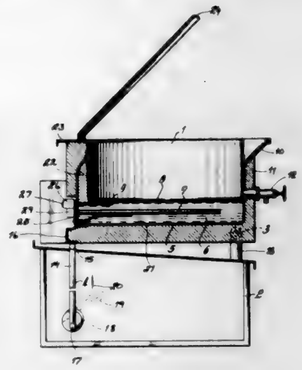
A portable baby bottle heating device consisting of three separable elements, namely, a container for receiving the baby bottle, a heat supply unit containing a heating element, and a power supply unit capable of energizing the heating element.

3,432,642
COOKING PAN SUITABLE FOR THE PREPARATION OF DIETETIC AND NONDIETETIC FOODS

Alfred Löhr and Helmut Hemmann, Herborn, and Karl Tropp, Werdorf, Germany, assignors to Burger Eisenwerke Aktiengesellschaft, Wetzlar, Germany, a corporation of Germany

Filed May 23, 1967, Ser. No. 640,531
Claims priority, application Germany, June 1, 1966, B 87,379
U.S. Cl. 219—439 5 Claims
Int. Cl. F27d *11/02*

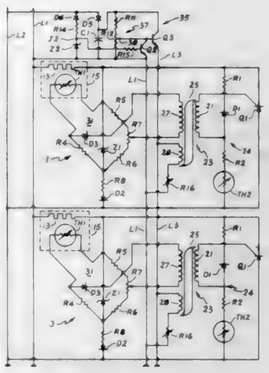
A cooking vessel for the frying, pan-broiling, and pan-roasting of food products (primarily meat) and settable without structural modification for the cooking of dietary portions requiring a minimum of browning, searing and fat-frying of comestibles, in which the vessel is provided with a double-wall bottom containing a liquid heat-distributing and heat-equalizing medium of good thermal conductivity and a high boiling point (e.g. silicone, mineral or vegetable oil having a boiling point and thermal-degradation temperature above about, say 225° C.), an electric heating element in the chamber between the walls, and a thermostat immersed in the heat-transfer medium proximal to the bottom of the inner vessel. Means is provided for selectively setting and/or indexing the thermostat at temperature levels.



3,432,643
MULTIZONE TEMPERATURE CONTROL

Francis Finnegan, Plainville, and Charles D. Flanagan, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,356
U.S. Cl. 219—501 11 Claims
Int. Cl. H05b *1/02*

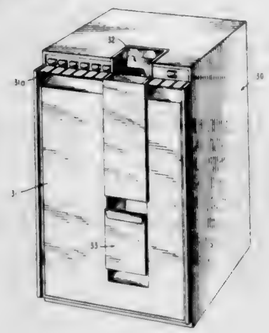


A plurality of temperature control circuits, each of which is operative to maintain the temperature in a respective zone at a respective preselected temperature, are collectively adjusted by means of a reference signal of adjustable amplitude supplied to all of the control circuits. In each control circuit the reference signal cooperates with a control voltage which varies as a function of the temperature in the respective zone to determine the magnetization of a saturable reactor core. This magnetization of the core determines the phase angle of triggering of an SCR thereby to vary the energization of a heater which affects the temperature in the respective controlled zone to maintain it at the preselected level.

3,432,644
TABULATING CARD READER CARD DRIVE STRUCTURE

Edwin O. Blodgett, Rochester, N.Y., assignor to Friden, Inc., a corporation of Delaware

Filed Feb. 11, 1965, Ser. No. 431,854
U.S. Cl. 235—61.11 3 Claims
Int. Cl. G06k *7/00*

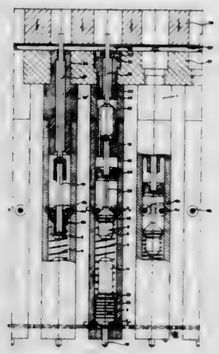


A punched card transport system having first and second card driving means for advancing individual cards past a read station in a step-by-step manner at first and second predetermined different rates. The two driving means are coupled together through differential gearing. First and second clutch means are selectively energized to engage the selected drive means to drive the cards at the selected speed. The differential gearing holds the nonselected drive means motionless while the selected one is powered.

3,432,645
SENSING ARRANGEMENT FOR PERFORATED DATA CARDS

Hans Hartmann, Mercedesstrasse 17, Stuttgart-Bad Cannstatt, Germany

Filed Apr. 15, 1965, Ser. No. 448,335
Claims priority, application Germany, Apr. 23, 1964, H 52,464
U.S. Cl. 235—61.11 20 Claims
Int. Cl. G06k *7/01*; H01h *43/08*

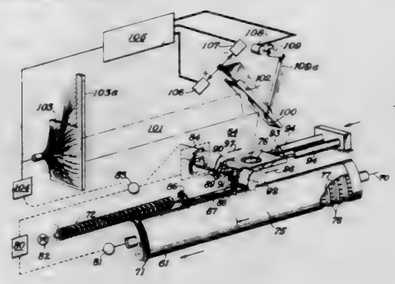


A sensing arrangement for perforated data cards in which a plurality of elongated feelers is carried by a support to form a sensing field. The feelers are mounted in the support movable between an active position projecting with end portions thereof beyond an end face of the support and an inactive position. The arrangement includes also springs cooperating with the feelers to bias the latter to the active position and means for indicating the positions of the respective feelers, so that when a perforated data card is pushed against the end face, some of the feelers will stay in the active position while others will be moved to the inactive position, whereby the position of the perforations in the data card may be ascertained.

3,432,646
RETINA CHARACTER READER

Edward Gordon Perry, Jr., Dallas, Tex., assignor to Recognition Equipment Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 25, 1964, Ser. No. 377,991
U.S. Cl. 235—61.11 9 Claims
Int. Cl. G06k *7/00*

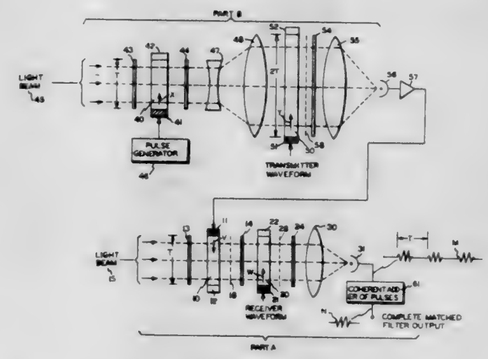


An automatic document reader wherein the document is loaded on a spinning cylindrical drum which, when at the optical reading station, advances past a reference location along a path parallel to its axis. An optical viewer advances with the drum and upon completion of the scanning of a line, moves in a direction opposite the advance of the drum in a stepwise motion so as to scan the next succeeding line.

3,432,647
ELECTRO-OPTICAL CORRELATOR

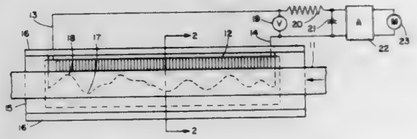
Raymond M. Wilmotte, 4301 Massachusetts Ave. NW., Washington, D.C. 20016

Filed Dec. 13, 1963, Ser. No. 330,481
U.S. Cl. 235—181 14 Claims
Int. Cl. G06g *7/19, 7/18*; G06f *15/34*



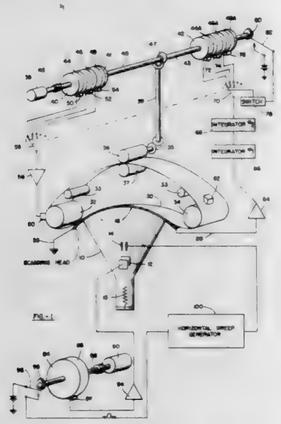
An ultrasonic, electro-optical correlator system is disclosed, of the type wherein a light beam is modulated by two signals transmitted along two delay lines. Correlation is obtained by the resultant two modulations of the light beam. One of the two signals is first reversed on its time axis before being applied to its delay line, and in this way the correlation output is obtained with reference to the entire lengths of the delay lines. A similar system is used to reverse the time axis of said one signal.

3,432,648
CROSS-CORRELATOR
Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,859
U.S. Cl. 235—181 **15 Claims**
Int. Cl. G06g *7/19, 7/18;* **G06f** *15/34*



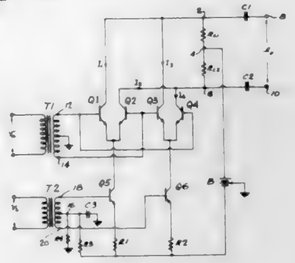
This invention pertains to methods and apparatus for multiplying together two distinct functions which may be of arbitrary nature. It is particularly useful in the cross-correlation of two functions. One time function is recorded magnetically on tape on a constant width track and a second time function is prepared with a "displacement-time delay line" and a potentiometer or masking means. Very fine insulated wire is wound on a strip of insulating material to form a wire-wound potentiometer strip, over which is passed a strip of magnetic tape with a time function magnetically recorded. Each turn will generate a voltage representing function; all the voltages generated in all the turns are summed and taken off. These voltages are delayed in time by an amount depending on the spacing of the turns and the velocity of the tape. To correlate, the outputs of each turn are multiplied by the other function by means of a magnetic mask having an appropriate contour. Provision is made for introducing both positive and negative values of the second function by preparing two strips of wire-wound inductors with appropriate directions of turns and connections, and using masks of magnetic material with openings cut in the surface.

3,432,649
CORRELATING SYSTEM
Ralph A. Landrum, Jr., Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,503
U.S. Cl. 235—181 **10 Claims**
Int. Cl. G06g *7/19;* **G06f** *15/34*



This invention concerns a novel system for correlating one function with a second function. A first function is placed on an image storage means where the image is displayed for several minutes. A photoconductive material is placed on the face of the image storage means such that the pattern of the image storage means makes a conductive pattern on the conductive material of the same shape as the image on the image storage means. The second time function is placed on magnetic tape. The tape is moved by and in close contact with the photoconductive material. Conductors are in contact with the photoconductive material and lead to integrating and recording means so that in effect as the two functions are moved with respect to each other, they are correlated.

3,432,650
SIGNAL MULTIPLIER PROVIDING AN OUTPUT SIGNAL SUBSTANTIALLY FREE OF COMPONENTS PROPORTIONAL TO THE INDIVIDUAL INPUT SIGNALS
Gordon Bruce Thompson, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Nov. 10, 1964, Ser. No. 410,121
U.S. Cl. 235—194 **14 Claims**
Int. Cl. G06g *7/16*



One of the two input signals to be multiplied is applied in its positive and its negative form to the bases of a first and a second transistor, respectively. The emitters of both a third and a fourth transistor are connected to the collector of the first transistor, while their collectors are connected to the two ends of a load resistor across which the output signal is generated. Similarly, the emitters of both a fifth and a sixth transistor are connected to the collector of the second transistor, while the collector of the fifth transistor is connected to the collector of the third transistor and the collector of the sixth transistor to that of the fourth transistor. The second input signal is applied in its positive form to the bases of the third and the sixth transistors and in its negative form to the bases of the fourth and the fifth transistors. The emitters of both the first and the second transistors are connected to a centre tap of the load resistor. Biasing is applied to operate the first and the second transistors in their most linear operating range and the third to sixth transistors in their most exponential range.

3,432,651
APPARATUS TO GENERATE CURVES BY ELEMENTAL ARCS
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed June 5, 1964, Ser. No. 372,768
Claims priority, application France, June 13, 1963, 938,052
U.S. Cl. 235—197 **3 Claims**
Int. Cl. G06g *7/26*

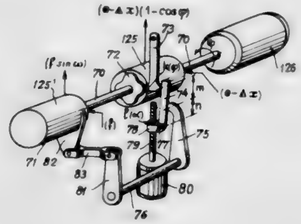
An apparatus for generating a curve by means of elemental arcs, wherein each elemental arc is defined by the coordinates of its terminal points and of the intersection point of the two tangents thereto. The apparatus comprises an analogue computer formulating quantities representing successive points of each elemental arc by translating a parametric equation whose terms are bound up with the aforesaid coordinates, said parametric equation taking the form:

$$x=(X_B-X_T)(1-\cos\varphi)+(X_T-X_A)\sin\omega$$
$$y=(Y_B-Y_T)(1-\cos\varphi)+(Y_T-Y_A)\sin\omega$$

where $\omega=\varphi+k(\varphi)l(\alpha)$ and in which

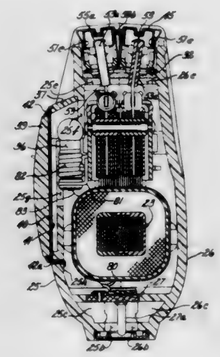
$$X_A, X_B, X_T, Y_A, Y_B, Y_T$$

are the Cartesian coordinates of the limit points A–B of each elemental arc and of the intersection point T of



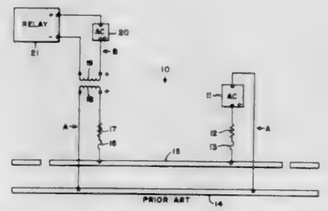
the tangents to said arc at A and B, φ is a parametric angle variable between 0 and $\pi/2$, α the angle subtended by the tangents TA, TB, $l(\alpha)$ a coefficient varying from 0 to 1 as α varies from 90 to 180°, and $k(\varphi)$ a function representing the angular difference between the two vector radii of a quadrant drawn to the points of intersection of said quadrant with two lines parallel to the quadrant marginal radii, drawn from a locus point of the parabolic arc which circumscribes that quadrant and whose tangents at its extremities are the same as those of the quadrant.

3,432,652
ILLUMINATED ELECTRIC SHAVER
Albert R. Spohr, Park Ridge, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Application June 21, 1965, Ser. No. 465,472, now Patent No. 3,272,998, dated Sept. 13, 1966, which is a division of application Ser. No. 286,248, June 7, 1963, now Patent No. 3,218,708, dated Nov. 23, 1965. Divided and this application Apr. 26, 1966, Ser. No. 545,460
U.S. Cl. 240—2 **6 Claims**
Int. Cl. F21v *33/00*



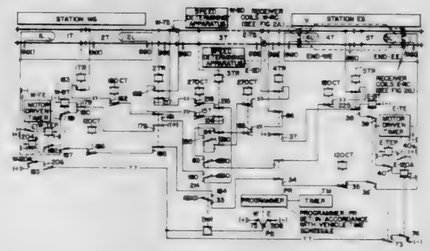
An electric shaver having a light supported within the shaver housing on the motor and being provided with a combined lens and medallion mounted on the outside of the housing.

3,432,653
SELF-ADJUSTING TRACK CIRCUITS
Fred H. Winks, 434 78th St., Brooklyn, N.Y. 11209, and Henry G. Wanser, R.F.D. 1, Rte. 22, Brewster, N.Y. 10509
Filed July 14, 1966, Ser. No. 565,151
U.S. Cl. 246—34 **2 Claims**
Int. Cl. B61l *21/00*



Our invention relates to track circuits and more specifically to a self-adjusting track circuit which will compensate for track current losses due to moisture causing a current leakage or current seepage from rail to rail.

3,432,654
VEHICLE REMOTE CONTROL SYSTEM
Simon Reich, Rochester, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed June 5, 1961, Ser. No. 114,748
U.S. Cl. 246—187 **8 Claims**
Int. Cl. B61l *3/00*



1. In a system for controlling a passenger vehicle equipped with doors during the stopping of said vehicle adjacent a wayside station, the combination of, motion detector means responsive to the speed of said vehicle effective to register whether or not said vehicle is in motion, position registering means partly on the wayside and partly on the vehicle responsive to said motion detector means effective to register whether or not said vehicle when stopped is at a predetermined position adjacent said wayside station, and door operating means responsive to the registration of said position registering means effective to open said vehicle doors during the station stop only provided that said vehicle has stopped at said predetermined position.

3,432,655
METHOD FOR VAPORIZING ELEMENTS BY IGNITING A MIXTURE INCLUDING THE ELEMENT
Alexis A. Venghiattis, Weston, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
No Drawing. Filed July 19, 1966, Ser. No. 566,244
U.S. Cl. 250—43.5 **11 Claims**
Int. Cl. G01n *21/26*

1. In an atomic absorption spectroscopic analysis of the type in which a radiant energy beam, including a discrete wavelength at which an element of interest absorbs

energy in its atomic state, is passed through a sample material in an atomized state, and the absorbed energy within a spectral band including said discrete wavelength is detected as a measure of the amount of said element of interest present, the improvement comprising:

mixing an original sample material with a substantial quantity of a pyrophoric substance;

placing the resulting sample pyrophoric substance mixture directly under the path of said radiant energy beam;

igniting said mixture so as to cause the resulting flame, including atomized particles of said element of interest, to be traversed by said radiant beam,

and determining the amount of radiation at said discrete wavelength absorbed by said flame while said mixture is burning.

3,432,656

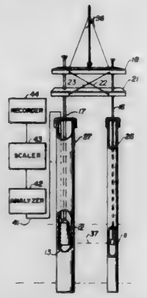
GAGE DEVICE FOR MEASUREMENT OF DENSITY PROFILES OF SNOWPACK

James L. Smith, Pleasant Hill, and Donald W. Willen, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 25, 1966, Ser. No. 597,150

U.S. Cl. 250—43.5 **10 Claims**

Int. Cl. G01t *1/16;* **G01n** *23/08*



The gage device of the invention disclosed herein comprises probe means including a radioisotope gamma radiation source and a gamma radiation detector arranged for continuous simultaneous movement along transversely spaced parallel pathways provided in a solid moisture containing deposit. The source and detector are proportioned in such a manner that a portion of the gamma radiation from said source directly traverses successive narrowly defined volume portions of said deposit so that the intensity of said direct transmission gamma radiation is a measure of the density of moisture in said volume portion. Means are provided for discriminating against indirectly transmitted radiation, for determining the intensity of directly transmitted radiation and for continuously plotting intensity variations correlatively with the changing position of said probe in said deposit as a measure of the moisture distribution therein.

3,432,657

X-RAY HELICAL SCANNING MEANS FOR DISPLAYING AN IMAGE OF AN OBJECT WITHIN THE BODY BEING SCANNED

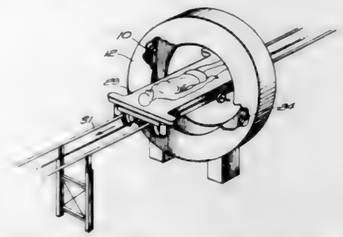
Peter Edmond Slavin, Winchester, Mass., assignor to Intelligent Instruments, Inc., Woburn, Mass., a corporation of Massachusetts

Filed July 6, 1965, Ser. No. 469,505

U.S. Cl. 250—53 **17 Claims**

Int. Cl. G01n *23/04*

A stereoscopic image is obtained from an X-ray scanning instrument in which the patient is moved along the axis of a rotating X-ray source with an X-ray receiver located oppositely the source and rotating with it to generate a helical scanning motion with respect to the patient. The X-ray receiver generates electrical signals which are recorded on magnetic tape and the tape is employed to



operate a stereo video system. A compact particle accelerator employing a revolving electrical field is provided for producing highly directional and monochromatic X-ray beams.

3,432,658

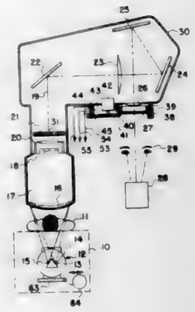
STEREOSCOPIC X-RAY APPARATUS EMPLOYING IMAGE CONVERTING AND POLARIZING MEANS

Joseph G. Quinn, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York

Filed May 26, 1966, Ser. No. 553,063

U.S. Cl. 250—60 **10 Claims**

Int. Cl. H01j *37/22;* **G01n** *23/04*



Successive X-ray images are taken at slightly different angles through an object and are converted to light images on the phosphor of an image intensifier. A stationary orthogonal polarizer and a rotating analyzer are interposed in the image path between the phosphor and the eyes of the observer so that each eye sees images which have been polarized differently. Retention by the eyes of the successive images gives the impression of viewing the object from different angles simultaneously, in which case a stereoscopic effect is produced. The observer does not have to wear polarizing glasses.

3,432,659

X-RAY DETECTOR SYSTEM FOR DETERMINING PLASMA ELECTRON TEMPERATURE

Raymond C. Elton, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy

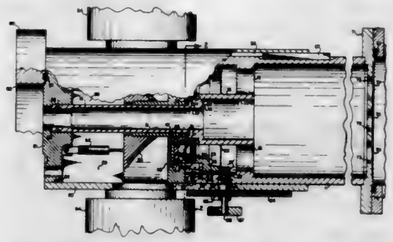
Filed May 26, 1966, Ser. No. 553,607

U.S. Cl. 250—71.5 **11 Claims**

Int. Cl. H01j *39/18;* **G01t** *1/20*

This device is directed to a system for simultaneously measuring X-rays emitted from a high temperature plasma source by using four separate measuring channels each of which has a thin metallic foil through which the X-rays pass. The four channels are positioned about the axis of the system such that X-rays may also pass through

the device along the axis to be detected by a vacuum spectrograph or a mass spectrometer. The radiation passes through each of the foils striking a scintillator material which gives off light that is detected by separate photo detectors. The foils are mounted onto a rotatable



wheel that contains twelve different foils, thus each detector may be used to detect X-rays that pass through one each of three foils that may be rotated into place. The X-ray signals are compared to determine the electron temperature of a plasma above two million degrees.

3,432,660

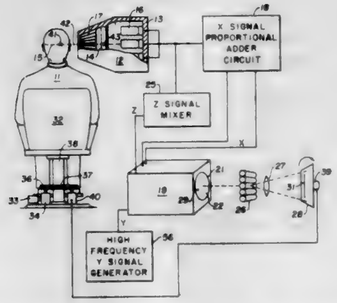
GAMMA-RAY CAMERA FOR IMAGING RADIOISOTOPE DISTRIBUTION IN A TRANSVERSE SECTION OF A ROTATING SUBJECT

Hal O. Anger, Berkeley, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 10, 1968, Ser. No. 720,174

U.S. Cl. 250—71.5 **6 Claims**

Int. Cl. G01t *1/20;* **H01j** *39/18;* **G01n** *21/00*



A radiation detector for showing the distribution of a radioactive substance in a transverse section through a subject uses a radiation camera with an oscillographic readout means. The subject is rotated while viewed by the radiation camera which is focused in the plane of the section and unfocused in the transverse plane. An image of scintillations detected in the camera is formed on an oscilloscope and projected through a cylindrical lens onto a photographic film rotated in synchronism with the subject.

3,432,661

APPARATUS FOR EXAMINING THE INTERNAL STRUCTURE OF A BODY

William Lloyd Hodgkinson, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England

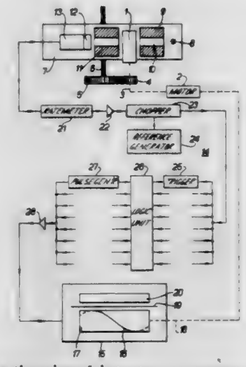
Filed Mar. 4, 1965, Ser. No. 437,182

Claims priority, application Great Britain, Mar. 11, 1964, 10,187/64

U.S. Cl. 250—83.3 **8 Claims**

Int. Cl. G01t *1/16*

In apparatus for examining the internal structure of a body an electric signal is derived in dependence on alpha, beta, gamma or some other radiation passing through the body. This signal is supplied to a facsimile recorder to produce a pictorial representation by way of an amplifier



which quantises the signal into two or more predetermined amplitudes. Instead of having a continuous variation of tone therefore the representation has a discrete number of different tones.

3,432,662

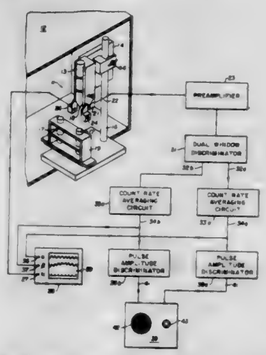
AUTOMATIC SEPARATION COLUMN PRODUCT ANALYZER

Robert J. Walker, Walnut Creek, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 31, 1966, Ser. No. 591,378

U.S. Cl. 250—83.1 **2 Claims**

Int. Cl. G01t *3/00;* **H01j** *39/32*



An automatic separation column product analyzer comprising:

(a) a radiation detector movable along the length of said column;

(b) an amplifier;

(c) a pulse-height discriminator;

(d) a count rate averaging circuit; and

(e) signal amplitude indicating means.

3,432,663

HIGH VOLTAGE STORAGE MODULE, PULSE GENERATOR AND SYSTEM

Robert L. Anderson, Walter P. Dyke, Frank J. Grundhauser, and J Kenneth Trolan, McMinnville, Oreg., assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon

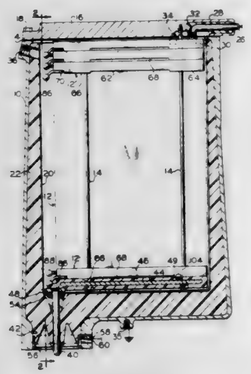
Filed Sept. 30, 1964, Ser. No. 400,392

U.S. Cl. 250—98 **9 Claims**

Int. Cl. H05g *1/24;* **F23q** *7/02;* **H05b** *41/36*

A high energy electrical pulse generation system is described in which fifteen pulse generator units are simul-

taneously discharged in parallel through a common load to produce a final output pulse of 300 kilovolts and 75,000 amperes having a rise time of 8 nanoseconds and a width of 50 nanoseconds. The pulse generator units each include a plurality of storage modules containing artificial transmission lines formed by capacitors and inductors embedded in elongated rectangular blocks of plastic having two spark gap electrodes extending from one end which are directly attached to the plates of the output capacitor and provide a plurality of spark gaps positioned in a common light path. Ultraviolet light is transmitted from a



single source through a window in the housing of each pulse generator unit to one of its spark gaps in order to cause all of the spark gaps to break down substantially simultaneously. This discharges the transmission lines in series to produce pulses of 300 kilovolts and 5000 amperes with a rise time of about 5 nanoseconds at the outputs of the units at approximately the same time in order to form the final output pulse of the system across the common load. The common load can be an exploding wire or an electron discharge device, such as an X-ray tube having a field emission cathode.

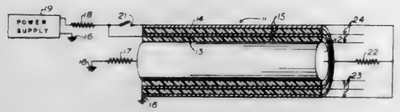
3,432,664

HIGH VOLTAGE FIELD-REVERSAL PULSE GENERATOR USING A LASER SWITCHING MEANS TO ACTIVATE A FIELD EMISSION X-RAY TUBE

James Berkeley Robison, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 10, 1964, Ser. No. 410,328

U.S. Cl. 250—98 **8 Claims**
Int. Cl. H05g *1/24*



A fast high voltage, high current pulse generator wherein high voltage on a first insulated elongated conductor disposed between second and third similar concentric conductors is switched to an end of the second conductor, providing an electric field reversal and generation of a high voltage, high current pulse at the ends of said second and third conductors.

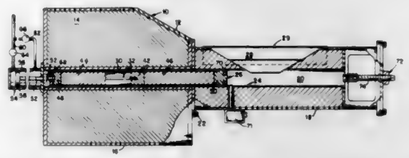
3,432,665

IRRADIATION DEVICE FOR PROVIDING A CONSTANT DOSE RATE

Harry E. Kimble, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 15, 1967, Ser. No. 617,018

U.S. Cl. 250—106 **5 Claims**
Int. Cl. G21h *5/00;* **G21f** *1/00*



A constant level dose rate from a radiation source is provided over a period of time which may correspond to a duration substantially greater than the half-life of the source. The source size is increased by as much as several factors over the size of a source required for the desired dose rate. A sufficiently large portion of this bigger source is then exposed at a window in a housing containing radiation moderating material to provide the desired dose rate and, as the dose rate decreases due to natural decay, a greater portion of the source is moved to the window to provide and maintain the constant level dose rate.

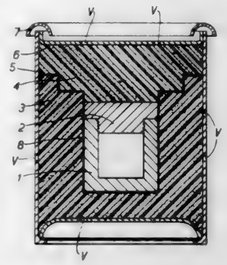
3,432,666

CONTAINERS FOR TRANSPORTING RADIOACTIVE AND/OR FISSILE MATERIALS

Geoffrey James Chetewoode Nash, Dorchester, Dorset, and Keith Harding, Weymouth, Dorset, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 12, 1965, Ser. No. 439,408
Claims priority, application Great Britain, Mar. 13, 1965, 10,719/64

U.S. Cl. 250—108 **7 Claims**
Int. Cl. G21f *5/00*



A transport container for radioactive material comprising a casing which includes a radiation attenuating substance dispersed in a matrix including a moderator material, the substance also affording fire protection for the container. Fire protection is achieved by employing a hydrated salt of boron which absorbs heat as its water of crystallization is driven off through vent holes in a layer surrounding the casing.

3,432,667

BOREHOLE FLUID EXCLUDER RELEASABLY COUPLED TO BOREHOLE TOOL

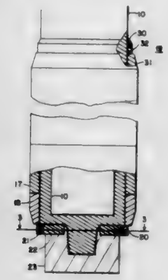
Richard L. Caldwell, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Apr. 12, 1965, Ser. No. 447,263

U.S. Cl. 250—108 **5 Claims**
Int. Cl. G21f *5/00, 7/00, 9/00*

The specification discloses a borehole fluid excluder releasably coupled to a borehole tool to allow the tool

to be retrieved from the borehole in the event the excluder becomes lodged therein. In the emobdiment disclosed, the fluid excluding system is supported by a lower member which is coupled to the tool by shear pins. In



the event the excluder becomes lodged in the borehole, an upward force on the tool causes the pins to break, thereby allowing the tool to be pulled through the excluder and out of the borehole.

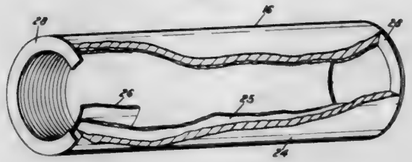
3,432,668

PHOTOMULTIPLIER HAVING WALL COATING OF ELECTRON EMITTING MATERIAL AND PHOTOCONDUCTIVE MATERIAL

John R. Davy, John M. Ballantine, and William B. Allan, all of Caxton St., Anniesland, Glasgow W3, Scotland

Filed Oct. 14, 1966, Ser. No. 586,737
Claims priority, application Great Britain, Oct. 15, 1965, 43,912/65

U.S. Cl. 250—207 **9 Claims**
Int. Cl. H01j *39/12*



An electron multiplier having varying amplification including a tube provided on the inner surface with a coating of electron-emitting material with the input end of the tube being provided with a second layer of photoconductive material so that amplification of an electron stream passing through the tube is dependent upon the amount of light striking the photoconductive material.

3,432,669

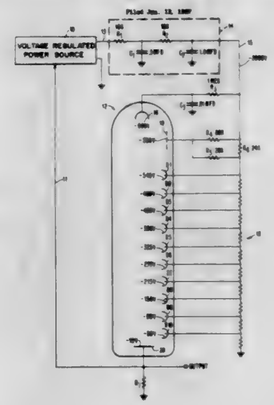
NOISE CANCELLATION CIRCUIT FOR A PHOTOMULTIPLIER TUBE

William A. Radke, Pleasanton, Calif., and John F. Schomburg, Stony Point, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 12, 1967, Ser. No. 609,992

U.S. Cl. 250—207 **3 Claims**
Int. Cl. H81j *39/12, 39/14*

A photomultiplier tube circuit which isolates the cathode current supply from the dynode power supply with a resistor substantially larger than component resistors in the dynode voltage divider and provides a filter capacitor only between the cathode and ground effectively eliminates the power supply ripple from the anode circuit of the photomultiplier tube. This occurs because the cathode to the first dynode noise voltage is approximately equal to N (where N is one less than the number of



dynodes) times the magnitude of any other interdynode noise, and is of opposite polarity thereto, which polarity relatively provides substantial cancellation of any voltage supply ripple.

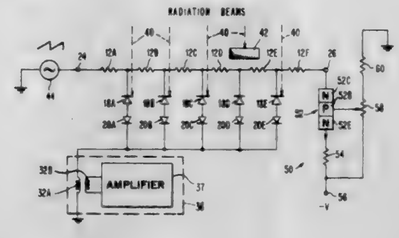
3,432,670

RADIATION SCANNER EMPLOYING CONSTANT CURRENT MEANS

Herbert Dym, Mahopac, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

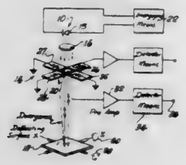
Filed Dec. 28, 1964, Ser. No. 421,425

U.S. Cl. 250—211 **5 Claims**
Int. Cl. H01j *39/12*



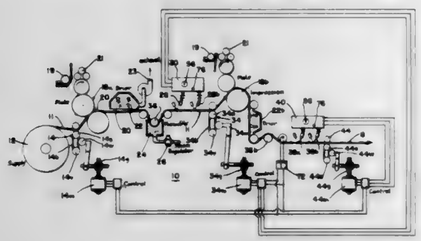
This invention relates to scanners of patterns of radiant energy and more particularly to improved drive circuits for such scanners wherein the driving signals are isolated from the derived signals. The radiation scanner described in the disclosure includes a plurality of pairs of back to back diodes which are connected on one side to a detector circuit which is responsive to changes in current. The other side of each diode pair is connected to a voltage divider circuit which has connected thereto a constant current means for providing a constant bias voltage across the voltage divider. A drive signal is also connected to the voltage divider circuit. At least one diode in each pair has photoconductive properties. When radiation is directed at one or more of the diode pairs, they tend to conduct, however, they are prevented from conducting by the fact that one diode in each diode pair is back-biased. The drive signal varies in time and overcomes the back bias of each diode pair in sequence, thereby allowing the diode pairs exposed to the radiation to conduct. The detection circuit is isolated from the drive signal and bias signal and, therefore, noise is eliminated from the detected signal.

3,432,671
SOLID STATE OPTICAL PICKOFF EMPLOYING PLANAR CRUCIFORM DETECTOR
Thomas Rhys Edmonds, Woodland Hill, Calif., assignor to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Apr. 14, 1965, Ser. No. 448,012
U.S. Cl. 250—217 3 Claims
Int. Cl. G02f *1/34*



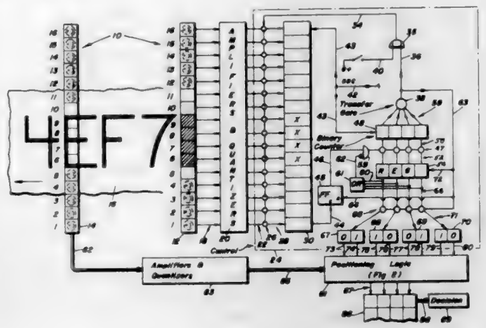
A solid state sensor employing an array of photocells in a cruciform configuration and forming an aperture. The array of photocells is centered on an optical axis which also has a solid state radiant energy source and reflecting surface located thereon.

3,432,672
PHOTOELECTRIC WEB REGISTRATION CONTROL INCLUDING TWO PHOTOCELLS WHICH GENERATE OPPOSITE POLARITY SIGNALS THAT TERMINATE SIMULTANEOUSLY
Al I. Bessonny and Howard Bowen, Evanston, Ill., assignors to Machine-O-Matic, Inc., Evanston, Ill., a corporation of Illinois
Filed Mar. 4, 1965, Ser. No. 437,063
U.S. Cl. 250—219 10 Claims
Int. Cl. G01n *21/30*; H01j *39/12*



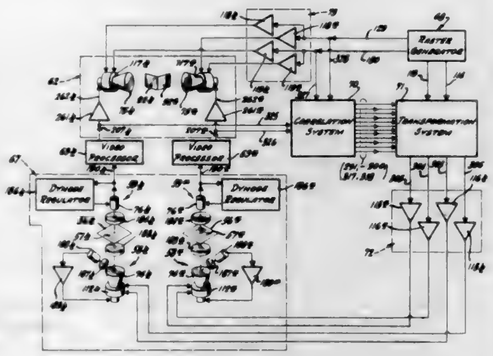
The specification describes an automatic web registration control for use with printing presses and the like which require precision regulation through mutiple processes of the elastic web containing gauging indicia. The illustrated embodiment comprises a pair of photocells spaced apart by the normal distance between a pair of indicia and a pair of pulse generation circuits for generating a pair of pulses of opposite polarity, one for each of the photocells, each initiated when its respective photocell responds to a gauging mark. The control also contains a timer initiated by the first generated pulse which simultaneously terminates both pulses. If the web is out of registration, the durations of the pulses will be different and this is detected by adding them. The output pulse will have the polarity of the longer of the pair of pulses and its duration will be a function of the magnitude of the loss of registration. The output pulse is then transmitted to the web tension rollers, humidifiers and driers to control web length and registration. Modifications are also suggested.

3,432,673
LINE TRACKING READING MACHINE HAVING MEANS TO POSITIONALLY NORMALIZE THE CHARACTER-VIDEO SIGNALS
Lyle W. Mader, Olney, Md., assignor to Control Data Corporation, Rockville, Md.
Filed Oct. 6, 1967, Ser. No. 673,314
U.S. Cl. 250—219 9 Claims
Int. Cl. G01n *21/30*



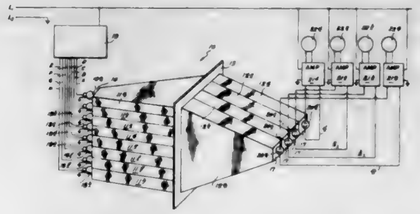
An optical character reading machine having a scanner whose field of view is appreciably taller than the vertical size of a line of print to provide large vertical registration tolerance and to enable the machine to scan severely skewed lines of print. A simple, high speed logic network positionally normalizes the character-video signals of the scanner so that the machine disregards substantially all of the signals originating from the field of view except those pertaining to the characters. The logic network positionally normalizes the video signals at exceptionally high speed in comparison to prior normalizing techniques.

3,432,674
PHOTOGRAPHIC IMAGE REGISTRATION
Gilbert L. Hobrough, Los Altos, Calif., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,502
U.S. Cl. 250—220 22 Claims
Int. Cl. H01j *39/12*



5. In an automatic registration instrument, a pair of scanner means for use in respectively scanning a pair of images, a pair of detection systems respectively arranged with said scanner means for receiving the scanning beams therefrom as such beams are respectively modulated by such images and for respectively developing electrical signals in response thereto, a pair of viewing means respectively connected with said detection systems for receiving such signals therefrom and for developing in response thereto reproductions of the respective images, a raster generator for developing the rasters for each of said scanner means and also said viewing means a correlation system for sensing any misregistration between such images and for developing error signals in response thereto, and a transformation system connected with said correlation system for transforming the raster of one of said scanner or viewing means in response to such error signals to effect transformations of the raster of said one scanner or viewing means and thereby accomplish registration of the image reproductions developed by said viewing means.

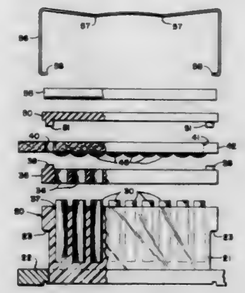
3,432,675
OPTICAL PROGRAMMING WITH CROSSED LIGHT GUIDES
S Kingsley Roby, P.O. Box 204, West Church Road, Saddle River, N.J. 07458
Filed Sept. 15, 1965, Ser. No. 487,529
U.S. Cl. 250—227 10 Claims
Int. Cl. H01j *5/16*; G01n *21/30*; G02b *5/14*



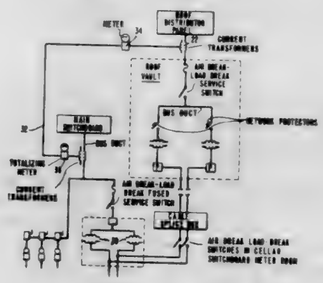
1. In an optical programming device, the combination of a plurality of first light conducting elements each having input and output ends, means disposed adjacent said input ends of said first elements and being operative to selectively direct light into the input end of each of said first elements for transmission through the element to the output end thereof, a plurality of second light conducting elements each having input and output ends and being adapted to receive light at the input end for transmission through the element to the output end thereof, said first light conducting elements having their output ends disposed adjacent the input ends of said second light conducting elements, said output end of each of said first elements having areas thereof registering with areas of the input ends of all of said second elements so that each of said second elements is adapted to receive light from all of said first elements, light sensitive control means disposed adjacent said output end of each of said second elements and being operable by light conducted through the respective second element from any one of said first elements, and a masking member disposed between said output ends of the first elements and said input ends of the second elements, said masking member having opaque and transparent areas to selectively determine which of said second elements receive light from each of said first elements.

3,432,676
HOUSING FOR LIGHT SENSITIVE DEVICES COMPRISING LIGHT-CONDUCTING TUBES IN TRANSPARENT PLASTIC SUPPORT BLOCK
Arthur F. Lindberg, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Oct. 5, 1966, Ser. No. 584,557
U.S. Cl. 250—239 13 Claims
Int. Cl. H01j *5/02*

A housing for light sensitive devices including a support block formed from a transparent material and having a plurality of parallel, blind holes formed in it; a plurality of hollow, blackened tubes each mounted in one of the blind holes in the support block and extending from the block a predetermined distance; a gasket having a thickness greater than the predetermined distance and having a plurality of holes formed in it mounted on the support block with each of the tubes extending into one of the holes in the gasket; a plurality of light sensitive devices mounted on the gasket and each extending into one of the holes therein; a printed circuit board attached to the photosensitive devices for supporting the devices in engagement with the gasket; a second gasket mounted on the printed circuit board; a saddle member mounted on the second gasket, and a spring clip mounted on the saddle member and attached to the support block for joining the components of the housing into a unitary structure.



3,432,677
POWER SYSTEM FOR HIGH RISE APARTMENT BUILDINGS
Gilbert Meyers, 2497 Williams Court, Bellmore, N.Y. 11710
Filed Mar. 25, 1965, Ser. No. 442,738
U.S. Cl. 307—17 5 Claims
Int. Cl. H02j *3/00*; H01b *7/30*; H02g *15/02*



A high tension electrical wiring system for a high-rise building comprising a basement transformer vault and a roof transformer vault with a concrete elevator shaft extending between the basement and the roof. A hollow conduit is integrally encased in the concrete of the elevator shaft. At least one borehole cable extends the full length of the conduit from the basement to the roof and is electrically connected to the transformer vaults. A support beam overlies the conduit. Pothead means are secured to the beam for supporting the borehole cable so that the borehole cable extends the full distance vertically between the lower transformer vault and the upper transformer vault without the use of cable support boxes.

3,432,678

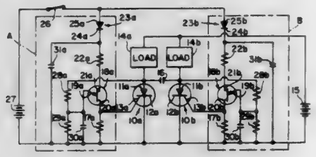
CONTROL CIRCUIT FOR SEQUENTIALLY TRIGGERING A PLURALITY OF SILICON CONTROLLED RECTIFIERS UPON SEQUENTIAL ACTUATIONS OF A SWITCH

Frank William Douglas Landor Larson, Montreal, Quebec, Canada, assignor to St. Regis-Consolidated Packaging Limited, Montreal, Quebec, Canada

Filed Mar. 1, 1965, Ser. No. 436,020

U.S. Cl. 307—38 **13 Claims**

Int. Cl. H02j *3/14*



A control circuit having a switch which, upon being closed and subsequently opened, switches a source of voltage from one load to another. Each load is connected in series with a different SCR and each SCR is adapted to be triggered by an associated unijunction transistor circuit. Commutating means are provided to ensure that a different unijunction transistor circuit is made operative each time to thereby trigger a different SCR upon each switch opening.

3,432,679

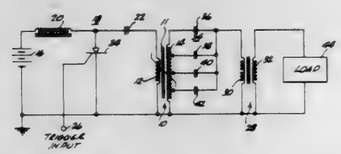
MAGNETIC PULSE MODULATOR

Lawrence H. O'Brien, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 31, 1964, Ser. No. 341,631

U.S. Cl. 307—88 **7 Claims**

Int. Cl. H01f *27/42, 35/00;* **H03k** *11/00*



In the disclosed magnetic pulse modulator circuit a plurality of capacitors are directly connected to different points along the secondary winding of a saturable core transformer for forming in conjunction with the secondary winding a pulse forming delay line. A resonant charging network periodically drives the transformer saturable core to a first saturated condition, and a trigger pulse responsive electronic switch periodically causes the resonant charging network to transfer energy through the transformer to the delay line capacitors, while driving the saturable core through an unsaturated condition to a second saturated condition opposite to the first saturated condition.

3,432,680

PARAMETRON LOGICAL COMPUTER DEVICE

Eiichi Goto, Meguro-ku, Tokyo-to, Japan, assignor to Zaidan Hojin Parametron Kenkyusho (known as Parametron Institute), Tokyo-to, Japan

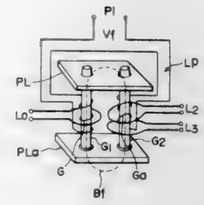
Filed Dec. 20, 1963, Ser. No. 332,130

Claims priority, application Japan, Dec. 31, 1962, 37/60,098; May 21, 1963, 38/25,445

U.S. Cl. 307—88 **16 Claims**

Int. Cl. H01f *27/26*

Transformer-like parametron coupling device with input and output circuits electromagnetically coupled to each other and a third circuit coupled to both the input and output circuits for applying an exciting current. Stacked



boards defining a closed magnetic path achieve electromagnetic coupling of the circuits.

3,432,681

OSCILLATION CIRCUITS CONTROLLED WITH FERROMAGNETIC THIN FILMS

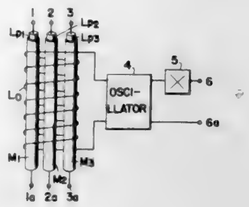
Shintaro Oshima, Musashino-shi, and Tetsusaburo Kamibayashi, Kitaadachi-gun, Saitama-ken, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Mar. 9, 1964, Ser. No. 350,431

Claims priority, application Japan, Mar. 11, 1963, 38/10,978; Dec. 9, 1963, 38/65,923; Jan. 14, 1964, 39/1,340

U.S. Cl. 307—88 **6 Claims**

Int. Cl. H03b *15/00*



An oscillator the start or termination of the oscillation of which is controlled in accordance with a decrease of hysteresis loss of at least one ferromagnetic thin film core associated, through a conductor carried by the core, with the oscillator when at least one magnetic field is applied to the core in the direction orthogonal to the easy magnetization direction of the core. A shift register or logical circuits can be formed by a plurality of the oscillators.

3,432,682

TRIGGERED VOLT-SECOND GENERATOR

Ronald G. Husa, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

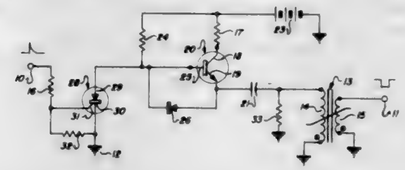
Filed Mar. 4, 1965, Ser. No. 437,331

U.S. Cl. 307—88 **1 Claim**

Int. Cl. H03k *3/45*

An electrical circuit for repetitively producing an output pulse with given volt-second area from a source of input pulses of variable wave shape and pulse width in which a square loop saturable reactor core primary is repetitively switched between its opposite saturation states through separate capacitor charging and discharging circuits, each of which includes the core primary. A silicon controlled rectifier in the capacitor discharge circuit is triggered by an input pulse to initiate core switching and

is thereafter provided with necessary latching current to sustain capacitor discharge whereby output pulses are



generated whose volt-second area is determined by the core characteristics and number of turns on the primary.

3,432,683

SHIFT REGISTER WITH BLOCKING OSCILLATOR STAGES USING OVERSHOOT PULSES AS SEQUENCE TRIGGER PULSES

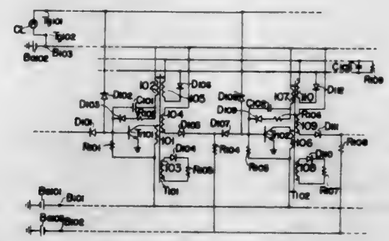
Masao Kawashima, Masakatsu Sakai, and Toshio Kobayashi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki-shi, Japan

Filed Sept. 3, 1965, Ser. No. 484,975

Claims priority, application Japan, Sept. 4, 1964, 39/50,773

U.S. Cl. 307—221 **6 Claims**

Int. Cl. H03k *21/00, 23/08, 23/22*



In a pulse shift register of the type comprising a plurality of one-shot blocking oscillator stages with means to utilize the main overshoot output pulses of one oscillator stage for sequence triggering the next oscillator stage, the overshoot pulses are shaped, as to amplitude and time position in relation to the clock pulses, by a common pulse-shaping network, consisting of a capacitor-resistor parallel circuit and operably connected, via individual diodes, to all the oscillator output stages. Auxiliary shaping circuits, also connected to the oscillator outputs and consisting of a resistor in series with a diode with or without a biasing battery, serve to suppress secondary overshoot pulses of reversed polarity following the main overshoot pulses.

3,432,684

SCR RING COUNTER HAVING SWITCHING MEANS TO SELECTIVELY ELIMINATE STAGE FROM COUNTING SEQUENCE

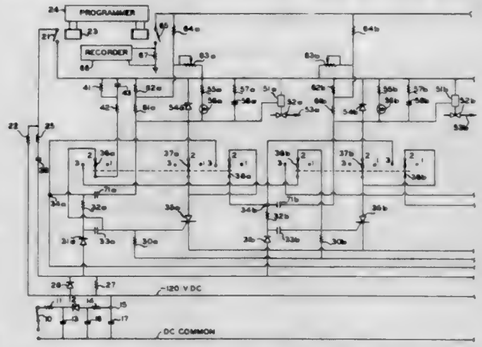
Richard W. Michael and Grady T. Porter, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,643

U.S. Cl. 307—223 **10 Claims**

Int. Cl. H03k *21/30, 23/08, 23/22*

A SCR (silicon controlled rectifier) ring counter is provided with switching means to selectively omit any of the stages from the operation of the counter. An initiating circuit provides a pulse to start operation with a particular stage. Each stage of the counter is provided with a voltage divider and a scaling resistor to provide an identification signal to a recorder. A diode is connected in parallel with the inductive load of each SCR to prevent any inductive kick on turn-off. An RC circuit is connected in parallel with each inductive load to provide for an



initial current flow while the current through the inductive load builds up.

3,432,685

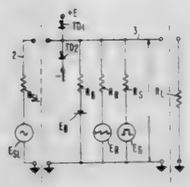
SENSE CIRCUIT FOR BISTABLE MEMORY DEVICES

Paul E. Stuckert, Katonah, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 23, 1964, Ser. No. 398,511

U.S. Cl. 307—231 **5 Claims**

Int. Cl. H03k *5/20, 5/00, 17/00*



The invention relates to a sensing circuit for high speed memories using the principle of pulse position modulation techniques. The circuits used overcome two major difficulties of high speed memories, namely, noise signals that linger from previous "write" operations and the shift in the baseline on which sense signals appear.

3,432,686

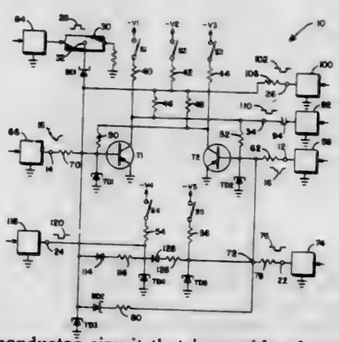
SEARCH MEMORY MATCH LOGIC DETECTOR

Louzelle Albert Luke, Coon Rapids, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,626

U.S. Cl. 307—231 **6 Claims**

Int. Cl. H03k *5/20, 3/26, 3/34*



A semiconductor circuit that is capable of performing

match logic as a detector of a Search memory system and is assigned to the Sperry Rand Corporation.

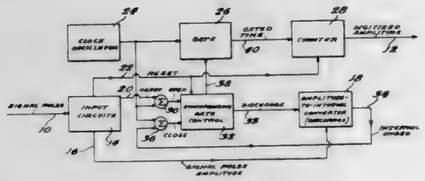
3,432,687

PULSE-COUNTING TIME MEASUREMENT METHOD AND APPARATUS

Thomas Lee Emmer, Oak Ridge, Tenn., assignor to Nuclear-Chicago Corporation, formerly named Searle Nuclear Corporation, Des Plaines, Ill., a corporation of Delaware

Filed June 15, 1965, Ser. No. 464,043

U.S. Cl. 307—229 **9 Claims**
Int. Cl. G06g *7/12, 7/16;* **H03k** *21/00*



A time-interval corresponding to the analog value of pulse amplitude is converted, in a pulse-height analyzer, to a digital value by direct counting of cycles of a clock oscillator. Adjacent-channel resolution loss due to changes in counter sensitivity with recorded count and minor circuit drifts are eliminated by varying the time of transmission of the oscillator signal only in discrete numbers of cycles, the transmission gate being both opened and closed in a portion of the cycle relatively remote from the portion of the cycle which actuates the counter. A particular circuit for operation at frequencies of the order of 50 to 100 megacycles employs tunnel diodes for the gating.

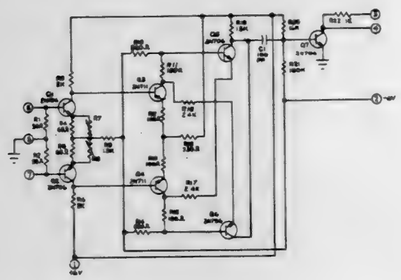
3,432,688

SENSE AMPLIFIER FOR MEMORY SYSTEM

Meyer J. Zola, New Paltz, N.Y., assignor to Ferroxcube Corporation of America, Saugerties, N.Y., a corporation of Delaware

Filed Dec. 21, 1965, Ser. No. 515,421

U.S. Cl. 307—239 **11 Claims**
Int. Cl. H03k *17/00, 5/08*



A sense amplifier for amplifying low level signals and having first and second differential amplifier stages with mutually complementary transistors and a rectifier stage having its input connected directly across the differential output of the second differential amplifier stage.

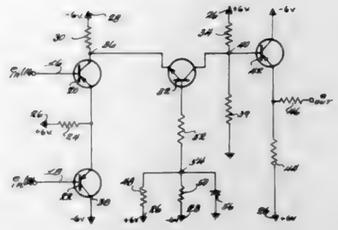
3,432,689

BALANCED LINE PULSE RECEIVER

Warren R. Pratt, White Bear Lake, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed May 20, 1965, Ser. No. 457,369

U.S. Cl. 307—255 **13 Claims**
Int. Cl. H03k *17/00, 17/28;* **H03f** *3/04*



A balanced line pulse receiver which utilizes low supply voltages, which satisfactorily operates in spite of wide variations in the positive and negative supply voltages and which maintains the impedances presented to each conductor of a balanced input line substantially equal to another as transitions occur in the input signal. First and second transistors are provided to receive the balanced input signals and a third transistor is operatively connected to one of said first or second transistors so that the impedances presented to the balanced input signals are maintained substantially equal.

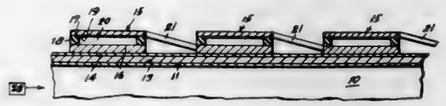
3,432,690

THERMIONIC CONVERSION OF MICROWAVE ENERGY TO DIRECT CURRENT

Alan E. Blume, Scotia, N.Y., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 31, 1966, Ser. No. 576,800

U.S. Cl. 310—4 **4 Claims**
Int. Cl. H02n *11/00*



A device for converting microwave energy to direct current by use of thermionic emission consisting of a waveguide having the inner surface thereof lined with a lossy material whereby the microwave energy exciting the waveguide is converted into heat and a refractory material affixed to the outside surface of the waveguide which serves as the cathode for a thermionic device. The refractory material when heated emits electrons causing current to flow in the thermionic device.

3,432,691

OSCILLATORY CIRCUIT FOR ELECTRO-ACOUSTIC CONVERTER

Andrew Shoh, Ridgefield, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

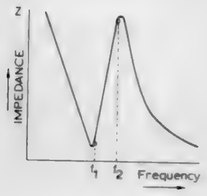
Filed Sept. 15, 1966, Ser. No. 579,673

U.S. Cl. 310—8.1 **20 Claims**
Int. Cl. H02n *11/00*

1. An oscillatory circuit for driving an electro-acoustic converter substantially at parallel resonance comprising:

a load circuit including an electro-acoustic converter having a predetermined natural frequency of oscillation and said load circuit exhibiting a capacitive reactance at said natural frequency;

a driving circuit coupled to said load circuit and including a source of direct current, a switching means for providing pulses of energy from said source, and the series connection of an inductance and a capacitance; said inductance providing an inductive reactance which substantially at the parallel resonance frequency of the converter equals the capacitive reactance of said driving circuit and of said load circuit reflected in said driving circuit, and



a feedback circuit coupled to said switching means for applying thereto an alternating current signal which substantially is in phase with the resistive voltage component across the converter.

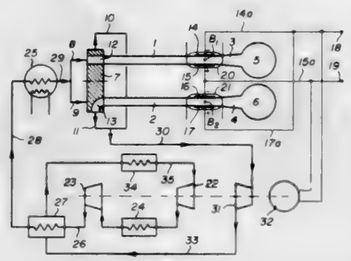
3,432,692

MAGNETO-HYDRODYNAMIC GENERATORS

Jean-Louis Chevalley, Carouge, Geneva, Switzerland, assignor to Eric Brocher, Chenebougerie, Geneva, Switzerland

Filed Aug. 19, 1966, Ser. No. 573,662
Claims priority, application Switzerland, Aug. 26, 1965, 12,015/65

U.S. Cl. 310—11 **4 Claims**
Int. Cl. H02k *45/00*



A magneto-hydrodynamic generator comprising at least one pair of shock tubes is provided, there being a reservoir of working fluid communicating with each tube at one end, a source of heated and compressed auxiliary fluid connected to the other end of the tubes via a cyclically controlled distributor, at least one pair of parallel electrodes arranged within each tube on oppositely arranged wall portions of its inner surface, adjacent the end communicating with the reservoir of working fluid, and means producing in each tube a transverse magnetic field parallel to said electrodes. The distributor is adapted to introduce the auxiliary fluid alternately into the tubes of the pair and to discharge said fluid after a predetermined lapse of time. The electrodes are connected to output terminals so as to obtain an alternating voltage whose period is formed by two alternations each produced by one tube of the pair.

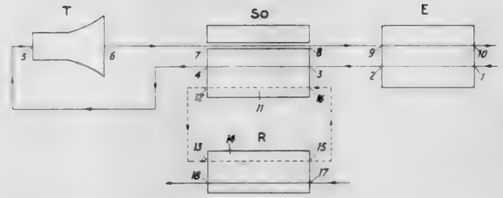
3,432,693

PROCESS AND APPARATUS FOR OVEROXIDISING THE AIR SUPPLIED TO THE BLOWPIPE OF A MAGNETOHYDRODYNAMIC CONVERSION PLANT

Jean Fabre and Jacques F. Millet, Paris, France, assignors to Electricite De France Service National, Paris, France, a company of France

Filed Jan. 17, 1967, Ser. No. 609,800
Claims priority, application France, Feb. 10, 1966, 49,114; June 30, 1966, 67,696

U.S. Cl. 310—11 **7 Claims**
Int. Cl. H02k *45/00;* **G21d** *7/02*



The present invention relates to a process and apparatus for supplying air previously overoxidised to a blowpipe of a magnetohydrodynamic conversion plant directly transforming thermal energy into electrical energy, the oxygen for enriching the feed air emanating from the decomposition at elevated temperature of metal oxides of polyvalent metals accompanied by the formation of lower oxides which are reoxdised by the oxygen in the surrounding air in order to re-supply the air fed to the blowpipe with enriching oxygen.

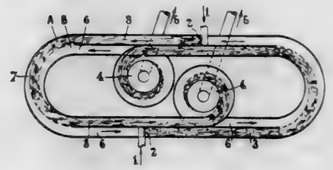
3,432,694

MAGNETOHYDRODYNAMIC GENERATOR

René Bidard, Paris, France, assignor to Compagnie Electro-Mecanique, Paris, France, a corporation of France

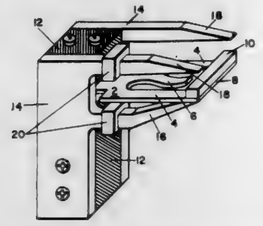
Filed July 14, 1966, Ser. No. 565,202
Claims priority, application France, July 23, 1965, 25,784

U.S. Cl. 310—11 **7 Claims**
Int. Cl. H02n *4/02*



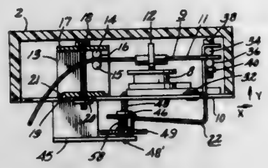
1. In an apparatus of the magnetohydrodynamic type for effecting a transfer of energy from thermal to electrical or vice versa, means establishing a plurality of magnetohydrodynamic loops entirely within a magnetic field and wherein an emulsion of gas in an electrically conductive liquid is caused to flow in said loops, means effecting a transfer of the gas only from one loop to another the energy distribution over said plurality of loops being evolved each at substantially constant temperature and between two pressures, the low pressure of one loop being substantially equal to the high pressure of another loop with the exception of a minor pressure change utilized in the transfer of the gaseous component from one loop to another, and means injecting an electrically conductive liquid into the loops for regulating the respective temperatures thereof.

3,432,695
INTERMITTENT MOTION DEVICES
John C. Sims, Jr., Sudbury, Mass., assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Oct. 10, 1966, Ser. No. 585,397
U.S. Cl. 310—15 9 Claims
Int. Cl. H02k 33/00, 35/00; H01f 7/08



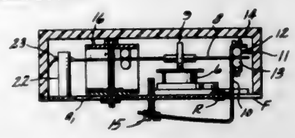
1. An intermittent motion device comprising, in combination:
a rotatable member upon which a rotational force is applied; the member containing at least one rotation-interrupting portion;
control means capable of assuming a motion-impeding position wherein the rotation-interrupting portion of the rotatable member is engaged by the control means, and capable of assuming a motion-permitting position when the rotation-interrupting portion of the rotatable member is not engaged by the control means;
the control means comprising a flexible member which is cocked by the rotation-interrupting portion of the rotatable member when the control means is in the motion-impeding position to exert a force on the control means toward the motion-permitting position, and a magnetic element which controls the position of the control means;
means for establishing a fixed magnetic field to attract the magnetic element for providing a force on the control means toward its motion-impeding position, said force exceeding the cocking force;
and means for selectively establishing a temporary magnetic field in opposition to the fixed magnetic field for counteracting the fixed magnetic field, enabling the cocking force to move the control means toward its motion-permitting position.

3,432,696
TORSION WIRE TENSION SPRING FOR A BATTERY-OPERATED CLOCK
Harry Albinger, Jr., Ashland, Mass., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 522,198, Jan. 21, 1966. This application May 18, 1967, Ser. No. 639,398
U.S. Cl. 310—36 5 Claims
Int. Cl. H02k 33/00, 33/02



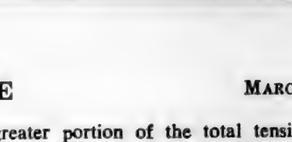
An electronic torsion wire clock wherein one of the ends of a torsion wire is connected to a unique leaf spring construction for adjusting the tension of the torsion wire. The leaf spring includes two extensions, each of which provides a portion of the total tension supplied by the spring to the torsion wire. The first extension supplies the greater portion of the total tension supplied to the torsion wire and is initially adjusted and fixed. The second extension of the spring is provided with a threaded bushing for introducing small accurate adjustments in the tension of the torsion wire. In this manner, a coarse and fine adjustment in the tension supplied to the torsion wire is achieved.

3,432,697
ADJUSTABLE TORSION MEMBER MECHANISM FOR TORSION MEMBER CLOCKS
Harry Albinger, Jr., and Chester B. Marble, Ashland, Mass., assignors to General Electric Company, a corporation of New York
Filed Jan. 21, 1966, Ser. No. 522,274
U.S. Cl. 310—36 11 Claims
Int. Cl. H02k 33/02



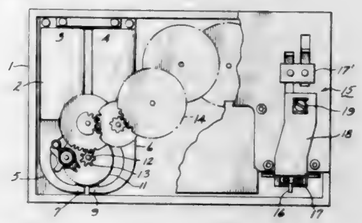
A mechanism for adjusting the torsion member of a torsion member clock wherein a first adjusting mechanism is provided for adjusting the effective length of the torsion member and a second adjusting mechanism is provided for adjusting the tension on the torsion member.

3,432,698
ADJUSTABLE TORSION MEMBER MECHANISM FOR TORSION MEMBER CLOCKS
Clyde W. McCarty, Holliston, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 21, 1966, Ser. No. 522,252
U.S. Cl. 310—36 6 Claims
Int. Cl. H02k 33/10



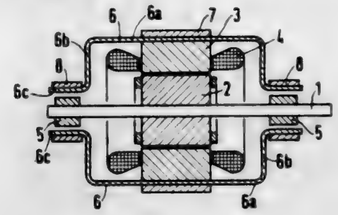
A mechanism for adjusting the tension of a torsion member in order to adjust the oscillating frequency of the torsion member wherein a resilient means is provided for adjusting one of the supports of the torsion member.

3,432,699
PERMANENT MAGNETIC SYNCHRONOUS MOTOR AND STARTING MECHANISM THEREFOR
Harry Albinger, Jr., Ashland, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 21, 1966, Ser. No. 522,197
U.S. Cl. 310—41 4 Claims
Int. Cl. H02k 7/118



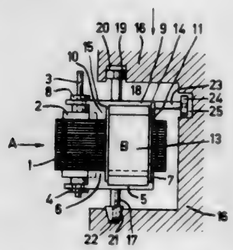
A permanent magnet synchronous motor and starting mechanism therefor wherein a starting member is held out of engagement with the motor after the motor has been started.

3,432,700
ELECTRIC MOTOR AND METHOD OF MANUFACTURE BY HIGH SPEED DEFORMATION
Artur Diederichs, Wurzburg, Germany, assignor to Siemens Aktiengesellschaft Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Sept. 20, 1966, Ser. No. 580,661
Claims priority, application Germany, Sept. 25, 1965, S 99,670
U.S. Cl. 310—42 10 Claims
Int. Cl. H02k 15/00



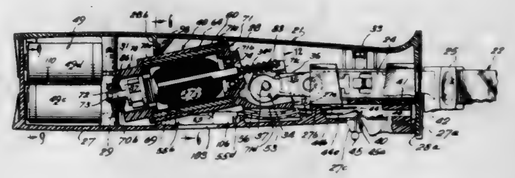
1. A method of manufacture of an electric motor, comprising the steps of
affixing a rotor to a shaft and positioning a pair of spaced bearings on opposite ends of the shaft;
positioning a stator around said rotor;
affixing support bracket means to said stator and to said bearings to affix said stator to said bearings;
positioning rings around said support bracket means around said stator and around said support bracket means around said bearings; and
closing and tightening the rings around said stator and around said bearings by a high speed forming process.

3,432,701
VIBRATION DAMPING SUSPENSION FOR AN ELECTRIC MOTOR
Reinder Hendrik Dijken, Jolle Jager and Minne Krikke, Drachten, Netherlands, assignors to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,505
Claims priority, application Netherlands, Dec. 22, 1965, 6516686
U.S. Cl. 310—47 5 Claims
Int. Cl. H02k 5/24



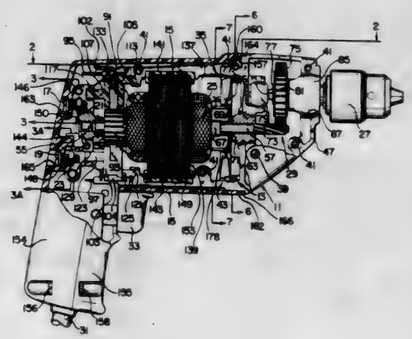
A vibration damping suspension for a small electric motor of the type used in electric shavers. A pair of damping shafts interconnect the stator and the motor housing. The center lines of the damping shafts are coincident, pass through the center of gravity of the motor, and are parallel to the center line of the rotor shaft. An alignment shaft normally positioned with respect to the center line of the rotor shaft interconnects the stator and the housing to prevent motor rotation. Elastic elements are interposed all shaft-housing connections.

3,432,702
BATTERY POWERED ELECTRIC KNIFE
Worthy L. Chambers, Lombard, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 24, 1966, Ser. No. 574,648
U.S. Cl. 310—50 11 Claims
Int. Cl. H02k 7/14



A battery operated electric knife includes a two-part casing enclosing an electric motor and drive assembly for converting rotary motion of the armature shaft into reciprocal motion of a pair of blade holding members. A unitary frame member pivotally mounted to the casing supports the motor, a shaft bearing, and the drive assembly, and a spring engaging the motor holds these elements in place. A unit of rechargable batteries is connected to a charging unit in a storage cradle when the knife is stored by a pair of charging contacts recessed in the casing and accessable through openings adjacent the motor which also provide cooling air. Each charging contact includes resilient fingers for receiving a charging terminal, and a mounting portion resiliently encloses both a projection on the casing and a conductor connected to the battery unit.

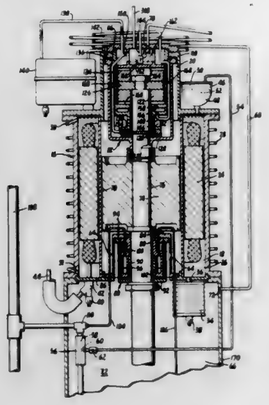
3,432,703
PORTABLE ELECTRIC DRILL
Martin I. Sheps, Baltimore, Jacobus J. Beckering, Bel Air, and Thaddeus E. Bednarski, Timonium, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Dec. 12, 1966, Ser. No. 601,143
U.S. Cl. 310—50 38 Claims
Int. Cl. H02k 7/14



1. A motor frame and housing construction for portable electric devices comprising an elongated motor frame, electric motor means supported by said frame, a hollow, elongated insulating housing encompassing said motor and at least a portion of said frame, and having an end portion engageable with a shoulder on said frame, means removably interconnecting said housing and said frame and drawing said housing end portion against said shoulder, said housing having an inner surface portion adapted to overlay and closely engage an outer surface portion of said frame when a housing of a first predetermined size is

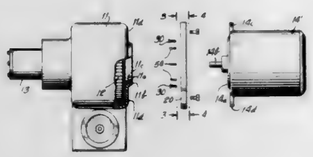
positioned on said frame, said housing and frame having cooperable, longitudinally extending abutment means adapted to be closely engaged when a housing of a second predetermined size greater than said first predetermined size is positioned on said frame.

3,432,704
SUBMERGIBLE APPARATUS MOTOR DRIVE
Arthur J. Nelson, Santa Barbara, Calif.
(1998 Broadway St., San Francisco, Calif. 94109)
Filed Aug. 4, 1966, Ser. No. 570,197
U.S. Cl. 310—87 **16 Claims**
Int. Cl. H02k *5/10*



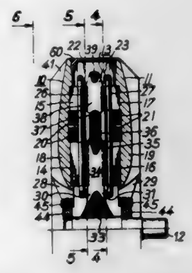
This apparatus relates to submergible motors comprising a gas filled rotor chamber isolated from an oil filled stator chamber and from the liquid in which the apparatus is immersed. A liquid plug separates the gas from the liquid with gas pressure monitoring and control means regulating the liquid level below rotor journals within the rotor chamber. Regulators also balance the gas pressure with the pressure of the oil and with that of the liquid. A centrifugal governor controlled valve also confines the liquid plug from escape when the apparatus is not operating. Cooling means are employed for the various fluids and an independent filtered lube oil system is provided. In the apparatus each fluid has a single specific function.

3,432,705
ADAPTOR FOR MOUNTING REPLACEMENT ELECTRIC MOTORS
Herbert Lindtveit, West Hempstead, N.Y., assignor to Sid Harvey, Inc., Valley Stream, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,130
U.S. Cl. 310—91 **6 Claims**
Int. Cl. H02k *5/04*



An adaptor plate suitable for connecting an electric motor to an oil burner blower housing so that the motor shaft is correctly and exactly centered within the pilot hole in the blower wheel housing, despite mismatched mounting parts of the motor and/or blower housing, including at least three spaced groups of apertures in the adaptor plate, each group having apertures at different radii with respect to a given center on the adaptor plate, so that at least three projecting members may be mounted in the respective groups of apertures at a suitable radius to engage the lip of said blower wheel housing pilot hole at at least three spaced portions thereof and thereby arrange the adaptor plate center to be congruent with the blower wheel axis, means for securing the adaptor plate to the blower wheel housing, and means for securing the electric motor to the adaptor plate so that the motor shaft is coaxial with the given center on the adaptor plate.

3,432,706
ROTARY ELECTRIC MACHINE
Hartwig Beyersdorf, Bremen-Arbergen, and Gerhard Bering, Bremen, Germany, assignors to Lloyd Dynamowerke G.m.b.H., Bremen, Germany
Filed Jan. 24, 1967, Ser. No. 611,273
Claims priority, application Germany, Jan. 26, 1966, L 52,690
U.S. Cl. 310—157 **10 Claims**
Int. Cl. H02k *1/22*

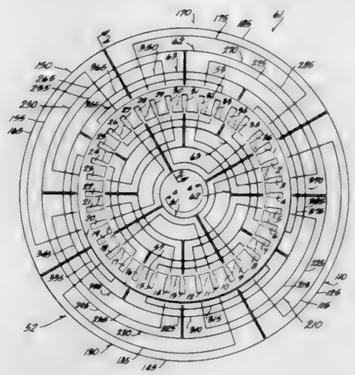


A rotary electric generator or motor having a rotary disc portion disposed between two stator disc portions and provided with a plurality of circumferentially-spaced, radially-extending spokes which are made of a magnetizable material and which define, in the space between the stator disc portions, zones of high magnetic conductivity in an axial direction separated by air spaces defining zones of low magnetic conductivity in an axial direction, at least one of the stator disc portions being provided with an annular excitation winding and an A.C. winding having radially-extending conductor portions.

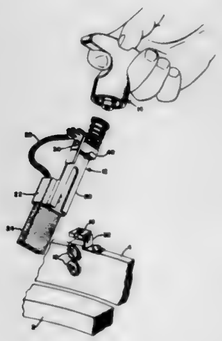
3,432,707
THREE PHASE CONCENTRIC STATOR WINDINGS AND METHOD OF WINDING
Robert W. Peters, Menomonee Falls, and Frederick G. Luber, Milwaukee, Wis., assignors to Henry J. Gorski, Milwaukee, Wis.
Filed Oct. 20, 1965, Ser. No. 498,350
U.S. Cl. 310—180 **15 Claims**
Int. Cl. H02k *3/00, 3/12, 3/48*

A three-phase stator winding wherein the phase windings are wholly contained in respective coil layers which are generally concentrically arranged with respect to one another. In any one slot, the turns are all from the same one of the phase windings.

A method of winding a pair of adjacently located coil groups forming a part of a phase winding wherein a first coil of one of the coil groups is wound in one rotative direction, followed by winding of one coil of the other coil group in the opposite rotative direction. Subsequently, another coil in the other coil group is wound in the same direction as the previous coil and in radially outward concentric relation thereto, followed by winding, in the reverse rotational direction of a second coil in the first mentioned coil group in radially outwardly concentric relation to the first coil.

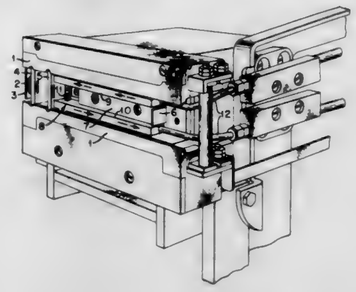


3,432,708
REMOVABLE BRUSH ASSEMBLY
Alexander F. Bissett, Lynn, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 19, 1966, Ser. No. 587,851
U.S. Cl. 310—239 **2 Claims**
Int. Cl. H02k *5/14*



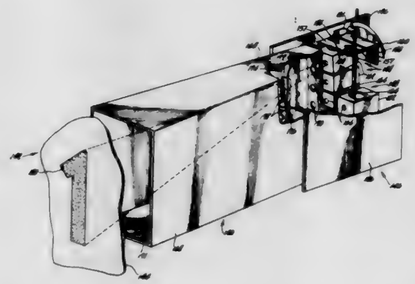
1. A dynamoelectric machine brush mounting device including:
- a stationary backplate mounted in a fixed position relative to said machine,
- a brush assembly removably fitted to said backplate, and
- a handle,
- said backplate and said brush assembly being dovetailed to each other for insertion and removal in a first direction, said backplate and said brush assembly defining holes in said first direction which holes are in a registry when said brush assembly is dovetailed to said backplate, the hole in said backplate being elongated,
- a spindle member having a crosspiece at one end thereof, said crosspiece being shorter than the largest dimension of the hole in said backplate and longer than the smallest dimension of the hole in said backplate,
- a flanged hollow cylinder mounted on the other end of said spindle,
- a compression spring extending between said flange and said brush assembly,
- said handle removably fixed relative to said hollow cylinder.

3,432,709
CALUTRON ION SOURCE WITH MAGNETIC FIELD INDUCING COIL WITHIN ARC CHAMBER
John V. Lee and Leon O. Love, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 23, 1965, Ser. No. 504,274
U.S. Cl. 313—63 **3 Claims**
Int. Cl. H05h *11/00;* **H01j** *1/50*



An ion source is provided with an electrically biased current loop within its arc chamber. Electric D.C. current is passed through the current loop in a direction so as to create a magnetic field directed toward the ion exit slit of the ion source. The magnetic field promotes the migration of ions formed in the arc chamber through the exit slit, thereby effecting a substantial increase in the operating efficiency of the ion source while operating at about one half the normal vapor feed rate.

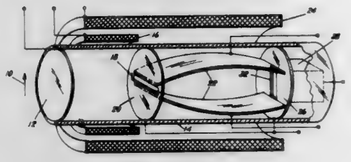
3,432,710
DISPLAY TUBE HAVING CHARACTER MASK WITH ELECTRON GUN INDIVIDUAL TO EACH CHARACTER
Donald G. Gumpertz, 4217 Navajo Ave., North Hollywood, Calif. 91602
Continuation-in-part of applications Ser. No. 182,455, Mar. 26, 1962, and Ser. No. 573,775, Aug. 8, 1966. This application June 8, 1967, Ser. No. 650,561
U.S. Cl. 313—69 **11 Claims**
Int. Cl. H01j *29/46, 31/16, 29/50*



A character display device operating on the cathode ray tube principle. A plurality of individual electron guns are disposed at one end of a vacuum tube and each gun is aimed along an axis directed at the center of a fluorescent screen located at the opposite end of the tube. A mask having a plurality of character apertures is disposed between the ends of the tube with each of the

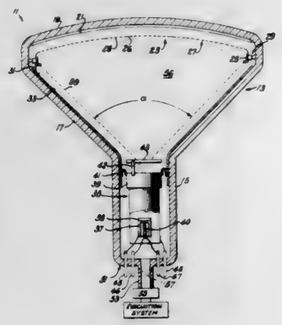
character apertures being located on one of the electron gun axes. Selective control of the operation of each electron gun controls the particular character displayed by the device.

3,432,711
HYBRID DEFLECTION IMAGE DISSECTOR HAVING CONCAVE DEFLECTION PLATES CONVERGING AT HORIZONTAL EDGES OF RESOLVING APERTURES
Robert H. Clayton, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,773
U.S. Cl. 313—79 **6 Claims**
Int. Cl. H01j *29/76*



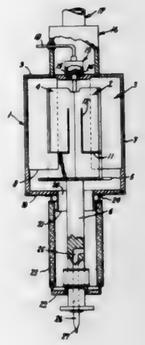
The electron image in an image dissector tube is scanned in the vertical direction across a horizontal slit which provides sharp vertical resolution. A pair of concave horizontally extending electrostatic deflection plates converging at the ends is positioned between the horizontal slit and a horizontal scanning aperture plate at the electron multiplier end. A combination of magnetic focusing and electrostatic deflection provides a cycloidal trajectory of electrons for horizontal line scanning across the second aperture which may extend in the vertical direction and provides sharp horizontal resolution.

3,432,712
CATHODE RAY TUBE HAVING A PERFORATED ELECTRODE FOR RELEASING A SELECTED GAS SORBED THEREIN
David Benda, Geneva, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,104
U.S. Cl. 313—181 **3 Claims**
Int. Cl. H01j *19/68, 19/70, 61/24*



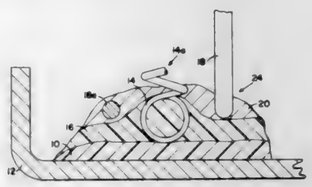
An improved color cathode ray tube employing an open metallic structure positioned relative to the screen, for example, a shadow mask color tube wherein the mask is a continuous selected gaseous giving mechanism during tube operation and a method of processing the tube for achieving the same. During tube processing the mask sorbs a selected introduced gas such as hydrogen. Electron beam impingement of the mask during subsequent tube operation effects gradual release of the occluded selected gas from the mask to provide a replenishable partial pressure of hydrogen which in relation to the total tube pressure is consistent for the promotion of enhanced emission and extended tube life.

3,432,713
HIGH CURRENT VACUUM GAP DEVICES WITH SLOTTED ELECTRODE VANES
James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 586,751, Oct. 14, 1966. This application May 19, 1967, Ser. No. 639,844
U.S. Cl. 313—231 **12 Claims**
Int. Cl. H01j *17/26, 61/28*



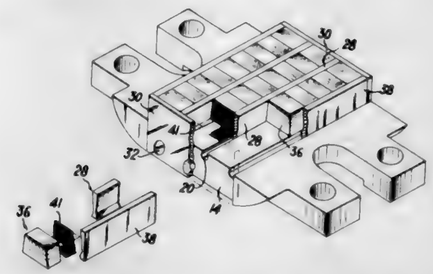
Vacuum gap devices adapted for very high current usage include a first inner electrode having outwardly disposed thin vanes and a second outer electrode having inwardly disposed thin vanes. Vanes of inner electrode are slotted to define a "folded-back" path of current conduction therein. Folded-back current path causes flux lines caused thereby to move arcing paths within interelectrode gaps to large mating vane area and permit high currents to pass between electrodes without high current density at any given point, thus avoiding anode spot formation.

3,432,714
FAST WARMUP CATHODE
Fred J. Schmidt, Owensboro, Ky., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Jan. 24, 1967, Ser. No. 611,483
U.S. Cl. 313—337 **3 Claims**
Int. Cl. H01j *1/24, 19/18*



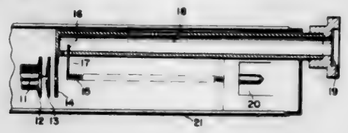
A fast warmup cathode having a coil-coil heater embedded in a layer of bonding ceramic adjacent a layer of insulating ceramic which is bonded to the cathode lid, and a heater leg brazed to the coil-coil heater ensuring positive electrical contact between the heater coil and the heater leg.

3,432,715
COMPOSITE ELECTRODE FOR MHD CONVERSION DUCT
David Yerouchalmi, Issy-les-Moulineaux, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Mar. 13, 1967, Ser. No. 622,503
Claims priority, application France, Mar. 22, 1966, 54,572
U.S. Cl. 313—346 **7 Claims**
Int. Cl. H01j *1/14*



The composite electrode comprises on the one hand a casing formed of heat-conducting material which is maintained at a low temperature and provided on one face with a partition structure forming recesses and on the other hand bricks formed of ceramic material, said bricks being attached to said casing by means of metallic elements which permit the flow of electric current from the frontal face of the electrode to the casing.

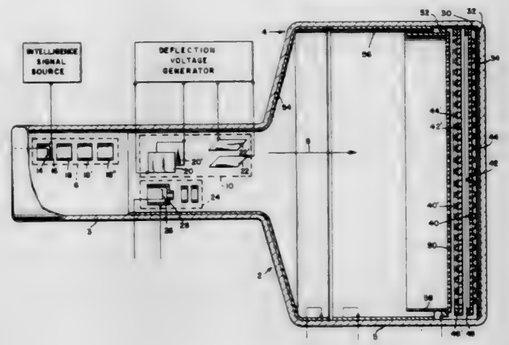
3,432,716
MICROWAVE TRANSDUCER AND ELECTRON DEVICE WITH MICROWAVE TRANSDUCER
Yoshihisa Suzuki, Tokyo-to, and Yoshio Tanaka, Musashino-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Feb. 13, 1964, Ser. No. 344,768
U.S. Cl. 315—3.5 **5 Claims**
Int. Cl. H01j *25/34*



A microwave transducer constructed so that an aperture for leading a parallel two-wire line into a rectangular waveguide is provided on the side wall of the waveguide, a loop is formed at the extreme end of the parallel two-wire lines thus led in, or pipes are fitted at the top and bottom walls of the waveguide, through which the parallel two-wire line passes, each wire being bent in mutually opposite directions, thereby coupling the waveguide and the wire lines in a high-frequency manner.

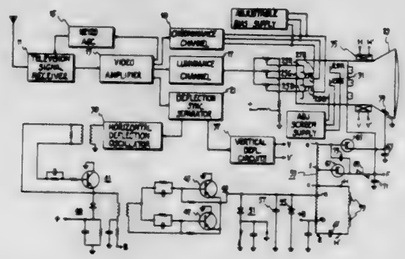
3,432,717
MOVING TARGET VISUAL INDICATOR TUBE
Leon S. Yaggy, North Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 5, 1965, Ser. No. 430,574
U.S. Cl. 315—12 **9 Claims**
Int. Cl. H01j *29/41*

A moving target visual indicator tube in which only changing information is displayed utilizing a storage target structure having two storage surfaces, one facing the flood and scanning electron guns and one facing the



viewing target, the latter storage surface adapted to become charged by flood electrons so as to cut off the passage thereof.

3,432,718
TELEVISION FOCUS VOLTAGE SUPPLY
Joseph O. Preisig, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,398
U.S. Cl. 315—22 **8 Claims**
Int. Cl. H01j *29/70, 29/56*

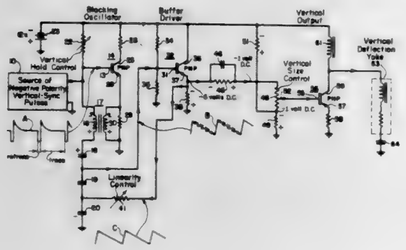


A focus voltage supply for use in connection with a cathode ray tube display system. Focus and ultor electrode supply voltages produced by means of peak rectifiers coupled to a deflection transformer are caused to "track" by rendering the focus supply responsive to variations in the amplitude of the second half of deflection flyback pulses.

3,432,719
TRANSISTORIZED SCANNING CIRCUIT WITH SERIES-CONNECTED CAPACITORS INCLUDED IN THE OSCILLATOR INPUT CIRCUIT
Grigory Strachanow, Des Plaines, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,098
U.S. Cl. 315—27 **15 Claims**
Int. Cl. H01j *29/70*

The scanning circuit features a free-running relaxation oscillator comprising a plurality of series-connected capacitors serving three different functions; (1) in conjunction with an adjustable resistor they determine the free-running frequency of the oscillator, (2) the capacitors form a sawtooth voltage for driving an amplifier which in turn effects the development of sawtooth scanning cur-

rent in the deflection yoke of a CRT, and (3) in response to a feedback signal, translated from the output of the amplifier and through an adjustable linearity control resistor, the capacitors effect wave shaping to compensate any undesired distortion, such as non-linear distortion, that may otherwise be introduced in the scanning current. In accordance with another feature, size control and linearity control adjustments may be made independent of each other by having the amplifier, driven by the oscillator, take the form of an emitter follower, and by employing a size control potentiometer between the output of the emitter follower and the yoke. Since the internal

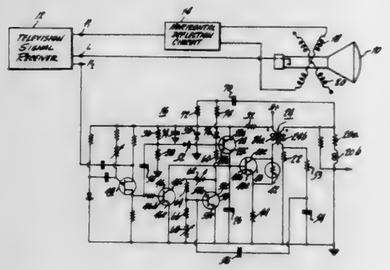


output impedance of an emitter follower is relatively low, changes of the setting of the potentiometer effect no appreciable variation of that impedance. Hence, the feedback signal source (namely the output of the emitter follower) presents a constant impedance to the linearity control circuit irrespective of the setting of the size control. The scanning circuit also features an output amplifier whose bias current is of constant magnitude for all settings of the size control, even though the sawtooth driving signal applied to that amplifier has a D.C. component of an amplitude dependent on the size control setting. This is accomplished by establishing both of the end terminals of the potentiometer at the same D.C. potential.

3,432,720
TELEVISION DEFLECTION CIRCUIT WITH LINEARITY CORRECTION FEEDBACK

Eduard R. Brunner, Zurich, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 18, 1967, Ser. No. 610,118
Claims priority, application Great Britain, Feb. 1, 1966, 4,386/66
U.S. Cl. 315—27 **11 Claims**
Int. Cl. H01j *29/70, 29/74*

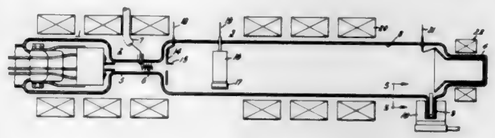


A deflection circuit wherein a capacitor is periodically charged by means of a transistor current source and discharged by a parallel switching means. A linearity correcting R-C feedback network having a time constant substantially equal to that of the deflection windings is coupled to the current source. A further S-shaping feedback network is also coupled to the current source.

3,432,721
BEAM PLASMA HIGH FREQUENCY WAVE GENERATING SYSTEM

Theodore T. Naydan and Harold R. Koenig, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Jan. 17, 1966, Ser. No. 521,142
U.S. Cl. 315—39 **5 Claims**
Int. Cl. H01j *19/80*

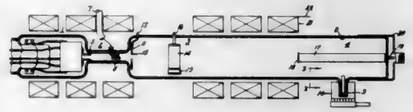


A system wherein a beam of density modulated electrons restricted to longitudinal motions traverses a plasma column having longitudinal and radial gradients. An interaction occurs between the beam and plasma in a section in the plasma column having a resonant frequency approximately equal to the driving frequency of the electron beam thereby permitting an electromagnetic wave to radiate out from the plasma.

3,432,722
ELECTROMAGNETIC WAVE GENERATING AND TRANSLATING APPARATUS

Theodore T. Naydan, Schenectady, and Kiyo Tomiyasu, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Jan. 17, 1966, Ser. No. 521,143
U.S. Cl. 315—39 **5 Claims**
Int. Cl. H01j *19/80*



An apparatus wherein a beam of density modulated electrons restricted to longitudinal movement traverses a plasma column having longitudinal and radial gradients. An interaction occurs between the beam and plasma in a section in the plasma column having a resonant frequency approximately equal to the driving frequency of the electron beam thereby permitting an electromagnetic wave to radiate out from the plasma. A cathode positioned inside a circular wave guide enclosing the plasma acts as an inner conductor of a coaxial wave guide while the outer conductor is coupled to the circular wave guide.

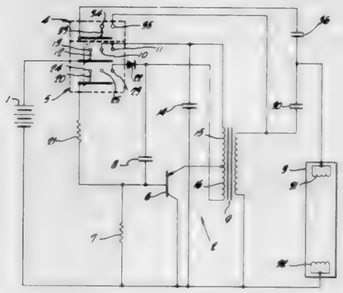
3,432,723
FLUORESCENT LAMP CIRCUIT EMPLOYING A CATHODE FOLLOWER CONFIGURATION

Jack V. Miller, 700 N. Auburn Ave., Sierra Madre, Calif. 91024, and Ronald W. Froelich, 444 Duarte Road, Arcadia, Calif. 91006

Filed Mar. 8, 1967, Ser. No. 621,563
U.S. Cl. 315—94 **16 Claims**
Int. Cl. H05b *41/14*

A highly efficient oscillator is energized by a battery, A voltage dividing capacitor and a fluorescent lamp are connected in series across the output of the oscillator.

The value of the capacitor is selected with the operating frequency of the oscillator and the impedance of the lamp in mind. The capacitor preferably has a negative

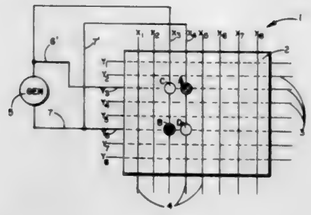


temperature coefficient. An ON-OFF switch includes provision for temporarily increasing the current through the lamp while it starts. In one embodiment, one of the lamp filaments forms part of the bias circuit for the oscillator.

3,432,724
ELECTROLUMINESCENT CROSSED GRID DEVICE FOR SIMULTANEOUSLY DISPLAYING A PLURALITY OF POINTS

John S. Frost, Santa Ana, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Feb. 27, 1967, Ser. No. 618,925
U.S. Cl. 315—169 **5 Claims**
Int. Cl. H05b *37/02*



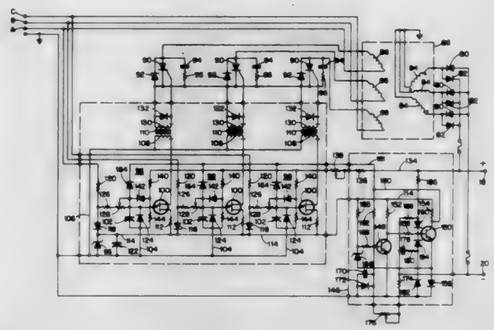
A crossed grid electroluminescent display device for simultaneously displaying a plurality of points while automatically suppressing electroluminescence generated at other undesirable points. The device utilizes excitation voltages of different phase relationships for reducing spurious emission at the undesirable points.

3,432,725
ELECTRIC DISCHARGE SYSTEM HAVING AUTOMATICALLY CONTROLLED POWER SUPPLY

Abbott L. Rotch, Milton, Mass., assignor to EG & G, Inc., Bedford, Mass., a corporation of Massachusetts

Filed July 1, 1966, Ser. No. 562,306
U.S. Cl. 315—241 **9 Claims**
Int. Cl. H05b *37/02, 41/14*

An electric power supply system for charging capacitor banks employed to ignite a flashtube. Gated semiconductor switch devices are connected between the AC input and a power transformer. Relaxation oscillator type timing circuits utilizing unijunction transistors control the conductivity of the gated semiconductor switch devices. Circuitry is provided to establish an initial timing cycle when the capacitive load first commences charging. A feedback circuit modifies the timing cycle as the capacitive load charges. A regulator circuit also controls the timing

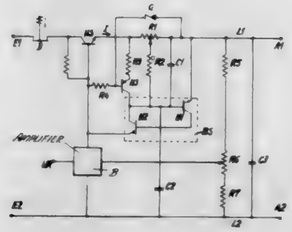


circuits to prevent conduction of the gated semiconductor switch devices when certain conditions exist in the capacitive load.

3,432,726
OVERLOAD AND SHORT-CIRCUIT PROTECTION FOR A D.C. VOLTAGE REGULATOR

Walter Meyer and Zoltan Bedo, Zurich, Switzerland, assignors to Albiswerk Zurich A.G., Zurich, Switzerland

Filed Dec. 21, 1966, Ser. No. 603,587
Claims priority, application Switzerland, Jan. 26, 1966, 1,067/66
U.S. Cl. 317—31 **10 Claims**
Int. Cl. G05f *3/08*



A D.C. voltage regulator with a transistor and current sensing resistor in series between the input and output of the regulator. A normally non-conductive bistable switch is rendered conductive upon the occurrence of an overload, short circuit or high ripple to block the transistor and interrupt current to a load.

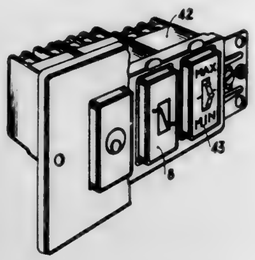
3,432,727
ELECTRONIC WIRING DEVICES FOR ELECTRIC PLANTS

Ermanno Bassani, Corso di Porta Vittoria 9, Milan, Italy

Filed Apr. 10, 1967, Ser. No. 629,593
Claims priority, application Italy, Apr. 12, 1966, 8,306/66
U.S. Cl. 317—99 **9 Claims**
Int. Cl. H02b *1/04, 1/10*

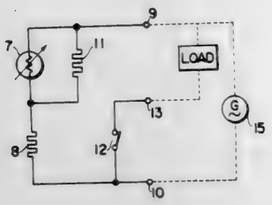
An electronic circuit arrangement in which portions of the circuit are contained within separate modular housing. The modules are stacked and spaced relative to each other by a mounting plate which holds in place the modules. The mounting plate may, in turn, be secured to a utility

outlet box inserted into a wall opening. The bulk of each module projecting from one side of the mounting plate extends into the interior of the box and thus into the wall in which the box resides. Each module is equipped with



terminals so that the different modules may be interconnected to form a desired circuit. Within any one module may be a relay, an amplifier, a voltage reducer, and a sensing element.

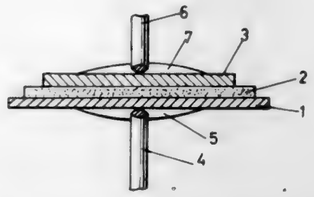
3,432,728
PHOTOELECTRIC CONTROL OF BIMETAL-TYPE SWITCH WITH PLURAL HEATERS
Yasutaka Kawase, % Kawase Institute of Technical Research, Inc., No. 31, 1-chome, Aratacho, Showa-ku, Nagoya, Aichi-ken, Japan
Filed Feb. 27, 1967, Ser. No. 618,741
U.S. Cl. 317—124 **2 Claims**
Int. Cl. H01h *47/24*



A light sensitive control apparatus having a thermal switch consisting of a photocell, a pair of electric heating resistors which are thermally connected to a pair of bimetal strips, one of which being main and the other temperature compensating. The apparatus can be operated to turn on and off a lamp located outdoors in response to ambient light.

3,432,729
TERMINAL CONNECTIONS FOR AMORPHOUS SOLID-STATE SWITCHING DEVICES
Morgens Dyre, Gildbro, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed June 29, 1965, Ser. No. 468,029
Claims priority, application Germany, July 4, 1964, D 44,893
U.S. Cl. 317—234 **4 Claims**
Int. Cl. H01l *5/00, 5/02, 7/16*

A terminal connection for a solid state switching element, the switching element and a method of manufacturing the solid state switching element which is composed of a plurality of components. The switching element is made by evaporating the components on a metal plate in a vacuum vessel and evaporating a crystalline layer of at least one of the components in the same vacuum vessel on the evaporated components as a continuation for a longer period of the time of evaporation of the components. First a three component system is evaporated to form an amorphous layer on the plate and evaporation is continued with two of the three components to form a crystalline layer over the amorphous layer. The initial quantity and the evaporation temperature is adjusted such



that the third component is consumed prior to the continued evaporation of the two components. The switching element comprises the metal plate, the layer of amorphous material formed from the components including germanium or silicon. A layer of crystalline material formed of at least one of the components or formed of a body of crystalline material compatible with the amorphous material and in contact therewith forms the terminal connection on the switching element.

3,432,730
SEMICONDUCTOR P-N JUNCTION STRESS AND STRAIN SENSOR
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Jimmie J. Wortman, Durham, and Ralph R. Stockard, Raleigh, N.C.
Filed Sept. 6, 1966, Ser. No. 577,548
U.S. Cl. 317—234 **4 Claims**
Int. Cl. H01c *5/00*

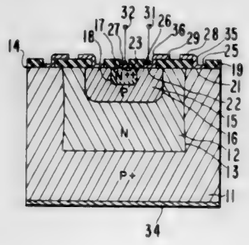


A rod of one type semiconductor material with a needle-like point at one of its ends and another type semiconductor material diffused into the surface of the rod at said one of its ends to form a P-N junction at said needle-like point. The rod with the P-N junction formed on its end is useful as a stress and strain sensor.

3,432,731
PLANAR HIGH VOLTAGE FOUR LAYER STRUCTURES
Ronald J. Whittier, Mountain View, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,778
U.S. Cl. 317—235 **7 Claims**
Int. Cl. H01l *9/12*

1. A multilayered semiconductor device having improved stability and high breakdown voltage comprising:
a first region of a first conductivity type having a surface;

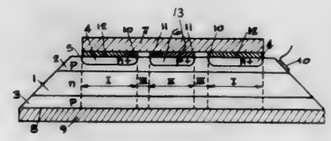
a second region of opposite conductivity type disposed within said first region and forming a first P-N junction therewith, said junction having an edge at said surface;
a third region of said first conductivity type disposed within said second region, said second and third regions forming a second P-N junction having an edge at said surface;
a fourth region of said opposite conductivity type disposed within said third region forming a third P-N junction, said junction having an edge at said surface;
a layer of insulating, protective material overlying at least a portion of said surface including said edges of said first, second, and third junctions and formed to expose a portion of said surface over said first and fourth regions;



a first metal contact ohmically connected to said exposed portion of said first region;
a second metal contact ohmically connected to said exposed portion of said fourth region;
a first field plate atop said insulating, protective material overlying said edge of said first junction, said plate being ohmically connected to said first region; and,
a second field plate atop said insulating, protective material overlying said edge of said second junction.

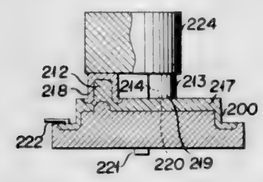
A force applicator has a relatively larger flattened face which rests on said top contact faces for applying a mechanical force to said transistor, said transistor converting the transmitted load into current intensity.

3,432,733
CONTROLLABLE SEMI-CONDUCTOR ELEMENT
Edouard Eugster, Windisch, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Apr. 14, 1967, Ser. No. 630,927
Claims priority, application Switzerland, Apr. 22, 1966, 5,894/66
U.S. Cl. 317—235 **4 Claims**
Int. Cl. H01l *11/00, 15/00*



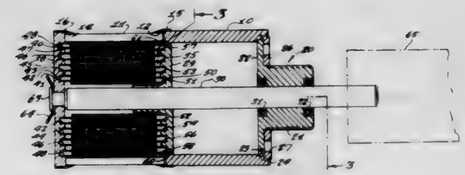
A controllable semi-conductor element comprises a circular disc of semi-conductor material having four stratified zones or layers of different conductor type materials to form an n-p-n-p structure. This structure includes an outer annular zone of n+ type material extending over an outer range which adjoins a first annular part-surface of an end face of a circular zone of p-type material. An inner circular zone of p+ material extending over an inner range adjoins a second part-surface of this end face which is concentric with and spaced radially from the outer annular zone and forms a four zone structure with two p-n transitions. A circular internal zone of the n-type material adjoins the circular zone of p-type material and has a higher average doping in the inner range than in the outer range, and an electrode adjoins the end face to provide a surface contact for the outer annular and inner circular part-surfaces. A second electrode adjoins the opposite end face of another circular zone of p-type material which is located adjacent the circular internal zone of n-type material to complete the four zone structure.

3,432,732
SEMICONDUCTIVE ELECTROMECHANICAL TRANSDUCERS
Shinichi Shibata, Tokyo, and Hideo Mori and Atsushi Owada, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Mar. 28, 1967, Ser. No. 626,483
Claims priority, application Japan, Mar. 31, 1966, 41/28,587; Apr. 9, 1966, 41/32,148
U.S. Cl. 317—235 **4 Claims**
Int. Cl. H01l *11/00, 15/00*



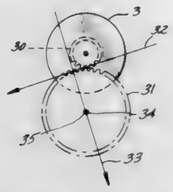
A transistor comprises a body of the semiconductive material with a plurality of protrusions integrally provided on a top face of said body, said body partitioned into more than one base region, more than one emitter region and a collector region, said base and emitter regions extended along at least external surfaces of said protrusions which are respectively flattened at its top contact face.

3,432,734
ENCLOSED ADJUSTABLE CAPACITOR WITH SEALS FOR OPERATING ROD
John E. Johanson, P.O. Box 329, Boonton, N.J. 07005
Filed Jan. 9, 1967, Ser. No. 607,999
U.S. Cl. 317—245 **4 Claims**
Int Cl. H01g *5/02*



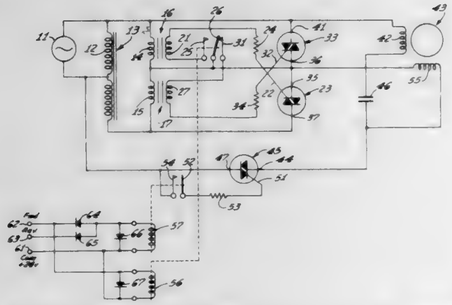
An adjustable capacitor with interleaved cylindrical electrodes one set of which is stationary. The other set of electrodes is supported by an axially displaceable rod. Both sets of electrodes are enclosed within a housing. Sealing rings engage the lateral surface of the rod where it passes through an end rod guiding portion of the housing. The sealing rings are of hollow generally toroidal configuration and have a circumferential slit the edges of which engage the rod. Each ring contains a supply of lubricant which lubricates the rod and seals the capacitor against the entry of dust and moisture.

3,432,735
SYNCHRONOUS MOTOR
Christie Petrides, Medway, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 21, 1966, Ser. No. 522,129
U.S. Cl. 318—138 **1 Claim**
Int. Cl. H02k *21/26*



A synchronous electric motor having a permanent magnet rotor including a plurality of alternately north and south poles, and torque takeoff gearing specifically positioned with respect to the force of gravity to achieve a motor having low operating noise.

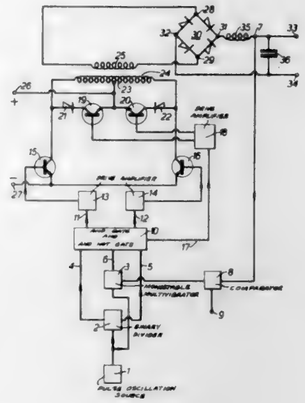
3,432,736
AC MOTOR PHASE REVERSING CIRCUIT
Bernard M. Van Emden, Van Nuys, Calif., assignor to Advance Data Systems, Beverly Hills, Calif., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 514,238
U.S. Cl. 318—202 **6 Claims**
Int. Cl. H02p *1/40*



Rotation direction control circuit for use with a two phase AC motor. An AC source is connected across one half an autotransformer, each of the two ends of the autotransformer winding being connected to a separate Triac. The other terminals of the Triacs are both connected to one phase of the motor field winding. One or the other Triac is energized to connect one of the ends of the autotransformer to the field winding, each end being in 180 degree phase opposition. The Triac energized is selected by a double throw relay contact connecting the selected Triac gate electrode to one of two transformer secondary windings, the primaries being connected in series across the autotransformer.

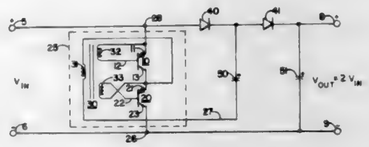
3,432,737
REGULATED DIRECT CURRENT SUPPLY CIRCUIT WITH ENERGY RETURN PATH
Ian Hunter, Chelmsford, and William Patrick Fitzgerald, Great Baddow, England, assignors to The Marconi Company Limited, English Electric House, Strand, London, England
Filed Apr. 20, 1967, Ser. No. 632,258
Claims priority, application Great Britain, Apr. 22, 1966, 17,833/66
U.S. Cl. 321—2 **8 Claims**
Int. Cl. H02m *3/32*

A circuit for producing a stabilized D.C. output voltage comprises a transformer having a divided primary and a secondary the voltage from which is rectified to provide the output voltage. The input voltage is applied between the mid point and ends of the primary through main transistor switches. The main transistor switches are closed alternately and periodically and controlled in dependence upon the D.C. output voltage for varying the portion of



the period during which each main switch is open or closed. Auxiliary transistor switches are connected in shunt circuits across the halves of the primary and arranged to be open only when the main switches are closed. The auxiliary switches may be opened and closed together or closed alternately each in a different one of two successive periods of main switch operation.

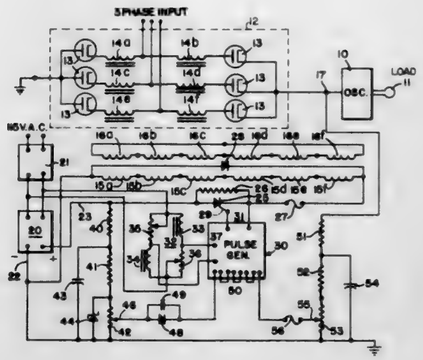
3,432,738
CURRENT DRIVEN VOLTAGE MULTIPLICATION CIRCUIT
James Lee Jensen, Frankfurt am Main, Germany, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,826
U.S. Cl. 321—15 **11 Claims**
Int. Cl. H02m *3/14*



A circuit for performing a voltage multiplication function having a capacitor diode multiplier driven by a current feedback transistor inverter.

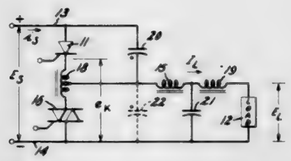
3,432,739
VOLTAGE REGULATOR FOR INDUCTION HEATING APPARATUS
Harry D. Kauffman, Cincinnati, Ohio, assignor to The Ohio Crankshaft Co., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 2, 1966, Ser. No. 577,077
U.S. Cl. 321—18 **1 Claim**
Int. Cl. H02m *7/20*

A voltage regulated power supply for supplying a controlled input voltage to a load includes a rectifier circuit incorporating a saturable core reactor, the reactance of its primary winding controlling the voltage output from the rectifier circuit. A silicon controlled rectifier is placed in series with the control winding of the saturable core reactor, and a pulse generator is used to determine the time



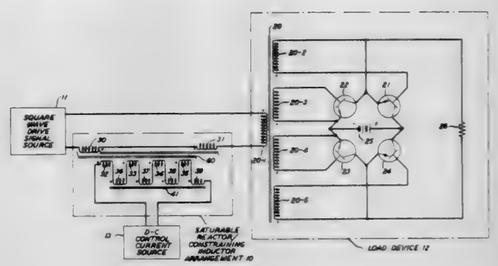
during which this silicon controlled rectifier remains in the conducting state in response to the difference between the actual voltage output of the rectifier circuit and a reference voltage.

3,432,740
SOLID STATE POWER CIRCUITS
Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 363,792, Apr. 30, 1964. This application Aug. 11, 1967, Ser. No. 660,062
U.S. Cl. 321—43 **44 Claims**
Int. Cl. H02m *7/48*



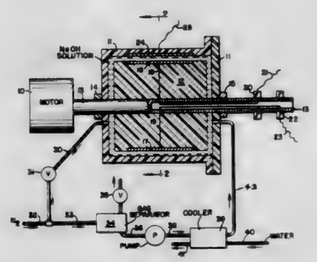
The invention comprises a family of improved power circuits using turn-on, nongate turn-off, controlled conducting devices. The power circuits are comprised by a pair of controlled conducting devices interconnected with a tapped inductance winding in series circuit relationship across a pair of power supply terminals which are adapted to be connected across a source of relatively constant electric potential with at least one of the pair of devices comprising a solid state, bidirectional conducting device. A commutation circuit is provided which includes the inductance winding and at least one commutation capacitor directly connected between one of the power supply terminals and the tap point of the inductance winding. Upon rendering the controlled conducting devices conductive during selected time intervals a desired value electric current is supplied to a load circuit connected to the inductance winding. The improved power circuits here disclosed may be operated in three different modes. The first mode is identified as a low frequency mode with or without load. The second mode is identified as a high frequency mode with load, and the third mode is a high frequency mode with or without load (i.e., variable load from full load to no-load).

3,432,741
SATURABLE REACTOR/CONSTRAINING INDUCTOR ARRANGEMENT
John D. Bishop, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 11, 1967, Ser. No. 674,532
U.S. Cl. 321—45 **5 Claims**
Int. Cl. H02m *7/52, 7/72*



In the control circuit of a saturable reactor the control winding and the constraining inductor are divided into an equal number of winding sections. The individual winding sections of the control winding are wound directly over each other on the saturable reactor cores and the individual winding sections of the constraining inductor are wound directly over each other on a separate constraining inductor core. The individual winding sections are serially connected across the D.C. control source with successive sections from the control winding and the constraining inductor following one another in alternation. The relative polarities of the winding sections are such that the winding sections of the constraining inductor cancel the A.C. voltages induced by the load current in the corresponding control winding sections. As a result, the effects of interwinding capacitances are substantially eliminated, thereby allowing a considerable increase in the load-current-to-control-current ratio without causing excessive distortion in the load current waveform due to winding capacitance effects.

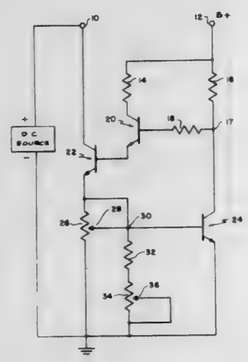
3,432,742
ROTARY SWITCH WITH NaOH SOLUTION BETWEEN ROTOR AND STATOR
John C. St. Clair, Box 333, Rural Rte. 2, London, Ohio 43140
Filed May 2, 1967, Ser. No. 635,504
U.S. Cl. 321—50 **3 Claims**
Int. Cl. H02m *7/34, 7/60, 7/92*



A switch, for converting direct current to alternating current, which has a stationary outer hollow cylindrical shell, with electrodes on its inner surface, and a rotating cylindrical inner rotor with electrodes on its outer surface. The rotor is 0.2 inch less in diameter than the outer

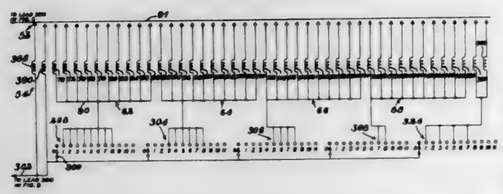
shell and is inside the outer shell. Between the rotor and the outer shell is passed a water solution of sodium hydroxide under sufficient pressure to completely dissolve the gases produced by electrolysis. As the rotor rotates, its electrodes alternately approach and draw away from the electrodes on the outer shell which produces the periodic effect of opening and closing switches.

3,432,743
CONSTANT CURRENT SINK CIRCUIT
Floyd E. Ford, Davidsonville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1966, Ser. No. 576,799
U.S. Cl. 323—3 **7 Claims**
Int. Cl. G05f *1/96*

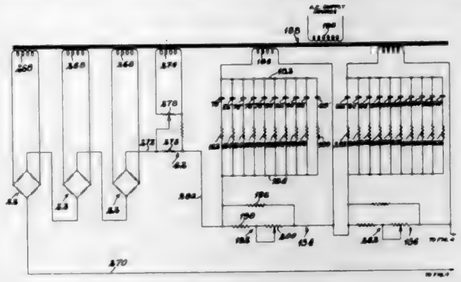


A solid state circuit providing an automatically variable load for a battery under test as the terminal voltage of the battery varies from a maximum to a minimum value. The circuit employs an external source of constant voltage and a variable setting for the current to be drawn. The load comprises a first section having a transistor and a second section having variable resistors, voltage sensing and current control means to vary the impedance of the first section of the load.

3,432,744
CONTROL CIRCUITS FOR CARD OPERATED BATCHER
Matthew T. Thorsson, Deerfield Beach, Fla., and Louis J. Lauler, Los Altos Hills, Calif., assignors, by mesne assignments, to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Original application Sept. 13, 1955, Ser. No. 534,134, now Patent No. 3,173,504, dated Mar. 16, 1965. Divided and this application Feb. 17, 1965, Ser. No. 433,424
U.S. Cl. 323—74 **5 Claims**
Int. Cl. H02p *13/16*

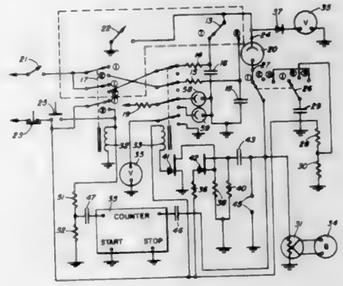


A control system for establishing, in succession, a plurality of selected voltage dividers in a common voltage divider circuit including stepping means for introducing



fixed impedances into the circuit successively in accordance with precoded means.

3,432,745
TEST CIRCUIT FOR MEASURING AND INDICATING BREAKDOWN VOLTAGE, RC TIME CONSTANT, AND ERG DISSIPATION OF A GAS DIODE
Charles A. Browning, Jr., 9303 20th Ave., Adelphi, Md. 20783
Filed Dec. 28, 1964, Ser. No. 421,738
U.S. Cl. 324—24 **8 Claims**
Int. Cl. G01r *31/22, 15/12*

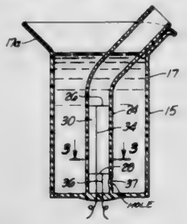


A test circuit for simultaneously measuring and indicating the breakdown voltage, the RC time constant, and the erg dissipation of gas discharge diodes wherein a voltage from a charged tank condenser is applied to a test diode and a digital voltmeter registers the breakdown voltage of the test diode. A timer counts the time from the application of the voltage to the test diode to the time breakdown of the test diode occurs. A ballistic galvanometer records the erg dissipation at breakdown voltage through a simulated primer resistance of a vacuum thermocouple.

3,432,746
APPARATUS FOR MEASUREMENT OF FLUID CONDUCTIVITY USING D.C. POWER IN A CONDUCTIVITY CELL
Myron L. Robinson, San Gabriel, Calif. (419 De La Fuente St., Monterey Park, Calif. 91754)
Filed Jan. 18, 1965, Ser. No. 426,036
U.S. Cl. 324—30 **6 Claims**
Int. Cl. G01r *11/44;* **G01v** *9/00, 9/02*

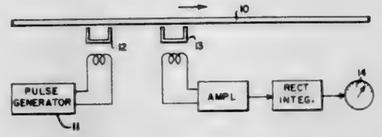
Apparatus for measurement of fluid conductivity comprising electrodes disposed within an insulating tubular shield defining an elongated electrolyte receiving zone, with the distance between the electrodes being greater than the width of the zone, and with a D.C. electric power

source in the range of 8 to 40 volts applied across the electrodes, providing an instrument for measuring dis-



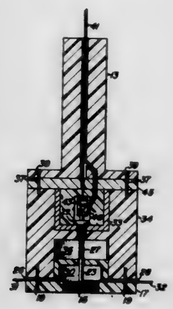
solved solids in parts per million and requiring no zero adjustment or calibration during operation.

3,432,747
SPOT RECORDING AND PICKUP METHODS AND APPARATUS FOR THE DETERMINATION OF HARDNESS OF RELATIVELY MOVING MAGNETIC MATERIAL WITHOUT CONTACTING THE SAME
George F. Quittner, Cleveland Heights, Ohio, assignor to API Instruments Company, Chesterland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 235,984, Nov. 7, 1962. This application Jan. 23, 1967, Ser. No. 610,833
U.S. Cl. 324—34 **6 Claims**
Int. Cl. G01r *33/12*



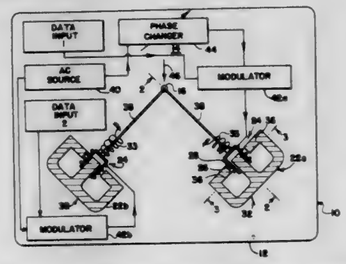
A non-contact magnetic, hence physical, hardness gage having a pulsed recording head spaced as much as 1/32 to 1" from relatively moving steel strip. Magnetic spots thus placed on the strip are later picked up by a likewise spaced-from-strip pickup transducer whose output signal is amplified, integrated and read out as a measure of sample hardness.

3,432,748
EDDY CURRENT TEST APPARATUS UTILIZING A MOVABLE COIL COUPLED TO A PIEZOELECTRIC ELEMENT
Nelson E. Alexander, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 7, 1967, Ser. No. 629,875
U.S. Cl. 324—40 **2 Claims**
Int. Cl. G01r *33/14*



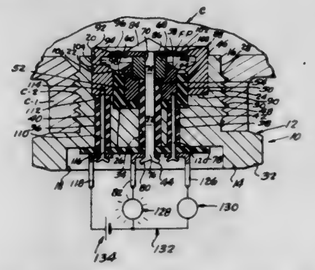
An apparatus for electrically measuring the thickness or for detecting flaws in a conductive body. A probe having a flat coil and piezoelectric element therein connected by a non-conductive rod. The discharge of a capacitor through the flat coil produces a counter magnetic field on the flat coil which in turn produces a mechanical force on the piezoelectric element. The piezoelectric element produces an electrical output pulse, which is amplified and measured.

3,432,749
DATA CORRELATING DEVICE AND PROCESS UTILIZING A RECIPROCATING MEMBER
Douglas A. Kohl, Osseo, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Aug. 26, 1963, Ser. No. 304,519
U.S. Cl. 324—140 **10 Claims**
Int. Cl. G01r *7/00*



A data correlating system including an indicator driven in a plane by a plurality of reciprocating electromagnetic units, each energized by an input signal. The electromagnetic units are disposed at an angle with respect to each other and energized either in phase or out of phase.

3,432,750
CHIP DETECTOR FOR MAGNETIC AND NON-MAGNETIC CONDUCTIVE PARTICLES
Dietrich W. Botstiber, Glenolden, Pa. 19036
Filed Oct. 31, 1967, Ser. No. 679,455
U.S. Cl. 324—41 **10 Claims**
Int. Cl. G01r *33/12*

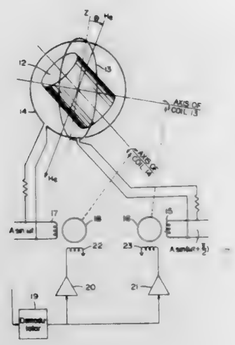


A detector having a chamber in contact with a fluid medium with impurities of differing compositions therein, the detector including means to differentiate the impurities by composition and to selectively signal accumulation of a predetermined quantity of each.

3,432,751
APPARATUS FOR ORIENTING A TOTAL FIELD MAGNETOMETER
Ensley A. Godby, Ralph C. Baker, and Murray W. Strome, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Mar. 22, 1965, Ser. No. 441,588
U.S. Cl. 324—43 **9 Claims**
Int. Cl. G01r *33/02*

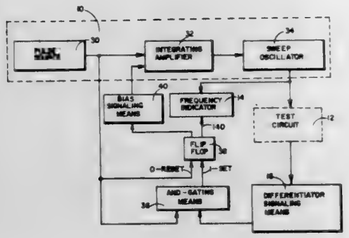
Apparatus for orienting a single total field measuring magnetometer so that a predetermined optimum axis is

aligned parallel to the earth's magnetic field. In order to maintain the optimum axis parallel to the earth's magnetic field, the magnetic field at the magnetometer is electrically rotated by means of two coils which are perpendicular to the optimum axis and to each other. Sinusoidal currents which may be either of the same frequency and displaced



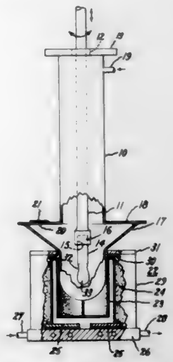
in phased quadrature or two sinusoidal currents of different frequencies are applied to the two coils. The signal from the magnetometer is then processed by a frequency sensitive phase sensitive detector and amplifiers to drive the servo system so that the magnetometer is aligned with the optimum axis parallel to the earth's field.

3,432,752
RESONANT FREQUENCY MEASUREMENT APPARATUS HAVING A GATED FREQUENCY INDICATING MEANS
Lyle R. Frederickson, Placentia, Leon A. Rovelsky, Orange, and Robert L. Wood, Santa Ana, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed July 29, 1965, Ser. No. 475,770
U.S. Cl. 324—57 **5 Claims**
Int. Cl. G01r *27/02*



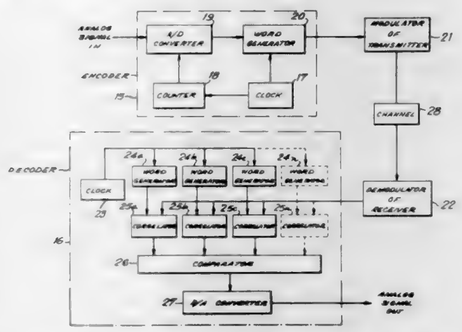
Apparatus for automatically measuring the resonant frequency of a resonant circuit. The resonant circuit to be tested is coupled to a swept frequency source. Differentiating means responsive to the output signal of the test circuit provides a signal indicative of the time rate of change of such output signal. Frequency indicating means, directly connected to the swept frequency source and responsive to the signal provided by the differentiating means, indicates that output frequency of the swept frequency source associated with a zero rate of change of the test circuit output signal.

3,432,753
METHOD OF ANALYZING MATERIALS TO DETERMINE THE IMPURITY CONTENT THEREOF
Fordyce H. Horn, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 30, 1966, Ser. No. 583,191
U.S. Cl. 324—71 **13 Claims**
Int. Cl. G01n *27/00, 27/26*



1. A method of analyzing a high purity material to determine the impurity content thereof comprising the steps of preparing a crystalline sample of the material to be analyzed; supporting said sample while leaving an end thereof unsupported; melting a portion of said sample at said unsupported end, said melted portion being suspended from said sample; freezing said melted portion unidirectionally and at a predetermined rate to form a frozen drop including the impurities present in said molten region, said impurities being distributed in said frozen drop in a pattern determined by the segregation coefficients of said impurities; and measuring at least one property of at least one selected portion of said frozen drop which is affected by said impurities to determine the impurity content of said material.

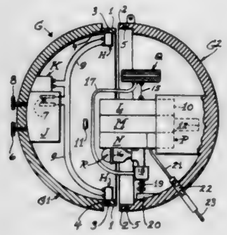
3,432,754
MATCHED SIGNAL TRANSMITTER-RECEIVER ARRANGEMENT
Edmund I. Schwartz, Fair Lawn, N.J., assignor to Devenco Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 411,058
U.S. Cl. 325—38 **13 Claims**
Int. Cl. H04b *1/06, 1/16;* **H03k** *13/00*



Arbitrary signal quantized at regular intervals into a predetermined number of levels, and a different pseudo-random binary word transmitted for each level. Every possible word simultaneously produced in receiver, and comparison with transmitted word yields signal at quantization level of sampled signal. Sampling may be done by

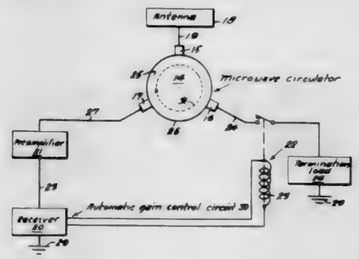
analog-to-digital converter (A/DC) adapted to initially set a shift register which produces the pseudo-random binary words. Receiver may include shift register for producing words, correlators for determining identity of transmitted word, comparator for producing a signal corresponding to output of sampling A/DC, and digital-to-analog converter for producing signal whose amplitude matches that of sampled signal.

3,432,755
DISTRESS SIGNALLING DEVICE FOR SUBMARINE AND AIRCRAFT
Joe Moreno, 1302 Orchard Ave., San Leandro, Calif. 94577
Filed Oct. 3, 1966, Ser. No. 583,738
U.S. Cl. 325—112 **4 Claims**
Int. Cl. H04b *1/02, 1/04*



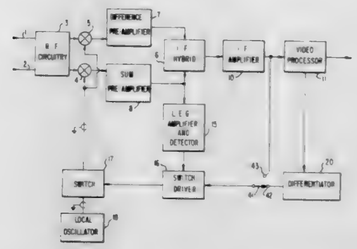
A distress signalling device for submarine and aircraft in which a two part sphere can be released from the craft in case of emergency, the sphere being automatically opened after a predetermined time delay to permit the sphere to rise to the surface of the water before opening in case it is released from a submarine or in case it is released from an airplane, to permit the airplane to clear the sphere before the latter opens. The opening of the sphere will release a balloon supported package that contains a radio transmitter, a tape deck that contains the emergency message, and a battery for operating the tape deck and the transmitter for brodacasting the message to radio-receiving stations or to a satellite for retransmission.

3,432,756
CONTINUOUS MICROWAVE ATTENUATOR
Ball Chin, El Paso, Tex., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 2, 1966, Ser. No. 591,659
U.S. Cl. 325—300 **2 Claims**
Int. Cl. H04b *1/06, 1/16;* **H01p** *1/22*



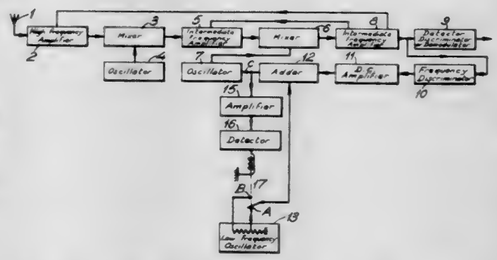
A continuous microwave attenuator, employing a microwave circulator, which extends the dynamic range of microwave receivers, provides a continuous attenuated signal output, and preserves the characteristics of amplitude modulated signals after the signals have been attenuated to a desired level.

3,432,757
LEADING EDGE GATING TECHNIQUE FOR PULSE RECEIVER
Walter D. Trippe, Orlando, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed July 1, 1965, Ser. No. 468,897
U.S. Cl. 325—322 **19 Claims**
Int. Cl. H04b *1/16, 1/06*



This invention relates to a leading edge gating technique for a pulse receiver, in accordance with which the gating of incident energy pulses is accomplished before intermediate frequency conversion, thus making possible the use of a narrower bandwidth IF amplifier than otherwise would be possible.

3,432,758
AUTOMATIC SIGNAL SEARCHING RECEIVER
André Charles Robert, Eaubonne, and Jacques Tauzia, Suresnes, France, assignors to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France
Filed Oct. 23, 1965, Ser. No. 503,604
Claims priority, application France, Jan. 14, 1965, 1,863
U.S. Cl. 325—420 **11 Claims**
Int. Cl. H04b *1/16;* **H03d** *7/16*

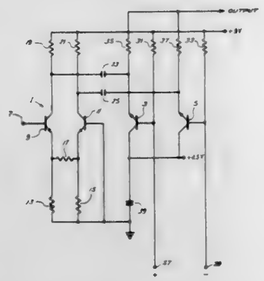


Receiver which automatically searches for signal if signal disappears. Employs low frequency oscillator which generates two voltage levels. Also employs relay and summing amplifier.

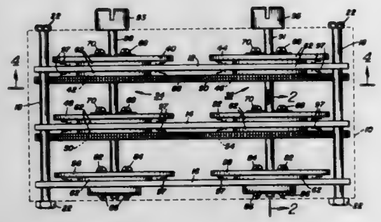
3,432,759
NOISE-ELIMINATING BALANCED MODULATOR-MIXER EMPLOYING TWO COMPLEMENTARILY CONTROLLED SWITCHES AND A DIFFERENTIAL AMPLIFIER
Charles S. Stone, Austin, Tex., assignor to Tracor, Inc., Austin, Tex., a corporation of Texas
Filed Mar. 23, 1965, Ser. No. 441,987
U.S. Cl. 325—450 **6 Claims**
Int. Cl. H04b *1/26;* **H03c** *1/54*

In a balanced modulator-mixer designed to develop an intermediate frequency signal relatively free of noise, differential amplifier means are provided for receiving the

input high frequency signal, the oppositely phased outputs of said amplifier are applied respectively to two active element switches which are controlled by complementarily applied switching control signals, and means are provided to sum the chopped outputs from the differential amplifier.



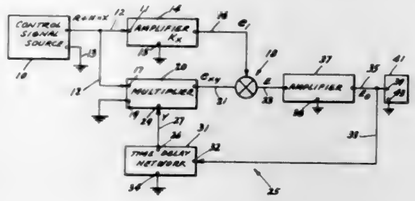
3,432,760
MULTI-BAND RADIO FREQUENCY TUNER-AMPLIFIER
Arnold L. Andzer, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,201
U.S. Cl. 325—452 **9 Claims**
Int. Cl. H04b *1/16;* **H03j** *5/02*



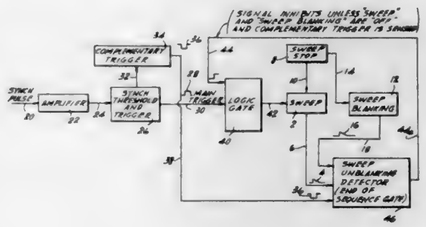
A radio frequency amplifier and tuner for a multiband radio is composed of a plurality of multi-layer printed circuit boards. A plurality of tuned circuits are located on stator printed circuit boards and amplifier circuits are located on rotor printed circuit boards; the rotor boards are rotated with respect to the stator boards so as to connect one of the tuned circuits on a stator board to an amplifier circuit on a rotor board.

3,432,761
METHOD AND ELECTRONIC SYSTEM FOR IMPROVING A CONTROL SIGNAL-TO-NOISE RATIO IN HIGH NOISE ENVIRONMENT ELECTRONIC SYSTEMS
Louis A. Morine, Mahwah, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 14, 1967, Ser. No. 646,046
U.S. Cl. 328—165 **8 Claims**
Int. Cl. H03b *1/04*

A method and electronic system for improving the control signal-to-noise ratio in high noise environmental electronic systems in which a noisy periodic input signal is simultaneously fed both to an amplifier and to a multiplier, and the outputs of both of which are summed and then amplified to provide an output signal a portion of which output signal is suitably delayed and fed back to the multiplier where it is multiplied by the noisy periodic input signal in an arrangement in which so long as the delay network has a delay time equal to a multiple of the period of the input signal, the periodic input signal will be amplified, but in which due to the randomness of the noise present in the periodic input signal, the noise will not be amplified as greatly as the periodic input signal so as to provide an output signal in which the value of the periodic input signal is substantially increased over that of the noise component so as to thereby improve the signal-to-noise ratio.



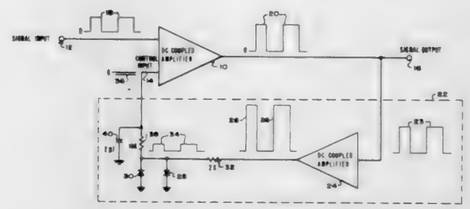
3,432,762
SWEEP CONTROL SYSTEM FOR AN OSCILLOSCOPE OR THE LIKE
John J. La Porta, Allendale, N.J., assignor, by mesne assignments, to Spedcor Electronics, Inc.
Filed Feb. 16, 1965, Ser. No. 433,083
U.S. Cl. 328—179 **12 Claims**
Int. Cl. H03k *3/53*



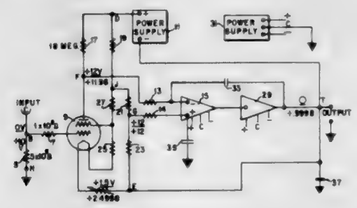
A sweep control system for an oscilloscope in which means are provided for preventing initiation of a sweep at any point in time other than at the beginning of a controlling signal such as a synch pulse, thus preventing the introduction of error arising from the occurrence of the end-of-sequence signal after the synch signal has appeared and before it has disappeared.

3,432,763
AMPLIFIER EMPLOYING NONLINEAR DC NEGATIVE FEEDBACK TO STABILIZE ITS DC OPERATING POINT
Eric M. Ingman, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Dec. 13, 1966, Ser. No. 601,523
U.S. Cl. 330—25 **2 Claims**
Int. Cl. H03g *3/30*

A first DC coupled amplifier having a non-linear DC negative feedback circuit that includes a second DC coupled amplifier for amplifying feedback pulses supplied to the feedback circuit from the output of the first amplifier, a clipping circuit for clipping the amplified feedback pulses at a selected level corresponding to the desired baseline of the output pulses from the first amplifier and hence to the desired DC operating point of the amplifier, and a low pass RC filter for intergrating the clipped, amplified feedback pulses to obtain a DC signal that biases the first amplifier to substantially the desired DC operating point.

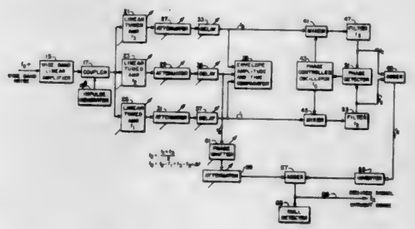


3,432,764
SPECIALIZED ELECTROMETER CIRCUIT
Harold A. Kermicle, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 20, 1967, Ser. No. 684,134
U.S. Cl. 330—87 **3 Claims**
Int. Cl. H03f *1/36, 3/52*



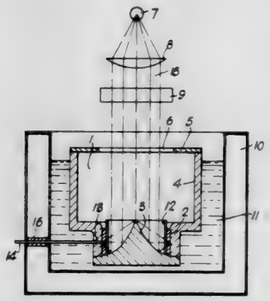
A specialized D.C. electrometer amplifier of the degenerative-feedback type has been provided in which noise degeneration is made independent of the amount of input capacity. The conventional input resistor network is grounded and the feedback voltage is impressed on the electrometer tube cathode, allowing the electrometer tube and its output circuitry to be made floating with respect to ground potential.

3,432,765
CIRCUIT FOR THE REDUCTION OF NOISE BY CANCELLATION TECHNIQUES
Arthur H. Gottfried, 5 Lakeside Ave., Rumson, N.J. 07760
Filed Nov. 1, 1967, Ser. No. 679,936
U.S. Cl. 330—126 **6 Claims**
Int. Cl. H03f *3/68*



This cancellation technique involves the utilization of wideband noise in two signal-free channels equally spaced from and on opposite sides of a center channel containing a desired periodic signal to cancel the noise in the center channel. The noise signals in the two signal-free channels are heterodyned to the frequency of the center channel and automatically phased with each other and with the center channel noise. The center channel noise is then removed or greatly reduced by a simple cancellation or subtraction process.

3,432,766
APPARATUS FOR PRODUCING STIMULATED EMISSION OF RADIATION
Daniel Joseph Morantz, Rochester, Kent, England, assignor to National Research Development Corporation, London, England, a British corporation
Continuation-in-part of application Ser. No. 340,903, Jan. 29, 1964. This application Mar. 13, 1964, Ser. No. 351,647
Claims priority, application Great Britain, Feb. 1, 1963, 4,343/63; Mar. 15, 1963, 10,435/63
U.S. Cl. 331—94.5 **9 Claims**
Int. Cl. H01s *3/00, 1/00;* **G02b** *5/14*

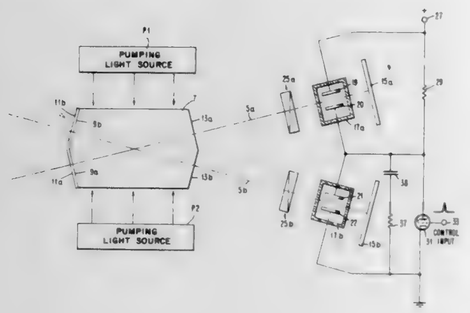


In optical maser apparatus, a curved internally reflecting surface, such as a cylinder, has a curvature to allow radiation to propagate along a substantially curved path, such as a circle or a spiral, which extends through a negative temperature medium. A further externally reflecting surface, such as a parabolic cusp or further spiral, focusses pumping radiation incident at right angles to the plane of said path into a small volume practically-coincident with said path to produce stimulated emission of radiation. Coherent radiation is derived by arranging for said stimulated radiation to traverse repetitively said path in a resonant structure, or by passing incident coherent radiation along said path to force said stimulated radiation into coherence to produce the effect of a light amplifier.

3,432,767
APPARATUS EMPLOYING ELECTRONIC LIGHT SHUTTERS FOR SWITCHING THE DIRECTION OF A LASER BEAM ALONG DISCRETE PATHS
Robert V. Pole, Yorktown Heights, and Jaen Nuñez, Flushing, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,220
U.S. Cl. 331—94.5 **8 Claims**
Int. Cl. H01s *3/00*

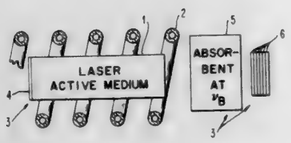
A multipath laser apparatus is provided including an active laser element, one end of which is formed into a plurality of plane surfaces each having a reflective coating thereon. The opposite end of the active laser element includes a number of plane surfaces each one being parallel to a different one of the coated surfaces thereby forming a number of discrete paths perpendicular to the parallel surfaces. Adjacent to the uncoated end of the

active laser element are provided a number of mirrors arranged such that each one is perpendicular to a different one of the paths, thereby forming a plurality of discrete resonant cavities. Electronic light shutters are placed in each path between the active laser element and each mirror. A light polarizer is placed in each path between the light shutter and the active element. When voltage is



is applied to a given Kerr cell, the amount of feedback in the associated path, that is, the Q of the resonant cavity along the path is reduced with respect to the Q of the cavities wherein the light shutter is not energized. When the laser element is then triggered into emission of intense laser light, the beam direction follows the preferred path having the higher relative Q.

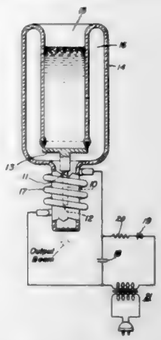
3,432,768
LASER DEVICE FOR PRODUCING MULTIPLE FREQUENCY OUTPUTS
Richard L. Garwin, Scarsdale, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,372
U.S. Cl. 331—94.5 **14 Claims**
Int. Cl. H01s *3/00*



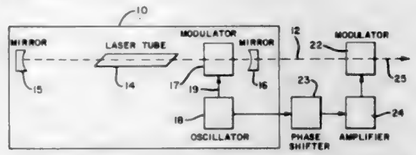
The invention relates to a laser device which is capable of providing output at at least two different frequencies, the sum of which is equal to the characteristic frequency of a particle within a laser active medium which has a forbidden single quantum transition.

3,432,769
COHERENT LIGHT SOURCE UTILIZING PENTAVALENT MANGANESE ACTIVATED CALCIUM CHLOROPHOSPHATE CRYSTAL
Jack D. Kingsley and Jerome S. Prener, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 24, 1964, Ser. No. 391,409
U.S. Cl. 331—94.5 **6 Claims**
Int. Cl. H01s *3/00;* **C09k** *1/04*

A four-level optical maser adapted to emit coherent infrared radiation when stimulated to a population inversion utilizes, as the active medium thereof, a crystal of a calcium chlorophosphate activated with pentavalent manganese.



3,432,770
METHOD AND APPARATUS FOR PRODUCING LIGHT HAVING A SINGLE FREQUENCY
Gail A. Massey, Belmont, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,441
U.S. Cl. 331—94.5 **9 Claims**
Int. Cl. H01s *3/00;* **H04b** *9/00;* **G02f** *1/28*



1. Apparatus for producing light having a single frequency comprising in combination:
a source of frequency modulated (FM) light having a sweep frequency ω_0 and a center frequency ω_c, said source comprising:
a laser having a cavity and producing a continuous output with a plurality of oscillating modes,
a radio frequency oscillator having an output frequency ω_0,
a first phase modulator within said cavity and in the path of light generated by said laser connected to said oscillator output and producing single-pass phase retardation of the laser generated light at the oscillator frequency,
a second phase modulator disposed in the path of said FM light, and
a phase shifter having an input connected to the output of said oscillator and producing a phase shift of 180 degrees therein,
said second modulator being connected to the output of said phase shifter whereby to modulate the phase of said FM light and produce light at the frequency ω_c.

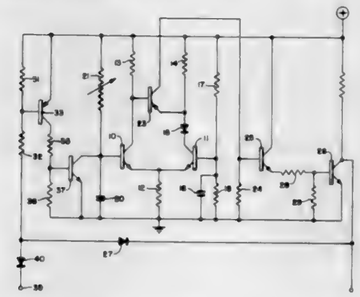
3,432,771
OPTICAL SCANNING TECHNIQUES EMPLOYING AN OPTICAL CAVITY INCLUDING TWO REFLECTORS AND A FOCUSSING OBJECTIVE
Wilton T. Hardy, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,438
U.S. Cl. 331—94.5 **16 Claims**
Int. Cl. H01s *3/00;* **G02b** *17/00*

Apparatus is provided for changing the direction of a light beam in an optical cavity. The optical cavity consists of a focussing objective, which may be an active lasing medium, located between two reflectors, such as curved mirrors, having effective centers of curvature which are separated by a predetermined distance. The relative position of one center of curvature with the other center of curvature can be controlled, for example, by positioning one of the mirrors. Points on the reflectors



are located at the object and image positions for the objective. When the active medium is suitably excited, the lasing mode is represented by a spot of light being formed on each mirror. The orientation of the lasing mode (and, hence, the positioning of the spots of light) is determined and controlled by the effective angular positioning of the reflectors.

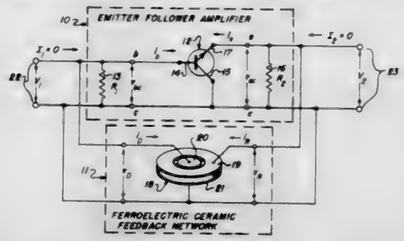
3,432,772
DIFFERENTIAL RELAXATION OSCILLATOR
James Alvin Johnsen, Mount Prospect, and John Loran Peterson, Chicago, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,370
U.S. Cl. 331—111 **5 Claims**
Int. Cl. H03k *3/26;* **H03b** *5/08, 5/18*



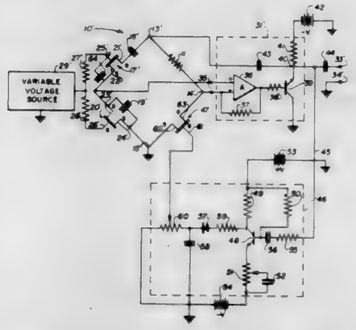
A stable relaxation oscillator uses a resistive-capacitive timing network with a transistor differential amplifier to sense a reference point on the charge curve of the capacitor that is proportional to variations in that curve due to D.C. power supply variations. When this reference point is sensed, an output pulse is amplified by a Darlington loop amplifier and is fed back to a discharge transistor which is rendered conductive to provide a discharge path for the capacitor. The circuit then resets, and the capacitor is allowed to charge again, repeating the cycle.

3,432,773
EMITTER-FOLLOWER OSCILLATOR EMPLOYING FERROELECTRIC CERAMIC FEEDBACK NETWORK
Cecil E. Land and Donald G. Schueler, Albuquerque, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 15, 1967, Ser. No. 661,179
U.S. Cl. 331—116 **8 Claims**
Int. Cl. H03b *5/30*

A transistor oscillator with ferroelectric ceramic multiterminal feedback network whereby the transistor is connected as an emitter-follower amplifier, and the feedback network is connected between the base and emitter electrodes of the transistor. The feedback network includes an axially polarized ferroelectric ceramic resonator with input, output and base electrodes, where the input and output electrodes are connected respectively to the emitter and base electrode of the transistor and the base electrode of the resonator is returned to ground. A modulator electrode can be included to permit modulation of the oscillator at either of two stable states of oscillation, where such stable states of oscillation are controlled by the direction of electrical polarization under the input and output electrodes.



3,432,774
VOLTAGE-TUNED WIEN BRIDGE OSCILLATOR
Oliver A. Fick, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 8, 1967, Ser. No. 659,568
U.S. Cl. 331—141 **2 Claims**
Int. Cl. H03b *5/26, 3/02, 5/38*

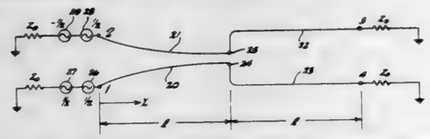


The drain source resistances of two field effect transistors are arranged in a resistive-capacitive oscillator, for example a Wein bridge oscillator, as variable resistive elements to provide a voltage-controlled resistance-tuned oscillator. A modification includes a third field effect transistor, arranged in a nonreactive branch of a Wien bridge oscillator, and provided with a feedback signal from the output of the oscillator, for stabilizing the amplitude of the oscillator signal in place of the heretofore conventional use of thermal feedback elements.

3,432,775
WIDE-BAND HYBRID NETWORK
Raymond H. Du Hamel, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 8, 1965, Ser. No. 494,181
U.S. Cl. 333—11 **5 Claims**
Int. Cl. H01p *5/12, 5/14, 3/00*

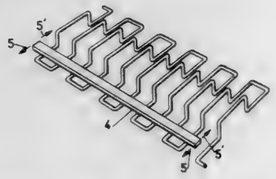
A microwave hybrid network having an extremely wide operating range is disclosed. A basic embodiment of the invention comprises a pair of mutually coupled transmission line sections and a pair of uncoupled transmission

line sections. One end of each of the coupled transmission lines is connected at a junction to an end of one of the uncoupled lines. The remaining ends comprise the network



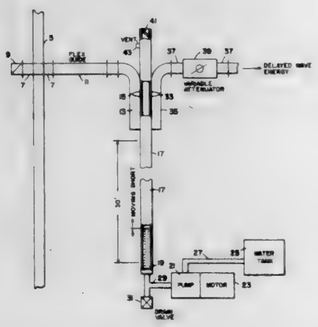
ports. The characteristic impedances and mutual coupling of the coupled transmission line sections are tapered over their entire lengths so as to provide wide-band operation.

3,432,776
WAVE-DELAY STRUCTURES
Jacques Arnaud, Walter Sobotka, and Maurice Desbrueres, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Aug. 10, 1965, Ser. No. 478,569
Claims priority, application France, Aug. 26, 1964, 986,208
U.S. Cl. 333—31 **9 Claims**
Int. Cl. H03h *7/30*



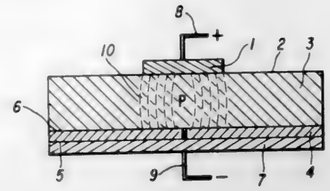
A meander-type wave-delay structure including a number of parallel, identical, equidistant conductors each having its two extremities connected respectively to the preceding and subsequent conductors by rectilinear connections perpendicular to said conductors, each conductor being bent so as to form a central rectilinear portion connected to two rectilinear terminal portions parallel to said central portion through intermediate rectilinear portions which are substantially perpendicular to both the central portion and the rectilinear connections.

3,432,777
HYDRODYNAMIC DELAY LINE
John W. Taylor, Jr., Baltimore, Md., Gerhard E. Gobl, Stockholm, Sweden, and Harold C. Hiscox, Glen Burnie, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Apr. 29, 1966, Ser. No. 547,076
U.S. Cl. 333—31 **9 Claims**
Int. Cl. H03h *7/30;* **H01p** *1/10;* **G01r** *27/04*



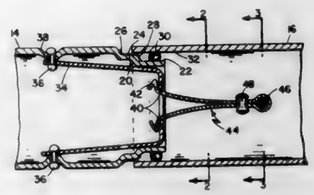
A wave guide variable delay line is disclosed. The waveguide is vertical and contains a fluid short the level of which may be varied. Means are provided to couple electromagnetic energy to and from the delay line.

3,432,778
SOLID STATE MICROSTRIPLINE ATTENUATOR
Alfred Ertel, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,301
U.S. Cl. 333—81 **9 Claims**
Int. Cl. H01p *1/22*



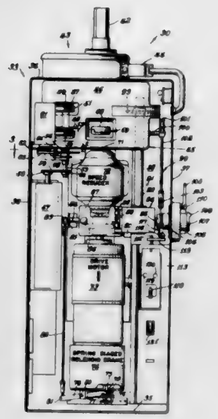
A microwave stripline attenuator is disclosed including a semiconductor substrate having a metallic stripline on one surface and a metal ground plane on an opposite surface. A diffused junction or a Schottky-barrier junction is formed at one surface of the substrate, and means are coupled to the junction to establish a selectively variable bias across the junction, thereby varying the resistivity of the substrate so that transmitted microwave signals are variably attenuated by changes in the bias across the junction.

3,432,779
LOW RF NOISE AXIAL COMPENSATION CONNECTOR
Donald Nelson Sewell, Acton, Mass., assignor to Dielectric Products Engineering Company, Inc., Littleton, Mass., a corporation of Michigan
Filed Mar. 9, 1967, Ser. No. 621,976
U.S. Cl. 333—97 **11 Claims**
Int. Cl. H01p *1/06*



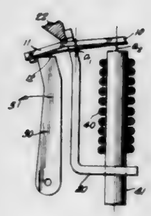
A simple, economical low RF noise axial compensation joint for a coaxial transmission line employing tubular inner and outer conductors. The end of one inner conductor section is reduced in a series of two steps, a first step on which a layer of polytetrafluoroethylene is disposed and over which the end of the other conductor section is received in clearance relation, and a second step of larger dimensional magnitude than the first step on which a Phosphor bronze spring formed in a loop is disposed. The spring provides the sole electric circuit connection between the two inner conductor sections and rolls along the surfaces when the sections are moved axially relative to one another.

3,432,780
MOTOR-DRIVEN OPERATOR FOR HIGH VOLTAGE SWITCH
David M. Evans, Wheeling, and Manfred Stene, Chicago, Ill., assignors to S & C Electric Company, Chicago, Ill., a corporation of Delaware
Filed July 6, 1967, Ser. No. 651,565
U.S. Cl. 335—68 **28 Claims**
Int. Cl. H01h *3/26*



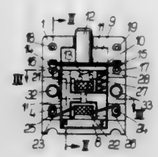
A motor-driven mechanism utilizing a drive motor, a plurality of shaft means, and a clutch shift means for connecting the shaft means to and from the said drive motor for operating a high voltage switch between open and closed positions at relatively high speed and requiring the application of relatively high torque in a relatively short interval.

3,432,781
MAGNETIC TRIP LATCHING SYSTEM FOR CIRCUIT BREAKERS
George W. Knecht, Brooklyn, N.Y., assignor to Murray Manufacturing Corporation
Filed Dec. 14, 1966, Ser. No. 601,580
U.S. Cl. 335—172 **5 Claims**
Int. Cl. H01h *9/20*



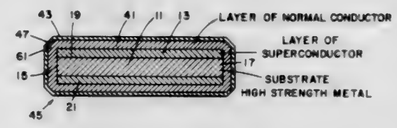
A magnetic trip latching device in an electromagnetic circuit breaker includes a trip armature rockably mounted on a frame member and having a bias moment on the armature which is dependent upon the latching force. This is accomplished by a two-piece trip armature including a bent lever arm and leaf spring, the biasing moments being provided, respectively, on the lever arm and spring such that the latch force reduces the distance between the lever arm and leaf spring, thereby reducing the bias.

3,432,782
PUSHBUTTON-CONTROLLED OVERLOAD CIRCUIT BREAKER
Jakob Ellenberger, Altdorf, near Nuremberg, Germany, assignor to Firma Ellenberger & Poensgen G.m.b.H., a firm of Germany
Filed May 31, 1967, Ser. No. 642,401
Claims priority, application Germany, Aug. 3, 1966, E 32,200
U.S. Cl. 335—170 **10 Claims**
Int. Cl. H01h *9/20*



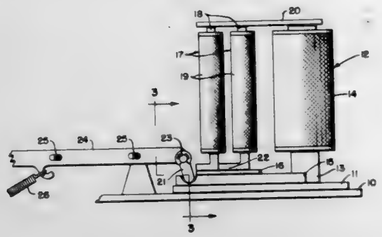
An overload circuit breaker which may be switched on by a pushbutton and has an electromagnet the core of which is premagnetized in one direction for holding the switch element in the on position, while its field coil produces a magnetic flux in the opposite direction whereby, when an excess current arises, the switch element will be released from the magnet core and will then be moved by springs to its off position.

3,432,783
SUPERCONDUCTOR RIBBON
Richard B. Britton, Setauket, Kenneth E. Robins, Center Moriches, and William B. Sampson, Bellport, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 24, 1967, Ser. No. 663,175
U.S. Cl. 335—216 **3 Claims**
Int. Cl. H01f *1/00*



Stabilized superconductor and method for large, high current density, high magnetic field, multipole, superconducting magnets, wherein a strong metallic alloy rectangular cross-section ribbon of substrate is coated with superconductor, the sides of the substrate are exposed by stripping the superconductor therefrom, and the superconductor surface and exposed substrate sides are coated with a tapered coat of low resistivity aluminum having an outer correspondingly beveled insulator of aluminum oxide thus providing a simple economic method for framing thin paralleled superconductors having suppressed current degradation due to flux trapping, the stainless steel providing long cross-connections between the superconductors normally thereto through the stainless steel and the paralleled superconductors having long cross-connections therefrom normally into the low resistivity aluminum whereby the ribbon is wound into a magnet having stabilized, insulated, adjacent, closely packed, tightly wound, high current density, multipole magnet turns with cooling passages formed between the ribbon turns along the tapered portions of the insulated aluminum coating.

3,432,784
MAGNETIC ACTUATOR AND LATCH
George A. Kim, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,341
U.S. Cl. 335—254 13 Claims
Int. Cl. H01f 7/00, 7/08



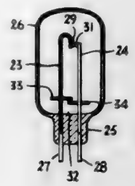
A plurality of actuator electromagnets each having its core connected to the core of a single latch electromagnet. The flux generated by the actuator electromagnets in combination with the flux generated by the latch electromagnet is sufficient to move armature elements individual to selected ones of the actuator electromagnets to an actuated position. The flux generated by the latch electromagnet alone is sufficient to retain the selected armature elements in their actuated positions but is insufficient to move the armature elements to that position.

3,432,785
COIL FORM
Gene R. Solmos, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 19, 1967, Ser. No. 610,348
U.S. Cl. 336—198 8 Claims
Int. Cl. H01f 27/30, 21/06



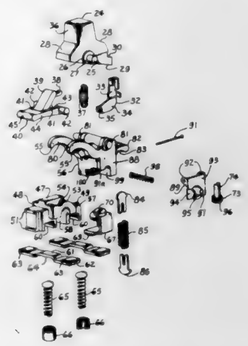
A coil form for transformer assembly having adjustable coupling consisting of two telescoping cylindrical members. An interfitting projection and window are respectively provided on the members to limit the relative axial and rotational movement therebetween. Additional projections on one member ride within axial slots in the other to permit axial movement for adjusting the transformer coupling and for providing a temporary locking of such movement upon relative rotation of the members to cause the projection to frictionally engage the wall of the other member. Final locking of the coupling adjustment is achieved by fusing the telescoping members with a soldering iron or adhesive material.

3,432,786
ELECTRICAL SWITCHES HAVING A REST CONTACT AND SELF-HOLDING MEANS
Holger V. Vind, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Oct. 4, 1966, Ser. No. 584,187
Claims priority, application Germany, Oct. 5, 1965, D 48,355, D 48,356, D 48,357
U.S. Cl. 337—95 2 Claims
Int. Cl. H01h 61/17, 37/32



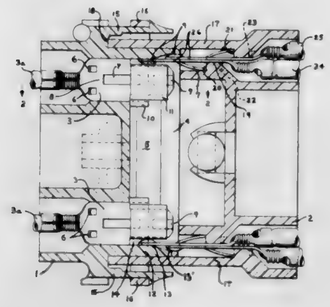
A circuit-breaking device comprising a switch having a movable bimetallic strip in contact with self-holding means and the strip has a layer of a material substantially insensitive to ion bombardment facing the other cooperating electrode for use in glow discharge devices. Another embodiment has non-conductive masks on the switch electrodes or strips to prevent formation of a short-circuit path due to metal vapor precipitations in operation in a glow discharge device.

3,432,787
MANUALLY OPERATED SWITCH
Jordan F. Puetz, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Continuation-in-part of application Ser. No. 540,406, Apr. 5, 1966. This application Aug. 10, 1967, Ser. No. 659,689
U.S. Cl. 337—153 10 Claims
Int. Cl. H01h 71/20, 73/22, 3/20



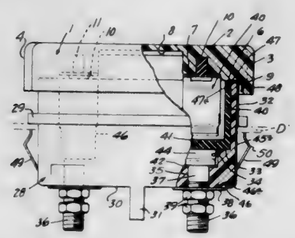
A fractional horsepower manually operable starter having movable contacts which are spring biased to a circuit closing position and moved to a circuit opening position against the spring bias by an overload responsive mechanism that has a pawl of rigid material which engages the teeth in a ratchet wheel of a solder pot type overload unit and a lever arrangement which will force the contacts open in event of a contact weld or a broken toggle spring and exert a maximum force to move the contacts to a circuit opening position upon release of the pawl by the ratchet wheel.

3,432,788
FUSE END CONNECTOR
Kenneth John Startin, Luton, England, assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 31, 1966, Ser. No. 576,354
Claims priority, application Great Britain, Sept. 7, 1965, 38,260/65
U.S. Cl. 337—201 7 Claims
Int. Cl. H01h 85/02, 85/46



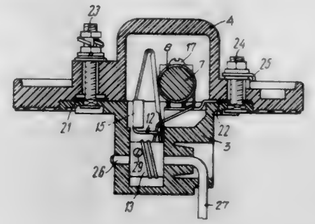
1. An electrical fuse connector assembly comprising a bipartite insulating housing having a first housing member releasably connected with a second housing member, the first housing member having mounted therein spaced fuse receptacles for receiving end-caps of a cartridge fuse and the said second housing member having mounted therein at least one tab contact member so that upon mating engagement of the first and second housing members, the tab contact engages an end-cap of the fuse, the tab contact being disposed in a slot in the second housing member and arranged to wedgingly engage an end of the fuse end-cap in a slot defined between the end portion of the end-cap and an adjacent wall of the first housing member.

3,432,789
FUSEHOLDER FOR ELECTRICAL CIRCUITS
Edmund F. Poehlman, Jr., Silver Spring, Md., assignor to Fuse Indicator Corporation, Rockville, Md., a corporation of Maryland
Filed June 16, 1967, Ser. No. 646,534
U.S. Cl. 337—242 13 Claims
Int. Cl. H01h 85/24, 85/32



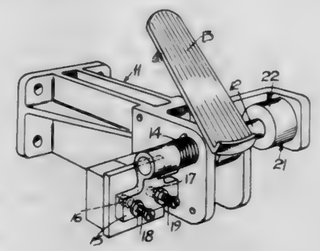
A protector for electrical circuits employing more particularly standard type cartridge fuses retained in standard fuse clips upon a fuse block, panel board or within a holder for preventing the unauthorized tampering or accidental misplacing of fuses upon the fuse clips or within the holder therefor.

3,432,790
ADJUSTABLE RHEOSTAT MEANS FOR LIQUID LEVEL GAUGES
Karl Yanovich Svilpe, Ul. Pernavas, 10, kv. 20; Genakh Maxovich Luft, Ul. Lachplesha 35, kv. 19; Andris Alfredovich Betlyan, Ul. Tallinas 90, kv. 9; Viktor Vasilievich Milyaev, Chiekurkalns 2, poperechnaya linila 1–2, kv. 16; and Lieb Borukhovich Gurevich, Ul. Kuldigas 29, kv. 5, all of Riga, U.S.S.R.; and Ivan Vasilievich Seleznev, Ul. Ljublinskaya 8/1, kv. 33, Moscow, U.S.S.R.
Filed Mar. 6, 1967, Ser. No. 620,951
U.S. Cl. 338—33 2 Claims
Int. Cl. H01c 13/00



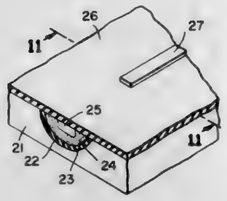
A liquid level gauge including a bent spring-type contact brush having one end rigidly secured to a pivotal axis within a housing. A float is connected to such pivotal axis and a rheostat in the housing has a winding on which the brush travels in operation. One end of the rheostat is pivoted in the housing and the other end is spring loaded and secured by a screw to the housing so that turning of the screw effects turning of the rheostat relative to the axis of the contact brush.

3,432,791
THROTTLE PEDAL UNIT FOR AN INDUSTRIAL TRUCK
Norman Harold George Palmer, Sutton Coldfield, England, assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Continuation of application Ser. No. 505,251, Oct. 26, 1965. This application Dec. 22, 1967, Ser. No. 693,024
Claims priority, application Great Britain, Nov. 17, 1964, 46,723/64
U.S. Cl. 338—198 2 Claims
Int. Cl. H01c 5/08



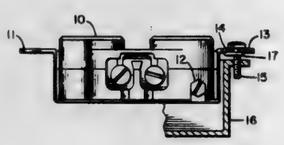
An electrically driven truck including an electric motor, the speed of which is controlled by an electric control system including a microswitch and potentiometer actuated by a throttle pedal moved by the truck operator. Actuators for the potentiometer and microswitch and a throttle pedal are all mounted on a shaft rotatable a limited angular movement from a rest position with a lever fixed to the shaft having microswitch actuating means movable away from the microswitch upon initial rotation of the shaft after which the potentiometer is operated to increase the speed of the motor.

3,432,792
ISOLATED RESISTOR FOR INTEGRATED CIRCUIT
Owen W. Hatcher, Jr., Sunnyvale, Calif., assignor to Teledyne, Inc., Mountain View, Calif., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,154
U.S. Cl. 338—311 2 Claims
Int. Cl. H01c 7/00



A diffused isolated resistor for an integrated circuit. A moat is provided in a semiconductor substrate which is lined with an isolating dielectric layer of silicon dioxide. The moat is filled with polycrystalline N-type silicon. A P-type layer is diffused into the polycrystalline silicon and forms the diffused resistor.

3,432,793
GROUNDING CONNECTION FOR ELECTRICAL UNIT
William A. Muska, 1378 Ryan Ave., Roseville, Minn. 55113, James C. Schacker, 1504 Edgewater, Arden Hills, Minn., and Earl E. McHattie, 2129 Midlothian Road, Roseville, Minn. 55113
Continuation-in-part of application Ser. No. 586,162, Oct. 12, 1966. This application Nov. 14, 1966, Ser. No. 594,177
U.S. Cl. 339—14 7 Claims
Int. Cl. H01r 3/06, 3/00; H02b 1/02



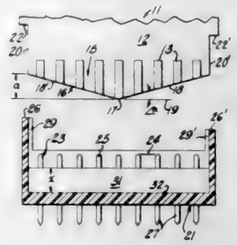
A metal clip is attached to the metal strap or yoke on an electrical unit such as a switch or receptacle to provide an automatic and reliable electrical circuit connection between the yoke and the metal flush box in which the unit is ordinarily mounted to ground the third connection.

3,432,794
CARD FRAME ASSEMBLY
John J. Churla, Raritan, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 29, 1966, Ser. No. 575,683
U.S. Cl. 339—17 6 Claims
Int. Cl. H05k 1/07; H01r 33/76



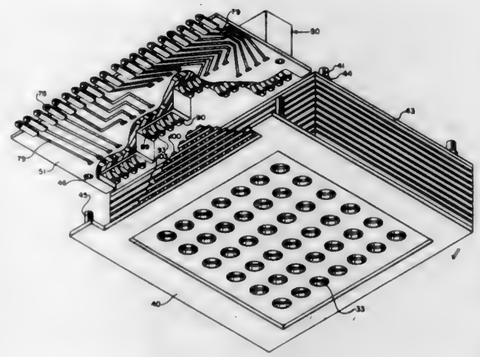
A card frame for multiconductor flat cable. The frame includes means for holding the cable down to the frame and strain relief means for relieving the strain on cable so held down. Rails are provided on the sides of the frame to permit insertion of the frame into a card frame holder. Handle means are also provided on the frame to permit gripping of the frame.

3,432,795
ELECTRICAL CONNECTOR HAVING FACILE ENGAGEMENT MEANS
Max L. Jayne, North Warren, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 618,126
U.S. Cl. 339—17 3 Claims
Int. Cl. H01r 13/50; H05k 1/04



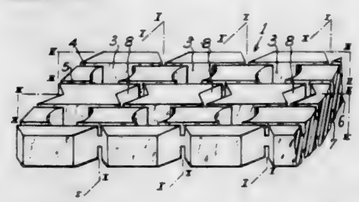
Means for reducing the insertion resistance and facilitating sliding engagement and seated securement of a plurality of contact elements with a plurality of resilient receiving elements in a two part electrical connector combination. The inserting connector part has engagement means formed to define a contour of insertion which makes contact with the resilient elements in the receiving connector part in a nonparallel manner to provide nonsimultaneous engagement between the contact and receiving elements.

3,432,796
MULTIPLANAR ELECTRICAL CONNECTION TECHNIQUES
William A. Reimer, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,724
U.S. Cl. 339—18 8 Claims
Int. Cl. H01r 13/50; H05k 1/04, 1/14



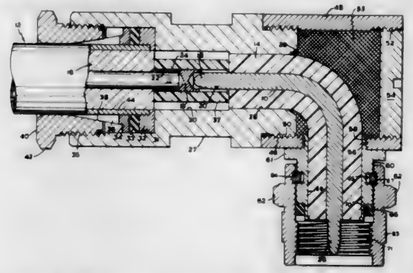
A separable multiplanar printed circuit structure having a plurality of printed circuit boards stacked together on a frame and aligned to provide a stepped edge along which the terminals of the printed circuits on all the levels of the stack are exposed. A connector having a stepped inner surface shaped to conform with the stepped edge of the stack has spring contacts which mate with the exposed terminals to provide the desired connections to the circuits in the multilayer structure.

3,432,797
JACK-CONTROLLED SYSTEM FOR MULTIPLE CONNECTIONS
Pierre Tardieu, 120 Rue Victor Hugo, Bois-Colombes 92, France
Filed Feb. 20, 1967, Ser. No. 617,119
Claims priority, application France, Aug. 19, 1966, 73,501
U.S. Cl. 339—18 4 Claims
Int. Cl. H02b 1/04



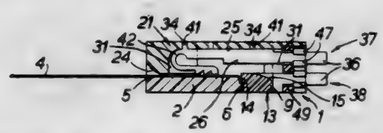
An arrangement for connecting various series of parallel leads with one another, the leads extending in different planes along directions which in each plane are orthogonal or parallel with the direction of the leads in another plane.

3,432,798
RIGHT ANGLE CONNECTORS
Alexander R. Brishka, Mamaroneck, N.Y., assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Aug. 10, 1967, Ser. No. 659,729
U.S. Cl. 339—89 6 Claims
Int. Cl. H01r 13/54, 17/18



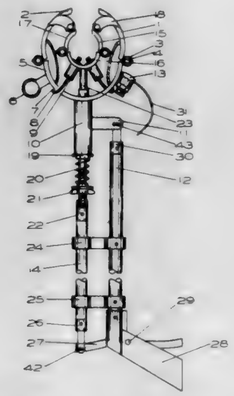
A right angle contact including an insulated contact wire, a conductive housing with terminals at right angles to each other therefor, the cavity in the housing being filled with finely divided metallic particles.

3,432,799
ELECTRICAL CONNECTORS FOR RIBBON CONDUCTORS OF CABLE TAPE
Claude L. Richards, Pattishall, John A. Cartwright, Northampton, and Graham Pearce, Rugby, England, assignors to Painton & Company Limited, Kingsthrope, England, a British company
Filed Oct. 25, 1966, Ser. No. 589,279
Claims priority, application Great Britain, Oct. 27, 1965, 45,533/65
U.S. Cl. 339—99 7 Claims
Int. Cl. H01r 11/20, 13/50; H05k 1/00



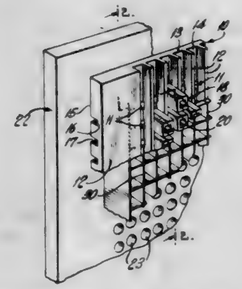
A connector for ribbon conductors of a cable tape, the connector having a body consisting of separably assembled components. The body forms a tape receiving recess and is provided with means to grip the tape against longitudinal movement. Contact clips are anchored in the body, each clip having a toothed end portion resiliently biased toward the tape. The body components are assembled with a relative longitudinal displacement of the toothed end portions and the tape, causing the toothed end portions to plough through insulation of the tape and to longitudinally scrape the ribbon conductors.

3,432,800
AUTOMATIC HOT LINE BREAKAWAY CLAMP
Daniel Joseph Goodman, Rte. 4, Box 170, Lake Charles, La. 70601
Filed Dec. 11, 1967, Ser. No. 689,381
U.S. Cl. 339—109 10 Claims
Int. Cl. H01r 13/24, 13/62, 3/00



A breakaway clamp and hot stick assembly for hot line work comprising an operable, segmented inner ring and an operable, segmented outer ring fixedly joined together near the mouth of the opening segments and an elongated push rod which by increasing the distance between opposing segments of the rings causes the rings to open, the rings being tensioned to be normally closed. The tension and rings are so designed that should an emergency develop, the clamp automatically breaks away.

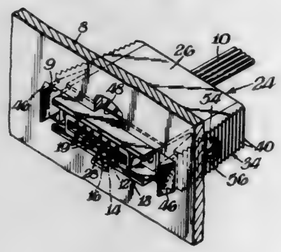
3,432,801
PATCHBOARD PROGRAMMING SYSTEM
Michael Ruotolo, Huntington, N.Y., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,680
U.S. Cl. 339—126 4 Claims
Int. Cl. H02b 1/02; H01r 25/00, 29/00



An electrical patchboard which includes a conductive plate having first and second arrays of parallel slots disposed on opposite sides of the conductive plate with the arrays of slots being mutually perpendicular to each other

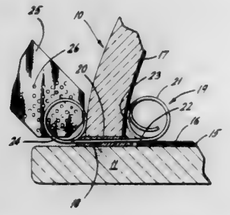
and recessed to a depth sufficient to form a matrix of holes through which are inserted electrical connectors having insulated sleeve portions shaped to form press fits between the parallel walls of at least one of the first or second arrays of slots.

3,432,802
EDGE BOARD AND FLAT CABLE CONNECTOR
Douglas Eugene Ritchie, Chelmsford, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 13, 1966, Ser. No. 586,451
U.S. Cl. 339—128 **11 Claims**
Int. Cl. H02b *1/02;* **H05d** *1/00;* **H01r** *13/50*



An enclosure for mounting an edge board or flat cable connector to a wall panel comprising a housing with interlocking top and bottom wall and screw secured side walls having resilient scalloped arms for engaging a panel opening.

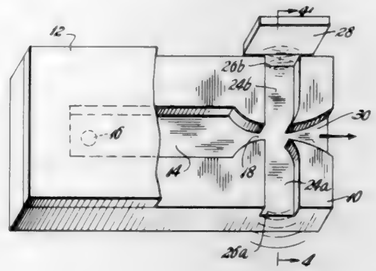
3,432,803
HIGH VOLTAGE CONNECTION FOR CATHODE RAY TUBE
Nathan C. Nice, Lansdale, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 15, 1968, Ser. No. 705,665
U.S. Cl. 339—144 **7 Claims**
Int. Cl. H01r *33/74*



High voltage lead-in connection for television picture tubes of the kind comprising a separately formed face plate frit-sealed to a bulb portion. The lead-in comprises a metallic supply conductor extending from the outside of the tube through the frit and having a portion bearing resiliently against conductively coated areas of the interior of the tube.

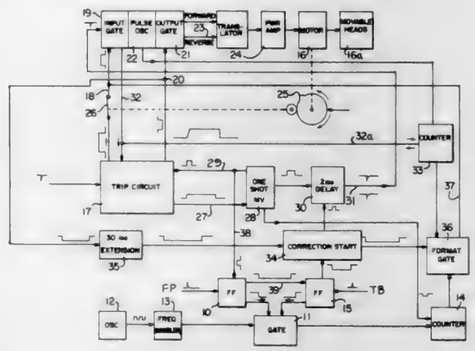
3,432,804
FLUID ULTRASONIC GENERATOR
Basil B. Beeken, New Haven, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,426
U.S. Cl. 340—15 **6 Claims**
Int. Cl. H04b *11/00*

A whistle device for generating wave energy in the ultrasonic frequency range. The device has a fluid inlet chamber terminating in a restricted throat, and an outlet channel spaced from the throat and of substantially the same width. Resonance cavities are disposed on opposite sides of the fluid stream with entrance orifices lying along



the edge of the fluid stream flowing between the throat and the outlet channel to generate ultrasonic frequency vibrations in the fluid stream.

3,432,805
TIME BREAK CORRECTOR FOR MARINE SEISMIC SIGNALS
Francis M. Romberg, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Jan. 31, 1968, Ser. No. 702,046
U.S. Cl. 340—15.5 **9 Claims**
Int. Cl. G01v *1/24*

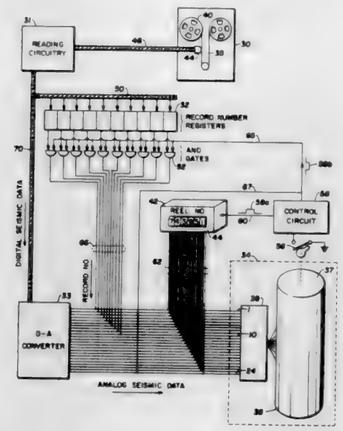


A marine seismic source is triggered by a firing signal produced when the magnetic drum recorder is in a particular position. The variable delay between the firing signal and the actual seismic impulse is compensated for by a corrector system. Movable playback heads on the seismic signal recorder are positioned by the corrector system so that the signals reproduced by these heads are in correct time relation to the actual seismic impulse. The corrector system includes first and second counters and a comparator for determining when the proper correction has been made.

3,432,806
METHOD AND APPARATUS FOR RECORDING IDENTIFYING DATA ON SEISMIC RECORDS
Jack J. Rousso, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 20, 1967, Ser. No. 647,471
U.S. Cl. 340—15.5 **10 Claims**
Int. Cl. G01v *1/00*

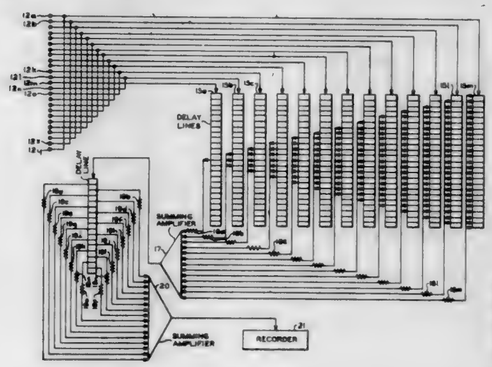
The specification discloses a method and apparatus for recording identifying data such as record numbers and magnetic tape reel numbers on a seismic cross section.

Markers are recorded as part of selected traces in the upper margin of the cross section before the beginning



of seismic data. The presence of a marker on a trace represents a binary "one" digit and the absence of a marker on a trace represents a binary "zero" digit.

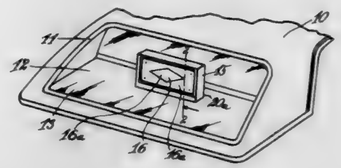
3,432,807
SIGNAL INTERPRETATION
Joe P. Lindsey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 20, 1967, Ser. No. 654,765
U.S. Cl. 340—15.5 **7 Claims**
Int. Cl. G01v *1/00*



In a seismic surveying system, a plurality of seismometers are closely spaced to one another on both sides of the shot point. The signals from the seismometers are combined into a single trace by a velocity filtering procedure to reduce ground waves and shallow multiple reflections. In one embodiment, the filtering is accomplished by the use of tapped delay lines and summing amplifiers.

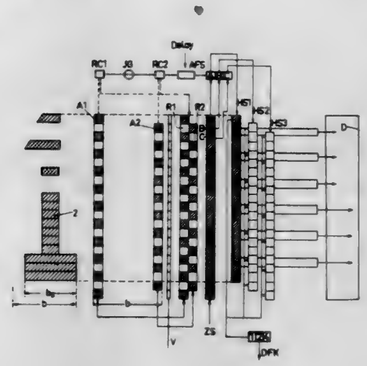
3,432,808
CAUTION LIGHTS FOR MOTOR CARS
John Fleece, 14600 Union St., Harvey, Ill. 60426
Filed Mar. 13, 1967, Ser. No. 622,567
U.S. Cl. 340—84 **10 Claims**
Int. Cl. B60q *1/26, 1/44;* **G08b** *23/00*

This invention comprises a removable caution light which is normally mounted inside the rear window of a motor vehicle. The caution light consists of a stationary base permanently connected to the electrical wiring system of the vehicle, and a signal housing removable from the base and adapted to receive a current supply cord,



whereby the housing can be removed from the base to be placed on top, or at some distance behind the vehicle, to communicate with other motorists.

3,432,809
DEVICE FOR CHARACTER RECOGNITION
Theodorus Reumerman, Zandvoortselaan 12, Zandvoort, Netherlands, and Willem Hendrik Theodoor Helmig, Clovistraat 57, Haarlem, Netherlands
Filed Jan. 11, 1965, Ser. No. 424,717
Claims priority, application Germany, Jan. 10, 1964, R 36,948
U.S. Cl. 340—146.3 **13 Claims**
Int. Cl. G06k *9/18*

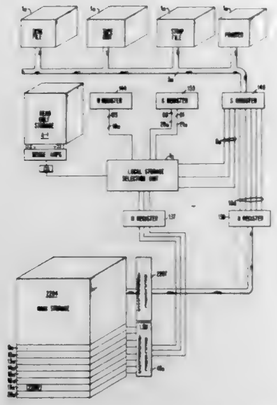


To recognize symbols having black content printed in predetermined zones, in spite of misalignment of characters and sensing heads, separate signals corresponding to the printed zones are read into predetermined storage positions of a store, a sensing circuit senses the outermost occupied storage position therein and, as a result of said sensing, transfers the information into an auxiliary storage having a number of storage places equal to the number of zones.

3,432,810
ADDRESSING SYSTEM FOR A COMPUTER EMPLOYING A PLURALITY OF LOCAL STORAGE UNITS IN ADDITION TO A MAIN MEMORY
Humberto R. Cordero, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 31, 1966, Ser. No. 553,973
U.S. Cl. 340—172.5 **4 Claims**
Int. Cl. G06f *7/06*

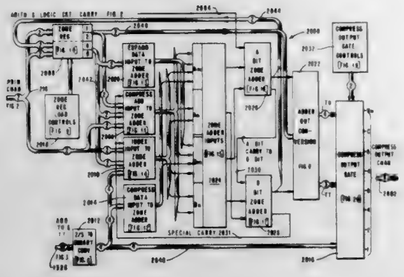
This storage addressing system provides for addressing local storage and main storage from the same address registers. When I/O devices require access to local storage, the I/O device address incldues indicia indicating the particular local storage unit to be used as well as

the specific location within the selected local storage unit. The same register is used for both local storage and



main storage. When local storage is used, certain outputs from the address register are diverted to a local storage address decode unit.

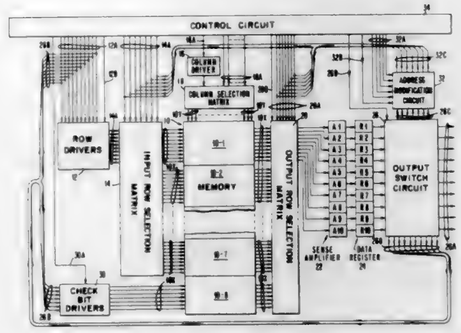
3,432,811
DATA COMPRESSION/EXPANSION AND COMPRESSED DATA PROCESSING
Russell G. Rinaldi, Poughkeepsie, and Brian B. Moore, New Paltz, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application June 30, 1964, Ser. No. 379,332, now Patent No. 3,310,786, dated Mar. 21, 1967. Divided and this application Jan. 19, 1967, Ser. No. 641,067
U.S. Cl. 340—172.5 **1 Claim**
Int. Cl. G11b *13/00*



This invention relates to data processing, and more particularly to a data processing code converter for converting data from binary form to binary coded decimal form.

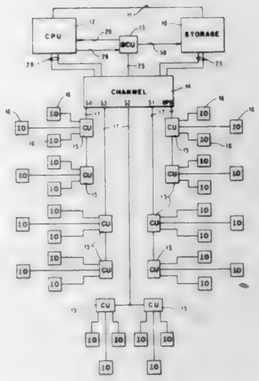
3,432,812
MEMORY SYSTEM
Robert F. Elfant, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 15, 1966, Ser. No. 565,439
U.S. Cl. 340—172.5 **15 Claims**
Int. Cl. G11b *13/00*

A 2½D memory system is disclosed including circuitry which allows the memory to operate when some of the memory positions are inoperative. Each column of the memory includes seven word locations and seven operable status indicators. When the memory is addressed, the operable status indicators are first interrogated for the addressed column and the outputs are applied to an address modification circuit. The input address specifies the sequential word location in the particular column which is to be



addressed. The address modification circuit provides an output address specifying the proper sequential word location counting only the operable word locations in the particular column. The functional operation is then carried out at that word location.

3,432,813
APPARATUS FOR CONTROL OF A PLURALITY OF PERIPHERAL DEVICES
Eugene J. Annunziata, Poughkeepsie, Robert S. James, Hyde Park, Lewis E. King, Highland, and Edwin B. Pierce, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 19, 1966, Ser. No. 543,623
U.S. Cl. 340—172.5 **13 Claims**
Int. Cl. G06f *7/06*



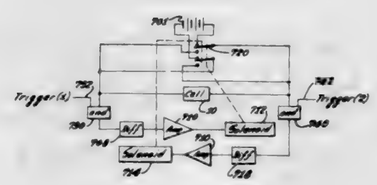
A peripheral control apparatus or channel which controls the transfer of data between input/output devices and a main memory of a data processing system. The channel performs I/O operations when instructed to do so by the data processing system by obtaining a control word from the main storage. A plurality of subchannels share a common control section which includes a local storage which is utilized to temporarily store a plurality

of control words, one for each subchannel. Whenever a subchannel has data to transfer or desires to receive data, the control word associated with that subchannel is brought out of the local storage and is utilized to control the data transfer. At the end of the data transfer the control word is put back into the local storage so that the common controls are free to be utilized by another subchannel.

Two types of subchannels are disclosed. In a selector type of subchannel entire data words are transferred sequentially to the main memory until an entire block has been transferred.

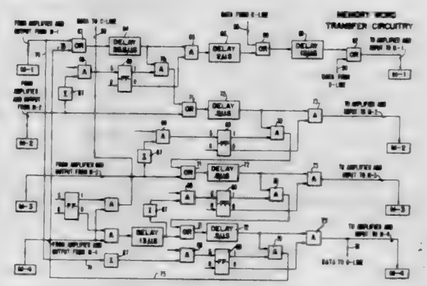
In the multiplexor subchannel data bytes or portions of a word are assembled in the channel by utilizing an additional data control word which provides an assembly area for the word in the local storage. When a full word has been assembled it is transferred to the main memory.

3,432,814
ELECTROLYTIC DEVICES
Thomas B. Bissett, Malibu, Calif., assignor to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California
Filed Mar. 15, 1962, Ser. No. 179,847
U.S. Cl. 340—173 **14 Claims**
Int. Cl. G11b *13/00;* **G01r** *27/22;* **H03d** *1/02*



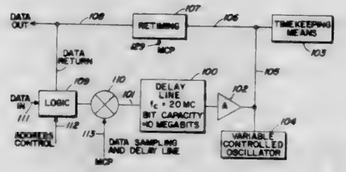
1. A system for detecting and indicating a particular frequency of electromagnetic energy, including,
an electrolytic cell including an electrolytic solution and a first electrode, a second electrode and a third electrode disposed in the electrolytic solution and including a particular amount of an active metal on the first electrode, the first and second electrodes being constructed to obtain a transfer of the active metal between the electrodes, means operatively coupled to the first and second electrodes in the electrolytic cell for obtaining a deposit of a particular portion of the active metal from the first electrode to the second electrode in representation of particular information and wherein the third electrode controls the particular amount of the active metal initially deposited on the second electrode in the cell and wherein the third electrode initially has at least the particular amount of active metal before the active metal becomes transferred to the second electrode, means operatively coupled to the first and second electrodes for producing a transfer of the active metal on one of the first and second electrodes at a particular rate to the other one of the first and second electrodes after the transfer of the particular amount of the active metal from the first electrode to the second electrode to produce a voltage surge on the one of the first and second electrodes after the transfer of the active metal to the other one of the first and second electrodes, and means including a differentiator operatively coupled to the one of the first and second electrodes for providing an output indication as to the time for the transfer of the active metal from the first and second electrodes upon the production of the voltage surge.

3,432,815
SWITCHING LOGIC FOR A TWO-DIMENSIONAL MEMORY
Donald J. Lem, Peekskill, N.Y., and Wilhelm G. Spruth, Boeblingen, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,531
U.S. Cl. 340—173 **12 Claims**
Int. Cl. G11b *9/00*



A self organizing delay device memory arrangement which is two dimensional and the switching logic which controls the flow of information among a plurality of delay devices and through a plurality of delay devices is described. The switching logic consisting of feedback paths each associated with a delay device which is adapted to stored data. An actuable gate is coupled between each of the feedback paths for successively transferring stored data from a delay device to the next succeeding delay device in the same time slot. A second actuable gate is coupled between the first and last of the feedback paths for transferring stored data therebetween and a delay element is interposed in the first feedback path for positioning the transferred data in a different portion of the same time slot.

3,432,816
GLASS DELAY LINE RECIRCULATING MEMORY
William M. Hutchinson, Newport Beach, and William J. Melvin, Costa Mesa, Calif., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 10, 1966, Ser. No. 519,732
U.S. Cl. 340—173 **28 Claims**
Int. Cl. G11b *13/00;* **H03k** *19/00;* **G06f** *7/00*



1. A recirculating memory for recirculating a pulse train comprising a first group of time synchronous data pulses and a second group of time synchronous synchronizing pulses;
said recirculating memory comprising:
input means;
output means;
delay line means;
first timing means responsive to the synchronizing pulses supplied from said delay line means to become synchronized therewith with a predetermined phase relation;
shift register means comprising a plurality of stages including a first stage;

said first stage responsive to the output of said delay line means to produce a first two-level output signal representative of the data and synchronizing pulses passing through said delay line means;

the remaining stages of said shift register responsive to said first two-level output signal to produce a second two-level signal;

means for supplying the said second two-level output signal to the input of said delay line means;

second timing means;

selecting circuit means responsive to the phase of the output of said first timing means with respect to the phase of said second timing means to shift an intermediate stage of said shift register means with said second timing means near the optimum shifting time to provide a predetermined constant phase between said second two-level output signal and said second timing means.

3,432,817

APPARATUS FOR INFORMATION STORAGE WITH THIN MAGNETIC FILMS

Heinz Billing, Munchhausenstrasse 12; Albrecht Rudiger, Widenmayerstrasse 24; and Karl-Heinz Gundlach, Elisabethenstrasse 75, all of Munich, Germany

Filed July 18, 1963, Ser. No. 296,030
Claims priority, application Germany, July 24, 1962, M 53,676; Mar. 15, 1963, M 56,122, M 56,123
U.S. Cl. 340—174 **8 Claims**
Int. Cl. G11b *5/00;* **B44d** *1/18*



Thin-film magnetic information storage elements (and methods of fabrication), comprising arrays such as spots or strips of magnetic thin-film material and conductors traversing said arrays; the thin-film material having, in addition to two stable remanence conditions in the "easy" magnetic direction, two other stable remanence conditions, in or opposite to a "hard" direction. Film domains may result from magnetic or thermal treatment, juxtaposition of different materials, or otherwise, and both planar and 3-dimensional arrays are contemplated.

3,432,818

RADIATION HARDENED RECORDING SYSTEM

Charles W. Lundberg and Fred G. Hewitt, St. Paul, Raymond H. James, Bloomington, and Vincent J. Korkowski, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 12, 1964, Ser. No. 351,413
U.S. Cl. 340—174 **20 Claims**
Int. Cl. G11b *5/00;* **G01t** *1/16;* **H01j** *39/00*

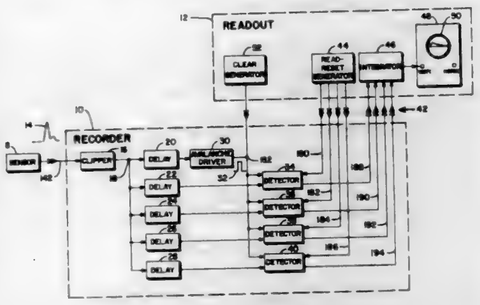
18. A portable radiation-hardened recording system, comprising:

sensor means for providing an electrical signal having a varying amplitude that is representative of a measured phenomenon;

a plurality of magnetizable detector means;

strobe-generator means activated by said electrical signal for coupling a strobe signal that has a partial switching characteristic with respect to said detector means to each of said detector means;

a plurality of delay means coupled to said sensor means for delaying said strobe signals a plurality of delay times with respect to said electrical signal; and,



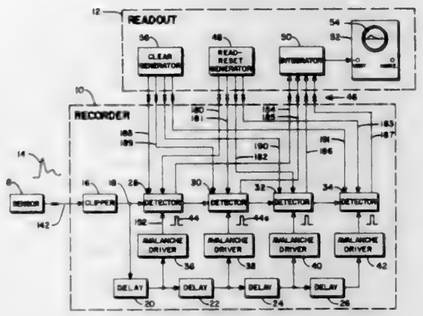
each of said detector means caused to record an amplitude level of said electrical signal as a corresponding partially-switched flux level when strobed by said strobe signal.

3,432,819

RADIATION HARDENED RECORDING SYSTEM

Vincent J. Korkowski, Minneapolis, Fred G. Hewitt, St. Paul, Raymond H. James, Bloomington, and Charles W. Lundberg, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 17, 1964, Ser. No. 352,524
U.S. Cl. 340—174 **14 Claims**
Int. Cl. G11b *5/00;* **G01t** *1/16;* **H01j** *39/00*



4. A portable radiation-hardened recording system, comprising:

sensor means for providing an electrical output signal having a varying amplitude that is representative of a measured phenomenon;

a strobe-generator means activated by said output signal for providing a strobe signal output;

a plurality of delay means serially coupled to said strobe-generator means for delaying said strobe signal providing a plurality of delay time strobe signals;

a plurality of detector means serially coupled to said sensor means and each coupled by a separate one of said delayed strobe signals;

each of said detector means recording a signal level characteristic of said electrical output signal when sampled by its respective delayed strobe signal; and

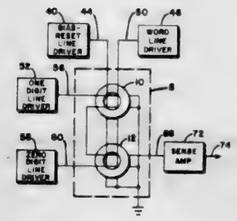
each of said recorded characteristics consisting of the relative amplitude of said electrical output signal at each of said plurality of delay times.

3,432,820

TWO-CORE-PER-BIT MEMORY

Fred G. Hewitt, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 1, 1964, Ser. No. 364,142
U.S. Cl. 340—174 **8 Claims**
Int. Cl. G11b *5/00*



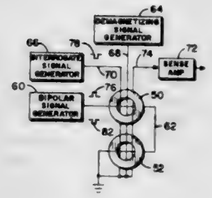
Bit-organized and word-organized memory devices and systems including magnetizable cores that utilize the time-limited history effect to achieve binary storage at a single stable-state of magnetic induction.

3,432,821

DETECTOR FOR A SEARCH MEMORY

Lanny L. Harklau, Minneapolis, and Raymond H. James, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,121
U.S. Cl. 340—174 **12 Claims**
Int. Cl. G11b *5/00*



An apparatus and a method of operation of magnetizable memory elements whereby there is achieved an asymmetrical switching threshold for bipolar drive fields.

3,432,822

MULTIAPERTURE THIN FILM MAGNETIC MEMORY

Bruce I. Bertelsen, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 26, 1964, Ser. No. 370,159
U.S. Cl. 340—174 **5 Claims**
Int. Cl. G11b *5/00*

A continuous magnetic thin film storage array is provided where the area of each magnetic storage region is defined by an apertured conductive plate adjacent thereto. The intersections of orthogonal drive lines are disposed over the apertures of the conductive plate thereby defining bit sites. The flux in the bit sites directly below an aperture is rapidly switched while that beneath the conductive

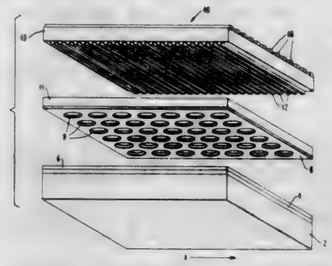


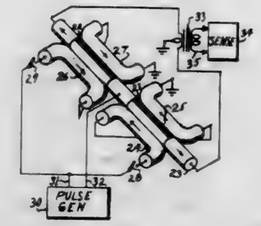
plate is inhibited from switching because of eddy currents developed within the plate.

3,432,823

MEMORY WITH CORES THREADED BY SINGLE CONDUCTORS

Richard L. Snyder, 1313 N. Kroeger Ave., Fullerton, Calif. 92631

Filed June 1, 1964, Ser. No. 371,592
U.S. Cl. 340—174 **8 Claims**
Int. Cl. G11b *5/00*



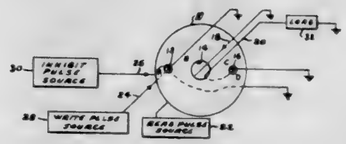
Coincident current magnetic memory employing plated wire cores utilizing domain wall switching. The memory may be a three-dimensional array employing inhibit conductors, and a printed circuit conductor network may be used in conjunction with plated wire cores.

3,432,824

MULTIAPERTURED MAGNETIC MEMORY ELEMENT

Albert Sherman, Cinnaminson, and William A. McNamara, Jr., Moorestown, N.J., assignors to the United States of America as represented by the Secretary of the Air Force

Filed June 25, 1964, Ser. No. 378,085
U.S. Cl. 340—174 **1 Claim**
Int. Cl. G11b *5/00*



A magnetic binary storage element comprising a disc of magnetic material having three apertures positioned along a diameter to define four flux legs. A READ pulse conductor passes through the central aperture, a WRITE

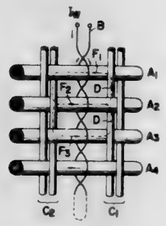
pulse conductor and an INHIBIT pulse wire pass through one side aperture, and a conductor constituting the element output circuit passes through the central aperture and the other side aperture thereby coupling to the flux leg between these apertures and sensing flux reversals therein. The pulse polarities are such that the magnetomotive force produced by the WRITE pulse is opposite to those produced by the READ and INHIBIT pulses.

3,432,825

MATRIX MEMORY DEVICE WITH CONDUCTORS OF WHICH SOME HAVE MAGNETIC THIN FILM COATING

Hisao Maeda, 211 Minamisenzoku-machi, Ota-ku, Tokyo-to, Japan; Hisaaki Maeda, heir of said Hisao Maeda, deceased

Filed July 1, 1964, Ser. No. 379,505
Claims priority, application Japan, July 3, 1963, 38/34,920
U.S. Cl. 340—174 **2 Claims**
Int. Cl. G11b *5/00*



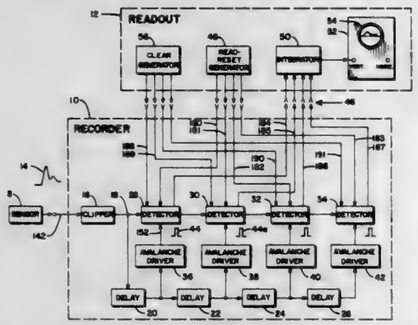
A matrix memory device has a woven fabric composed of conductor warps for transmitting word drive current, and magnetic film plated conductor wefts for transmitting digit pulses, and magnetic warp wires arranged between the word drive conductors.

3,432,826

RADIATION HARDENED RECORDING SYSTEM

Fred G. Hewitt, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 386,823
U.S. Cl. 340—174 **11 Claims**
Int. Cl. G11b *5/00;* **G01t** *1/16*



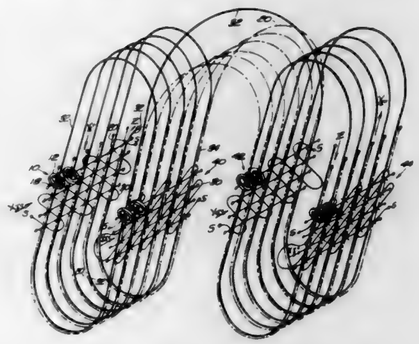
1. A portable radiation-hardened recording system, comprising:
   - a serial-string of a plurality of magnetizable detector means;
   - a plurality of delay means, a separate one intermediate adjacent ones of said plurality of detector means;
   - a transient signal drive line serially intercoupling said serial string of detector means and delay means;
   - sensor means for coupling a relatively long duration transient electrical signal having a varying amplitude to said transient signal drive line;
   - a strobe pulse drive line serially intercoupling only said detector means;
   - strobe pulse generator means for coupling a relatively short duration time-limited strobe pulse to said strobe pulse drive line;
   - said strobe pulse generator means coupling said strobe pulse to said strobe pulse drive line coincident with said sensor means coupling said transient signal to said transient signal drive line;
   - said strobe pulse coincident at each of said detector means with a different relatively short duration sampled portion of said transient signal;
   - each of said detector means recording its respective transient signal sampled portion as a respective time-limited flux level.

3,432,827

STACKED MAGNETIC MEMORY SYSTEM

Andrew N. Sarno, Medford, Mass., assignor to DI/AN Controls, Inc., Boston, Mass., a corporation of Massachusetts

Filed Sept. 4, 1964, Ser. No. 394,412
U.S. Cl. 340—174 **3 Claims**
Int. Cl. G11b *5/00*



A densely packed coincident current core memory system is provided wherein multiple memory planes are arranged in superimposed relation with the matrix in each plane comprising a plurality of magnetic cores arranged in horizontal rows and vertical columns with the axes of all of the cores being generally parallel and coplanar with one another. X and Y drivers operate from one side only of the matrix and the sense winding is passed diagonally back and forth through the cores. The inhibit winding is threaded through the cores in one column or row of core elements in one matrix plane and is carried down to the underlying core matrix where it is threaded back through the cores in a column or row in the underlying matrix. The winding is then looped back up to the first matrix and threaded down through the next column or row of cores until the two core matrices are sewn together by the inhibit winding.

3,432,828

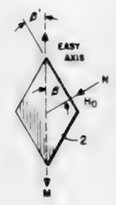
SHARP THIN FERROMAGNETIC FILM

Paul D. Barker, Minneapolis, and Ernest J. Torok, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 400,183
U.S. Cl. 340—174 **2 Claims**
Int. Cl. G11b *5/00*

An open flux path core of thin ferromagnetic material having single domain properties providing single domain

rotational switching and having the property of uniaxial anisotropy. The invention relates, in particular, to the



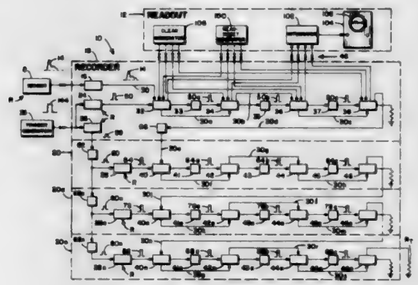
planar contour of such core whereby a line normal to the edge of such core forms an angle β with the anisotropic axis, which angle β is everywhere greater than 45°.

3,432,829

RADIATION-HARDENED RECORDING SYSTEM

Fred G. Hewitt, St. Paul, and Raymond H. James, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 2, 1964, Ser. No. 401,005
U.S. Cl. 340—174 **6 Claims**
Int. Cl. G11b *5/00;* **G01t** *1/16;* **H01j** *39/00*



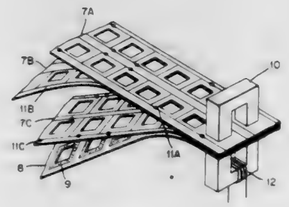
1. A portable radiation-hardened recording system, comprising:
   - first, second, through *n* detector-delay sets, each of said sets including;
     - a plurality of magnetizable detector means;
     - a plurality of interleaved strobe pulse delay means, a separate one intermediate adjacent ones of said plurality of detector means;
     - a transient signal drive line serially intercoupling said plurality of detector means;
     - a strobe pulse drive line serially intercoupling said interleaved detector means and delay means;
   - the transient signal drive lines of said *n* sets serially intercoupled;
   - a transient signal delay means intercoupled intermediate the transient signal drive lines of said first and second sets;
   - sensor means for coupling a relatively long duration varying amplitude transient electrical signal to said serially intercoupled transient signal drive lines;
   - first strobe generator means for coupling a relatively short duration time-limited strobe pulse to the strobe pulse drive line of said first set;
   - separate complex strobe generator means coupled to separate ones of the strobe pulse drive lines of said second through *n*th sets for coupling a relatively short duration time-limited strobe pulse to the strobe pulse drive lines of said second through *n*th sets;
   - a plurality of serially intercoupled trigger pulse delay means, a separate one associated with a separate one of said second through *n*th sets;
   - second strobe generator means for coupling a trigger pulse to said plurality of serially intercoupled trigger pulse delay means;
   - the respectively delayed trigger pulse emitted from the respective trigger pulse delay means coupled to the trigger pulse delay means associated complex strobe generator;
   - said trigger generator means coupling said trigger pulse to said plurality of trigger pulse delay means for causing respectively delayed trigger pulses to be coupled to the trigger pulse delay means associated complex strobe generator means whereby said complex strobe generator means couple respectively delayed relatively short duration time-limited strobe pulses to their associated strobe pulse drive lines coincident with said sensor means coupling said transient signal to said serially intercoupled transient signal drive lines;
   - said strobe pulses coincident at their respectively associated detector means with a different relatively short duration sampled portion of said transient signal;
   - each of said detector means recording its respective transient signal sampled portion as a respective time-limited flux level.

3,432,830

TRANSFORMER READ-ONLY STORAGE CONSTRUCTION

Charles E. Owen, Eastleigh, Antony Proudman, Awbridge, near Romsey, Daniel M. Taub, Winchester, and William A. Warwick, South Wonston, near Winchester, England, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 20, 1964, Ser. No. 412,665
U.S. Cl. 340—174 **5 Claims**
Int. Cl. G11b *5/00*

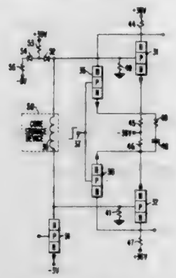


An improved read-only memory is disclosed of the type in which each bit position of the memory has a transformer core that couples a large number of primary windings to a single secondary winding. The primary windings are interconnected to form words of the memory and selecting a particular word produces a pattern of signals on the secondary windings. The primary windings for each word are formed on a longitudinal tape that has apertures for receiving the legs of the transformers at each bit position. A structure is disclosed that reduces the ringing that can occur in a device of this type. The longitudinal conductors in adjacent tapes are staggered so as to reduce capacitive coupling between the longitudinal conductors. Each transformer core is fitted with a closed loop having an appropriate resistance to damp the ringing.

3,432,831
GATED DIFFERENCE AMPLIFIER

Melvin P. Xylander, Apalachin, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Feb. 8, 1965, Ser. No. 430,831
U.S. Cl. 340—174 4 Claims
Int. Cl. G11b 5/00; H03f 1/00, 21/00

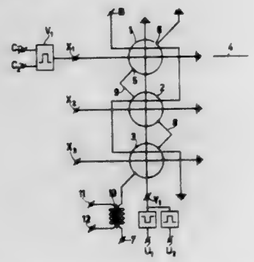


A gated difference amplifier effectively detects low level signals without noise being introduced during gating. High speed gating transistors are connected in parallel with respective difference amplifier transistors. A common gate signal source causes either the gating transistors or the amplifier transistors to conduct. Switching of the gating transistors causes identical potential shifts at both amplifier output terminals, whereby the potential difference across the output terminals remains constant.

3,432,832
MAGNETORESISTIVE READOUT OF THIN FILM MEMORIES

Theodoor Holtwijk Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 24, 1965, Ser. No. 434,898
Claims priority, application Netherlands, Feb. 26, 1964, 6401805
U.S. Cl. 340—174 3 Claims
Int. Cl. G11b 5/62



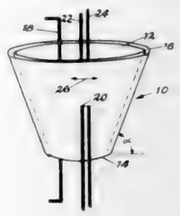
A thin film magnetoresistive device having a bias field which is applied in a direction opposite that of a read-out field for increasing the rotational distance through which the internal magnetic vector swings upon application of a readout field, thereby increasing the change in impedance of the film during readout.

3,432,833
MAGNETIC CORE OF TAPERED TUBE FORM FOR PROGRESSIVE MAGNETIC SWITCHING

Emmett P. McMahon, Buffalo, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed Mar. 29, 1965, Ser. No. 443,180
U.S. Cl. 340—174 22 Claims
Int. Cl. G11b 5/00; H01f 27/42; H03k 17/00

A tapered tube of rectangular B-H loop magnetic material is provided with a conductor extending through it, by means of which the tube may be set initially in one remanent state throughout. The conductor then may apply either pulses to reverse the magnetization of discrete bands of the tube commencing with its smallest end,

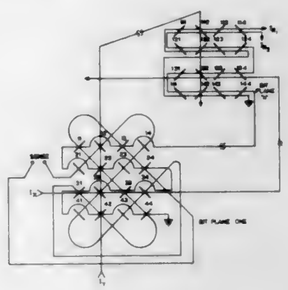


or the same effect may be produced by applying a slowly varying MMF to the conductor. Various functions may be performed, including multilevel storage in which read-out conductors project through slits provided in the wall of the tube at various axial positions.

3,432,834
NON-DESTRUCTIVE READ-OUT MEMORY

Harry Putterman, Elizabeth, N.J., assignor to General Precision Systems Inc., Little Falls, N.J., a corporation of Delaware

Filed Apr. 23, 1965, Ser. No. 450,346
U.S. Cl. 340—174 1 Claim
Int. Cl. G11b 5/00



An NDRO memory of the coincident-current magnetic core memory matrix type wherein a reset winding is coupled only to those cores which are to be read out with a signal during the read-out sequence. If a plurality of programs are to be stored in the memory, a plurality of reset windings are provided, each winding separately contacting only those cores which are to provide a signal during the read-out sequence, each winding including separate enabling means.

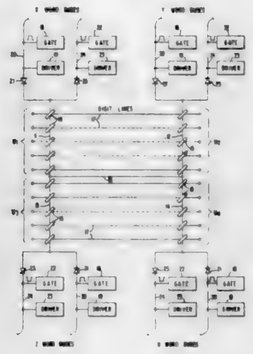
3,432,835
CURRENT SUMMING ARRANGEMENT FOR A MAGNETIC CORE MEMORY

Henry R. Foglia, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 30, 1965, Ser. No. 452,182
U.S. Cl. 340—174 8 Claims
Int. Cl. G11b 5/00

A word organized core memory having individual drive lines threading all of the cores in each word. All of the drive lines are joined together at one end to form a common summing node or junction, and selectively con-

trolled gates and drivers are connected to the other end of each drive line. If there are n words in the memory, a full select switching current may be produced in the drive line of a selected word by actuating the gate for that line and concurrently energizing the drivers con-



nected to the non-selected drive lines to each generate a current of

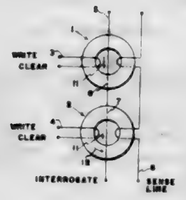
$$\frac{1}{n-1}$$

times the full select magnitude. These fractional currents sum at the node to a full select value.

3,432,836
METHOD FOR MAGNETIC CORE READOUT WITH NOISE CANCELLATION

Tyler R. Hunt, Stow, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed May 28, 1965, Ser. No. 459,796
U.S. Cl. 340—174 3 Claims
Int. Cl. G11b 5/00



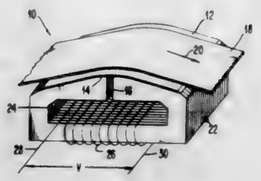
A method and apparatus for magnetic core readout with noise cancellation. Specifically, readout of a single aperture core utilizing elastic switching techniques is combined with a second core associated therewith set so as to be driven towards complete saturation upon readout to greatly improve signal to noise ratios over that possible with the single core alone.

3,432,837
SENSOR MAGNETIC HEAD WITH MAGNETIC MATERIAL AS A GAP BRIDGE

George J. Fan, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 30, 1964, Ser. No. 422,239
U.S. Cl. 340—174.1 16 Claims
Int. Cl. G11b 5/30

The disclosure provides a sensor for dynamic magnetic field patterns. A particular sensor for magnetic field patterns is a magnetic head which has a discontinuity or gap in its reading face that is placed adjacent a flexible record medium with magnetic field patterns thereon which are to be read, e.g., magnetic tape. The magnetic head of this invention has a layer of magnetic material on its reading

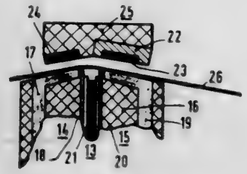


face bridging the gap with permeability less than the magnetic material of the head and coercivity less than that of the record. There is a cooperation of the magnetic layer with the magnetic tape to obtain a flux concentration in the reading coil of the magnetic head.

3,432,838
MAGNETICALLY DECOUPLED MAGNETIC READ-WRITE TRANSDUCER ASSEMBLY

Klaus Winkler, Planegg, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Aug. 18, 1965, Ser. No. 480,585
U.S. Cl. 340—174.1 3 Claims
Int. Cl. G11b 5/00; G01d 15/12



A device for the coupling of the heads of a magnetic head system having at least one writing head and at least one reading head arranged closely behind the writing head in the direction of movement of the recording medium, the reading and writing heads each including a core of two legs with a gap between the leg ends adjacent the recording medium, a magnetically homogeneous and magnetically well-conducting body disposed on the side of the part of the writing and reading heads adjacent the recording medium, the body being electrically poorly conducting, whereby the body couples the legs of the writing head and reading head, and the body thereby providing a coupling between the heads having a magnetic resistance which results in a flux that is sufficiently great to compensate for the stray flux.

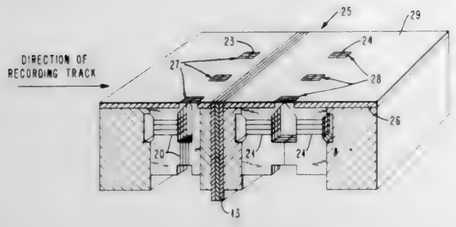
3,432,839
MAGNETIC MULTIHEAD ASSEMBLY WITH SHIELDING MEANS

Charles H. Stapper, Fridley, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 390,843, Aug. 17, 1964. This application Dec. 9, 1966, Ser. No. 600,586
U.S. Cl. 340—174.1 6 Claims
Int. Cl. G11b 5/40

A magnetic transducer in which feedthrough noise between heads thereof is reduced by the provision of a conductive coating inlaid over the operating surface to cover

portions of the pole faces of the heads and reduce their ability to transmit and receive feedthrough noise. Additional shield means positioned in the transducer between the heads is exposed at the operating surface through the

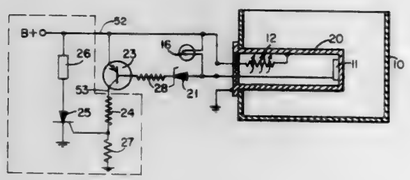


conductive coating to act as a magnetic sink for feedthrough. Configurations of the additional shielding means and shapes of the pole pieces providing improved results are disclosed.

3,432,840
FLUID LEVEL INDICATOR

Nicholas T. Neapolitakis, Chicago, and William H. White, Jr., Wheaton, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Sept. 28, 1965, Ser. No. 490,910
U.S. Cl. 340—244 **1 Claim**
Int. Cl. G08b *21/00*



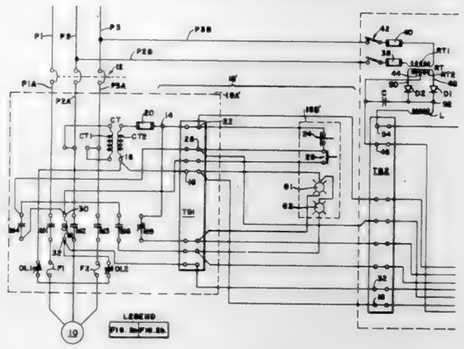
A fluid level indicator including a thermistor and a heating element in combination. Absence of fluid surrounding the indicator probe permits the heating element to heat the thermistor. The changing resistance of the thermistor energizes a transistor which gates on a silicon controlled rectifier to actuate an alarm.

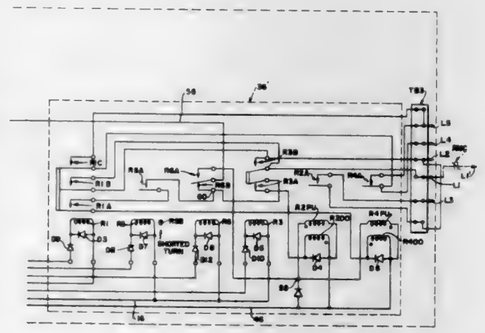
3,432,841
STATUS INDICATING AND ALARM ANNUNCIATING SYSTEMS FOR ELECTRICALLY POWERED DEVICES

Herbert Harvey, Palos Verdes Estates, Martin H. Sims, Redondo Beach, and Charles L. Clay, Long Beach, Calif., assignors to Harvey Aluminum Incorporated, Torrance, Calif., a corporation of California

Filed Dec. 13, 1967, Ser. No. 690,291
U.S. Cl. 340—248 **39 Claims**
Int. Cl. G08b *21/00, 28/00*

A status and control system is provided for electrically powered devices such as electric motors including a sealed status module having a plurality of condition sensing relays therein adapted to be interconnected through distinct electrical interfaces with energizing or motor starter circuitry and information read out circuitry, respectively, the latter being connected to a computer or instrument input for the purpose of providing status information with regard to a plurality of predetermined conditions of a device or motor being monitored. In the case in which a computer is used, the computer can be programmed to type out the status information for each device or motor being monitored in response to the conditions of predetermined combinations of sensing relays in the sealed status module.



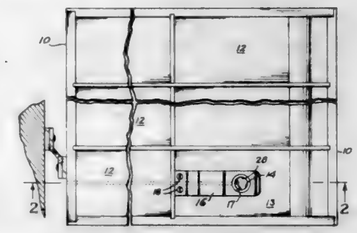


Each such device or motor is monitored by an individual sealed status module in combination with its individual energizing or motor starter circuitry.

3,432,842
MONEY CONTAINER WITH INTEGRAL HOLDUP ALARM

Robert L. Poznanski, 1611 NW. Northrup St., Portland, Oreg. 97209

Filed Jan. 14, 1966, Ser. No. 520,802
U.S. Cl. 340—280 **2 Claims**
Int. Cl. G08b *21/00;* **H01j** *39/12*

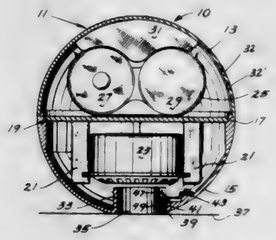


1. A structural money container comprising in combination:
(a) a money compartment defined by a floor and side walls dimensioned to contain a stack of paper money,
(b) spring clip means mounted substantially flatwise on the compartment floor for releasably securing at least the lowermost unit of a stack of paper money between the clip means and floor with the remaining units of the stack freely overlying the clip means,
(c) the floor and clip means having registering openings therein normally intercepted by the money unit secured under the clip means,
(d) light sensitive electrical resistor means mounted in registry with the registering openings below the clip means for activation by light upon removal of the money unit from under the clip means, and
(e) an electric circuit including in series circuit relationship a source of electric current, an electrically operated alarm, and the light sensitive resistor means.

3,432,843
SIGNAL MEANS

Claude L. Spring, Des Moines, Iowa, assignor to Jensen Industries Incorporated, Estherville, Iowa, a corporation of Iowa

Filed Jan. 20, 1966, Ser. No. 521,983
U.S. Cl. 340—283 **7 Claims**
Int. Cl. G01b *21/00*

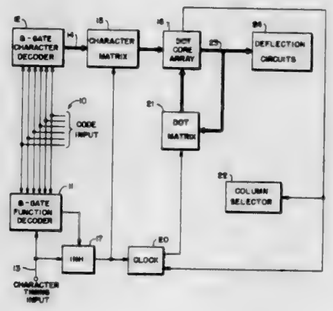


A spherical signal means with a signal unit therein maintained in an inoperative position by a spring loaded plunger operatively connected to a power unit for the signal unit, whereupon when the weight of the device rests on the spring loaded plunger, the unit will remain dormant, but the signal unit will be energized whenever the device is moved so as to release the spring loaded plunger.

3,432,844
CHARACTER GENERATION LOGIC

Charles R. Winston, Deerfield, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Apr. 21, 1965, Ser. No. 449,732
U.S. Cl. 340—324 **8 Claims**
Int. Cl. G08b *23/00;* **G01d** *15/20, 15/16*

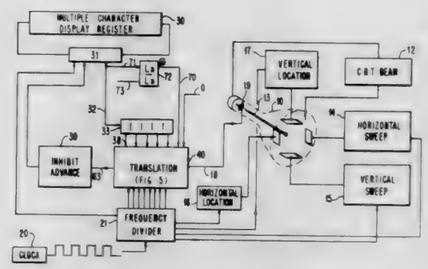


An electrostatic printer employs 40 printing nozzles located across a page width to print 80 character lines with each nozzle printing two characters and with printing taking place sequentially a character at a time. At all times, three adjacent nozzles are turned on with the outer two of the three having the ink streams being deflected onto a mask and with printing taking place only from the center one of the three nozzles. Permutation-coded input characters are decoded in two groups of AND-gates, the outputs of which are supplied to a diode matrix to provide a single digital output for each different input character. Each output of the diode matrix is variably threaded through selected ones of the cores of a fixed wired ferrite core memory, with each core individually associated with a different dot location in the matrix out of which the character is to be formed; and only those cores associated with the selected character are set. The set cores then are sequentially interrogated one at a time under control of a dot diode matrix having a diode crosspoint for each dot location in the character matrix. Interrogation is accomplished by resetting a set core, causing signals to be supplied on permutation-coded output windings to a storage register, the output of which is used to supply control signals to the deflection electrodes associated with the printing nozzles. The output of the register also is supplied to the diode matrix to select (in conjunction with a clock pulse) the diode for the next dot location to be interrogated and the sequence is repeated. When the last memory core for a given character is reset, the interrogation is stopped and the system is reset awaiting receipt of the next input permutation-coded character.

3,432,845
NUMERIC DISPLAY

Gavin L. Douglas and Jack W. Simpson, Sr., Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 8, 1966, Ser. No. 532,713
U.S. Cl. 340—324 **18 Claims**
Int. Cl. G08b *23/00*



Numeric characters are generated for a cathode ray tube display from predetermined character segments each produced by an individual AND circuit that combines appropriate time related beam blanking information and required character component information. Additionally, a 5-bit BCD code form is employed to advantage to assist in display of decimal points, grouping of digits by threes, and suppression of high order zeros.

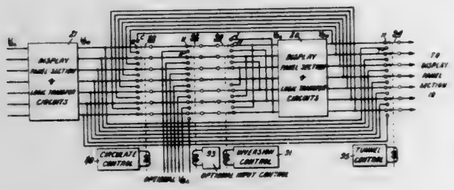
3,432,846
TRAVELING SIGN CONTROLLED BY LOGIC CIRCUITRY AND PROVIDING A PLURALITY OF VISUAL DISPLAY EFFECTS

Clifford M. Jones, Scotia, and John D. Harnden, Jr., Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Apr. 19, 1965, Ser. No. 449,177
U.S. Cl. 340—339 **12 Claims**
Int. Cl. H05b *41/44*

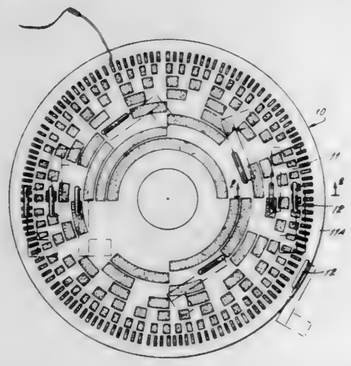
A plurality of electronic circuits produce desired optical effects on illuminated display signs of the moving or non-

moving display type. Logic circuits permit the circulating of a desired message along only a particular portion of the sign, for obtaining negative writing wherein the characters comprise nonilluminated lamps on an illuminated lamp background, and for reversing the direction of character motion on the sign as some examples of the optical



effects produced. The logic circuits are electronic switching circuits. A cover member for the sign lamps separates the illumination effects of adjacent lamps and provides cooling thereof by natural convection. A light emitting diode optical link system controls a second display sign remote from a first sign.

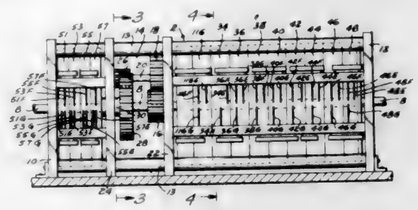
3,432,847
ROTATION INPUT ENCODER ASSEMBLY
Fred J. Eccles and Harold Landow, Stamford, Conn., assignors to Breeze Corporations, Inc., Union, N.J., a corporation of New Jersey
Filed Apr. 2, 1965, Ser. No. 445,161
U.S. Cl. 340—347 **1 Claim**
Int. Cl, H03k *13/00*



A shaft encoder, employing adjustable spring type roller contact members which pass over conductive and nonconductive segments on coaxial annular tracks of a rotary encoder disc as the shaft rotates. The position of the shaft at any time is indicated in binary form by the current flow thru the various contacts as they are above either conductive or nonconductive segments at that particular time.

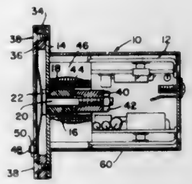
3,432,848
NONAMBIGUOUS SWITCH SYSTEM
John J. La Porta, Allandale, N.J., assignor, by mesne assignments, to Spedcor Electronics, Inc.
Filed Aug. 2, 1965, Ser. No. 476,598
U.S. Cl. 340—357 **20 Claims**
Int. Cl. G08c *19/00;* **H03k** *17/00;* **H04q** *1/00*

In a switch having a plurality of output tracks continuously moved past sensing stations, nonambiguous sensing for each track is achieved by having a pair of



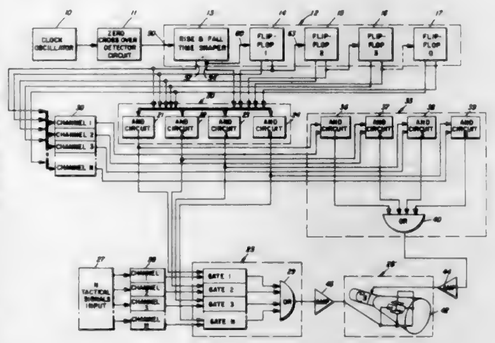
separated sensing brushes at each said station, the brushes of each pair being rectifier-connected to signal sources which are selectively energized.

3,432,849
SOUND GENERATOR
Leonard E. Earling, % The Gray Manufacturing Co., Tecumseh, Mich. 49286
Filed Apr. 29, 1966, Ser. No. 546,246
U.S. Cl. 340—388 **7 Claims**
Int. Cl. G08b *3/10*



A self-contained sound generator comprising a resilient diaphgram, a plunger, and means for driving the plunger. The intermediate portion of the diaphragm is slotted such that the form and thickness of the diaphragm are less critical than otherwise and operation is achieved using substantially less electrical energy and magnetic force.

3,432,850
MOLECULAR PULSE TIME-DIVISION MULTIPLEXER
Richard S. Chamberlin, Ellicott City, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 12, 1968, Ser. No. 697,454
U.S. Cl. 343—5 **14 Claims**
Int. Cl. G01s *9/00;* **H04j** *3/00*



A radar display control system for displaying tactical signals during predetermined portions of a segment of a

multiplex cycle. A plurality of binary counters, each stage of which has an output with a time duration of twice that of the previous stage, is used to enable various tactical signal channels so that signals on these channels are passed on to a utilization device. The outputs of the binary counters are also used to activate an intensity gate generator which likewise is connected to the utilization device. Thus, the outputs of the enabling circuit and the intensity gate generator control the operation of the utilization device so that only a predetermined portion of the tactical signals are passed to the utilization device.

3,432,851
SIGNAL PROCESSOR
Andrew P. Cox, Jr., Lutherville, and William L. Price, Glen Burnie, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 22, 1966, Ser. No. 603,998
U.S. Cl. 343—6.5 **33 Claims**
Int. Cl. H01s *9/56*

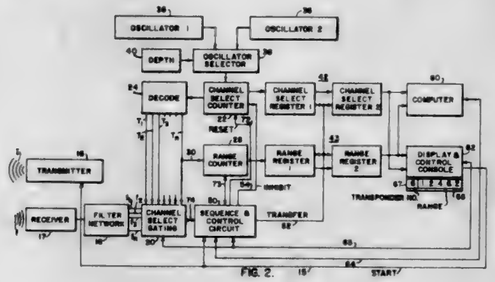
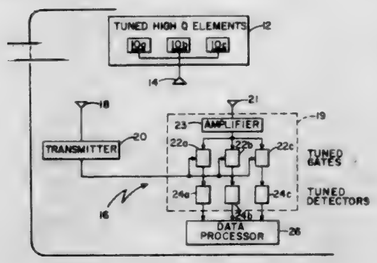


FIG. 2.

A signal processor which receives signals on individually enabled channels, from transponders of an array, after an interrogation signal is transmitted, to determine and record ranges to specific transponders. A control circuit transfers the count in a running range counter to storage means in response to one or more received transponder signals, and in addition transfers information relative to which transponder sent the received signal. When all the data desired are stored, the control circuit transfers the information to either a visual display or a computer. The computer acknowledges the transfer conditions or with a visual display, an operator may acknowledge the transfer conditions.

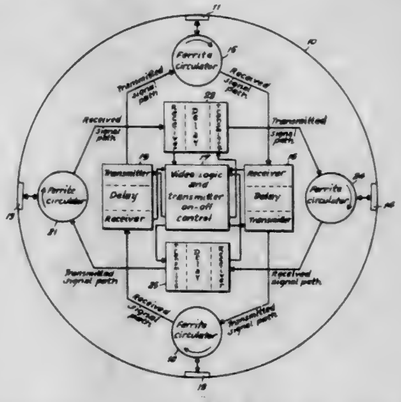
3,432,852
TRANSPONDER HAVING IMPROVED ISOLATION
Charles E. Arnold, Milton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,048
U.S. Cl. 343—6.5 **4 Claims**
Int. Cl. G01s *9/56*



A passive transponder having improved isolation between transmitter and receiver. A group of high-Q cir-

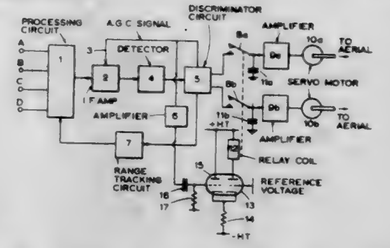
cuits arranged in a coded format is interrogated by a transmitter output signal swept through the frequency range of the high-Q circuits causing sequential and delayed reradiation of the transmitted energy. The reradiation is received by a receiver, including a plurality of tuned gates connected to a plurality of tuned detectors, wherein the tuned gate for each particular frequency is energized and allows the delayed signal from the corresponding high-Q circuit to be processed only after the transmitter has swept by the passband of the corresponding tuned detector.

3,432,853
BIDIRECTIONAL FLOW BEACON
Charles R. Wise, Las Cruces, N. Mex., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 6, 1967, Ser. No. 666,558
U.S. Cl. 343—6.8 **2 Claims**
Int. Cl. G01s *9/56*



A bidirectional flow multichannel radar beacon wherein the interrogation signal is received, amplified and then transmitted through diametrically opposed antennas, resulting in a substantial reduction in Doppler frequency error generated due to roll or other change in attitude of the missile carrying beacon with respect to the ground radar.

3,432,854
RADAR APPARATUS
Peter Frederic Thomas Cryer Stillwell, Aylesbury, Peter Murdo Montgomery, Thames Ditton, and Richard William Hogg, Farnborough, England, assignors to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain,
Filed Nov. 19, 1959, Ser. No. 854,197
Claims priority, application Great Britain, Nov. 22, 1958, 37,681/58
U.S. Cl. 343—7.4 **6 Claims**
Int. Cl. G01s *9/50*

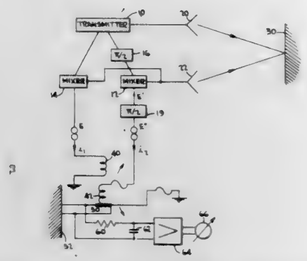


1. Radar automatic tracking apparatus comprising means for deriving a signal representing a tracking error

and means for applying said tracking error signal to an automatic tracking control circuit, means for receiving a signal reflected from an object being tracked by said apparatus, means for weighting said tracking error signal in response to the amplitude of said received signal to reduce falsification of said tracking error signal due to glint.

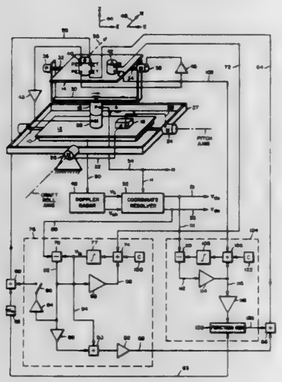
3,432,855
MOVING TARGET INDICATOR
Henry P. Kalmus, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 5, 1968, Ser. No. 702,994
U.S. Cl. 343—7.7 **13 Claims**
Int. Cl. G01s *9/42*

A moving target indicator for detecting movement of targets deeply imbedded in clutter noise. The system uses the Doppler phenomenon to generate a signal that is a function of the relative velocity between the transmitter and the target. Another signal is simultaneously generated that is also a function of the relative velocity but has its phase shifted a fixed amount. The two signals are fed to a correlator which will produce a voltage that is proportional to the velocity of the target and whose polarity



is dependent on the direction of the velocity of the target with respect to the target indicator system.

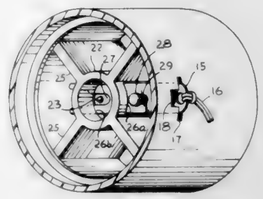
3,432,856
DOPPLER INERTIAL NAVIGATION SYSTEM
Heinz Buell, Mount Kisco, N.Y., Joseph A. Gannon, Wayne, Pa., and Jack Rubin, Brooklyn, N.Y., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed July 17, 1967, Ser. No. 653,974
U.S. Cl. 343—9 **17 Claims**
Int. Cl. G01s *9/44;* **G06f** *15/50;* **G06g** *7/78*



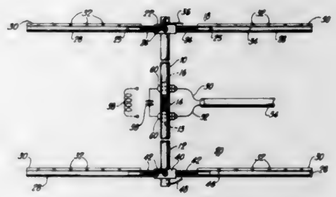
An inertial reference table **14** is mounted upon a two-gimbal mounting structure including gimbal ring **30**. It is arranged for leveling about an East axis on gimbal shafts **32–34**, and arranged for rotation for azimuth alignment upon a vertical gimbal shaft at motor **28**. The system is arranged for in-flight gyrocompassing in response to North axis signals from accelerometer **42** supplied to gyrocompassing circuit **76**. Electrical compensation for leveling errors about the North axis is provided in response to East axis outputs of the accelerometer **42** by the compensating circuit **104**. Both the gyrocompassing circuit **76** and the compensating circuit **104** are corrected and damped by vectorial velocity signals derived from a Doppler radar set **48**.

3,432,857
RESCUE SIGNALING SYSTEM
George Rasmussen, Long Beach, and Robert J. Spellmire, San Marino, Calif., assignors, by mesne assignments, to Pike Corporation of America, Los Angeles, Calif., a corporation of California
Filed Jan. 31, 1967, Ser. No. 613,015
U.S. Cl. 343—18 **4 Claims**
Int. Cl. G01s *7/00*

A signaling system comprising: a rocket propelled shell which contains chaff capable of reflecting a radar beam and means for discharging the chaff into the atmosphere to form a radar beam reflecting cloud. The shell launching apparatus includes a tube into which the shell is inserted at one end and a manually operated shell firing mechanism mounted on the other end. The shell is rocket propelled.



3,432,858
SHORT DIPOLE ANTENNA
Allan R. Brown, 315 N. Lincoln, Park Ridge, Ill. 60068
Filed Dec. 14, 1964, Ser. No. 418,144
U.S. Cl. 343—752 **11 Claims**
Int. Cl. H01q *9/00, 1/50, 9/16*



The antenna comprises a shortened dipole radiating element having a physical length equal to a small fraction of a wavelength at the operating frequency and a pair of spiral wound coils are connected to the outer ends of the radiating element. A transmission line is coupled to the radiating element and the antenna is resonated to the operating frequency by adjustment of the spiral wound coils. The coils are wound about the longitudinal axis of the radiating element in the same direction so that the magnetic fields produced by these coils tend to cancel and radiation is concentrated in the shortened dipole radiating element.

3,432,859
RADOME AND METHOD FOR MAKING SAME
Thomas J. Jordan, Ballston Lake, and Henry T. Plant, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 29, 1963, Ser. No. 254,798
U.S. Cl. 343—872 **9 Claims**
Int. Cl. H01q *1/42, 15/08;* **E04b** *1/32*

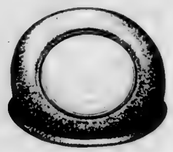
1. A rigid panel comprising a radome through which microwave energy is transmitted having substantially uniform dielectric properties, said panel comprising a plurality of layers of preformed elements, each of said elements being made of plastic material and having a uniform thickness and uniform dielectric properties, said elements being preformed such that, upon assembly thereof into layers, a plurality of elongated passages is defined, the maximum dimension of said passages in a direction parallel to said transmitted microwave energy being not greater than one-tenth of the wavelength of said microwave energy.



DESIGNS

MARCH 11, 1969

213,490
COOKIE
Gloria J. Hoover, 213½ E. College, Granville, Ohio 43023
Filed Apr. 17, 1967, Ser. No. 6,730
Term of patent 14 years
U.S. Cl. D1—1
Int. Cl. D1—*01*



213,491
FOOD PACKAGING CUP OR SIMILAR ARTICLE
Everett C. Beeman, Wallingford, Conn., and Edwin W. Fuerst, East Colrain, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation of design applications Ser. No. 8,140, and Ser. No. 8,142, Aug. 4, 1967. This application Apr. 8, 1968, Ser. No. 11,743
Term of patent 14 years
U.S. Cl. D9—219
Int. Cl. D9—*04*



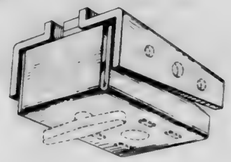
213,492
FOOD PACKAGING CUP OR SIMILAR ARTICLE
Everett C. Beeman, Wallingford, Conn., and Edwin W. Fuerst, East Colrain, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation of design applications Ser. No. 8,139, and Ser. No. 8,141, Aug. 4, 1967. This application Apr. 8, 1968, 11,741
Term of patent 14 years
U.S. Cl. D9—219
Int. Cl. D9—*04*



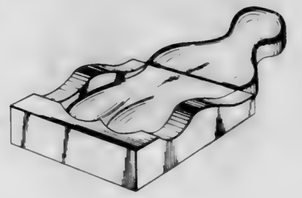
213,493
PANEL
Robert G. Wheeler, Corvallis, Oreg., assignor to Wood Processes Oregon Ltd., Corvallis, Oreg., a partnership of Oregon
Filed Feb. 14, 1968, Ser. No. 10,578
Term of patent 14 years
U.S. Cl. D13—1
Int. Cl. D5—*03*



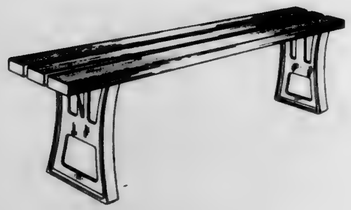
213,494
ADJUSTMENT CONTROL UNIT FOR A CHAIR
Alan W. Speicher, Boonville, and Robert H. Godwin, Evansville, Ind., assignors to Bliss & Laughlin Industries, Incorporated, Oak Brook, Ill., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 8,110
Term of patent 14 years
U.S. Cl. D15—1
Int. Cl. D8—*03*



213,495
CONTOUR AID CUSHION
Shephard D. Roberts, P.O. Box 136, Brevoort Station, Brooklyn, N.Y. 11216
Filed Dec. 18, 1967, Ser. No. 9,825
Term of patent 14 years
U.S. Cl. D15—8
Int. Cl. D6—*02*



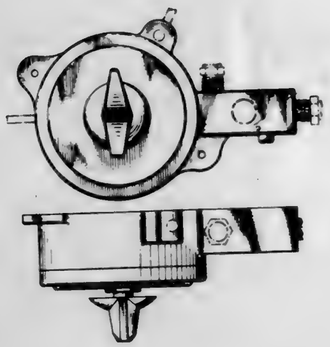
213,496
BENCH
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time Inc., Litchfield, Mich., a corporation of Michigan
Filed Mar. 4, 1968, Ser. No. 10,829
Term of patent 14 years
U.S. Cl. D15—11
Int. Cl. D6—*01*



213,497
TAIL FOR FISHING LURE
Walter W. Collins, 221 W. Knoxville, Broken Arrow, Okla. 74012
Filed May 9, 1968, Ser. No. 11,863
Term of patent 14 years
U.S. Cl. D22—27
Int. Cl. D22—*07*



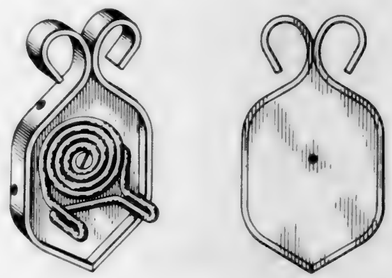
213,498
TIME-CONTROLLED VALVE
Albert Fegel, 12129 E. Beverly Blvd., Whittier, Calif. 90601
Filed Jan. 29, 1968, Ser. No. 10,350
Term of patent 14 years
U.S. Cl. D23—19
Int. Cl. D23—*01*



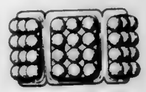
213,499
CONTROL FOR AN ELECTRIC BLANKET
John R. Wilson, Royal Oak, Mich., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1967, Ser. No. 9,944
Term of patent 14 years
U.S. Cl. D26—13
Int. Cl. D13—*03*



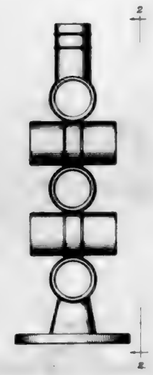
213,500
TELEPHONE HOLDER
Charles H. Williams, 649 S. Oak Grove, Springfield, Mo. 65802
Filed May 22, 1968, Ser. No. 12,042
Term of patent 7 years
U.S. Cl. D26—14
Int. Cl. D8—*03*; D14—*99*



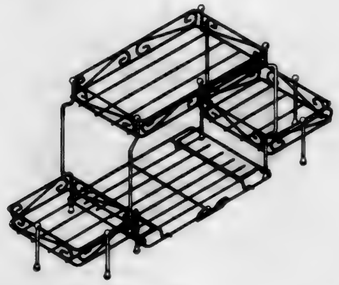
213,501
CHRISTMAS TREE ORNAMENT
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed Apr. 3, 1968, Ser. No. 11,291
Term of patent 3½ years
U.S. Cl. D29—1
Int. Cl. D11—*05*



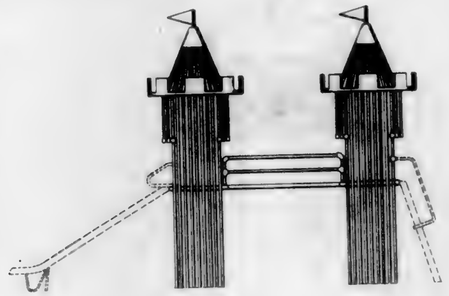
213,502
MAGAZINE RACK
Roger K. Ericson, 906 W. Miner St., Arlington Heights, Ill. 60005
Filed Dec. 18, 1967, Ser. No. 9,815
Term of patent 7 years
U.S. Cl. D33—2
Int. Cl. D6—*01*



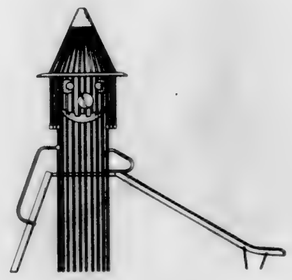
213,503
SUPPORT STAND FOR A TOASTER AND A CANISTER SET
Joseph Stopyra, 1033 E. Hunting Park Ave., Philadelphia, Pa. 19124
Filed Aug. 8, 1967, Ser. No. 8,160
Term of patent 14 years
U.S. Cl. D33—3
Int. Cl. D6—*01*



213,504
DOUBLE TOWER PLAYGROUND APPARATUS
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Mar. 4, 1968, Ser. No. 10,839
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



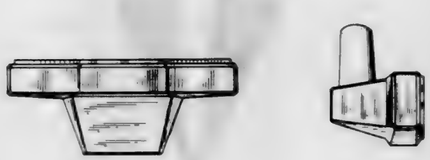
213,505
WITCH-FACED PLAYGROUND CLIMBER AND SLIDE
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Mar. 20, 1968, Ser. No. 11,050
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



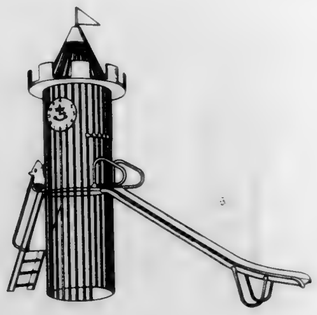
213,506
COMBINED PLAYHOUSE AND SLIDE
Helen J. Rosing, 235 77th Ave. N., Brooklyn Park, Minn. 55430
Filed Mar. 1, 1968, Ser. No. 10,810
Term of patent 7 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



213,507
GOLF PUTTER HEAD
Erl A. Koenig, Poestenkill Road, Troy, N.Y. 12180
Filed May 7, 1968, Ser. No. 11,807
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



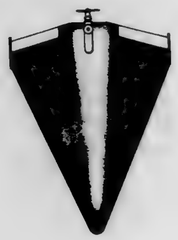
213,508
COMBINED PLAYGROUND CLIMBER AND SLIDE
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Mar. 4, 1968, Ser. No. 10,816
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



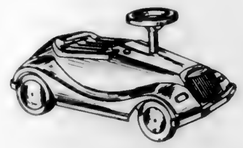
213,509
GOLF PUTTER
Karsten Solheim, 10412 N. 37th St., Phoenix, Ariz. 85028
Filed Apr. 25, 1968, Ser. No. 11,630
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



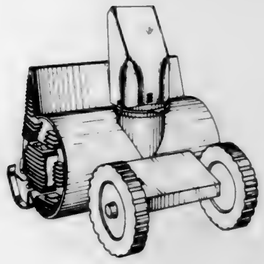
213,510
MODEL AIRCRAFT
John P. Kukon, Trenton, N.J., John R. Fitzpatrick, Levittown, Pa., and Juergen K. Bock, Toms River, N.J., assignors to Aereon Corporation, Trenton, N.J., a corporation of Pennsylvania
Filed Apr. 29, 1968, Ser. No. 11,692
Term of patent 14 years
U.S. Cl. D34—15
Int. Cl. D21—*02*

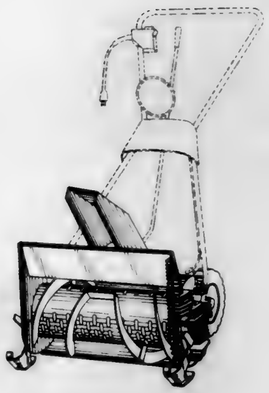


213,511
TOY AUTOMOBILE
Hajime Moribe, Tokyo, Japan, assignor to Pop Corporation, Tokyo, Japan
Filed Dec. 5, 1967, Ser. No. 9,639
Claims priority, application Japan May 30, 1967 42/15,461
Term of patent 14 years
U.S. Cl. D34—15
Int. Cl. D21—*02*

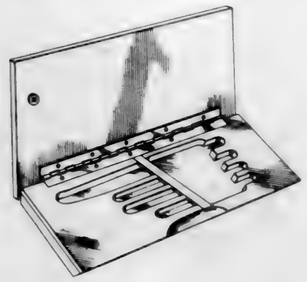


213,512
SNOW THROWER
Alvin Romin, Jr., Oak Lawn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 8, 1968, Ser. No. 11,343
Term of patent 14 years
U.S. Cl. D35—2
Int. Cl. D15—*05*





213,513
KNIFE BOX
Robert Hain, Edison, and Richard A. Warn, Sr., Milltown, N.J., assignors to Washington Forge, Inc., a corporation of New Jersey
Filed Feb. 6, 1968, Ser. No. 10,458
Term of patent 14 years
U.S. Cl. D44—29
Int. Cl. D3—*99*



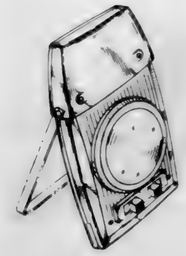
213,514
KNIFE BOX
Robert W. Hain, Edison, and Richard A. Warn, Sr., Milltown, N.J., assignors to Washington Forge, Inc., a corporation of New Jersey
Filed Feb. 6, 1968, Ser. No. 10,461
Term of patent 14 years
U.S. Cl. D44—29
Int. Cl. D3—*99*



213,515
AUTOMATIC LUBRICATION SYSTEM FOR KNITTING MACHINES
James H. Yon, Jr., Charlotte, N.C., assignor to Jett Manufacturing Corporation, Charlotte, N.C., a corporation of North Carolina
Filed Feb. 12, 1968, Ser. No. 10,550
Term of patent 14 years
U.S. Cl. D46—1
Int. Cl. D23—*01*



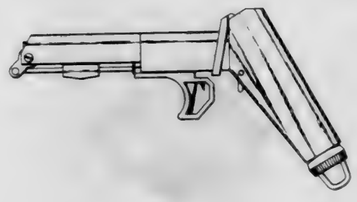
213,516
ELECTRIC BATTERY LANTERN
Herbert J. Ashe, % The H. J. Ashe Co. Inc., South Norwalk, Conn. 68509
Filed June 10, 1968, Ser. No. 12,277
Term of patent 14 years
U.S. Cl. D48—24
Int. Cl. D26—*04*



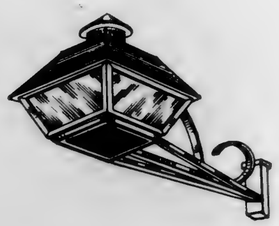
213,517
CIGARETTE LIGHTER
Zenzaburo Yoshino, Tokyo, Japan, assignor to Zenza Bronica Kogyo Kabushike, Kaisha, Tokyo, Japan
Filed Jan. 26, 1968, Ser. No. 10,333
Term of patent 7 Years
U.S. Cl. D48—27
Int. Cl. D27—*05*



213,518
GASLIGHTER
Albertus van Poppel, Aaserstraat 11, Rolde, Netherlands
Filed Sept. 11, 1967, Ser. No. 8,537
Term of patent 3½ years
U.S. Cl. D48—27
Int. Cl. D27—*05*



213,519
COMBINED OUTDOOR LIGHTING FIXTURE AND SUPPORT BRACKET
Donald V. Vesely, Hillside, and John Kaiser, Westchester, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois
Filed Oct. 12, 1967, Ser. No. 8,968
Term of patent 14 years
U.S. Cl. D48—31
Int. Cl. D26—*03*



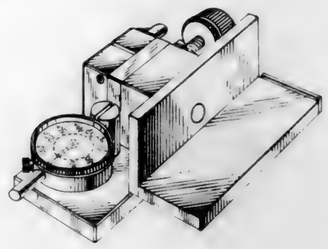
213,520
COMBINED OUTDOOR LIGHTING FIXTURE AND SUPPORT
Donald V. Vesely, Hillside, and John Kaiser, Westchester, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois
Original design application Oct. 12, 1967, Ser. No. 8,968. Divided and this application Apr. 24, 1968, Ser. No. 12,426
Term of patent 14 years
U.S. Cl. D48—31
Int. Cl. D26—*03*



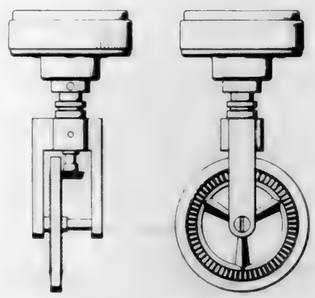
213,521
OUTDOOR LIGHTING FIXTURE
Donald V. Vesely, Hillside, and John Kaiser, Westchester, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois
Original design application Oct. 12, 1967, Ser. No. 8,968. Divided and this application Apr. 24, 1968, Ser. No. 12,427
Term of patent 14 years
U.S. Cl. D48—31
Int. Cl. D26—*03*



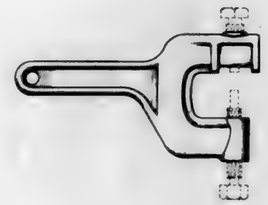
213,522
SURFACE ANGLE INSPECTION TOOL
Leon A. Chelmo, 2621 Major Ave. N. 55422, and John E. Schuh, 5301 Georgia Ave. N., Minneapolis, Minn. 55428
Filed May 23, 1967, Ser. No. 7,235
Term of patent 14 years
U.S. Cl. D52—6
Int. Cl. D10—*08*



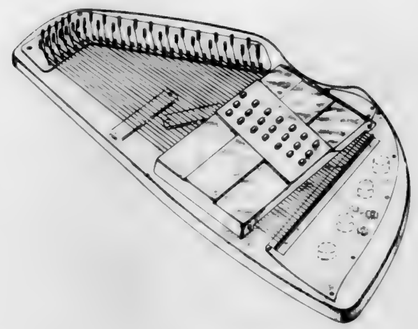
213,523
TACHOMETER
William E. Shea, Washington, N.J., assignor to Sheetmaster Corporation, Boca Raton, Fla., a corporation of Florida
Filed Mar. 28, 1968, Ser. No. 11,175
Term of patent 14 years
U.S. Cl. D52—6
Int. Cl. D10—*08*



213,524
RIVETING TOOL
Thomas J. Scarnato, Barrington, and Paul C. Gordon, Hinsdale, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 8, 1968, Ser. No. 10,068
Term of patent 14 years
U.S. Cl. D54—10
Int. Cl. D8—*02*



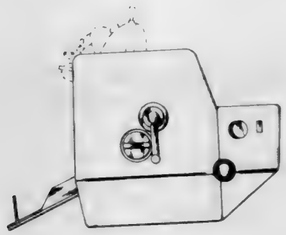
213,525
ZITHER OR SIMILAR ARTICLE
Glen R. Peterson, Jr., Summit, N.J., assignor to Oscar Schmidt-International, Inc., Union, N.J.
Filed July 21, 1967, Ser. No. 7,944
Term of patent 14 years
U.S. Cl. D56—1
Int. Cl. D17—*03*



213,526
EYEGLASS CASE
Iris W. Russell, 605 N. Rocky River Drive, Berea, Ohio 44017
Filed Apr. 23, 1968, Ser. No. 11,745
Term of patent 14 years
U.S. Cl. D57—1
Int. Cl. D3—*99*



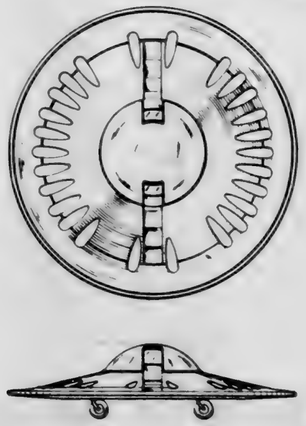
213,527
COMBINED OFFSET PRINTING AND DUPLICATING MACHINE
Wolfgang Czapla, Berlin, Germany, assignor to Rotaprint Aktiengesellschaft, Berlin, Germany
Filed May 15, 1967, Ser. No. 7,113
Claims priority, application Germany Dec. 1, 1966
Term of patent 14 years
U.S. Cl. D64—11
Int. Cl. D18—*02, 03*



213,528
AIRCRAFT
Lawrence B. Rellis, 734 NW. 80th St., Apt. 16, Miami, Fla. 33150
Filed Sept. 13, 1967, Ser. No. 8,586
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D12—*07*



213,529
VERTICAL LIFT FLYING MACHINE
John W. Sherwood, 806 Pine St., Atlantic, Iowa 50022, and John W. Sherwood III, Rte. 3, Box 158, Guthrie Center, Iowa 50115
Filed Apr. 3, 1967, Ser. No. 6,486
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D12—*07*



213,530
FLASHING SIGNAL LIGHT UNIT
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 8, 1968, Ser. No. 11,355
Term of patent 14 years
U.S. Cl. D72—1
Int. Cl. D29—*99*



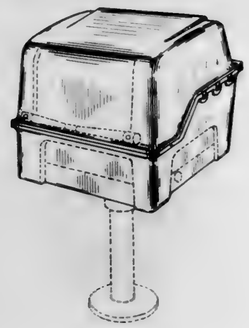
213,531
PEN
Noboru Wakai, Tokyo, Japan, assignor to Dai Nihon Bungu Kabushiki Kaisha (also trading as The Japan Stationery Co., Ltd.), Tokyo, Japan, a corporate body of Japan
Filed Dec. 27, 1967, Ser. No. 9,945
Term of patent 3½ years
U.S. Cl. D74—17
Int. Cl. D19—*06*



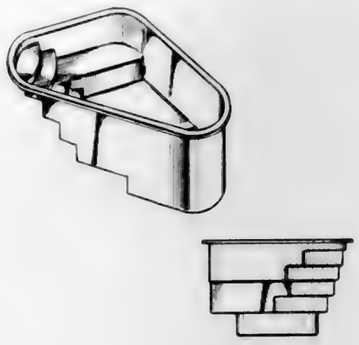
213,532
NEWSPAPER DISPLAY STAND
Ronald W. Yeo, 604 Iris, Corona Del Mar, Calif. 92625
Filed Nov. 13, 1967, Ser. No. 9,365
Term of patent 14 years
U.S. Cl. D80—11
Int. Cl. D6—*01*



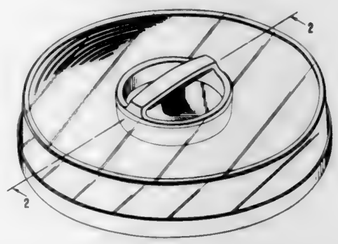
213,533
COOKING APPARATUS
Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois
Filed Aug. 16, 1967, Ser. No. 8,289
The portion of the term of the patent subsequent to Sept. 19, 1984, has been disclaimed
Term of patent 14 years
U.S. Cl. D81—10
Int. Cl. D7—*04*



213,534
HYDROTHERAPY POOL
David K. Cavenah, 4238 Shady Glade Ave., P.O. Box 1174, Studio City, Calif. 91604
Filed July 25, 1968, Ser. No. 12,892
Term of patent 14 years
U.S. Cl. D83—1
Int. Cl. D24—*02*; D23—*02*



213,535
CONTAINER FOR MEMORY DISCS
George Lyman, Weston, Mass., and Anthony Gelardi, Cranston, R.I., assignors to The Morningstar Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 15, 1967, Ser. No. 9,430
Term of patent 14 years
U.S. Cl. D87—1
Int. Cl. D3—*99*; D9—*04*



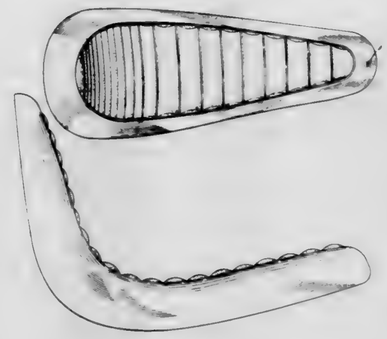
213,536
COLLAPSIBLE SUN SHADE COVER OR THE LIKE
Ralph Guajardo, 1003 N. Parkside, Chicago, Ill. 60651
Filed Jan. 25, 1967, Ser. No. 5,563
Term of patent 14 years
U.S. Cl. D88—3
Int. Cl. D21—*05*



213,537
HAND GRIP FOR A CRUTCH OR CANE
Robert D. Parry, 7240 Algonquin Drive, Cincinnati, Ohio 45243
Filed Mar. 22, 1968, Ser. No. 11,092
Term of patent 14 years
U.S. Cl. D88—5
Int. Cl. D24—*01*



213,538
BICYCLE SEAT
George Barris, North Hollywood, Calif., assignor to Stelber Cycle Corporation, Elmhurst, N.Y., a corporation of New York
Filed May 31, 1968, Ser. No. 12,153
Term of patent 14 years
U.S. Cl. D90—16
Int. Cl. D12—*11, 14*



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 11TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Albert, Robert J. Concrete containing porous aggregates. Re. 26,545, 3–11–69, Cl. 259—147.
American Cyanamid Co.: *See*—
Remmers, Edward G., Sieger, and Barringer. Re. 26,541.
Barringer, William C.: *See*—
Remmers, Edward G., Sieger, and Barringer. Re. 26,541.
Beeson, M'Lou: *See*—
Besson, Clement T., Jr. Re. 26,543.
Besson, Clement T., Jr., deceased, by M'Lou Beeson, administratrix, and W. T. Russell and W. E. Webb; said Russell and Webb assor. to said Beeson. Method and apparatus for breaking and separating eggs. Re. 26,543, 3–11–69, Cl. 146—221.
Castor, Edwin C., Jr. Cutting tool. Re. 26,544, 3–11–69, Cl. 29—103.
Formsprag Co.: *See*—
Kalns, Ilmars. Re. 26,540.
Kalns, Ilmars, to Formsprag Co. Bi-directional no-back drive device. Re. 26,540, 3–11–69, Cl. 192—8.
Ministry of Defense, The State of Israel: *See*—
Popper, Jakhin B. Re. 26,542.
Popper, Jakhin B., to Ministry of Defense, The State of Israel. Device for limiting the speed of rotation of a body. Re. 26,542, 3–11–69, Cl. 188—185.
Remmers, Edward G., G. M. Sieger, and W. C. Barringer, to American Cyanamid Co. Stable aqueous glycol solution of tetracycline aluminum calcium gluconate complex having a pH about 7.5 to 9. Re. 26,541, 3–11–69, Cl. 424—227.
Russell, Willard T.: *See*—
Besson, Clement T., Jr. Re. 26543.
Sieger, George M.: *See*—
Remmers, Edward G., Sieger, and Barringer. Re. 26,541.

LIST OF PLANT PATENTEES

Mercury, George: *See*—
Mercuri, Pasquale, and Mercury. 2,870.
Mercuri, Pasquale, and Mercury. 2,871.
Mercuri, Pasquale, and G. Mercury. Carnation plant. 2,870, 3–11–68, Cl. 70.
Mercuri, Pasquale, and G. Mercury. Carnation plant. 2,871, 3–11–68, Cl. 73.

LIST OF DESIGN PATENTEES

Aereon Corp.: *See*—
Kukon, John P., Fitzpatrick, and Bock. 213,510.
Ashe, Herbert J. Electric battery lantern. 213,516, 3–11–69, Cl. D48—24.
Barris, George, to Stelber Cycle Corp. Bicycle seat. 213,538, 3–11–69, Cl. D90—16.
Beeman, Everett C., and E. W. Fuerst, to Monsanto Co. Food packaging cup or similar article. 213,491, 3–11–69, Cl. D9—219.
Beeman, Everett C., and E. W. Fuerst, to Monsanto Co. Food packaging cup or similar article. 213,492, 3–11–69, Cl. D9—219.
Bliss & Laughlin Industries Inc.: *See*—
Speicher, Alan W., and Godwin. 213,494.
Bock, Juergen K.: *See*—
Kukon, John P., Fitzpatrick, and Bock. 213,510.
Cavenah, David K. Hydrotherapy pool. 213,534, 3–11–69, Cl. D83—1.
Charmglow Mfg. Co.: *See*—
Koziol, Walter. 213,533.
Chelmo, Leon A., and J. E. Schuh. Surface angle inspection tool. 213,522, 3–11–69, Cl. D52—6.
Collins, Walter W. Tail for fishing lure. 213,497, 3–11–69, Cl. D22—27.
Czapla, Wolfgang, to Rotaprint Aktiengesellschaft. Combined offset printing and duplicating machine. 213,527, 3–11–69, Cl. D64—11.
Dai Nihon Bungu Kabushiki Kaisha: *See*—
Wakai, Noboru. 213,531.
Ericson, Roger K. Magazine rack. 213,502, 3–11–69, Cl. D33—2.
Fedtro, Inc.: *See*—
Kahn, Robert D. 213,530.
Fegel, Albert. Time controlled valve. 213,498, 3–11–69, Cl. D23—19.
Fitzpatrick, John R.: *See*—
Kukon, John P., Fitzpatrick, and Bock. 213,510.
Fuerst, Edwin W.: *See*—
Beeman, Everett C., and Fuerst. 213,491.
Beeman, Everett C., and Fuerst. 213,492.
Game-Time Inc.: *See*—
Wormser, Robert S. 213,496.
Wormser, Robert S. 213,504.
Wormser, Robert S. 213,505.
Wormser, Robert S. 213,508.
Gelardi, Anthony: *See*—
Lyman, George, and Gelardi. 213,535.
Godwin, Robert H.: *See*—
Speicher, Alan W., and Godwin. 213,494.
Gordon, Paul C.: *See*—
Scarnato, Thomas J., and Gordon. 213,524.
Guajardo, Ralph. Collapsible sun shade cover or the like. 213,536, 3–11–69, Cl. D88—3.
Guardian Light Co.: *See*—
Vesely, Donald V., and Kaiser. 213 519.
Vesely, Donald V., and Kaiser. 213,520.
Vesely, Donald V., and Kaiser. 213,521.
Hain, Robert, and R. A. Warn, Sr., to Washington Forge, Inc. Knife box. 213,513, 3–11–69, Cl. D44—29.
Hain, Robert W., and R. A. Warn, Sr., to Washington Forge, Inc. Knife box. 213,514, 3–11–69, Cl. D44—29.
Hoover, Gloria J. Cookie. 213,490, 3–11–69, Cl. D1—1.
International Harvester Co.: *See*—
Scarnato, Thomas J., and Gordon. 213,524.
Jett Mfg. Corp.: *See*—
Yon, James H., Jr. 213,515.
Kahn, Robert D., to Fedtro, Inc. Flashing signal light unit. 213,530, 3–11–69, Cl. D72—1.
Kaiser, John: *See*—
Vesely, Donald V., and Kaiser. 213,519.
Vesely, Donald V., and Kaiser. 213,520.
Vesely, Donald V., and Kaiser. 213,521.
Koenig, Erl A. Golf putter head. 213,507, 3–11–69, Cl. D34—5.
Koziol, Walter, to Charmglow Mfg. Co. Cooking apparatus. 213,533, 3–11–69, Cl. D81—10.
Kukon, John P., J. R. Fitzpatrick, and J. K. Bock, to Aereon Corp. Model aircraft. 213,510, 3–11–69, Cl. D34—15.
Lyman, George, and A. Gelardi, to The Morningstar Corp. Container for memory discs. 213,535, 3–11–69, Cl. D87—1.
Monsanto Co.: *See*—
Beeman, Everett C., and Fuerst. 213,491.
Beeman, Everett C., and Fuerst. 213,492.
Moranduzzo, Dario. Christmas tree ornament. 213,501, 3–11–69, Cl. D29—1.
Moribe, Hajime, to Pop Corp. Toy automobile. 213,511, 3–11–69 Cl. D34—15.
Morningstar Corp., The: *See*—
Lyman, George, and Gelardi. 213,535.
Parry, Robert D. Hand grip for a crutch or cane. 213,537, 3–11–69, Cl. D88—5.
Peterson, Glen R., Jr., to Oscar Schmidt International, Inc. Zither or similar article. 213,525, 3–11–69, Cl. D56—1.
Pop Corp.: *See*—
Moribe, Hajime. 213,511.
Rellis, Lawrence B. Aircraft. 213,528. 3–11–69, Cl. D71—1.
Roberts, Shephard D. Contour aid cushion. 213,495, 3–11–69, Cl. D15—8.
Romin, Alvin, Jr., to Sunbeam Corp. Snow thrower. 213,512, 3–11–69, Cl. D35—2.
Rosing, Helen J. Combined playhouse and slide. 213,506, 3–11–69, Cl. D34—5.
Rotaprint Aktiengesellschaft: *See*—
Czapla, Wolfgang. 213,527.
Russel, Iris W. Eye glass case. 213 526, 3–11–69, Cl. D57—1.
Scarnato, Thomas J., and P. C. Gordon, to International Harvester Co. Riveting tool. 213,524, 3–11–69, Cl. D54—10.
Schmidt, Oscar, International, Inc.: *See*—
Peterson, Glen R., Jr, 213,525.
Schuh, John E.: *See*—
Chelmo, Leon A., and Schuh. 213,522.
Shea, William E., to Sheetmaster Corp. Tachometer. 213,523, 3–11–69, Cl. D52—6.
Sheetmaster Corp.: *See*—
Shea, William E. 213,523.
Sherwood, John W., and J. W. Sherwood III. Vertical lift flying machine. 213,529, 3–11–69, Cl. D71—1.
Sherwood, John W., III: *See*—
Sherwood, John W., and J. W. Sherwood III. 213,529.

Solheim, Karsten. Golf putter. 213,509, 3–11–69, Cl. D34—5.
Speicher, Alan W., and R. H. Godwin, to Bliss & Laughlin Industries Inc. Adjustment control unit for a chair. 213,494, 3–11–69, Cl. D15—1.
Stelber Cycle Corp.: *See*—
Barris, George. 213,538.
Stopyra, Joseph. Support stand for a toaster and a canister set. 213,503, 3–11–69, Cl. D33—3.
Sunbeam Corp.: *See*—
Romin, Alvin, Jr. 213,512.
Wilson, John R. 213,499.
Van Poppel, Albertus. Gas-lighter. 213,518, 3–11–69, Cl. D48—27.
Vesely, Donald V., and J. Kaiser, to Guardian Light Co. Combined outdoor lighting fixture and support bracket. 213,519, 3–11–69, Cl. D48—31.
Vesely, Donald V., and J. Kaiser, to Guardian Light Co. Combined outdoor lighting fixture and support. 213,520, 3–11–69, Cl. D48—31.
Vesely, Donald V., and J. Kaiser, to Guardian Light Co. Outdoor lighting fixture. 213,521, 3–11–69, Cl. D48—31.
Wakai, Noboru, to Dai Nihon Bungu Kabushiki Kaisha (also t/a The Japan Stationery Co., Ltd.). Pen. 213,531, 3–11–69, Cl. D74—17.
Warn, Richard A., Sr.: *See*—
Hain, Robert, and Warn. 213,513.
Hain, Robert W., and Warn. 213,514.
Washington Forge, Inc.: *See*—
Hain, Robert, and Warn. 213,513.
Hain, Robert W., and Warn. 213,514.
Wheeler, Robert G., to Wood Processes Oregon Ltd. Panel. 213,493, 3–11–69, Cl. D13—1.
Williams, Charles H. Telephone holder. 213,500, 3–11–69, Cl. D26—14.
Wilson, John R., to Sunbeam Corp. Control for an electric blanket. 213,499, 3–11–69, Cl. D26—13.
Wood Processes Oregon Ltd.: *See*—
Wheeler, Robert G. 213,493.
Wormser, Robert S., to Game-Time Inc. Bench. 213,496, 3–11–69, Cl. D15—11.
Wormser, Robert S., to Game-Time, Inc. Double tower playground apparatus. 213,504, 3–11–69, Cl. D34—5.
Wormser, Robert S., to Game-Time Inc. Witch faced playground climber and slide. 213,505, 3–11–69, Cl. D34—5.
Wormser, Robert S., to Game-Time, Inc. Combined playground climber and slide. 213,508, 3–11–69, Cl. D34—5.
Yeo, Ronald W. Newspaper display stand. 213,532, 3–11–69, Cl. D80—11.
Yon, James H., Jr., to Jett Mfg. Corp. Automatic lubrication system for knitting machines. 213,515, 3–11–69, Cl. D46—1.
Yoshino, Zenzaburo, to Zenza Bronica Kogyo Kabushiki Kaisha. Cigarette lighter. 213,517, 3–11–69, Cl. D48—27.
Zenza Bronica Kogyo Kabushiki Kaisha: *See*—
Yoshino, Zenzaburo. 213,517.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 11TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Mekanprodukter Hans Holm: *See*—
Innings, Lars Sven Erik, and Hammarlund, Lars Arne, 3,431,939.
AB Tetra Pak: *See*—
Rausing, Gad Anders, and Jarund, Harry Sigvard Valdemar, 3,431,700.
Abbott Laboratories: *See*—
Rosenbrook, William, Jr., and Sinclair, Arthur Charles, 3,432,505.
Short, James Harold, 3,432,493.
Wolownik, Stephen, 3,432,508.
Abe, Kazuo, Kokubo, Ryo, Yamada, Yumizuru, Nagakura, Mizuhiko, and Shima, Koji, to Nissan Kagaku Kogyo Kabushiki Kaisha. Apparatus for the continuous production of melamine. 3,432,274, 03-11-69, Cl. 023-285.
ACF Industries Incorporated: *See*—
Cordani, Eugene J., and Sittner, Edward H., 3,431,868.
ACF Industries, Incorporated: *See*—
Packard, Leslie M., and Chance, Maynard R., 3,432,374.
Acker, Eric O., Jr.: *See*—
Acker, Eric O., Sr., Acker, Eric O., Jr., and Acker, Ronald W. 3,431,613.
Acker, Eric O., Sr., Acker, Eric O., Jr., and Acker, Ronald W., to Acker Industries, Inc.Sheet material forming machine. 3,431,613, 03-11-69, Cl. 029-006.2
Acker Industries, Inc.: *See*—
Acker, Eric O., Sr., Acker, Eric O., Jr., and Acker, Ronald W., 3,431,613.
Acker, Ronald W.: *See*—
Acker, Eric O., Sr., Acker, Eric O., Jr., and Acker, Ronald W. 3,431,613.
Adam, Gunter: *See*—
Kingsbury, L C James, Marker, Hannes, and Adam, Gunter 3,432,168.
Adams, Clarence R., to Boeing Company, The. Self-leveling air bearing fixture. 3,432,213, 03-11-69, Cl. 308-005.
Adams, Robert L., to Radio Corporation of America. Document handling apparatus. 3,432,035, 03-11-69, Cl. 209-074.
Addin, Leo. Method and composition for the treatment of fruit trees. 3,431,676, 03-11-69, Cl. 047-058.
Advance Data Systems: *See*—
Van Emden, Bernard M., 3,432,736.
Advanced Instruments Inc.: *See*—
Wiggin, Blanton C., 3,431,781.
Aerojet-General Corporation: *See*—
Cannon, Charles R., Cantor, Paul A., and King, Willam M., 3,432,584.
Gold, Marvin H., and Marcus, Henry J., 3,432,540.
King, Harry A., 3,431,818.
Linden, Gustave B., 3,432,524.
Watson, Elwood R., Rowley, Gene V., and Wunderlich, Charles R., 3,432,585.
Aeroquip Corporation: *See*—
Buller, Leonard E., 3,432,189.
Kunz, Guenter Otto, 3,432,190.
Agfa-Gevaert Aktiengesellschaft: *See*—
Saleck, Wilhelm, Lassig, Wolfgang, and Posse, Rolf-Fred, 3,432,304.
von Rintelen, Harald, Liebe, Werner, and Krafft, Werner, 3,432,298.
Aida Iron Works & Co., Ltd.: *See*—
Iwamatsu, Mayuki, and Fujimura, Akira, 3,432,014.
Ajax Manufacturing Company, The: *See*—
Kull, Albert R., and Rettig, Peter P., 3,431,768.
Akers, Dale M.: *See*—
Howell, Samuel G., and Akers, Dale M. 3,432,339.
Aktiebolaget Astra: *See*—
Brohult, Astrid Helena, Brohult, Sven Fritiof Abraham, Hallgren, Bo Erik, and Brohult, Johan Axel, 3,432,602.
Aktiebolaget Siefvert & Fornander: *See*—
Hedborg, Lennart, 3,431,954.
Aktiebolaget Svenska Flaktfabriken: *See*—
Berg, Bengt, 3,431,707.
Mattsson, Malte Kurt Einar, 3,431,927.
Aktiengesellschaft Brown, Boveri & Cie: *See*—
Eugster, Edouard, 3,432,733.
Albertine, Albert W., and Graves, John A., to McDonnell Douglas Corporation. Slider latch. 3,432,197, 03-11-69, Cl. 287-189.36
Albinger, Harry, Jr., to General Electric Company. Torsion wire tension spring for a battery operated clock. 3,432,696, 03-11-69, Cl. 310-036.
Albinger, Harry, Jr., to General Electric Company. Permanent magnetic synchronous motor and starting mechanism therefor. 3,432,699, 03-11-69, Cl. 310-041.
Albinger, Harry, Jr., and Marble, Chester B., to General Electric Company. Adjustable torsion member mechanism for torsion member clocks. 3,432,697, 03-11-69, Cl. 310-036.
Albiswerk Zurich A.G.: *See*—
Meyer, Walter, and Bedo, Zoltan, 3,432,726.
Alder, Robert L., to Jackson, Byron, Inc.Signalling orientation indicator. 3,431,654, 03-11-69, Cl. 033-205.
Alert Stamping and Mfg. Co., Inc.: *See*—
Blanch, Charles H., and Otzak, Henry F., 3,432,623.
Alexander, Nelson E., to United States of America, Army. Eddy current test apparatus utilizing a movable coil coupled to a piezoelectric element. 3,432,748, 03-11-69, Cl. 324-040.
Alford, Harvey R.: *See*—
Niedrach, Leonard W., and Alford, Harvey R. 3,432,355.
Allan, William B.: *See*—
Davy, John R., Ballantine, John M., and Allan, William B. 3,432,668.
Allegheny Ludlum Steel Corporation: *See*—
Ardito, Victor P., Bishop, Harry L., and Woodcock, Ray E., 3,432,288.
Harbaugh, Samuel S., 3,432,604.
Allen, Manton E.: *See*—
Warner, Albert C., and Allen, Manton E. 3,431,853.
Allied Chemical Corporation: *See*—
Schmidt, Lawrence D., 3,432,398.
Allis-Chalmers Manufacturing Company: *See*—
Gillis, Edward Allan, 3,432,363.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Jonsson, Erik, 3,432,387.
von Kruesenstierna, Otto, Lindholm, Ingemar, and Malmberg, Gunnar, 3,432,353.
Allred, Von D.Rotary device. 3,431,894, 03-11-69, Cl. 123-008.
Altherr, Russell G., to Amsted Industries Incorporated. Automatic slack adjuster. 3,432,011, 03-11-69, Cl. 188-196.
Aluminum Company of America: *See*—
Gitzen, Walter H., and Mac Zura, George, 3,432,313.
Stroup, Philip T., and Terrill, James R., 3,431,629.
Amazonen-Werke H. Dreyer: *See*—
Dreyer, Heinz, 3,432,150.
Amchem Products Inc.: *See*—
Heller, Ferdinand P., 3,432,270.
American Can Company: *See*—
Rein, Arnold Robert, 3,432,375.
Spaulding, Harold Ernest, 3,431,702.
American Cyanamid Company: *See*—
Berenson, Herman, Dornbush, Albert Carl, and Wehner, Donald Clifford, 3,432,341.
American Enka Corporation: *See*—
Mertens, Johan J., 3,431,716.
American Factors Associates, Limited: *See*—
Silver, Harold F., and Price, Frank B., 3,431,839.
American Home Products Corporation: *See*—
Bagli, Jehan F., and Bogri, Tibor, 3,432,541.
Hays, Merlin B., 3,432,391.
American Instrument Co., Inc.: *See*—
Wasilewski, Joseph C., 3,432,271.
American Velcro, Inc.: *See*—
Girard, Laurent H., 3,431,679.
Hasslinger, Russell, 3,431,605.
Amerock Corporation: *See*—
Anderson, Lloyd L., 3,431,590.
AMP Incorporated: *See*—
Gurley, Grey Manning, and Over, William Roderick, 3,431,621.
Startin, Kenneth John, 3,432,788.
Amsted Industries Incorporated: *See*—
Altherr, Russell G., 3,432,011.
Amthor, Helmut K., and Conte, Alfred L., to Union Carbide Corporation. Apparatus for forming metal. 3,431,622, 03-11-69, Cl. 029-204.
Anastin, Samuel C.Sound improving devices. 3,432,001, 03-11-69, Cl. 181-031.
Anderson Company, The: *See*—
Krohm, Fred A., and Rieckenberg, George W., 3,431,579.
Anderson, Lloyd L., to Amerock Corporation. Hinge. 3,431,590, 03-11-69, Cl. 016-168.
Anderson, Malkolm V., to United States of America, Atomic Energy Commission. Three dimensional flexible dovetail honeycomb. 3,432,379, 03-11-69, Cl. 161-068.
Anderson, Robert L., Dyke, Walter P., and Grundhauser, Frank J., to Field Emission Corporation. High voltage storage module, pulse generator and system. 3,432,663, 03-11-69, Cl. 250-098.
Anderson, Roy M.: *See*—
Lynn, Lawrence, and Anderson, Roy M. 3,432,309.
Anderson, Victor F., to Shell Oil Company. Modular display bin. 3,432,061, 03-11-69, Cl. 220-007.
Andrae, Ralph N., and Camis, Theodore G., Jr.Model aircraft retractable landing gear. 3,431,672, 03-11-69, Cl. 046-078.
Andrew Industries Incorporated: *See*—
Ludeman, Edwin H., 3,432,191.
Andueda, Kenichi: *See*—
Okuya, Eitaro, Sakaguchi, Adio, Komatsu, Kouei, Kikuchi, Tatsuhiko, Yasunaga, Hidetoshi, and Andueda, Kenichi 3,432,515.
Andzer, Arnold L., to General Dynamics Corporation. Multiband frequency tuner-amplifier. 3,432,760, 03-11-69, Cl. 325-452.
Anger, Hal O., to United States of America, Atomic Energy Commission. Gamma-ray camera for imaging radioisotope distribution in a transverse section of a rotating subject. 3,432,660, 03-11-69, Cl. 250-071.5
Angold, Raymond H.Cooking food under pressure. 3,431,835, 03-11-69, Cl. 099-408.
Anker-Werke Aktiengesellschaft: *See*—
Priebs, Horst, 3,432,022.
Anner, Georg, and Wieland, Peter, to Ciba Corporation. 7α-Methyl-19-nor-androstadienes. 3,432,528, 03-11-69, Cl. 260-397.3
Annunziata, Eugene J., James, Robert S., King, Lewis E., and Pierce, Edwin B., to International Business Machines Corporation. Apparatus for control of a plurality of peripheral devices. 3,432,813, 03-11-69, Cl. 340-172.5
API Instruments Company: *See*—
Quittner, George F., 3,432,747.
Apparatenbouw MOBA N.V.: *See*—
Mosterd, Jacob H., 3,432,034.
Appel, David W., to Kimberly-Clark Corporation. Tow spreading device. 3,431,602, 03-11-69, Cl. 019-066.

Archipoff, Alexis: *See—*
Sambeth, Joerg, and Archipoff, Alexis 3,432,448.

Ardito, Victor P., Bishop, Harry L., and Woodcock, Ray E., to Allegheny Ludlum Steel Corporation. Process control of top-blown oxygen converter. 3,432,288, 03-11-69, Cl. 075-060.

Arizona Chemical Company: *See—*
Herrlinger, Richard, Kirkland, Claude James, and Ciesielski, Leo Frank, 3,432,402.

Armand, Marc Roger: *See—*
Fouche, Lucien Frederic Henri Marcel, and Armand, Marc Roger 3,431,893.

Armand, Walter R.Temperature and pressure control device for automotive heaters. 3,431,943, 03-11-69, Cl. 137-625.31

Armour and Company: *See—*
Guttmann, Andrew T., Jungermann, Eric, and Linfield, Warner M., 3,432,547.
Schnabel, Herbert W., 3,431,689.

Armour Industrial Chemical Company: *See—*
Malec, Robert E., and Betty, Roy J., Jr., 3,432,527.

Armstrong, Eldon L., and Davis, Robert H., to Mobil Oil Corporation. Alkyl aromatic hydrocarbon emulsion lubricant for metal rolling. 3,432,434, 03-11-69, Cl. 252-049.5

Arnaud, Jacques, Sobotka, Walter, and Desbrueres, Maurice, to CSF-Compagnie generale de Telegraphie Sans Fil. Wave delay structures. 3,432,776, 03-11-69, Cl. 333-031.

Arnold, Charles E., to Sylvania Electric Products Inc.Transponder having improved isolation. 3,432,852, 03-11-69, Cl. 343-006.5

Arnow, Lewis. Electric toy vehicle and track therefor. 3,431,674, 03-11-69, Cl. 046-244.

Arsenault, James H., to Curtis & Marble Machine Co.Roll stop for a roll deck. 3,432,076, 03-11-69, Cl. 221-295.

Azahi Kasei Kogyo Kabushiki Kaisha: *See—*
Mihara, Kazuhiko, Yamashiki, Takashi, and Takano, Mitsuo, 3,432,429.
Ohfuka, Toshio, Shirode, Katsumi, and Ichikawa, Yasushi, 3,432,482.

Ashland Oil & Refining Company: *See—*
McKillip, William J., and Throckmorton, Peter E., 3,432,475.
Robins, Janis, 3,431,969.

Atkinson, Wesley H.Disconnectable drive means for shafts. 3,431,795, 03-11-69, Cl. 074-545.

Atlantic Richfield Company: *See—*
Hersh, Harold R., and Boyce, John E., 3,432,452.

Atz, Robert W., to United States of America, Atomic Energy Commission. Centrifugal pump of the free surface type. 3,431,860, 03-11-69, Cl. 103-111.

Austin, George E.: *See—*
Rawlings, Richard F., and Austin, George E. 3,431,803.

Austin, Russell A., 15% to Davis, Bill A.; and Bevers, John Denzil. Shoulder guard for football players. 3,431,560, 03-11-69, Cl. 002-002.

Automatic Electric Laboratories, Inc.: *See—*
Bold, Eugene R., Krebs, Peter D., and McKeon, Patrick E., 3,431,642.
Reimer, William A., 3,432,796.

Automatic Sprinkler Corporation of America: *See—*
Cupp, Charles D., 3,431,932.

Automotive bin carrying machine: *See—*
Vereschagin, Alex A., and Vereschagin, John J., 3,432,053.

Autry, Wallace M., and Chapman, Clifford P., to United States of America, Army. Photomechanical color proving process. 3,432,297, 03-11-69, Cl. 096-027.

Avera, William W., to Bahnson Company, The. Suction flute mounted wiper device for drafting rolls. 3,431,717, 03-11-69, Cl. 057-034.5

Avot, Jean-Pierre, to Societe Anonyme Anciens Etablissements Walton & Place. Manufacture of corrugated cardboard. 3,432,372, 03-11-69, Cl. 156-151.

Ayers, Buell O.: *See—*
Sanford, Richard A., and Ayers, Buell O. 3,431,770.

Ayers, Orval E., Huskins, Chester W., and Carter, Herbert A., to United States of America, Army. Method of curing epoxy resins employing difluoroamino compounds as catalysts. 3,432,444, 03-11-69, Cl. 260-002.

Aylesbury Automation Limited: *See—*
Rose, Stanley, 3,431,610.

Baba, Hideshige, to Tokyo International Products, Inc.Process of printing on soap. 3,432,325, 03-11-69, Cl. 117-012.

Backers, Franciscus Theodorus, and Wessels, Johannes Hendrik, to North American Philips Company, Inc.Apparatus for recording video and audio signals with means for facilitating synchronous cutting. 3,432,614, 03-11-69, Cl. 178-006.6

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
Kiefer Hans, Raff, Paul, and Schuster, Ludwig, 3,432,552.

Bagli, Jehan F., and Bogri, Tibor, to American Home Products Corporation. 9, 15-Dihydroxyprost-13-enoic acid and ester and preparation thereof. 3,432,541, 03-11-69, Cl. 260-468.

Bahnson Company, The: *See—*
Avera, William W., 3,431,717.

Bailey, John M., to Caterpillar Tractor Co.Engine fuel injection valve assembly. 3,431,895, 03-11-69, Cl. 123-032.

Baird Chemical Industries, Inc.: *See—*
Dadekian, Zaven A., and Wilbourn, David S., 3,432,561.

Baker, Ralph C.: *See—*
Godby, Ensley A., Baker, Ralph C., and Strome, Murray W. 3,432,751.

Balaguer, Rodolfo Rodriguez, to Patent Holding Corporation. Warming device. 3,432,364, 03-11-69, Cl. 136-181.

Balding, Victor Horace. Machine tools. 3,431,634, 03-11-69, Cl. 029-568.

Balding, Victor Horace. Tool engaging device. 3,431,635, 03-11-69, Cl. 029-568.

Ball Brothers Research Corporation: *See—*
Fogelberg, Clement V., 3,431,599.

Ballantine, John M.: *See—*
Davy, John R., Ballantine, John M., and Allan, William B. 3,432,668.

Ban, Thomas E., to McDowell-Wellman Engineering Co.Rotary abrading device. 3,431,684, 03-11-69, Cl. 051-164.

Bangert, Lothar: *See—*
Kurtz, Manfred, and Bangert, Lothar 3,432,126.

Bank, William. Electric sign letter constructions. 3,431,666, 03-11-69, Cl. 040-135.

Bantox Safety Closures Limited: *See—*
Bugla, Gottfried, 3,432,065.

Bares, Jiri: *See—*
Erdos, Emerich, and Bares, Jiri 3,432,404.

Barker, Cedric Chaffer: *See—*
Conway, John Albert, and Barker, Cedric Chaffer 3,432,123.

Barker, Paul D., and Torok, Ernest J., to Sperry Rand Corporation. Sharp thin ferromagnetic film. 3,432,828, 03-11-69, Cl. 340-174.

Barr, Harold N.: *See—*
Frank, Louis, and Barr, Harold N. 3,432,295.

Bartelt Engineering Company, Inc.: *See—*
Miller, William N., 3,431,703.

Barton, David W., to Ford Motor Company. Elastomeric rubber impact energy absorbing bumper. 3,432,200, 03-11-69, Cl. 293-071.

Bash, Charles W., and Lane, George A., to Dow Chemical Company, The. Flare composition containing alkali metal nitrate magnesium, and a copolymer reaction product binder. 3,432,370, 03-11-69, Cl. 149-019.

Bashor, James R., to United States Dill Head Company. Chip breaker. 3,431,799, 03-11-69, Cl. 077-032.3

Bassani, Ermanno. Electronic wiring devices for electric plants. 3,432,727, 03-11-69, Cl. 317-099.

Basso, Michael J., 35% to Scofield, John D.Self-adjusting closure actuated switch assembly. 3,432,634, 03-11-69, Cl. 200-159.

Bates, Thomas R., to Eastman Kodak Company. Planographic mandrels. 3,432,299, 03-11-69, Cl. 096-036.

Bathellier, Louis, and Cheesman, Harry, to Compagnie de Saint-Gobain. Article handling machine. 3,431,698, 03-11-69, Cl. 053-061.

Battelle Development Corp., The: *See—*
Bouladon, Gabriel, and Zuppiger, Paul, 3,431,866.
Nelson, Jerome W., and Lewis, Wallace J., 3,432,638.

Bauer, Kurt, to Ciba Corporation. Coatings for rectal capsules and process for their manufacture. 3,432,594, 03-11-69, Cl. 424-033.

Bauer, Robert E.Apparatus for arranging and placing groups of articles in shelves. 3,432,045, 03-11-69, Cl. 214-016.4

Bausch & Lomb Incorporated: *See—*
Jackson, Earl V., 3,432,195.
Martens, Alexander E., 3,431,760.
Rand, Royden N., 3,432,414.

Bausch & Lomb, Incorporated: *See—*
Bird, Thomas S., 3,432,226.

Bautz, Frederick H., and McElroy, Howard J., to Verson Allsteel Press Company. Transfer assembly for presses. 3,432,042, 03-11-69, Cl. 214-001.

Beattly, Charles W.: *See—*
Peoples, Leo C., and Beattly, Charles W. 3,432,483.

Beazley, Rodney Thomas, to Glacier Metal Company Limited, The. Centrifugal fluid cleaners. 3,432,091, 03-11-69, Cl. 233-001.

Beck, Robert Haun, to Du Pont de Nemours, E. I., and Company. Offset image transfer process. 3,431,846, 03-11-69, Cl. 101-426.

Becker, Hans-Dieter, to General Electric Company. Photochemical production of poly-(1,4-phenylene ethers). 3,432,412, 03-11-69, Cl. 204-158.

Beckering, Jacobus J.: *See—*
Sheps, Martin I., Beckering, Jacobus J., and Bednarski, Thaddeus E. 3,432,703.

Becking, Donald H.: *See—*
Brown, Henry, Becking, Donald H., and Valayil, Sylvester P. 3,432,408.

Beckman Instruments, Inc.: *See—*
Zec, Zvonimir Juan, 3,432,424.

Becton, Dickinson of California, Inc.: *See—*
Rodrigues, Anthony F., and Eaton, Roy W., 3,431,596.

Bedline, Inc.: *See—*
Spitz, Melvin P., Sharp, Chester H., and Sproule, John W., 3,431,567.

Bednarski, Thaddeus E.: *See—*
Sheps, Martin I., Beckering, Jacobus J., and Bednarski, Thaddeus E. 3,432,703.

Bedo, Zoltan: *See—*
Meyer, Walter, and Bedo, Zoltan 3,432,726.

Beebe, Jerry T., and DeLoe, O. Paul, to Towne Robinson Fastener Company. Locknuts. 3,431,959, 03-11-69, Cl. 151-021.

Beeken, Basil B., to Pitney-Bowes, Inc.Fluid ultrasonic generator. 3,432,804, 03-11-69, Cl. 340-015.

Beer, Ludwig A., to Monsanto Company. Graft copolymers prepared by polymerizing vinyl chloride in the presence of vinyl acetate polymers. 3,432,576, 03-11-69, Cl. 260-878.

Belke Manufacturing Company: *See—*
Vitacco, Nicholas P., 3,432,419.

Bell Aerospace Corporation: *See—*
McMahon, Emmett P., 3,432,833.

Bell, Charles C., to Leesona Corporation. Apparatus for processing yarn. 3,431,719, 03-11-69, Cl. 057-108.

Bell & Howell Co.: *See—*
Johnson, Edwin S., 3,432,234.

Bell Telephone Laboratories, Incorporated: *See—*
Bishop, John D., 3,432,741.

Bellet, Paul, and Van Thuong, Truong, to Roussel-UCLAF. Process for the preparation of hydroxycyclo- alkanones. 3,432,393, 03-11-69, Cl. 195-051.

Beloit Corporation: *See—*
Justus, Edgar J, 3,432,382.

Bemis Company, Inc.: *See—*
Goodwin, Ralph C., 3,431,829.

Benda, David, to Sylvania Electric Products Inc.Cathode ray tube having a perforated electrode for releasing a selected gas sorbed therein. 3,432,712, 03-11-69, Cl. 313-181.

Bender, Richard B.Apparatus and method for coating pipe. 3,432,582, 03-11-69, Cl. 264-047.

Bendix Corporation, The: *See—*
Morine, Louis A., 3,432,761.

Benerito, Ruth R.: *See—*
McKelvey, John B., Benerito, Ruth R., and Berni, Ralph J. 3,432,2[illegible]

Bennett, Colin Earl Garnsworthy: *See—*
McKinnon, Neil Alexander, Bennett, Colin Earl Garnsworthy, Williams, Lloyd Stuart, and McTaggart, Frederick Kenneth 3,432,296.

Bennett, Fred. Mechanical scouring device. 3,431,572, 03-11-69, Cl. 015-093.

Bentham, Harold W.: *See—*
Earling, Roy, and Scheuerman, Frank J., 3,431,695.

Berenson, Herman, Dornbush, Albert Carl, and Wehner, Donald Clifford, to American Cyanamid Company. Protecting fabrics with bacteriatoxic- fungitoxic applications of α,γ-alkylenebis (triphenylphosphonium salt). 3,432,341, 03-11-69, Cl. 117-138.5

Berezsak, John, to Jaybec Manufacturing Corporation. Hinge having self-closing feature. 3,431,587, 03-11-69, Cl. 016-145.

Berg, Bengt, to Aktiebolaget Svenska Flaktfabriken. Method in operating conditioning towers for furnace fumes containing dust to be recovered by means of electrostatic precipitators. 3,431,707, 03-11-69, Cl. 055-020.

Berg, Clyde H. O.Method of retorting solids. 3,432,397, 03-11-69, Cl. 201-032.

Bergler, Otto, to Lutz, Eugen, KG, Maschinenfabrik. Hand-operated, belt-type sanding device for woodworking. 3,431,686, 03-11-69, Cl. 051-170.

Berglund, Erling Gotthard: *See—*
Stalberg, Nils Gustav, and Berglund, Erling Gotthard 3,432,149.

Bergman, Sune Hearley, to Joh Mustad AB. Bass control of electronic musical instruments. 3,432,607, 03-11-69, Cl. 084-001.17

Bering, Gerhard: *See—*
Beyersdorf, Hartwig, and Bering, Gerhard 3,432,706.

Berk Limited: *See—*
Jolles, Zvi Enrico, 3,432,450.

Bernardi, Oscar & Co.: *See—*
Bernardi, Oscar, 3,431,972.

Bernardi, Oscar, to Bernardi, Oscar & Co.Apparatus for removing snow from pitched roofs. 3,431,972, 03-11-69, Cl. 165-047.

Berni, Ralph J.: *See—*
McKelvey, John B., Benerito, Ruth R., and Berni, Ralph J. 3,432,252.

Berry, Charles E., to Viking Oil Company. Navigation instrument. 3,432,093, 03-11-69, Cl. 235-061.

Bertelsen, Bruce I., to International Business Machines Corporation. Multiaperture thin film magnetic memory. 3,432,822, 03-11-69, Cl. 340-174.

Bessonny, Al I., and Bowen, Howard, to Machine-O-Matic, Inc.Photoelectric web registration control including two photocells which generate opposite polarity signals that terminate simultaneously. 3,432,672, 03-11-69, Cl. 250-219.

Betiyan, Andris Alfredovich: *See—*
Svilpe, Karl Yanovich, Luft, Genakh Maxovich, Betiyan, Andris Alfredovich, Milyaev, Viktor Vasilievich, Gurevich, Leib Borukhovich, and Selezney, Ivan Vasilievich 3,432,790.

Betso, Stephen, to Ludwig, A., & Co., Inc.Selectively releasable engageable separable- leaf hinge. 3,431,591, 03-11-69, Cl. 016-171.

Betty, Roy J., Jr.: *See—*
Malec, Robert E., and Betty, Roy J., Jr. 3,432,527.

Bevers, John Denzil: *See—*
Austin, Russell A., 3,431,560.

Beville, Ross H., Schor, Wayne E., and Durst, David R., to Broadcast Electronics, Inc.Common capstan mounting system. 3,432,082, 03-11-69, Cl. 226-110.

Beyersdorf, Hartwig, and Bering, Gerhard, to Lloyd Dynamowerke G.m.b.H.Rotary electric machine. 3,432,706, 03-11-69, Cl. 310-157.

Bezimensky, Alexandre. Hydrodynamic transmission devices. 3,431,728, 03-11-69, Cl. 060-054.

Bidard, Rene, to Compagnie Electro-Mecanique. Magnetohydrodynamic generator. 3,432,694, 03-11-69, Cl. 310-011.

Biggar, Gordon McLaren: *See—*
Edwards, Robert Harry, and Biggar, Gordon McLaren 3,432,259.

Billing, Heinz, Rudiger, Albrecht, and Gundlach, Karl-Heinz. Apparatus for information storage with thin magnetic films. 3,432,817, 03-11-69, Cl. 340-174.

Binninda, Norbert, and Wendt, Alfred, deceased, (by Wendt, Frau Alfred, sole heir). Traffic load equalization arrangement. 3,432,621, 03-11-69, Cl. 179-018.

Binstock, Martin H.: *See—*
Katz, Norman H., and Binstock, Martin H. 3,432,365.

Biochemie G.m.b.H.: *See—*
Frank, Albert, Kraushaar, Alfred, Margreiter, Hans, and Schenk, Roland, 3,432,490.

Bird, Thomas S., to Bausch & Lomb, Incorporated. Projection objective having large numerical aperture and high magnification. 3,432,226, 03-11-69, Cl. 350-214.

Bishop, Harry L.: *See—*
Ardito, Victor P., Bishop, Harry L., and Woodcock, Ray E. 3,432,288.

Bishop, John D., to Bell Telephone Laboratories, Incorporated. Saturable reactor/constraining inductor arrangement. 3,432,741, 03-11-69, Cl. 321-045.

Bissett, Alexander F., to General Electric Company. Removable brush assembly. 3,432,708, 03-11-69, Cl. 310-239.

Bissett-Berman Corporation, The: *See—*
Bissett, Thomas B., 3,432,814.

Bissett, Thomas B., to Bissett-Berman Corporation, The. Electrolytic devices. 3,432,814, 03-11-69, Cl. 340-173.

Black and Decker Manufacturing Company, The: *See—*
Sheps, Martin I., Beckering, Jacobus J., and Bednarski, Thaddeus E., 3,432,703.

Black, Hugh. Wood fasteners. 3,431,810, 03-11-69, Cl. 085-011.

Blackstone Corporation: *See—*
Carlson, Richard E., 3,431,620.

Blake, Darrell N.Perforated pipe. 3,431,975, 03-11-69, Cl. 166-227.

Blanch, Charles H., and Olzak, Henry F., to Alert Stamping and Mfg. Co., Inc.Reel construction having improved ratchet and pawl. 3,432,623, 03-11-69, Cl. 191-012.2

Blandin, Ernest W.Means for transferring graphic material. 3,432,235, 03-11-69, Cl. 355-084.

Blasbalg, Herman L., to International Business Machines Corporation. Random-access communication system employing pseudo-random signals. 3,432,619, 03-11-69, Cl. 179-015.

Bles, Marcus J.Snow-removing basket for tractor. 3,431,662, 03-11-69, Cl. 037-118.

Blodgett, Edwin O., to Friden, Inc.Tabulating card reader card drive structure. 3,432,644, 03-11-69, Cl. 235-061.11

Bloom, Henry: *See—*
Frank, Barton, 3,431,869.

Bloomfield Manufacturing Co.: *See—*
Brown, Angus M., 3,432,074.

Blume, Alan E., to United States of America, Army. Thermionic conversion of microwave energy to direct current. 3,432,690, 03-11-69, Cl. 310-004.

Blume, Roe Calvin, to Du Pont de Nemours, E. I., and Company. Process for producing α,α, dimethyl-β- halopropionic acids. 3,432,548, 03-11-69, Cl. 260-539.

Bodine, Albert G., Jr.Sonic method and apparatus for inserting fastening elements into plastic compliant bodies. 3,431,988, 03-11-69, Cl. 175-056.

Bodkin, Ernest A., and Maziuk, John, to Mobil Oil Corporation. Upgrading of naphtha. 3,432,425, 03-11-69, Cl. 208-080.

Boegli, Charles P., and Steigerwald, Delbert, to Fieldstone Corporation, The. Research animal watering apparatus. 3,431,891, 03-11-69, Cl. 119-072.5

Boehm, Ernest Robert, to Stevens, J. P., & Co. Inc.Soft-feel, long-stretch, elastic braid. 3,431,814, 03-11-69, Cl. 087-002.

Boeing Company, The: *See—*
Adams, Clarence R., 3,432,213.

Bogri, Tibor: *See—*
Bagli, Jehan F., and Bogri, Tibor 3,432,541.

Bohler, Walter: *See—*
Weinrotter, Ferdinand, Schmidt, Alfred, Muller, Walter, and Bohler, Walter 3,432,501.

Bold, Eugene R., Krebs, Peter D., and McKeon, Patrick E., to Automatic Electric Laboratories, Inc.Method for fabricating a prewired terminal block. 3,431,642, 03-11-69, Cl. 029-629.

Bolkcom, Wilbur T., and Knapp, William E.Silicon carbide furnaces and plants. 3,432,605, 03-11-69, Cl. 013-020.

Bolton-Emerson, Inc.: *See—*
Johnson, Charles A., 3,432,107.
Russell, Frank H., 3,432,383.

Bolton, Theodore S., to Carrier Corporation. Door mounting for a room air conditioner discharge opening. 3,431,748, 03-11-69, Cl. 062-262.

Boniecki, Krystyna W., and Boniecki, Maria Albin. Figure having an associated spray of liquid simulating wearing apparel. 3,432,099, 03-11-69, Cl. 239-018.

Boniecki, Maria Albin: *See—*
Boniecki, Krystyna W., and Boniecki, Maria Albin 3,432,099.

Booth, Carl H.Combination vacuum cleaner and defroster device. 3,431,581, 03-11-69, Cl. 015-313.

Borden Company, The: *See—*
Halpern, Benjamin D., 3,432,512.

Borer, Herbert W., Ehlke, Charles C., and Svoboda, James, to Caterpillar Tractor Co.Loader frame for track-type loaders. 3,432,051, 03-11-69, Cl. 214-140.

Borg-Warner Corporation: *See—*
Stokely, Raymond E., 3,431,751.

Boris, Meszaros, Erika: *See—*
Kasztreiner, Endre, Borsi, Jozsef, Vargha, Laszlo, Boris, Meszaros, Erika, and Szilagyi, Geza 3,432,549.

Borsi, Jozsef: *See—*
Kasztreiner, Endre, Borsi, Jozsef, Vargha, Laszlo, Boris, Meszaros, Erika, and Szilagyi, Geza 3,432,549.

Bossard, Paul, and Chauvigne, Michel, to Carpano & Pons. Programming apparatus. 3,432,626, 03-11-69, Cl. 200-038.

Boston, Charlie L., to Case, J. I., Company. Safety lock for pedal mechanisms. 3,431,793, 03-11-69, Cl. 074-512.

Bostwick, Louis E., and Mandelik, Bernard G., to Pullman Incorporated. Sulfuric acid process. 3,432,264, 03-11-69, Cl. 023-168.

Botstiber, Dietrich W.Chip detector for magnetic and non-magnetic conductive particles. 3,432,750, 03-11-69, Cl. 324-041.

Bottoms, Harry Simister, to Lucas, Joseph, (Industries) Limited. Gear pumps. 3,431,862, 03-11-69, Cl. 103-126.

Bouet, Jacques, to International Harvester Company. Cutter bar. 3,431,714, 03-11-69, Cl. 056-296.

Bouladon, Gabriel, and Zuppiger, Paul, to Battelle Development Corp., The. Closed loop passenger transport complex. 3,431,866, 03-11-69, Cl. 104-025.

Boultinghouse, Harold D., to Phillips Petroleum Company. Tufted articles and method for making same. 3,431,875, 03-11-69, Cl. 112-410.

Bounds, William E., and Morris, Elmer S.Device for frosting cocktail glasses. 3,431,749, 03-11-69, Cl. 062-293.

Bourne, Ronald Frederick, and Cheyne, Donald Gordon. Mounting of beater and like blades on rotors. 3,432,110, 03-11-69, Cl. 241-191.

Bouton, Gertrude V.,: *See—*
Vischar, Alfred, Jr., 3,431,902.

Bowditch, Hoel L.: to Foxboro Company, The. Apparatus for use in the measurement of fluid flow. 3,431,935, 03-11-69, Cl. 137-269.

Bowen, Howard: *See—*
Bessonny, Al I., and Bowen, Howard 3,432,672.

Bowen, John T., to Ingersoll-Rand Company. Liquid spring. 3,431,985, 03-11-69, Cl. 173-119.

Bower, Lewis Robert, to Wild, A. G., & Co. Limited. Hydraulic roof supports. 3,431,737, 03-11-69, Cl. 061-045.

Bowers, Grayson Hunter, Jr.Apparatus for making wall panel frames. 3,431,619, 03-11-69, Cl. 029-200.

Bowles Engineering Corporation: *See—*
Bowles, Ronald E., 3,431,930.

Bowles, Ronald E., to Bowles Engineering Corporation. Dual fluid vortex valve. 3,431,930, 03-11-69, Cl. 137-081.5

Boyce, John E.: *See—*
Hersh, Harold R., and Boyce, John E. 3,432,452.

Bracco, Fulvio: *See—*
Kovaca, Desidrio, 3,431,592.

Braddy, John E., and Wiens, Bradley E., to Owens-Illinois, Inc.Method for surface treatment of glass articles. 3,432,331, 03-11-69, Cl. 117-046.

Brannock, Kent C., to Eastman Kodak Company. Manufacture of 2,4-(1H,3H)-pyridinediones. 3,432,506, 03-11-69, Cl. 260-289.

Branson Instruments, Incorporated: *See—*
Shoh, Andrew, 3,432,691.

Braun, Karlheinz, to Eisenbau Albert Ziefle K.G.Electrically insulating coupling for pipes and the like. 3,432,186, 03-11-69, Cl. 285-053.

Bray, Ralph: *See—*
Frank, Edward, and Bray, Ralph 3,431,787.

Breedlove, William W., and Fabry, Joseph W., Jr.Golf bag stands. 3,432,130, 03-11-69, Cl. 248-096.

Breeze Corporations, Inc.: *See—*
Eccles, Fred J., and Landow, Harold, 3,432,847.

Breidt, Peter, Jr., and Lefevre, Lloyd E., to Dow Chemical Company, The. Method for the preparation of a filamentary reinforced resinous article having improved surface characteristics. 3,432,588, 03-11-69, Cl. 264-171.

Brenner, Charles: *See—*
Cirino, John F., and Brenner, Charles 3,431,580.

Brey-r, Frederick: *See—*
Harper, John D., Breyer, Frederick, and Wagner, Richard C. 3,431,745.

Bricker, Carl E., to Goodyear Tire & Rubber Company, The. Parking attachment for disk brake. 3,432,009, 03-11-69, Cl. 188-106.

Brico Engineering Limited: *See—*
Farmer, Edwin Bruce, 3,432,290.

Brilando, Frank P., to Schwinn Bicycle Co.Unicycle saddle. 3,432,204, 03-11-69, Cl. 297-214.

Brion, Albert E., Jr.: *See—*
Duvall, William C., Ludwick, William R., and Brion, Albert E., Jr. 3,432,609.

Brishka, Alexander R., to Sealectro Corporation. Right angle connectors. 3,432,798, 03-11-69, Cl. 339-089.

Bristol Siddeley Engines Limited: *See—*
Llewelyn, Geirionydd, and Ubank, Raymond George, 3,432,280.

British Needle Company Ltd., The: *See—*
Stephens, Frederick Allen, and Hurst, Arthur, 3,432,059.

British Oxygen Company Limited, The: *See—*
Webster, Thomas J., and Garrett, Michael E., 3,431,746.

Britton, Richard B., Robins, Kenneth E., and Sampson, William B., to United States of America, Atomic Energy Commission. Superconductor ribbon. 3,432,783, 03-11-69, Cl. 335-216.

Broadcast Electronics, Inc.: *See—*
Beville, Ross H., Schor, Wayne E., and Durst, David R., 3,432,082.

Brocher, Eric: *See—*
Chevalley, Jean-Louis, 3,432,692.

Brohult, Astrid Helena, Brohult, Sven Fritiof Abraham, Hallgren, Bo Erik, and Brohult, Johan Axel, to Aktiebolaget Astra. Oral alkyl glycerol ether improvement in radiation, radiomimetic, or cytostatic tumor therapies. 3,432,602, 03-11-69, Cl. 424-307.

Brohult, Johan Axel: *See—*
Brohult, Astrid Helena, Brohult, Sven Fritiof Abraham, Hallgren, Bo Erik, and Brohult, Johan Axel 3,432,602.

Brohult, Sven Fritiof Abraham: *See—*
Brohult, Astrid Helena, Brohult, Sven Fritiof Abraham, Hallgren, Bo Erik, and Brohult, Johan Axel 3,432,602.

Brophy, William R., Jr., to Weston Instruments, Inc.Multiangle gauge. 3,431,782, 03-11-69, Cl. 073-363.9

Bross, Helmut Karl. Writing instrument. 3,432,244, 03-11-69, Cl. 401-113.

Brother Kogyo Kabushiki Kaisha: *See—*
Watanabe, Tomoyoshi, Hishida, Yukio, and Hirata, Takashi, 3,432,018.

Brown, Allan R.Short dipole antenna. 3,432,858, 03-11-69, Cl. 343-752.

Brown, Angus M., to Bloomfield Manufacturing Co.Vending machine. 3,432,074, 03-11-69, Cl. 221-117.

Brown, Henry, Becking, Donald H., and Valsyil, Sylvester P., to Udylite Corporation, The. Chromium plating electrolyte and method for preventing mist therein. 3,432,408, 03-11-69, Cl. 204-051.

Brown, Martin Granger, to Imperial Chemical Industries Limited. Preparation of calcium sulphate alpha- hemihydrate slurries for casting in moulds. 3,432,318, 03-11-69, Cl. 106-110.

Brown, Paul R., to Seal Basin Marine Company. Mooring device. 3,431,568, 03-11-69, Cl. 009-008.

Brown, William M., to Continental Can Company, Inc.Partition for containers. 3,432,029, 03-11-69, Cl. 206-065.

Browning, Charles A., Jr.Test circuit for measuring and indicating breakdown voltage, RC time constant, and ERG dissipation of a gas diode. 3,432,745, 03-11-69, Cl. 324-024.

Bruecher, Judith F.: *See—*
Buck, Henry M., Bruecher, Judith F., Carlton, Louis A., and Pierce, Aaron E. 3,431,974.

Brumelle, Clifton B.Lock construction. 3,431,754, 03-11-69, Cl. 070-144.

Brunner, Eduard R., to Radio Corporation of America. Television deflection circuit with linearity correction feedback. 3,432,720, 03-11-69, Cl. 315-027.

Buck, Henry M., Bruecher, Judith F., Carlton, Louis A., and Pierce, Aaron E., to Esso Production Research Company. Subsurface fluid flow diverter. 3,431,974, 03-11-69, Cl. 166-136.

Buehler, Alois A., and Peterson, Carl R., to Ingersoll-Rand Company. Check valve vent and blow air metering plug for rock drills. 3,431,984, 03-11-69, Cl. 173-078.

Bueler, Richard C., to Wagner Electric Corporation. Adjusting mechanism. 3,431,730, 03-11-69, Cl. 060-054.6

Buell, Heinz, Gannon, Joseph A., and Rubin, Jack, to Singer-General Precision, Inc.Doppler inertial navigation system. 3,432,856, 03-11-69, Cl. 343-009.

Bugla, Gottfried, to Bantox Safety Closures Limited. Tamper-proof fluid-tight containers. 3,432,065, 03-11-69, Cl. 220-040.

Bugnon, Maurice, and Melin, Ginette nee Poncet. Foundation garment. 3,431,913, 03-11-69, Cl. 128-546.

Bullard, Calvin P., and Luginbuhl, David E., to Universal American Corporation (formerly) Robfre Manufacturing Corporation). Nozzle shut-off valve for plastic injection molding machine. 3,431,600, 03-11-69, Cl. 018-030.

Buller, Leonard E., to Aeroquip Corporation. Flexmaster end restraint. 3,432,189, 03-11-69, Cl. 285-232.

Bunin, Donald S.: *See—*
Oringer, Kenneth, Gallagher, Gerald T., Bunin, Donald S., and Easton, Bernard E. 3,432,546.

Burger Eisenwerke Aktiengesellschaft: *See—*
Lohr, Alfred, Hemmann, Helmut, and Tropp, Karl, 3,432,642.

Burgess, Henry A.Safety cap for medicine bottle or the like. 3,432,058, 03-11-69, Cl. 215-009.

Burk, Emmett H., Jr.: *See—*
Hoffman, William D., Burk, Emmett H., Jr., and Eichhorn, Robert M. 3,432,570.

Burkhardt, Gottfried: *See—*
Metschnabl, Andreas, and Burkhardt, Gottfried 3,432,094.

Burlington Industries, Inc.: *See—*
Luckenbach, Roy L., 3,431,656.

Burns, William C., and Vlig, Meye, to Shell Oil Company. Device for transporting fluids in plastic containers. 3,432,071, 03-11-69, Cl. 220-066.

Burr, Robert Page, to Circuit Research Company. Method of manufacturing toroidally wound disc armatures. 3,431,638, 03-11-69, Cl. 029-598.

Burroughs Corporation: *See—*
Larsson, Ivar F., 3,431,640.

Burrows, Arthur Thomas Charles, to King, George W., Limited. Conveyor. 3,431,867, 03-11-69, Cl. 104-172.

Bush, George W., to Philadelphia Handle Company Inc.Hideaway handle with I-shaped link. 3,431,586, 03-11-69, Cl. 016-115.

Cairns, Elton J., to General Electric Company. Fuel cell electrolyte and process of using. 3,432,358, 03-11-69, Cl. 136-086.

Caldwell, John R., to Eastman Kodak Company. Dyeable polymers. 3,432,472, 03-11-69, Cl. 260-075.

Caldwell, Richard L., to Mobil Oil Corporation. Borehole fluid excluder releasably coupled to borehole tool. 3,432,667, 03-11-69, Cl. 250-108.

Calhoun, David L.Method and apparatus for leak testing. 3,431,773, 03-11-69, Cl. 073-049.2

Camis, Theodore G., Jr.: *See—*
Andrae, Ralph N., and Camis, Theodore G., Jr. 3,431,672.

Campbell, James D., III: *See—*
Cillag, John R., and Campbell, James D., III 3,432,421.

Campbell Soup Company: *See—*
Weeks, Richard C., 3,432,310.

Campbell, William Henry: *See—*
Crawley, John, Saunders, Alan, Milne, Alistair, and Campbell, William Henry 3,431,825.

Canadian Bronze Company Limited: *See—*
Horsey, Sydney F., and Tyler, William J. L., 3,432,097.

Canadian Patents & Development Limited: *See—*
Godby, Ensley A., Baker, Ralph C., and Strome, Murray W., 3,432,751.

Cannon, Charles R., Cantor, Paul A., and King, Willam M., to Aerojet-General Corporation. Process for the manufacture of a reverse osmosis membranc having a non-heating annealing step. 3,432,584, 03-11-69, Cl. 264-049.

Cantor, Paul A.: *See—*
Cannon, Charles R., Cantor, Paul A., and King, Willam M. 3,432,584.

Canyon Research Corporation: *See—*
Marshall, Burton H., 3,431,805.

Caracciolo, Edward A., to Philco-Ford Corporation. Method of packaging microelectronic devices. 3,431,637, 03-11-69, Cl. 029-588.

Carl, Allen E.: *See—*
Houtz, Harold H., and Carl, Allen E. 3,432,411.

Carlisle, Richard W.: *See—*
Sebesta, George J., and Carlisle, Richard W. 3,432,622.

Carlson, Bert M.Snow plow with laterally expansible fixed angle plow portions. 3,431,661, 03-11-69, Cl. 037-046.

Carlson, Richard E., to Blackstone Corporation. Apparatus for assembly of tube and center radiator cores. 3,431,620, 03-11-69, Cl. 029-202.

Carlton, Louis A.: *See—*
Buck, Henry M., Bruecher, Judith F., Carlton, Louis A., and Pierce, Aaron E. 3,431,974.

Carlton, William C.Method of making a racket frame. 3,431,626, 03-11-69, Cl. 029-423.

Carpano & Pons: *See—*
Bossard, Paul, and Chauvigne, Michel, 3,432,626.

Carpenter, Herbert L., Jr.: *See—*
Naylor, Robert M., and Carpenter, Herbert L., Jr. 3,431,870.

Carpenter, Herbert L., Jr., and Dubois, Robert A., to Greif Bros. Cooperage Corporation. Drum liner with flexible neck. 3,432,070, 03-11-69, Cl. 220-063.

Carr, Donald R., to Whittaker Corporation. Subreflector-positioning mechanism. 3,432,135, 03-11-69, Cl. 248-287.

Carrier Corporation: *See—*
Bolton, Theodore S., 3,431,748.

Carrow, Donald J.: *See—*
Verdol, Joseph A., and Carrow, Donald J. 3,432,479.

Carruthers, George A., to Turbo Machine Company. Creel. 3,432,118, 03-11-69, Cl. 242-131.1

Carter, Herbert A.: *See—*
Ayers, Orval E., Huskins, Chester W., and Carter, Herbert A. 3,432,444.

Carter's Ink Company, The: *See—*
Coppeta, Leonard T., 3,432,446.

Cartwright, John A.: *See—*
Richards, Claude L., Cartwright, John A., and Pearce, Graham 3,432,799.

Case, Cecil L., to Hesston Corporation, Inc.Speed, steering and direction control for vehicles. 3,431,993, 03-11-69, Cl. 180-006.48

Case, J. I., Company: *See—*
Boston, Charlie L., 3,431,793.
Goth, Gary J., 3,432,057.

Cash, George O., Jr., and Joyner, Frederick B., to Eastman Kodak Company. Polyolefin compositions and their preparation. 3,432,514, 03-11-69, Cl. 260-093.7
Bailey, John M., 3,431,895.
Borer, Herbert W., Ehlke, Charles C., and Svoboda, James, 3,432,051.

Caterpiller Tractor Co.: *See—*
Sons, Charles C., Jr., 3,431,963.

Caudill, Allison H., and Goff, Willie, Jr., to International Business Machines Corporation. Small increment ribbon feed. 3,432,020, 03-11-69, Cl. 197-151.

Cavalli, Pompeo. Bed-sofa. 3,432,203, 03-11-69, Cl. 297-109.

Celanese Coatings Company: *See—*
Shimp, David A., McWhorter, Wayne F., and Wolfe, Norman G., 3,432,440.

Celanese Corporation: *See—*
Dirks, Jerald Edson, and Fisher, Gene Jordan, 3,432,543.
Wile, Ronald H., 3,432,557.

Celanese Corporation of America: *See—*
Martin, Alfred W., Walker, James W., McNair, William T., Jr., and Hood, Coy H., 3,432,560.

Central Engineering Company, Inc.: *See—*
Daneman, Ben, 3,431,583.

Ceskoslovenska akademie ved: *See—*
Erdos, Emerich, and Bares, Jiri, 3,432,404.
Hrdina, Jiri, 3,431,789.

Chamberlin, Richard S., to United States of America, Navy. Molecular pulse time-division multiplexer. 3,432,850, 03-11-69, Cl. 343-005.

Chambers, Worthy L., to Sunbeam Corporation. Battery powered electric knife. 3,432,702, 03-11-69, Cl. 310-050.

Chance, Maynard R.: *See—*
Packard, Leslie M., and Chance, Maynard R. 3,432,374.

Chapman, Clifford P.: *See—*
Autry, Wallace M., and Chapman, Clifford P. 3,432,297.

Chasar, Anthony R., to Triax Company, The. Laterally movable extractor mechanism. 3,432,056, 03-11-69, Cl. 214-730.

Chauvigne, Michel: *See—*
Bossard, Paul, and Chauvigne, Michel 3,432,626.

Chechak, Albert J., and Robeson, Charles D., to Eastman Kodak Company. Carotenoid compounds. 3,432,566, 03-11-69, Cl. 260-668.

Cheesman, Harry: *See—*
Phillipson, Alan, Spiller, Basil Harry Royston, Smith, Robin, and Cheesman, Harry 3,431,697.
Bathellier, Louis, and Cheesman, Harry 3,431,698.

Chemetron Corporation: *See—*
Hettlinger, Raymond C., and Smith, Robert L., 3,431,937.

Chemical Construction Corporation: *See—*
Ohsol, Ernest O., 3,432,263.

Chemische Fabriek L. van der Grinten N.V.: *See—*
Vercoulen, Johannes Cornelis Augustinus, 3,432,236.

Chemische Fabrik Pfersee G.m.b.H.: *See—*
Enders, Heinz, and Pusch, Gunter, 3,432,553.

Chemische Werke Hule Aktiengesellschaft: *See—*
Seeliger, Wolfgang, 3,432,473.
von Portatius, Hans, 3,432,470.

Chen, Hsin Sheng, to Ingersoll-Rand Company. High energy rate actuator. 3,431,725, 03-11-69, Cl. 060-001.

Chesapeake Instrument Corporation: *See—*
Lemon, Stanley G., Eiseman, William F., and Donoho, Charles M., 3,431,778.

Chevalley, Jean-Louis, to Brocher, Eric. Magneto-hydrodynamic generators. 3,432,692, 03-11-69, Cl. 310-011.

Chevron Research Company: *See—*
Dreher, John L., 3,432,432.
Ransley, Derek L., 3,432,542.

Cheyne, Donald Gordon: *See—*
Bourne, Ronald Frederick, and Cheyne, Donald Gordon 3,432,110.

Chiddix, Max Eugene, to GAF Corporation. Alkyl alkenyl arsinic acids and salts thereof. 3,432,496, 03-11-69, Cl. 260-242.

Chiddix, Max Eugene, and Leonard, Edward Oliver, to GAF Corporation. Aryl alkyl arsinic acids and salts thereof. 3,432,494, 03-11-69, Cl. 260-242.

Chiddix, Max Eugene, and Leonard, Edward Oliver, to GAF Corporation. Aryl hydroxyalkyl arsinic acids and salts thereof. 3,432,495, 03-11-69, Cl. 260-242.

Chimiotex S.A.: *See—*
Drisch, Nicolas B., 3,432,589.

Chin, Ball, to United States of America, Army. Continuous microwave attenuator. 3,432,756, 03-11-69, Cl. 325-300.

Chinn, George M., Schnatter, William P., and Watson, Henry F., to United States of America, Navy. Grenade launcher. 3,431,820, 03-11-69, Cl. 089-161.

Christianson, Clinton C., to General Electric Company. Regulated fuel cell system. 3,432,356, 03-11-69, Cl. 136-086.

Christopher, Glenn B., to Jet Research Center, Inc.Shaped charge and method of manufacture therefor. 3,431,850, 03-11-69, Cl. 102-024.

Chrysler Corporation: *See—*
Fields, Bruce G., 3,431,627.

Chugai Seiyzku K.K.: *See—*
Nitta, Yoshihiro, Namekata, Masaya, Tomita, Eiichi, and Hirota, Yusaku, 3,432,489.

Churla, John J., to Thomas & Betts Corporation. Card frame assembly. 3,432,794, 03-11-69, Cl. 339-017.

Ciba Corporation: *See—*
Anner, Georg, and Wieland, Peter, 3,432,528.
Bauer, Kurt, 3,432,594.
Speiser, Peter, 3,432,592.

Ciba Limited: *See—*
Porret, Daniel, 3,432,500.

Ciesielski, Leo Frank: *See—*
Herrlinger, Richard, Kirkland, Claude James, and Ciesielski, Leo Frank 3,432,402.

Cillag, John R., and Campbell, James D., III, to Du Pont de Nemours, E. I., and Company. Fused salt electrolytic cell with diaphragms having insulative spacers. 3,432,421, 03-11-69, Cl. 204-247.

Circuit Research Company: *See—*
Burr, Robert Page, 3,431,638.

Cirino, John F., and Brenner, Charles, to Mr. Robot, Inc.Vehicle washing apparatus. 3,431,580, 03-11-69, Cl. 015-302.

Claas, Reinhold. Aligning device for attachments of agricultural machines and the like. 3,431,711, 03-11-69, Cl. 056-021.

Clare-Pendar Co.: *See—*
Martin, Carl E., 3,432,624.

Claren, Rodolfo, to Salvi, A., & Co. S.p.A.Vibration dampers for suspended members. 3,432,610, 03-11-69, Cl. 174-042.

Clark & Vicario Corporation: *See—*
Kaiser, Robert G., 3,432,036.

Clausen, Heinrich: *See—*
Rohrborn, Hans-Joachim, Clausen, Heinrich, Grassmann, Wolfgang, and Valet, Gerhard 3,432,324.

Clay, Charles L.: *See—*
Harvey, Herbert, Sims, Martin H., and Clay, Charles L. 3,432,841.

Clayton, Robert H., to International Telephone and Telegraph Corporation. Hybrid deflection image dissector having concave deflection plates converging at horizontal edges of resolving apertures. 3,432,711, 03-11-69, Cl. 313-079.

Cleary, Robert D.: *See—*
Noddings, Charles R., and Cleary, Robert D. 3,432,571.

Clement, John C., to Industrial Nucleonics Corporation. Two-dimensional material property control system. 3,431,761, 03-11-69, Cl. 072-009.

Clemett, Edwin F., Jr., to McCord Corporation. Windshield wiper system for automotive vehicles. 3,431,578, 03-11-69, Cl. 015-250.12

Cleveland, Clark C., to United States of America, Navy. Waterproofed electrolyte entry port and fill channel for galvanic battery. 3,432,360, 03-11-69, Cl. 136-090.

Cleveland, Clark C., to United States of America, Navy. Galvanic battery electrical contact. 3,432,361, 03-11-69, Cl. 136-090.

Cleveland, Clark C., French, Harry F., deceased (by Cleveland Trust Company, executor), and Pattin, Howard S., to United States of America, Navy. Setback activated, spin filled galvanic battery. 3,432,359, 03-11-69, Cl. 136-090.

Cleveland Technical Center, Inc.: *See—*
Crouch, Harold C., 3,432,210.

Cleveland Trust Company,: *See—*
Cleveland, Clark C., French, Harry F., deceased (by Cleveland Trust Company, executor), and Pattin, Howard S. 3,432,359.

Cohen, Abraham B., to LTV Ling Altec, Inc.Horn-loaded loudspeaker. 3,432,002, 03-11-69, Cl. 181-031.

Cohen, Leonard A.Control mechanism. 3,431,790, 03-11-69, Cl. 074-471.

Colebrook Mills, Inc.: *See—*
Crawford, Ishmael, 3,431,752.

Coleman, Homer B., and Gardner, Robert E., Jr., to United States Steel Corporation. Method of clearing tar accumulations from a coke- oven collector main. 3,432,396, 03-11-69, Cl. 201-002.

Colibri Lighters Limited: *See—*
Retzler, William, 3,432,248.

Colight, Inc.: *See—*
Pesek, Cyril P., 3,431,921.

Collins, John Oliver, Jr., to Johns-Manville Corporation. Thermal insulation of fibrous brucite. 3,432,381, 03-11-69, Cl. 162-152.

Collins Radio Company: *See—*
Hutchinson, William M., and Melvin, William J., 3,432,816.

Colonial Broach & Machine Company: *See—*
Fulks, James K., 3,431,633.

Colwell, Otha Leroy, to Felt Products Mfg. Co. Cylinder sleeve seal. 3,432,177, 03-11-69, Cl. 277-205.

Combustion Engineering, Inc.: *See—*
Stern, Fred M., 3,432,389.

Commissariat a l'Energie Atomique: *See—*
Le Coz, Francois, Mombaxet, Rene, and Raynaud, Noel, 3,431,618.
Vautrey, Louis, 3,432,047.
Yerouchalmi, David, 3,432,715.

Commonwealth Scientific and IndustrialResearch Organization: *See—*
McKinnon, Neil Alexander, Bennett, Colin Earl Garnsworthy, Williams, Lloyd Stuart, and McTaggart, Frederick Kenneth, 3,432,296.

Compagnie de Saint-Gobain: *See—*
Bathellier, Louis, and Cheesman, Harry, 3,431,698.

Compagnie Electro-Mecanique: *See—*
Bidard, Rene, 3,432,694.

Compagnie Industrielle de Procedes& d'Applications S.A. (CIPA): *See—*
Godel, Albert, 3,431,892.

Compo Shoe Machinery Corporation: *See—*
Peterson, Evald O., 3,431,806.

Comprehensive Service Corporation: *See—*
Freedman, Myron L., 3,432,113.

Conductron Corporation: *See—*
Edmonds, Thomas Rhys, 3,432,671.

Connor, Robert W., to Ford Motor Company. Latch mechanism. 3,432,198, 03-11-69, Cl. 292-216.

Conte, Alfred L.: *See—*
Amthor, Helmut K., and Conte, Alfred L. 3,431,622.

Continental Can Company, Inc.: *See—*
Brown, William M., 3,432,029.
Fitko, Chester W., and Ravve, Abraham, 3,432,464.
Khoury, Nick S., 3,432,067.
Kinnavy, James W., 3,431,877.

Continental Machines, Inc.: *See—*
Whitmore, Charles H., and Ernst, Walter, 3,431,856.

Continental Oil Company: *See—*
Miller, Donald B., McClaflin, Gifford G., and Sorenson, Wayne R., 3,432,513.

Control Data Corporation: *See—*
Lynn, Richard G., Sr., Machukla, James R., and Hill, John L., 3,431,858.
Mader, Lyle W., 3,432,673.
Pratt, Warren R., 3,432,689.

Conway, John Albert, and Barker, Cedric Chaffer, to Dehavilland Aircraft of Canada, Limited, The. Cross ducting system for augmentor wing aircraft. 3,432,123, 03-11-69, Cl. 244-053.

Conzinc Riotinto of Australia Limited: *See—*
Worner, Howard Knox, 3,432,157.

Cook, Ernest E., and Pareja, Ramon, to Hypro, Inc.Pump with concentric valve means. 3,431,865, 03-11-69, Cl. 103-228.

Coppeta, Leonard T., to Carter's Ink Company, The. Porous applicator prepared by bonding thermoplastic fibrous flock particles at point of contact with the aid of a plasticizer. 3,432,446, 03-11-69, Cl. 260-002.5

Coppock, Alden D.: *See—*
Dixon, Peter Ray, and Coppock, Alden D. 3,432,253.

Cordani, Eugene J., and Sittner, Edward H., to ACF Industries Incorporated. Cover for deck openings in railway flatcars. 3,431,868, 03-11-69, Cl. 105-366.

Cordero, Humberto R., to International Business Machines Corporation. Addressing system for a computer employing a plurality of local storage units in addition to a main memory. 3,432,810, 03-11-69, Cl. 340-172.5

Cordis Corporation: *See—*
Keller, John Walter, Jr., 3,431,912.

Corish, Patrick J.: *See—*
Haines, Robert C., and Corish, Patrick J. 3,432,165.

Coss, Raymond L.Orthopedic traction appliance. 3,431,904, 03-11-69, Cl. 128-083.

Costello, Alfred P.Package valve. 3,432,087, 03-11-69, Cl. 229-062.5

Cotta Ramusino: *See—*
Galbarini, Maso, and Cotta Ramusino 3,431,797.

Cowan, Arnold A., to Bobrick Corporation, The. Recessed washroom dispenser and method of installing the same. 3,432,217, 03-11-69, Cl. 312-242.

Cowley, John James, to Therapeutic Research Corporation Limited. Tubular pressure vessel. 3,432,060, 03-11-69, Cl. 220-003.

Cox, Andrew P., Jr., and Price, William L., to Westinghouse Electric Corporation. Signal processor. 3,432,851, 03-11-69, Cl. 343-006.5

Craig, Walter J., to Kand Rubber Company. Closure construction. 3,432,069, 03-11-69, Cl. 220-063.

Cranstoun, Leroy Bruce, to Ethicon, Inc.Method and apparatus for making collagen articles. 3,432,392, 03-11-69, Cl. 195-006.

Crawford, Donald C., Viitanen, Veikko K., and Hoffman, John D., to FMC Corporation. Bag stacker. 3,431,828, 03-11-69, Cl. 093-013.

Crawford, Ishmael, to Colebrook Mills, Inc.Cable knitting method and apparatus. 3,431,752, 03-11-69, Cl. 066-096.

Crawley, John, Saunders, Alan, Milne, Alistair, and Campbell, William Henry, to Vickers Limited. High pressure device. 3,431,825, 03-11-69, Cl. 092-165.

Creager, Lester W.Bucket tooth for excavating equipment. 3,431,664, 03-11-69, Cl. 037-142.

Creamer, Robert J., to Olin Mathieson Chemical Corporation. Firearm receiver and bolt with cooperating guide means. 3,431,668, 03-11-69, Cl. 042-016.

Crowhite, Howard Linn, to Ford Motor Company. Snap action flyweight governor for developing a speed sensitive pressure signal. 3,431,929, 03-11-69, Cl. 137-056.

Crouch, Harold C., to Cleveland Technical Center, Inc.Braking system. 3,432,210, 03-11-69, Cl. 303-003.

Crouse, William G., to International Business Machines Corporation. Data transmission apparatus utilizing frequency shift keying. 3,432,616, 03-11-69, Cl. 178-066.

CSF-Compagnie generale dc Telegraphic Sans Fil: *See*—
Arnaud, Jacques, Sobotka, Walter, and Desbrueres, Maurice, 3,432,776.

Cucinella, Salvatore: *See*—
Marconi, Walter, Mzaaei, Alessandro, de Malde', Marcello, and Cucinella, Salvatore 3,432,516.

Cuenot, Charles, to Le Nickel, Societe Anonyme. Method of producing pure nickel by electrolytic refining. 3,432,410, 03-11-69, Cl. 204-112.

Cupp, Charles D., to Automatic Sprinkler Corporation of America. Valve assembly for breathing apparatus. 3,431,931, 03-11-69, Cl. 137-102.

Cupp, Charles D., to Automatic Sprinkler Corporation of America. Valve assembly for breathing apparatus. 3,431,932, 03-11-69, Cl. 137-102.

Curphey, David G., and Fowler, William J., to FMC Corporation. Presorting method and apparatus. 3,432,032, 03-11-69, Cl. 209-073.

Curran, Robert E.: *See*—
Mendelsohn, Lewis I., and Curran, Robert E. 3,432,279.

Currey, John E., to Hooker Chemical Corporation. Current conducting members for electrolytic cell. 3,432,422, 03-11-69, Cl. 204-258.

Curry, James W., to Texas Instruments Incorporated. Method for preparation of cyclic diorganosiloxanes. 3,432,538, 03-11-69, Cl. 260-448.2

Curtis & Marble Machine Co.: *See*—
Arsenault, James H., 3,432,076.

Cushman, Robert, and Wasco, Anthony, Jr., to Saginaw Machine and Tool Company. Mounting pin assembly. 3,432,214, 03-11-69, Cl. 308-015.

Dedekian, Zaven A., and Wilbourn, David S., to Baird Chemical Industries, Inc.Preparation of alkyl chlorides by the reaction of alkyl alcohols with phosphorus trichloride. 3,432,561, 03-11-69, Cl. 260-652.

Dahl, Hans, to Escher Wyss G.m.b.H.Fine-spreading and retarding device for the pulp suspension stream in a papermaking machine. 3,432,384, 03-11-69, Cl. 162-338.

Dahl, Norman C.Fixed force level nut. 3,431,812, 03-11-69, Cl. 085-062.

Dahlin, Robert Walton: *See*—
Davis, Glenn Gary, and Dahlin, Robert Walton 3,431,916.

Dahowski, Edward L.: *See*—
Feagin, Roy C., Dahowski, Edward L., and Kosmos, Peter 3,432,312.

Dale, Ingvald, and Lewis, Charles B., to Lamb-Grays Harbor Co., Inc.Sheet control apparatus. 3,432,161, 03-11-69, Cl. 271-046.

Dale, John R.Mobile gas-operated electrically-actuated projectile firing system. 3,431,816, 03-11-69, Cl. 089-008.

Dalhart, Austin Thomas: *See*—
Moss, Theron V., and Dalhart, Austin Thomas 3,431,576.

Damm, Carl A., to United States of America, Navy. Ejector assembly with lockable store-engaging presser foot. 3,431,824, 03-11-69, Cl. 092-132.

Daneman, Ben, to Central Engineering Company, Inc.Sound attenuator for vacuum-type debris collector. 3,431,583, 03-11-69, Cl. 015-326.

Danfoss A/S: *See*—
Dyre, Morgens, 3,432,729.
Hallgreen, Knud Julius, 3,432,246.
Iversen, Kristian, 3,431,726.
Sorensen, Carl, and Molgard, Age, 3,431,938.
Valbjorn, Knud V., 3,431,796.
Vind, Holger V., 3,432,786.
Waldorff, Jorgen F., 3,431,863.

Danjes, Martin Hermann. Sewage water aeration device. 3,432,154, 03-11-69, Cl. 261-122.

Dankese, Joseph P., to General Electric Company. Fluent material distribution system and fuel cell therewith. 3,432,357, 03-11-69, Cl. 136-086.

Darigo, Julius, Dickey, Rex E., and Reed, David S., to Remington Arms Company, Inc.Process of forming jacketed projectiles. 3,431,612, 03-11-69, Cl. 029-001.23

Davee, Robert L., and Louzos, Demetrious V., to Union Carbide Corporation. Process for producing electrodes for galvanic batteries. 3,432,351, 03-11-69, Cl. 136-067.

Davidse, Pieter D., and Maissel, Leon I., to International Business Machines Corporation. Low power density sputtering on semiconductors. 3,432,417, 03-11-69, Cl. 204-192.

Davies, Evan D.Water saving device for water closets. 3,431,564, 03-11-69, Cl. 004-040.

Davies, Phineas, and Hughes, David Owen, to Imperial Chemical Industries Limited. Catalyst for steam reforming of hydrocarbons. 3,432,443, 03-11-69, Cl. 252-459.

Davies, Trevor, East, Anthony Julian, and Mc Creath, Michael King, to Imperial Chemical Industries Limited. Polyesters of improved dyeability containing tertiary amines. 3,432,467, 03-11-69, Cl. 260-047.

Davis, Bill A.: *See*—
Austin, Russell A., 3,431,560.

Davis, Glenn Gary, and Dahlin, Robert Walton, 50% to Lavine, Morris. Cigarette snuffer. 3,431,916, 03-11-69, Cl. 131-256.

Davis, Hugh J., and Jones, Edmund A., said Davis assor to Johns Hopkins University, The and said Jones assor to Ortho Pharmaceutical Corp.Intrauterine contraceptive device. 3,431,905, 03-11-69, Cl. 128-130.

Davis, Robert H.: *See*—
Armstrong, Eldon L., and Davis, Robert H. 3,432,434.

Davy, John R., Ballantine, John M., and Allan, William B.Photomultiplier having wall coating of election emitting material and photoconductive material. 3,432,668, 03-11-69, Cl. 250-207.

De Acetis, William, and Smutny, Edgar J., to Shell Oil Company. Polyfunctional epoxides and their polymers. 3,432,465, 03-11-69, Cl. 260-047.

De Lorme, Albert R.: *See*—
Dryer, Peter J., and De Lorme, Albert R. 3,432,630.

de Malde', Marcello: *See*—
Marconi, Walter, Mzaaei, Alessandro, de Malde', Marcello, and Cucinella, Salvatore 3,432,516.

De Mattia, Albert C.Navigational plotting and calculating device. 3,431,650, 03-11-69, Cl. 033-001.

De Vine, Barry F.: *See*—
Stuart, Guy E., Jr., and De Vine, Barry F. 3,431,678.

De Volder, Noel Jozef: *See*—
Van den Heuvel, Walter August, Vanhaist, Johan Eugeen, Van Engerland, Jozef Leonard, and De Volder, Noel Jozef 3,432,329.

Deal, Kenneth M., and Waterman, Raymond R., to Vanderbilt, R. J., Company, Inc.Foamable plastisol composition and method of foaming same. 3,432,449, 03-11-69, Cl. 260-002.5

Dean, Richard A., and McCabe, Earl A., Jr., to United States of America, Atomic Energy Commission. Fuel assembly for a nuclear reactor. 3,432,390, 03-11-69, Cl. 176-078.

Deardorff, Donald K., to United States of America, Interior. Device for drawing wire which eliminates chatter. 3,431,766, 03-11-69, Cl. 072-285.

DeBusk, Bill J.Tractor handy box. 3,432,052, 03-11-69, Cl. 214-501.

Decca Limited: *See*—
Phillipson, Alan, Spiller, Basil Harry Royston, Smith, Robin, and Cheesman, Harry, 3,431,697.

Declark, Inc.: *See*—
Gondeck, Frederick V., Hickox, Lester E., Kennedy, Thomas E., Perez, Arthur, and Thompson, James F., 3,432,378.

Deeks, Hugh A.Exercising machine. 3,432,164, 03-11-69, Cl. 272-073.

Deere & Company: *See*—
Jones, William A., 3,432,095.
Myers, Herbert Arthur, and Holzhei, Don Earl, 3,432,075.
Probsting, Bernhard, 3,431,712.
Ten Pas, Warren Edward, Schnell, Ernst Emil, and Polzin, Donald Herman, 3,432,064.
Wilken, George Henry, and Ginter, Robert Aloyious, 3,431,779.

Dehavilland Aircraft of Canada, Limited, The: *See*—
Conway, John Albert, and Barker, Cedric Chaffer, 3,432,123.

Delamater, William B.Shower head. 3,432,105, 03-11-69, Cl. 239-455.

Delaney, Everett W., to United Aircraft Corporation. Aircraft fuel storage and distribution system. 3,432,121, 03-11-69, Cl. 244-017.11

DeLoe, O. Paul: *See*—
Beebe, Jerry T., and DeLoe, O. Paul 3,431,959.

Demol, Pierre: *See*—
Mathis, Pierre, and Demol, Pierre 3,432,340.

Dennert, Heinz. Method and apparatus for heat-treating granulated expansible materials. 3,432,155, 03-11-69, Cl. 263-021.

Depmer, Wilhelm. Method and apparatus for the extraction of oil from cottonseed. 3,432,529, 03-11-69, Cl. 260-412.4

Desbrueres, Maurice: *See*—
Arnaud, Jacques, Sobotka, Walter, and Desbrueres, Maurice 3,432,776.

Deutscher, Abe, Muttart, Vincent H., and Gilbert, Jack W.Alarm and safety lock device. 3,432,631, 03-11-69, Cl. 200-061.67

Deuzeman, Hendrik Herman Jan: *See*—
Gladney, Kurt Paul, and Deuzeman, Hendrik Herman Jan 3,432,453.

Devenco Incorporated: *See*—
Schwartz, Edmund I., 3,432,754.

DI/AN Controls, Inc.: *See*—
Sarno, Andrew N., 3,432,827.

Diamond Shamrock Corporation: *See*—
Edwards, Joseph R., 3,432,306.
Sickles, Ralph E., 3,432,338.

Dick, A. B., Co.: *See*—
Tonkin, Kenneth J., Swanson, John L., and Jeschke, Richard R., 3,431,841.

Dickey, Rex E.: *See*—
Darigo, Julius, Dickey, Rex E., and Reed, David S. 3,431,612.

Dickman, John J., to Missouri Research Laboratories, Inc.Smoke generating apparatus. 3,432,439, 03-11-69, Cl. 252-359.1

Diederichs, Artur, to Siemens Aktiengesellschaft. Electric motor and method of manufacture by high speed deformation. 3,432,700, 03-11-69, Cl. 310-042.

Diefendorf, Russell J., to General Electric Company. Pyrolytic vacuum deposition from gases. 3,432,330, 03-11-69, Cl. 117-046.

Diehl: *See*—
Metschnabl, Andreas, and Burkhardt, Gottfried, 3,432,094.

Dielectric Products Engineering Company, Inc.: *See*—
Sewell, Donald Nelson, 3,432,779.

Dijken, Reinder Hendrik, Jager, Jolle, and Krikke, Minne, to North American Philips Company, Inc.Vibration damping suspension for an electric motor. 3,432,701, 03-11-69, Cl. 310-047.

Dillard, James W., and Doores, Vernon R.Automatic transmission system. 3,431,798, 03-11-69, Cl. 074-688.

Dirks, Jerald Edson, and Fisher, Gene Jordan, to Celanese Corporation. Reduction of chlorinated by-products in ethylene- based vinyl acetate catalyst solution. 3,432,543, 03-11-69, Cl. 260-497.

Disbrow, Richard A.: *See*—
Turner, George L., Johnson, Gerould A., Disbrow, Richard A., and Nestell, Donald E. 3,432,102.

Dixon, Peter Ray, and Coppock, Alden D.Fabric cleaning process. 3,432,253, 03-11-69, Cl. 008-142.

Domtar Limited: *See*—
Engel, Karl, 3,432,090.

Donoho, Charles M.: *See*—
Lemon, Stanley G., Eiseman, William F., and Donoho, Charles M. 3,431,778.

Doores, Vernon R.: *See*—
Dillard, James W., and Doores, Vernon R. 3,431,798.

Doremus, Krouse, Foundry Co.: *See*—
Doremus, R Ellsworth, and Doremus, Richard E., 3,431,936.

Doremus, R Ellsworth, and Doremus, Richard E., to Doremus, Krouse, Foundry Co.Valve with washout slot. 3,431,936, 03-11-69, Cl. 137-323.

Doremus, Richard E.: *See*—
Doremus, R Ellsworth, and Doremus, Richard E. 3,431,936.

Dornbush, Albert Carl: *See*—
Berenson, Herman, Dornbush, Albert Carl, and Wehner, Donald Clifford 3,432,341.

Dorr-Oliver Incorporated: *See*—
Hubbard, Peter J., 3,432,101.

Dory, Jacques, to Realisations Ultrasoniques Limited Company. Ultrasonic testing apparatus for material in sheet or foil. 3,431,774, 03-11-69, Cl. 073-067.8

Douglas, Gavin L., and Simpson, Jack W., Sr., to International Business Machines Corporation. Numeric display. 3,432,845, 03-11-69, Cl. 340-324.

Douwes, Cornelis Th.: *See*—
Kouwenhoven, Herman W., and Douwes, Cornelis Th. 3,432,565.

Dow Chemical Company, The: *See*—
Bash, Charles W., and Lane, George A., 3,432,370.
Breidt, Peter, Jr., and Lefevre, Lloyd E., 3,432,588.
Grant, Charles H., 3,432,371.
Hibbard, Billy B., 3,432,454.
Langer, Horst G., 3,432,438.
Lemelson, Jerome H., 3,432,326.
Long, Ray S., and Tveter, Elmer C., 3,432,255.
Mussell, Dorsey R., 3,432,286.
Noddings, Charles R., and Cleary, Robert D., 3,432,571.
Nowak, Robert M., and Glesner, William K., 3,431,597.
Olstowski, Franciszek, and Mezoff, John G., 3,431,970.
Trepanier, Donald L., 3,432,497.
Vanderhoff, John W., 3,432,413.

Dowling, Thomas P.: *See*—
Kern, Forrest L., Schwoyer, William L., and Dowling, Thomas P. 3,431,849.
Kern, Forest L., Schwoyer, William L., and Dowling, Thomas P. 3,431,851.

Draper, James S.: *See*—
Hill, Jacque A. F., and Draper, James S. 3,432,208.

Dreher, John L., to Chevron Research Company. Perfluoropolyether greases thickened with metal-free phthalocyanine. 3,432,432, 03-11-69, Cl. 252-025.

Dresser Industries, Inc.: *See*—
Henry, George R., and Lewis, Thomas W., II, 3,432,315.
Stephens, Roger C., 3,431,693.

Dreyer, Heinz, to Amazonen-Werke H. Dreyer. Agitator for centrifugal spreaders. 3,432,150, 03-11-69, Cl. 259-106.

Drinkard, William C., Jr., to Du Pont de Nemours, E. I., and Company. Icosahedral dodecahydrododecaborane derivatives and their preparation. 3,432,539, 03-11-69, Cl. 260-462.

Driech, Nicolas B., to Chimiotex S.A.Process for manufacturing regenerated cellulose filaments. 3,432,589, 03-11-69, Cl. 264-197.

Driscoll, Tommy, and Richards, Homer. Apparatus for use with an internal combustion engine for reducing air pollution. 3,431,898, 03-11-69, Cl. 123-119.

Drum, Daniel D., to National Dust Collector Corporation. Apparatus for collecting contaminants from gases. 3,432,153, 03-11-69, Cl. 261-108.

Dryer, Peter J., and De Lorme, Albert R., to Essex Wire Corporation. Direction signal operating apparatus. 3,432,630, 03-11-69, Cl. 200-061.34

Du Hamel, Raymond H., to Hughes Aircraft Company. Wide-band hybrid network. 3,432,775, 03-11-69, Cl. 333-011.

Du Pont de Nemours, E. I., and Company: *See*—
Beck, Robert Haun, 3,431,846.
Blume, Roe Calvin, 3,432,548.
Cillag, John R., and Campbell, James D., III, 3,432,421.
Drinkard, William C., Jr., 3,432,539.
Foster, Peter William, 3,432,477.
Harvey, John, Jr., 3,432,600.
Heffelfinger, Carl John, 3,432,591.
Levin, Gilbert V., 3,432,487.
Roesky, Herbert W., 3,432,277.
Schuler, Mathias John, and Smeltz, Kenneth Cleon, 3,432,409.
Zimmerman, Joseph, 3,432,575.

du Pre, Frits Karel, to North Apercian Philips Company Inc.Piston rod guide for rhombic drive stirling cycle apparatus. 3,431,788, 03-11-69, Cl. 074-044.

Dubinsky, Emanuel. Cover for beach umbrellas and the like. 3,431,926, 03-11-69, Cl. 135-034.

Dubion, Incorporated: *See*—
Rosen, Jacob J., 3,432,581.

Dubois, Robert A.: *See*—
Carpenter, Herbert L., Jr., and Dubois, Robert A. 3,432,070.

Dufour, Adrien Lucien. Dehydration oven having continuous conveyors. 3,431,657, 03-11-69, Cl. 034-209.

Dugan, William P.: *See*—
Freshauf, Eugene G., and Dugan, William P. 3,431,641.

Dumesnil, Maurice E.: *See*—
Pilling, David J., and Dumesnil, Maurice E. 3,432,405.

Dunlop Company Limited, The: *See*—
Haines, Robert C., and Corish, Patrick J., 3,432,165.

Dunnebier, Kurt: *See*—
Winkler, Richard, and Dunnebier, Kurt 3,431,842.

Durand, Douglas V.Forced air burner. 3,431,873, 03-11-69, Cl. 110-018.

Duriron Company, Inc., The: *See*—
Reiling, Victor G., 3,432,511.

Durst, David R.: *See*—
Beville, Ross H., Schor, Wayne E., and Durst, David R. 3,432,082.

Dutton, Lloyd K.: *See*—
Mooney, Walter G., Dutton, Lloyd K., and Lynch, Francis K. 3,432,187.

Duvall, William C., Ludwick, William R., and Brion, Albert E., Jr., to Goodyear Tire & Rubber Company, The. Packageable shelter with radio frequency shielding. 3,432,609, 03-11-69, Cl. 174-035.

Dyke, Walter P.: *See*—
Anderson, Robert L., Dyke, Walter P., and Grundhauser, Frank J. 3,432,663.

Dym, Herbert, to International Business Machines Corporation. Radiation scanner, employing constant current means. 3,432,670, 03-11-69, Cl. 250-211.

Dyna Magnetic Devices,Inc.: *See*—
Sebesta, George J., and Carlisle, Richard W., 3,432,622.

Dynamics Corporation of America: *See*—
Ruotolo, Michael, 3,432,801.

Dyre, Morgens, to Danfoss A/S. Terminal connections for amorphous solid-state switching devices. 3,432,729, 03-11-69, Cl. 317-234.

Earling, Leonard E.Sound generator. 3,432,849, 03-11-69, Cl. 340-388.

Earling, Roy, and Scheuerman, Frank J., 33 1/3% to Bentham, Harold W., Apparatus and process for producing frozen confection packages with spoon projecting through lid. 3,431,695, 03-11-69, Cl. 053-015.

East, Anthony Julian: *See*—
Davies, Trevor, East, Anthony Julian, and Mc Creath, Michael King 3,432,467.

East, Clarence Robert, and Mallinger, Morton A., to Pan American Petroleum Corporation. Forming fractures in the desired direction in earth formations. 3,431,977, 03-11-69, Cl. 166-281.

Eastern Target Company, Inc.: *See*—
Lueddeke, Raymond Paul, and Lueddeke, Louis, 3,431,598.

Eastman, Donald R., to Eastman Kodak Company. Photoconductographic material and process of preparation. 3,432,406, 03-11-69, Cl. 204-018.

Eastman Kodak Company: *See*—
Bates, Thomas R., 3,432,299.
Brannock, Kent C., 3,432,506.
Caldwell, John R., 3,432,472.
Cash, George O., Jr., and Joyner, Frederick B., 3,432,514.
Chechak, Albert J., and Robeson, Charles D., 3,432,566.
Eastman, Donald R., 3,432,406.
Gignilliat, William W., and Wilder, John W., 3,432,462.
Jones, Jean E., and Kalenda, Norman W., 3,432,302.
Jones, Jean E., and Kalenda, Norman W., 3,432,303.
Lestina, Gregory J., and Reckhow, Warren A., 3,432,300.
Loria, Anthony, 3,432,521.

Easton, Bernard E.: *See*—
Oringer, Kenneth, Gallagher, Gerald T., Bunin, Donald S., and Easton, Bernard E. 3,432,546.

Eaton, Roy W.: *See*—
Rodrigues, Anthony F., and Eaton, Roy W. 3,431,596.

Eaton Yale & Towne Inc.: *See*—
Frailly, Nicholas D., 3,431,809.
Lyth, William W., 3,432,004.
Martin, Robert L., 3,431,998.
Palmer, Norman Harold George, 3,432,791.
Ulinski, Bronislaus I., 3,432,054.

Ebelhardt, David P., to Mead Corporation, The. Article carrier for flanged containers. 3,432,202, 03-11-69, Cl. 294-087.2

Eccles, Fred J., and Landow, Harold, to Brecae Corporations, Inc.Rotation input encoder assembly. 3,432,847, 03-11-69, Cl. 340-347.

Edmisson, Russell C.: *See*—
Gaines, Jack H., and Edmisson, Russell C. 3,432,611.

Edmonds, Thomas Rhys, to Conductron Corporation. Solid state optical pickoff employing planar cruciform detector. 3,432,671, 03-11-69, Cl. 250-217.

Edwards, Joseph R., to Diamond Shamrock Corporation. Process of preparing chemically acidified milk products. 3,432,306, 03-11-69, Cl. 099-054.

Edwards, Robert Harry, and Biggar, Gordon McLaren, to Electric Reduction Company of Canada Ltd.Manufacture of sodium metaphosphate. 3,432,259, 03-11-69, Cl. 023-106.

EG & G, Inc.: *See*—
Rotch, Abbott L., 3,432,725.

Egyesult Gyogyszer- es Tapszergyar: *See*—
Kaaztreiner, Endre, Borsi, Jozsef, Vargha, Laszlo, Boris, Meszaros, Erika, and Szilagyi, Geza, 3,432,549.

Ehlke, Charles C.: *See*—
Borer, Herbert W., Ehlke, Charles C., and Svoboda, James 3,432,051.

Ehner, William J., and Losert, Gerhard K., to General Electric Company. Dual scale interval timer. 3,431,720, 03-11-69, Cl. 058-022.9

Ehret, Yale W., and Zoltok, Harry. Sash release mechanism. 3,431,677, 03-11-69, Cl. 049-141.

Eichas, Heinz: *See*—
Schubert, Alfred, and Eichas, Heinz 3,432,146.

Eichenberger, Walter W.Process for making sand molds. 3,431,968, 03-11-69, Cl. 164-039.

Eichhorn, Robert M.: *See*—
Hoffman, William D., Burk, Emmett H., Jr., and Eichhorn, Robert M. 3,432,570.

Eidt, Clarence Martin, Jr.: *See*—
Taylor, James Howard, and Eidt, Clarence Martin, Jr. 3,432,535.

Eiger, William H., to General Motors Corporation. Self-loading scraper bowl. 3,431,659, 03-11-69, Cl. 037-004.

Eiger, William H., to General Motors Corporation. Ejector for scraper bowl. 3,431,663, 03-11-69, Cl. 037-129.

Eisai Co., Ltd.: *See*—
Kijima, Shizumasa, and Konita, Takeshi, 3,432,525.

Eiseman, William F.: *See*—
Lemon, Stanley G., Eiseman, William F., and Donoho, Charles M. 3,431,778.

Eisenbau Albert Ziefle K.G.: *See*—
Braun, Karlheinz, 3,432,186.

Eisengiesserei KG: *See*—
Winkler, Richard, and Dunnebier, Kurt, 3,431,842.

Eisenman, Arnold. Motor vehicle lock. 3,431,755, 03-11-69, Cl. 070-181.

Electric & Musical Industries Limited: *See*—
Stillwell, Peter Frederic Thomas Cryer, Montgomery, Peter Murdo, and Hogg, Richard William, 3,432,854.

Electric Reduction Company of Canada Ltd.: *See*—
Edwards, Robert Harry, and Biggar, Gordon McLaren, 3,432,259.

Electricite De France Service National: *See—*
Fabre, Jean, and Millet, Jacques F., 3,432,693.
Elekal: *See—*
Sambeth, Joerg, and Archipoff, Alexis, 3,432,448.
Elfant, Robert F., to International Business Machines Corporation. Memory system. 3,432,812, 03-11-69, Cl. 340-172.5
Elleboudt, Walter J.Channel assembly for flexible tubing, conductors, and the like. 3,432,128, 03-11-69, Cl. 248-068.
Ellenberger, Jakob, to Firma Ellenberger & Poensgen GmbH. Pushbutton-controlled overload circuit breaker. 3,432,782, 03-11-69, Cl. 335-170.
Elliotts Liverpool Limited: *See—*
Howells, Francis Thomas, 3,432,049.
Ellsworth, Arthur W., Fujioka, Robert K., and Uyeda, Tim M., to Samsonite Corporation. Readily assembled and disassembled table. 3,431,871, 03-11-69, Cl. 108-153.
Eltinge, Lamont, to Ethyl Corporation. Engine timing arrangement. 3,431,897, 03-11-69, Cl. 123-117.
Elton, Raymond C., to United States of America, Navy. X-ray detector system for determining plasma electron temperature. 3,432,659, 03-11-69, Cl. 250-071.5
Elyashev, Isaak Grigorievich: *See—*
Kazantsev, Boris Afanasievich, Sitro, Igor Nikolaevich, Malyk, Vladimir Avksentievich, and Elyashev, Isaak Grigorievich 3,431,855.
Emich, Karl H., to National Distillers and Chemical Corporation. Sample handling system for gaseous organic contaminant detector. 3,432,272, 03-11-69, Cl. 023-254.
Emmer, Thomas Lee, to Nuclear-Chicago Corporation, formerly named Searle Nuclear Corporation. Pulse-counting time measurement method and apparatus. 3,432,687, 03-11-69, Cl. 307-229.
Enami, Shigekazu: *See—*
Kan, Masao, Hyodo, Hiroshi, Watanabe, Akio, and Enami, Shigekazu 3,432,327.
Enders, Heinz, and Pusch, Gunter, to Chemische Fabrik Pfersee G.m.b.H.Process for manufacturing 1,3 - diaminopropanol -(2). 3,432,553, 03-11-69, Cl. 260-585.
Engel, Karl, to Domtar Limited. Self-locking box. 3,432,090, 03-11-69, Cl. 229-051.
Enger, Helmut: *See—*
Plum, Hans, Feldges, Werner, Enger, Helmut, and Grefen, Hans 3,431,595.
Enright, James H., to Emerson Electric Co.Flexible inlet cover. 3,432,108, 03-11-69, Cl. 241-100.
Ensley, Donald Luther, to Harvest Queen Mill & Elevator Company. High resolution optical pick-off. 3,432,242, 03-11-69, Cl. 356-116.
Eppenberger, Paul, to Gebruder Buhler. Apparatus for marking and filling sacks. 3,431,699, 03-11-69, Cl. 053-067.
Erdos, Emerich, and Bares, Jiri, to Ceskoslovenska akademie ved. Method and apparatus for continuously determining the oxygen content of gases. 3,432,404, 03-11-69, Cl. 204-001.
Ernst, Walter: *See—*
Whitmore, Charles H., and Ernst, Walter 3,431,856.
Erpenbach, Heinz: *See—*
Sennewald, Kurt, Erpenbach, Heinz, Vogt, Wilhelm, and Joest, Herbert 3,432,544.
Ertel, Alfred, to Texas Instruments Incorporated. Solid state microstripline attenuator. 3,432,778, 03-11-69, Cl. 333-081.
Escher Wyss G.m.b.H.: *See—*
Dahl, Hans, 3,432,384.
Esso Production Research Company: *See—*
Buck, Henry M., Bruecher, Judith F., Carlton, Louis A., and Pierce, Aaron E., 3,431,974.
Glazier, Walter H., 3,431,999.
Esso Research and Engineering Company: *See—*
Kociacin, Joseph J., 3,432,606.
Rogers, Dilworth T., 3,432,322.
Semiuk, George E., 3,432,577.
Taylor, James Howard, and Eidt, Clarence Martin, Jr., 3,432,535.
Tsien, Hsue C., 3,431,771.
Webber, William O., 3,432,481.
Ethicon, Inc.: *See—*
Cranston, Leroy Bruce, 3,432,392.
Ethyl Corporation: *See—*
Eltinge, Lamont, 3,431,897.
Wolf, Calvin N., 3,432,471.
Eugster, Edouard, to Aktiengesellschaft Brown, Boveri & Cie. Controllable semi-conductor element. 3,432,733, 03-11-69, Cl. 317-235.
Evans, David M., and Stene, Manfred, to S & C Electric Company. Mortor driven operator for high voltage switch. 3,432,780, 03-11-69, Cl. 335-068.
Everett, George, to Stanley Works, The. Automatic inspection device. 3,432,033, 03-11-69, Cl. 209-073.
Everts, George G.Overshoe fasteners. 3,431,604, 03-11-69, Cl. 024-068.
EVG Entwickungs-und Verwertungsgesellschaft m.b.H.: *See—*
Gott, Hans, and Ritter, Josef, 3,431,952.
Ewart, George, and Raitt, John Stewart, to Scottish Agricultural Industries Limited. Water-soluble polyphosphate and method of preparation. 3,432,261, 03-11-69, Cl. 023-107.
Fabre, Jean, and Millet, Jacques F., to Electricite De France Service National. Process and apparatus for overoxidising the air supplied to the blowpipe of a magnetohydrodynamic conversion plant. 3,432,693, 03-11-69, Cl. 310-011.
Fabry, Joseph W., Jr.: *See—*
Breedlove, William W., and Fabry, Joseph W., Jr. 3,432,130.
Fairbanks Morse Inc.: *See—*
Pan, Pei-Tai, 3,432,420.
Fairbanks Morse Inc., mesne: *See—*
Thomson, Matthew T., and Lauler, Louis J., 3,432,744.
Fairchild Camera and Instrument Corporation: *See—*
Pilling, David J., and Dumesnil, Maurice E., 3,432,405.
Whittier, Ronald J., 3,432,731.
Fan, George J., to International Business Machines Corporation. Sensor magnetic head with magnetic material as a gap bridge. 3,432,837, 03-11-69, Cl. 340-174.1
Farbenfabriken Bayer Aktiengesellschaft: *See—*
Oertel, Harald, Rinke, Heinrich, and Thoma, Wilhelm, 3,432,456.
Farber, Milton: *See—*
Miller, Robert, Farber, Milton, and Loveless, Frederick C. 3,432,250.
Farbwerke Hoechst Aktiengesellschaft vormalsMeister Lucius & Bruning: *See—*
Keil, Karl, 3,432,573.
Schacht, Ulrich, 3,432,597.
Farmer, Edwin Bruce, to Brico Engineering Limited. Ferrous material. 3,432,290, 03-11-69, Cl. 075-123.
Farmer, John, to Honiron, Inc.Juice extraction apparatus and screw press. 3,432,344, 03-11-69, Cl. 127-003.
Farrand Optical Co., Inc.: *See—*
Shenker, Marvin, La Russa, Joseph, and Nershi, George Thomas, 3,432,219.
Feagin, Roy C., Dahowski, Edward L., and Kosmos, Peter, to Howmet Corporation. Refractory mold composition and method. 3,432,312, 03-11-69, Cl. 106-038.3
Feldges, Werner: *See—*
Plum, Hans, Feldges, Werner, Enger, Helmut, and Grefen, Hans 3,431,595.
Feldhege, Heinrich, to Lamprecht, Adolf K.G.Drainage and overflow device for connection to a basin. 3,431,566, 03-11-69, Cl. 004-198.
Feldmuhle Aktiengesellschaft: *See—*
Schubert, Alfred, and Eichas, Heinz, 3,432,146.
Felt Products Mfg. Co: *See—*
Colwell, Otha Leroy, 3,432,177.
Fennell, Louis V.Truck spare tire lock. 3,431,756, 03-11-69, Cl. 070-259.
Ferguson, John F., to Geigy Chemical Corporation. Method of reducing the cholinesterase activity of phosphoric acid esters. 3,432,503, 03-11-69, Cl. 260-251.
Ferris, DeLacy F., to United States of America, Army. Poppet valve device. 3,431,731, 03-11-69, Cl. 060-225.
Ferris, Lockwood W., to National Lead Company. Selective recovery of salts from mixed salt solutions. 3,432,031, 03-11-69, Cl. 209-010.
Ferris, Lockwood W., to National Lead Company. Selective recovery of salts from mixed salt solutions. 3,432,258, 03-11-69, Cl. 023-091.
Ferroxcube Corporation of America: *See—*
Zola, Meyer J., 3,432,688.
Fiberglas Canada Limited: *See—*
Gladney, Kurt Paul, and Deuzeman, Hendrik Herman Jan, 3,432,453.
Fichtel & Sachs A.G.: *See—*
Schwerdhofer, Hans Joachim, 3,432,015.
Fick, Oliver A., to United States of America, Atomic Energy Commission. Voltage-tuned wien bridge oscillator. 3,432,774, 03-11-69, Cl. 331-141.
Field Emission Corporation: *See—*
Anderson, Robert L., Dyke, Walter P., and Grundhauser, Frank J., 3,432,663.
Field, Milton Scott, and Nilson, Edward B., to Alm Corp.Automatic disconnect socket assembly. 3,432,629, 03-11-69, Cl. 200-051.07
Fields, Bruce G., to Chrysler Corporation. Method of forming a brake band. 3,431,627, 03-11-69, Cl. 029-423.
Fieldstone Corporation, The: *See—*
Boegli, Charles P., and Steigerwald, Delbert, 3,431,891.
Finkbeiner, Herman L., and Klebe, Johann F., to General Electric Company. Soluble silylated cellulose and method of preparing same. 3,432,488, 03-11-69, Cl. 260-212.
Finn, John J.Shoe with fit adjustment means. 3,431,658, 03-11-69, Cl. 036-058.5
Finnegan, Francis, and Flanagan, Charles D., to Texas Instruments Incorporated. Multizone temperature control. 3,432,643, 03-11-69, Cl. 219-501.
Firma Alexander Schoeller & Co.: *See—*
Schoeller, Alexander, 3,432,063.
Firma Ellenberger & Poensgen GmbH: *See—*
Ellenberger, Jakob, 3,432,782.
Fischer, Herbert C., Jr.: *See—*
Fischer, Herbert C., and Fischer, Herbert C., Jr. 3,431,687.
Fischer, Herbert C., and Fischer, Herbert C., Jr.Reinforced article. 3,431,687, 03-11-69, Cl. 051-206.
Fisher, Gene Jordan: *See—*
Dirks, Jerald Edson, and Fisher, Gene Jordan 3,432,543.
Fisher, Sallie A., of 3/4 to Robinette Research Laboratories, Inc. and 1/4 to Techniservice Corporation. Process of removing dyestuff from foam backing. 3,432,251, 03-11-69, Cl. 008-102.
Fitko, Chester W., and Ravve, Abraham, to Continental Can Company, Inc.Polyhydroxy aromatic compounds in polyamide cements as adhesion promoters. 3,432,464, 03-11-69, Cl. 260-047.
Fitzgerald, Joseph J., and Mayo, Kenneth E., to Sanders Nuclear Corporation. Method of producing a thulium heat source material. 3,432,386, 03-11-69, Cl. 176-016.
Fitzgerald, William Patrick: *See—*
Hunter, Ian, and Fitzgerald, William Patrick 3,432,737.
Fives-Penhoet: *See—*
Fouche, Lucien Frederic Henri Marcel, and Armand, Marc Roger, 3,431,893.
Flanagan, Charles D.: *See—*
Finnegan, Francis, and Flanagan, Charles D. 3,432,643.
Fleece, John. Caution lights for motor cars. 3,432,808, 03-11-69, Cl. 340-084.
Fleisher, Harold, Kosanke, Kurt M., Kulcke, Werner W., and Max, Erhard, to International Business Machines Corporation. Optical scanning device. 3,432,222, 03-11-69, Cl. 350-149.
Flemming, Leonard P.Moveable seat type exerciser. 3,432,162, 03-11-69, Cl. 272-058.
Flexibox Limited: *See—*
Wright, Ronald Frederick, 3,431,683.
Flickinger, Maynard L., and Ross, Robert S., to Goodyear Aerospace Corporation. Combination ballonet and dilation system for balloons. 3,432,122, 03-11-69, Cl. 244-031.
Flohr, William P., Jr., to Landis Tool Company. Work support shoe assembly. 3,431,681, 03-11-69, Cl. 051-103.
Flower, Robert A., Stavis, Gus, and Gamertsfelder, George R., to Singer-General Precision, Inc.Velocity measuring device. 3,432,237, 03-11-69, Cl. 356-028.
Fluor Corporation, Ltd., The: *See—*
Schutt, Hermann C., 3,432,399.
FMC Corporation: *See—*
Crawford, Donald C., Viitanen, Veikko K., and Hoffman, John D., 3,431,828.
Curphey, David G., and Fowler, William J., 3,432,032.

Hanley, William M., 3,431,940.
Lee, Nathan Dean, and Schwartz, Nelson Norman, 3,432,267.
Oringer, Kenneth, Gallagher, Gerald T., Bunin, Donald S., and Easton, Bernard E., 3,432,546.
Fogelberg, Clement V., to Ball Brothers Research Corporation. Extrusion method and apparatus. 3,431,599, 03-11-69, Cl. 018-012.
Foglia, Henry R., to International Business Machines Corporation. Current summing arrangement for a magnetic core memory. 3,432,835, 03-11-69, Cl. 340-174.
Foltz, Robert E., to Lawrence Brothers, Inc.Track supports. 3,431,585, 03-11-69, Cl. 016-094.
Folz, John M., to Phillips Petroleum Company. Recovery of furfural from furfural polymer by successive extractions with a hydrocarbon and with water. 3,432,569, 03-11-69, Cl. 260-680.
Ford, Floyd E., to United States of America, Navy. Constant current sink circuit. 3,432,743, 03-11-69, Cl. 323-003.
Ford Motor Company: *See—*
Barton, David W., 3,432,200.
Connor, Robert W., 3,432,198.
Croswhite, Howard Linn, 3,431,929.
Frey, Stuart M., 3,431,588.
Frey, Stuart M., 3,431,589.
Gates, Walter G., 3,432,005.
Hallauer, William J., and Potts, Bill L., 3,431,614.
Kavthekar, Keshav S., and Russell, Richard G., 3,431,997.
Pierce, Stanley L., Jr., 3,431,928.
Forrer, Homer W., to Mead Corporation, The. Article carrier. 3,432,073, 03-11-69, Cl. 220-113.
Forschmidt, Samuel. Shelf bracket. 3,432,134, 03-11-69, Cl. 248-235.
Forster, Harry: *See—*
Schiller, Siegfried, Lenk, Peter, and Forster, Harry 3,432,335.
Forte, Virginia A., to Getha, William. Lipstick blotter. 3,432,081, 03-11-69, Cl. 225-039.
Fortescue, Peter, to United States of America, Atomic Energy Commission. Nuclear reactor system with fission gas removal. 3,432,388, 03-11-69, Cl. 176-037.
Foster, Peter William, to Du Pont de Nemours, E. I., and Company. Poly(trans-1,2-cyclobutylene adipamide) and fibers thereof. 3,432,477, 03-11-69, Cl. 260-078.
Foster, Stephen F., to Hercules Incorporated. Explosive cartridge assemblies. 3,431,848, 03-11-69, Cl. 102-024.
Foster Wheeler Corporation: *See—*
McCallister, Robert A., and Sinclair, Alan M., 3,432,265.
Whitney, Gilbert C., Jr., and Schroeder, Joseph W., 3,431,763.
Fouche, Lucien Frederic Henri Marcel, and Armand, Marc Roger, to Fives-Penhoet. Single-tube forced-circulation heat transfer devices. 3,431,893, 03-11-69, Cl. 122-032.
Foufounis, Jean. Phonograph tone arm and mounting. 3,432,171, 03-11-69, Cl. 274-023.
Fowler, Galvin W., to United States of America, Army. Position marker. 3,431,852, 03-11-69, Cl. 102-032.
Fowler, William J.: *See—*
Curphey, David G., and Fowler, William J. 3,432,032.
Fox, Harry W., to Pratt & Whitney, Inc.Apparatus for forming thread rolling dies. 3,431,680, 03-11-69, Cl. 051-094.
Fox River Paper Corporation: *See—*
Vaurio, Frans V. E., 3,432,328.
Foxboro Company, The: *See—*
Bowditch, Noel L., 3,431,935.
Fraatz, Robert E., to Shell Oil Company. Fluid distribution bar. 3,431,889, 03-11-69, Cl. 118-315.
Frailly, Nicholas D., to Eaton Yale & Towne Inc.External retaining ring. 3,431,809, 03-11-69, Cl. 085-008.8
Frandsen, Richard L.Pressurized-water-operated cleaning apparatus. 3,431,573, 03-11-69, Cl. 015-098.
Frank, Albert, Kraushaar, Alfred, Margreiter, Hans, and Schunk, Roland, to Biochemie G.m.b.H.2-(β-Hexamethylene imino ethyl) cyclohexanone- 2-carboxylic acid benzyl ester and salts thereof. 3,432,490, 03-11-69, Cl. 260-239.
Frank, Barton, to Bloom, Henry. Edible food container forming machine and method. 3,431,869, 03-11-69, Cl. 107-004.
Frank, Edward, and Bray, Ralph, to Philco-Ford Corporation. Electronic tuning apparatus. 3,431,787, 03-11-69, Cl. 074-010.27
Frank, Louis, and Bart, Harold N., to Hittman Associates, Inc.Method for making oriented fiber or whisker composites. 3,432,295, 03-11-69, Cl. 075-206.
Fraze, Ermal C., and Silver, Francis M., to Fraze, Ermal C.Easy open can end. 3,432,068, 03-11-69, Cl. 220-054.
Frederickson, Lyle R., Rovelsky, Leon A., and Wood, Robert L., to North American Rockwell Corporation. Resonant frequency measurement apparatus having a gated frequency indicating means. 3,432,752, 03-11-69, Cl. 324-057.
Freedman, Myron L., to Comprehensive Service Corporation. Split reel. 3,432,113, 03-11-69, Cl. 242-071.8
Freehauf, Eugene G., and Dugan, William P., to General Dynamics Corporation. Method of manufacturing electrical connectors. 3,431,641, 03-11-69, Cl. 029-625.
Freeman, Carl R.Building construction. 3,431,692, 03-11-69, Cl. 052-467.
Freeman Chemical Corporation: *See—*
Kwan, Fred K. C., Ross, Richard C., and Svoboda, Glenn R., 3,432,458.
Freeport Sulphur Company: *See—*
Olivier, James P., 3,432,030.
French, Harry F.,: *See—*
Cleveland, Clark C., French, Harry F., deceased (by Cleveland Trust Company, executor), and Pattin, Howard S. 3,432,359.
Freudenschuss, Otto, to Vockenhuber, Karl Hauser, Raimund. Projector for substandard format film. 3,432,229, 03-11-69, Cl. 352-176.
Frey, Stuart M., to Ford Motor Company. Integrated hinge and door check assembly. 3,431,588, 03-11-69, Cl. 016-145.
Frey, Stuart M., to Ford Motor Company. Integrated hinge and door check assembly. 3,431,589, 03-11-69, Cl. 016-145.
Friden, Inc.: *See—*
Blodgett, Edwin O., 3,432,644.
Fried, John H., to Syntex Corporation. 6,7-Cyclopentanono and 6,7-cyclopentano steroids. 3,432,492, 03-11-69, Cl. 260-239.55
Froelich, Ronald W.: *See—*
Miller, Jack V., and Froelich, Ronald W. 3,432,723.
Frost, John S., to North American Rockwell Corporation. Electroluminescent crossed grid device for simultaneously displaying a plurality of points. 3,432,724, 03-11-69, Cl. 315-169.
Fuji Shashin Film Kabushiki Kaisha: *See—*
Kono, Yuichi, Matsumoto, Shigeru, and Yoshikawa, Masaru, 3,432,273.
Fujimura, Akira: *See—*
Iwamatsu, Mayuki, and Fujimura, Akira 3,432,014.
Fujioka, Robert K.: *See—*
Ellsworth, Arthur W., Fujioka, Robert K., and Uyeda, Tim M. 3,431,871.
Fujitsu Limited: *See—*
Kawashima, Masao, Sakai, Masakatsu, and Kobayashi, Toshio, 3,432,683.
Fujiyama, Susumu: *See—*
Igarashi, Yukio, Komatsu, Makoto, Fujiyama, Susumu, and Okumoto, Kazuo 3,432,556.
Fulks, James K., to Colonial Broach & Machine Company. Broaching apparatus having automatic tool changing means. 3,431,633, 03-11-69, Cl. 029-568.
Furey, James T.: *See—*
Rairden, John R., III, and Furey, James T. 3,432,416.
Fuse Indicator Corporation: *See—*
Poehlman, Edmund F., Jr., 3,432,789.
Gabler, Rudolf, to Inventa A.G. fur Forschung und Patentverwertung. Heat-resistant polythioethers, and method for their production. 3,432,468, 03-11-69, Cl. 260-047.
Gadient, Fulvio: *See—*
Jucker, Ernst, Lindenmann, Adolf, Schenker, Erhard, and Gadient, Fulvio 3,432,491.
GAF Corporation: *See—*
Chiddix, Max Eugene, and Leonard, Edward Oliver, 3,432,494.
Chiddix, Max Eugene, and Leonard, Edward Oliver, 3,432,495.
Chiddix, Max Eugene, 3,432,496.
Gaines, Jack H., and Edmisson, Russell C., to Sierra Electric Corporation. Electrical device moduline. 3,432,611, 03-11-69, Cl. 174-066.
Galantay, Eugene E., to Sandoz Inc.5,9-Epoxy-6,7,8,9-tetrohydro-5H benzocyclohepten- 5-ols and process for preparing same. 3,432,526, 03-11-69, Cl. 260-345.9
Galbarini, Maso, and Cotta Ramusino, to Innocenti Societa Generale per l'Industria Metallurgica e'Meccanica. Device for moving machine tool components. 3,431,797, 03-11-69, Cl. 074-665.
Galey, William F., to PPG Industries, Inc.Process for manufacture of glass utilizing gas pressure for glass sizing. 3,432,283, 03-11-69, Cl. 065-099.
Gallagher, Gerald T.: *See—*
Oringer, Kenneth, Gallagher, Gerald T., Bunin, Donald S., and Easton, Bernard E. 3,432,546.
Galloway, J. Robert, and Galloway, Robert K.Carton. 3,432,086, 03-11-69, Cl. 229-037.
Galloway, Robert K.: *See—*
Galloway, J. Robert, and Galloway, Robert K. 3,432,086.
Gamertsfelder, George R.: *See—*
Flower, Robert A., Stavis, Gus, and Gamertsfelder, George R. 3,432,237.
Ganiaris, Neophytos: *See—*
Grover, Kenneth M., and Ganiaris, Neophytos 3,431,655.
Gannon, Joseph A.: *See—*
Buell, Heinz, Gannon, Joseph A., and Rubin, Jack 3,432,856.
Gar Wood Industries, Inc.: *See—*
Spisak, Edward C., 3,432,206.
Gardner, John F., to Xerox Corporation. Exposure control device. 3,432,231, 03-11-69, Cl. 355-008.
Gardner, Lloyd E., to Phillips Petroleum Company. Catalysts for the production of fluoroalkenes and fluoroalkapolyenes. 3,432,441, 03-11-69, Cl. 252-441.
Gardner, Lloyd E., to Phillips Petroleum Company. Dehydrofluorination process and products. 3,432,562, 03-11-69, Cl. 260-653.5
Gardner, Robert E., Jr.: *See—*
Coleman, Homer B., and Gardner, Robert E., Jr. 3,432,396.
Garlet, Robert, and Grandet, Louis, to Office National Industriel de l'Azote. Process for the production of carbon oxysulphide. 3,432,266, 03-11-69, Cl. 023-203.
Garnier, Marcel, to Micro-Mega. Device for attaching a dental hand tool of the slip joint type. 3,432,194, 03-11-69, Cl. 287-119.
Garrett, Michael E.: *See—*
Webster, Thomas J., and Garrett, Michael E. 3,431,746.
Garwin, Richard L., to International Business Machines Corporation. Laser device for producing multiple frequency outputs. 3,432,768, 03-11-69, Cl. 331-094.5
Garzia, Aldo, to Instituto Chemioterapico Italiano S.p.A.3,4,5-Trimethoxybenzoylguanidines. 3,432,550, 03-11-69, Cl. 260-559.
Garzia, Aldo, to Instituto Chemioterapico Italiano S.p.A.3,4,5-Trimethoxybenzoylguanidines. 3,432,551, 03-11-69, Cl. 260-559.
Gates, Walter G., to Ford Motor Company. Self-cleaning oil filter. 3,432,005, 03-11-69, Cl. 184-006.
Gebr. Eickhoff, Maschinenfabrik und Eisengiessereim.b.H.: *See—*
Lucas, Horst, 3,432,023.
Gebruder Buhler: *See—*
Eppenberger, Paul, 3,431,699.
Gebrueder Netzsch Maschinenfabrik: *See—*
Geissel, August, 3,432,109.
Geigy Chemical Corporation: *See—*
Ferguson, John F., 3,432,503.
Pesterfield, Enos Charles, Jr., 3,432,520.
Geissel, August, to Gebrueder Netzsch Maschinenfabrik. Machine for dispersing and comminuting flowable materials. 3,432,109, 03-11-69, Cl. 241-172.
General Dynamics Corporation: *See—*
Andzer, Arnold L., 3,432,760.
Freehauf, Eugene G., and Dugan, William P., 3,431,641.
Schroeder, Paul M., Jr., 3,432,125.
Zavitz, Arnold L., 3,432,423.
General Electric Company: *See—*
Albinger, Harry, Jr., 3,432,696.
Albinger, Harry, Jr., and Marble, Chester B., 3,432,697.
Albinger, Harry, Jr., 3,432,699.

Becker, Hans-Dieter, 3,432,412.
Bissett, Alexander F., 3,432,708.
Cairns, Elton J., 3,432,358.
Christianson, Clinton C., 3,432,356.
Dankese, Joseph P., 3,432,357.
Diefendorf, Russell J., 3,432,330.
Ehner, William J., and Losert, Gerhard K., 3,431,720.
Finkbeiner, Herman L., and Klebe, Johann F., 3,432,488.
Hay, Allan S., 3,432,466.
Hay, Allan S., 3,432,469.
Horn, Fordyce H., 3,432,753.
Irwin, John W., 3,431,903.
Jones, Clifford M., and Harnden, John D., Jr., 3,432,846.
Jordan, Thomas J., and Plant, Henry T., 3,432,859.
Kingsbury, L C James, Masker, Hannes, and Adam, Gunter, 3,432,168.
Kingsley, Jack D., and Prener, Jerome S., 3,432,769.
Lafferty, James M., 3,432,713.
Mc Carty, Clyde W., 3,432,698.
Mendelsohn, Lewis I., and Curran, Robert E., 3,432,279.
Morgan, Raymond E., 3,432,740.
Musgrove, Ronald Obie, and McMillan, William Joseph, 3,432,048.
Naydan, Theodore T., and Koenig, Harold R., 3,432,721.
Naydan, Theodore T., and Tomiyasu, Kiyo, 3,432,722.
Niedrach, Leonard W., and Alford, Harvey R., 3,432,355.
Petrides, Christie, 3,432,735.
Polonsky, Samuel, and King, Bartley E., 3,432,625.
Quinn, Joseph G., 3,432,658.
Rairden, John R., III, and Furey, James T., 3,432,416.
Reas, William H., 3,432,276.
Rentz, John C., 3,431,611.
Simoneau, Edward T., 3,432,536.
Tragert, William E., 3,432,349.
Walkup, William B., 3,431,817.
White, Donald W., 3,432,292.
White, Donald W., Tragert, William E., and Rocco, William A., 3,432,352.

General Industries, Inc.: *See*—
Johnson, Alvin L., 3,432,143.

General Mills, Inc.: *See*—
Kamal, Marwan R., 3,432,574.

General Motors Corporation: *See*—
Eiger, William H., 3,431,659.
Eiger, William H., 3,431,663.

General Precision Inc.: *See*—
Riordan, Hugh E., 3,431,934.

General Precision Systems, Inc.: *See*—
Putterman, Harry, 3,432,834.

General Signal Corporation: *See*—
Jennings, Lyston C., and Spooner, Howard C., 3,431,857.
Reich, Simon, 3,432,654.

Gentry, Hermond G., to Mead Corporation, The. Machine and method for folding an insert. 3,431,826, 03-11-69, Cl. 093-001.

Geolograph Company, The: *See*—
Jennings, Clifton C., and Lankford, William L., Jr., 3,431,780.

Gerhard Collardin GmbH: *See*—
Moller, Fritz, Groschopp, Heinz, and Wagenknecht, Rudolf, 3,432,337.

Gerke, Merrill D., to United States of America, Navy. Day-night water marker. 3,431,569, 03-11-69, Cl. 009-311.

Gershon, Milton: *See*—
Townsley, John J., and Gershon, Milton 3,432,106.

Geschickter Fund for Medical Research, Inc.: *See*—
Rice, Leonard M., and Grogan, Charles H., 3,432,499.

Getha, William: *See*—
Forte, Virginia A., 3,432,081.

Gevaert-Photo Production, N.V.: *See*—
Van den Heuvel, Walter August, Vanhaist, Johan Eugeen, Van Engerland, Jozef Leonard, and De Volder, Noel Jozef, 3,432,329.

Gignilliat, William W., and Wilder, John W., to Eastman Kodak Company. Process for stabilizing polymers. 3,432,462, 03-11-69, Cl. 260-045.85

Gilbert, Jack W.: *See*—
Deutscher, Abe, Muttart, Vincent H., and Gilbert, Jack W. 3,432,631.

Giles, Cyril George, Martin, James Alexander, and Spindlow, John Richard, to National Research Development Corporation. Vehicle guidance system. 3,431,996, 03-11-69, Cl. 180-098.

Gillette Company, The: *See*—
Pickel, James Brennan, 3,431,624.

Gillis, Edward Allan, to Allis-Chalmers Manufacturing Company. High temperature fuel cell electrolyte carrier. 3,432,363, 03-11-69, Cl. 136-153.

Ginter, Robert Aloyious: *See*—
Wilken, George Henry, and Ginter, Robert Aloyious 3,431,779.

Girard, Andre Jean, to Office National d'Etudes et de Recherches Aerospatiales. Spectrometric apparatus of high resolving power. 3,432,238, 03-11-69, Cl. 356-097.

Girrard, Andre Jean, to Office National d'Etudes et de Recherches Aerospatiales. Radiation gate of spectrometric apparatus. 3,432,241, 03-11-69, Cl. 356-099.

Girard, Laurent H., to American Velcro, Inc.Skiving apparatus. 3,431,679, 03-11-69, Cl. 051-005.

Girardiere, Gustave: *See*—
Lubet-Moncla, Xavier Lucien, 3,431,907.

Girling Limited: *See*—
Hemus, Robert B., 3,432,010.

Gitzen, Walter H., and Mac Zura, George, to Aluminum Company of America. Production of ceramic bodies. 3,432,313, 03-11-69, Cl. 106-046.

Giulietti, Luciano, to RIV-SKF Officine di Villar Perosa S.p.A.Valve tappets and method of making same. 3,431,896, 03-11-69, Cl. 123-090.

Glacier Metal Company Limited, The: *See*—
Beazley, Rodney Thomas, 3,432,091.
Michael, Anthony D., and Pratt, George C., 3,432,293.

Gladney, Kurt Paul, and Deuzeman, Hendrik Herman Jan, to Fiberglas Canada Limited. De-ionizing treatment for phenolic resins using a soluble ammonium salt. 3,432,453, 03-11-69, Cl. 260-029.3

Glass, John R., and Liederman, David, to Mobil Oil Corporation. Method for determining components in hydrocarbon streams. 3,432,403, 03-11-69, Cl. 204-001.

Glass, Marvin, & Associates: *See*—
Glass, Marvin I., and Licitis, Gunars, 3,432,230.

Glass, Marvin I., and Licitis, Gunars, to Glass, Marvin, & Associates. Audio-visual unit. 3,432,230, 03-11-69, Cl. 088-028.

Glazier, Walter H., to Esso Production Research Company. Common depth point seismic prospecting. 3,431,999, 03-11-69, Cl. 181-000.5

Gleim, William K. T., to Universal Oil Products Company. Thioheteropoly acid anhydrides as crude oil hydrorefining catalysts. 3,432,442, 03-11-69, Cl. 252-435.

Glenn, John D., Robbins, Owen G., Schwemer, Warren C., and Silverman, Joseph R., to Jet Stream Products, Inc.Apparatus for cleaning soiled materials. 3,431,753, 03-11-69, Cl. 068-009.

Glesner, William K.: *See*—
Nowak, Robert M., and Glesner, William K. 3,431,597.

Gobl, Gerhard E.: *See*—
Taylor, John W., Jr., Gobl, Gerhard E., and Hiscox, Harold C. 3,432,777.

Godby, Ensley A., Baker, Ralph C., and Strome, Murray W., to Canadian Patents & Development Limited. Apparatus for orienting a total field magnetometer. 3,432,751, 03-11-69, Cl. 324-043.

Godel, Albert, to Compagnie Industrielle de Procedes & d'Applications S.A. (CIPA). Process and apparatus for combustion and heat recovery in fluidized beds. 3,431,892, 03-11-69, Cl. 122-004.

Goetze-Claren, Wolfgang. Salts of furan carboxylic acids with thiamine and its salts. 3,432,504, 03-11-69, Cl. 260-256.6

Goff, Willie, Jr.: *See*—
Caudill, Allison H., and Goff, Willie, Jr. 3,432,020.

Gold, Marvin H., and Marcus, Henry J., to Aerojet-General Corporation. 1-Chloro-1,1-dinitro-3-cyano propane. 3,432,540, 03-11-69, Cl. 260-465.7

Goldenberg, Malvin H.Coupling end reinforcement for flexible conduit. 3,431,948, 03-11-69, Cl. 138-109.

Goldfarb, Adolph E.Control means for toy electric racing cars. 3,432,166, 03-11-69, Cl. 273-086.

Gondeck, Frederick V., Hickox, Lester E., Kennedy, Thomas E., Perez, Arthur, and Thompson, James F., to Declark, Inc.Foamed core laminated structure and method. 3,432,378, 03-11-69, Cl. 161-044.

Goodman, Daniel Joseph. Automatic hot line breakaway clamp. 3,432,800, 03-11-69, Cl. 339-109.

Goodwin, Ralph C., to Bemis Company, Inc.Methods of making bags. 3,431,829, 03-11-69, Cl. 093-035.

Goodwin, Warren. Variable torque arm. 3,432,158, 03-11-69, Cl. 267-057.

Goodyear Aerospace Corporation: *See*—
Flickinger, Maynard L., and Ross, Robert S., 3,432,122.
Hunt, Tyler R., 3,432,836.
Loughridge, Raymond H., and Trybus, Conrad, 3,432,218.

Goodyear Tire & Rubber Company, The: *See*—
Bricker, Carl E., 3,432,009.
Duvall, William C., Ludwick, William R., and Brion, Albert E., Jr., 3,432,609.
Hillegass, Kenneth P., 3,432,007.
Kersker, Theodore M., and Kovac, Frederick J., 3,431,962.
Spacht, Ronald B., 3,432,460.
Tazuma, James J., and Zadra, Mario D., 3,432,572.

Gorski, Henry J.: *See*—
Peters, Robert W., and Luber, Fredrick G., 3,432,707.

Gossett, Bryant W., to Gossett Machine Works, Inc.Vibration damping drive assembly for textile calender rolls. 3,431,603, 03-11-69, Cl. 019-159.

Gossett Machine Works, Inc.: *See*—
Gossett, Bryant W., 3,431,603.

Goth, Gary J., to Case, J. I., Company. Automatic bucket positioner. 3,432,057, 03-11-69, Cl. 214-764.

Goto, Eiichi, to Zaidan Hojin Parametion Kenkyusho (known as Parametron Institute). Parametron logical computer device. 3,432,680, 03-11-69, Cl. 307-088.

Gott, Hans, and Ritter, Josef, to EVG Entwickungs-und Verwertungsgesellschaft m.b.H.Devices for adjusting the transverse wire spacing in wire mesh welding machines. 3,431,952, 03-11-69, Cl. 140-112.

Gottfried, Arthur H.Circuit for the reduction of noise by cancellation techniques. 3,432,765, 03-11-69, Cl. 330-126.

Grace, W. R., and Co.: *See*—
Patterson, William A., Schirmer, Henry G., and Weissman, Stanley N., 3,432,447.

Gragerson, Kennith L.Surface and/or ground embedded pickers. 3,431,979, 00-/1-/6, Cl. 171-063.

Graham, Phillip. Drafting machine. 3,431,651, 03-11-69, Cl. 033-018.

Granberry, Doyle S., McCalip, Robert L., and Lovelace, Byron K., to Texas Instruments Incorporated. Method of making diffused semiconductor devices. 3,431,636, 03-11-69, Cl. 029-578.

Grandet, Louis: *See*—
Garlet, Robert, and Grandet, Louis 3,432,266.

Grant, Charles H., to Dow Chemical Company, The. Dry explosive composition containing particulate metal of specific mesh and gauge. 3,432,371, 03-11-69, Cl. 149-021.

Grassmann, Wolfgang: *See*—
Rohrborn, Hans-Joachim, Clausen, Heinrich, Grassmann, Wolfgang, and Valet, Gerhard 3,432,324.

Grave, Dale L.Cleaning device. 3,431,582, 03-11-69, Cl. 015-321.

Graves, John A.: *See*—
Albertine, Albert W., and Graves, John A. 3,432,197.

Greaves, Melvin J., and Werner, Tage, to McKee, Arthur G., & Company. Apparatus and method for supporting vessels. 3,431,691, 03-11-69, Cl. 052-223.

Greaves, Melvin J., Werner, Tage, and Greenwalt, Richard B., to McKee, Arthur G., & Company. Agglomeration method and apparatus. 3,432,287, 03-11-69, Cl. 075-005.

Green, Charles J., to Rocket Research Corporation. Generation of cool working fluids. 3,431,742, 03-11-69, Cl. 062-052.

Green, Charles J., to Rocket Research Corporation. Generation of cool working fluids. 3,431,743, 03-11-69, Cl. 062-052.

Green, Leland Dale: *See*—
Saeger, Waldemar, Reynolds, Robert W., Green, Leland Dale, Tanguay, Armand R., and Shimabukuro, George T. 3,432,613.

Greenwalt, Richard B.: *See*—
Greaves, Melvin J., Werner, Tage, and Greenwalt, Richard B. 3,432,287.

Greenwood, Roger Kearsley: *See*—
Mayer, George, and Greenwood, Roger Kearsley 3,432,291.

Grefen, Hans: *See*—
Plum, Hans, Feldges, Werner, Enger, Helmut, and Grefen, Hans 3,431,595.

Greif Bros. Cooperage Corporation, The: *See*—
Naylor, Robert M., and Carpenter, Herbert L., Jr., 3,431,870.

Greif Bros. Cooperage Corporation: *See*—
Carpenter, Herbert L., Jr., and Dubois, Robert A., 3,432,070.

Grigor, James: *See*—
Peters, John, and Grigor, James 3,432,554.

Gris, Pierre A.: *See*—
Lamy, Jacques E., and Gris, Pierre A. 3,432,062.

Groetschel, Karl Maria. Roof supporting system for mine workings. 3,431,738, 03-11-69, Cl. 061-045.

Grogan, Charles H.: *See*—
Rice, Leonard M., and Grogan, Charles H. 3,432,499.

Groll, Walter H.Adjustable lawnmower guard. 3,432,183, 03-11-69, Cl. 280-150.

Groschopp, Heinz: *See*—
Moller, Fritz, Groschopp, Heinz, and Wagenknecht, Rudolf 3,432,337.

Gross, Jenoe, to Sealomatic Electronics Corp.Over center crank means for producing reciprocating motion. 3,431,822, 03-11-69, Cl. 091-210.

Grover, Kenneth M., and Ganiaris, Neophytos, to Struthers Scientific and International Corporation. Freeze drying. 3,431,655, 03-11-69, Cl. 034-005.

Grover Musical Products, Inc.: *See*—
Thompson, Josephus B., 3,431,807.

Grumman, Eugene V.Jack arrangement for trailers. 3,431,727, 03-11-69, Cl. 060-052.

Grundhauser, Frank J.: *See*—
Anderson, Robert L., Dyke, Walter P., and Grundhauser, Frank J. 3,432,663.

Grundig Elektro-Machanische Versuchsanstalt: *See*—
Schroder, Erich, 3,432,169.

Grunert, Ernst Otto. Dried meat product and method of making same. 3,432,311, 03-11-69, Cl. 099-208.

Guerrero, Efrain. Aircraft. 3,432,120, 03-11-69, Cl. 244-012.

Guichet, Niles F.Dental face bow. 3,431,649, 03-11-69, Cl. 032-020.

Guilbault, George G., and Kramer, David N., to United States of America, Army. Specific fluorometric detection method for cyanide. 3,432,269, 03-11-69, Cl. 023-230.

Guilbert, Incorporated: *See*—
Guilbert, Nicholas R., Jr., 3,432,055.

Guilbert, Nicholas R., Jr., to Guilbert, Incorporated. Coupling for carts. 3,432,055, 03-11-69, Cl. 214-730.

Guinet, Paul Alfred Eugene, and Puthet, Robert Raphael, to Rhone-Poulenc S.A.Process for splitting silanes. 3,432,537, 03-11-69, Cl. 260-448.2

Gulf Oil Corporation: *See*—
Westling, Randolph E., 3,431,879.

Gulotta, Joseph A., to PPG Industries, Inc.Manufacture of float glass of thickness greater than equilibrium thickness. 3,432,284, 03-11-69, Cl. 065-099.

Gulotta, Joseph A., to PPG Industries, Inc.Method and apparatus for initially restricting the divergent flow of float glass. 3,432,285, 03-11-69, Cl. 065-099.

Gumpertz, Donald G.Display tube having character mask with electron gun individual to each character. 3,432,710, 03-11-69, Cl. 313-069.

Gundlach, Karl-Heinz: *See*—
Billing, Heinz, Rudiger, Albrecht, and Gundlach, Karl-Heinz 3,432,817.

Gunther, Karl-Georg: *See*—
Schenk, Horst, Gunther, Karl-Georg, and Kulb, Wilhelm 3,431,625.

Gurevich, Leib Borukhovich: *See*—
Svilpe, Karl Yanovich, Luft, Genakh Maxovich, Betiyan, Andris Alfredovich, Milyaev, Viktor Vasilievich, Gurevich, Leib Borukhovich, and Seleznev, Ivan Vasilievich 3,432,790.

Gurley, Grey Manning, and Over, William Roderick, to AMP Incorporated. Apparatus for connecting corresponding wires of pairs of wires to each other. 3,431,621, 03-11-69, Cl. 029-203.

Guttmann, Andrew T., Jungermann, Eric, and Linfield, Warner M., to Armour and Company. Bis-aminophophinic acids useful as anti-bacterial agents. 3,432,547, 03-11-69, Cl. 260-502.5

Gyongyos, Ivan, to Swiss Aluminium Ltd.Continuous casting machine of the rotatable wheel type. 3,431,971, 03-11-69, Cl. 164-278.

H & H Plastics Mfg. Co.: *See*—
Hummel, Raymond J., and Ruhl, Horst, 3,431,561.

Haas, Peter, to Sindaco S.A.Timepiece case. 3,431,722, 03-11-69, Cl. 058-152.

Habib, Robert. Machine for grinding tools with a helical cut. 3,431,682, 03-11-69, Cl. 051-123.

Hackmann, Johannes T., to Shell Oil Company. Organophosphorus insecticides. 3,432,599, 03-11-69, Cl. 424-203.

Hadley, William D.Choker hook locking chain. 3,432,201, 03-11-69, Cl. 294-074.

Hagadorn, Marold Weston, and Johnston, Bruce R., to Sylvania Electric Products Inc.Refractory metal diffusion bonding. 3,431,615, 03-11-69, Cl. 029-025.14

Hagadorn, Marold Weston, and Kerstetter, Donald R., to Sylvania Electric Products Inc.Refractory metal diffusion bonding. 3,431,631, 03-11-69, Cl. 029-498.

Hahn, Robert S., to Heald Machine Company, The. Grinding high-temperature alloys. 3,431,685, 03-11-69, Cl. 051-166.

Haines, Robert C., and Corish, Patrick J., to Dunlop Company Limited, The. Game ball. 3,432,165, 03-11-69, Cl. 273-061.

Hajikano, Kiyoshi. Adjustable drawing die. 3,431,769, 03-11-69, Cl. 072-468.

Hall, Leland V.Diminishing container and dispenser. 3,432,078, 03-11-69, Cl. 222-080.

Hallauer, William J., and Potts, Bill L., to Ford Motor Company. Method for manufacturing an electrode. 3,431,614, 03-11-69, Cl. 029-025.12

Hallgreen, Knud Julius, to Danfoss A/S. Electrical flame ignition and supervising apparatus. 3,432,246, 03-11-69, Cl. 431-027.

Hallgren, Bo Erik: *See*—
Brohult, Astrid Helena, Brohult, Sven Fritiof Abraham, Hallgren, Bo Erik, and Brohult, Johan Axel 3,432,602.

Halliburton Co.: *See*—
O'Loughlin, Bernard T., and Tindell, William A., Jr., 3,432,151.

Halliburton Company: *See*—
Love, Robert G., 3,431,785.

Halpern, Benjamin D., to Borden Company, The. Cyanoalkylated hydroxyalkylated polyvinyl alcohol and derivatives. 3,432,512, 03-11-69, Cl. 260-091.3

Halpern, Ernst, to Williamsburg Steel Products Company. Adjustable support. 3,431,690, 03-11-69, Cl. 052-204.

Hamil, Henry F.: *See*—
Kurtz, Abraham N., and Hamil, Henry F. 3,432,498.

Hamilton of Indiana, Inc.: *See*—
Nathan, Bernard, and Tate, Gary L., 3,432,028.

Hamilton Watch Company: *See*—
Slaugh, James R., 3,431,721.

Hammarlund, Lars Arne: *See*—
Innings, Lars Sven Erik, and Hammarlund, Lars Arne 3,431,939.

Hamrick, Joseph T.Two-step rocket propellant injection system. 3,431,733, 03-11-69, Cl. 060-258.

Hanley, William M., to FMC Corporation. Shut-off for pressure controlled liquid flow system at zero flow. 3,431,940, 03-11-69, Cl. 137-565.

Hanmer, Richard Alan, to Lazy Eight (OO) Inc., The. Toy vehicle with self-steering mechanism. 3,431,673, 03-11-69, Cl. 046-208.

Harbaugh, Samuel S., to Allegheny Ludlum Steel Corporation. Automatic determination of arc furnace operating state. 3,432,604, 03-11-69, Cl. 013-013.

Hardee, Walter D.: *See*—
McGill, Robert W., and Hardee, Walter D. 3,431,831.

Hardesty, George K. C.Ratio spectroradiometer. 3,432,243, 03-11-69, Cl. 356-176.

Harding, Keith: *See*—
Nash, Geoffrey James Chetewoode, and Harding, Keith 3,432,666.

Hardy, Jean Marie, and Lacombe, Henry Marie Andre Rene, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Ejecting nozzle for propellers provided with a plurality of driving streams and, more particularly, two driving streams. 3,432,100, 03-11-69, Cl. 239-127.3

Hardy, Wilton A., to International Business Machines Corporation. Optical scanning techniques employing an optical cavity including two reflectors and a focussing objective. 3,432,771, 03-11-69, Cl. 331-094.5

Hare, Lloyd H., to Litton Business Systems, Inc.Automatically disabled backspace mechanism. 3,432,019, 03-11-69, Cl. 197-091.

Harklau, Lanny L., and James, Raymond H., to Sperry Rand Corporation. Detector for a search memory. 3,432,821, 03-11-69, Cl. 340-174.

Harnden, John D., Jr.: *See*—
Jones, Clifford M., and Harnden, John D., Jr. 3,432,846.

Harper, John D., Breyer, Frederick, and Wagner, Richard C., to Integral Process Systems, Inc.Liquid nitrogen flash freezing. 3,431,745, 03-11-69, Cl. 062-063.

Harpham, Lawrence M.Combination fishing pole and reel holder. 3,431,670, 03-11-69, Cl. 043-021.2

Harris, Mcchell F.Hair drying hair roller. 3,431,917, 03-11-69, Cl. 132-042.

Harris, Thomas J., and Max, Erhard, to International Business Machines Corporation. Stressed laser scanning device using light polarizers. 3,432,221, 03-11-69, Cl. 350-149.

Hartmann, Hans. Sensing arrangement for perforated data cards. 3,432,645, 03-11-69, Cl. 235-061.11

Harvey Aluminum (Incorporated): *See*—
Harvey, Herbert, Sims, Martin H., and Clay, Charles L., 3,432,841.

Harvey, Herbert, Sims, Martin H., and Clay, Charles L., to Harvey Aluminum (Incorporated). Status indicating and alarm annunciating systems for electrically powered devices. 3,432,841, 03-11-69, Cl. 340-248.

Harvey, John, Jr., to Du Pont de Nemours, E. I., and Company. Partially reduced 2-(1-napthylamino) oxazoline, indanylethylureas, and indanylaminooxazoline. 3,432,600, 03-11-69, Cl. 424-272.

Harvey, Robert R., and Vaclaw, Mike M., to Phillips Petroleum Company. Polymer suspension and production of oil therewith. 3,431,976, 03-11-69, Cl. 166-274.

Harvey, Sid, Inc.: *See*—
Lindtveit, Herbert, 3,432,705.

Hashemi, Hadi T., and Lott, Jerry L.Engine for exchanging energy between high and low pressure systems. 3,431,747, 03-11-69, Cl. 062-123.

Hasslinger, Russell, to American Velcro, Inc.Closure assembly. 3,431,605, 03-11-69, Cl. 024-205.12

Hatcher, Owen W., Jr., to Teledyne, Inc.Isolated resistor for integrated circuit. 3,432,792, 03-11-69, Cl. 338-311.

Hauni Werke, Korber & Co. K. G.: *See*—
Wahle, Gunter, and Lorenzen, Heinz-Christen, 3,431,827.

Hauni-Werke Korber & Co. K.G.: *See*—
Richter, Willy, 3,431,914.

Hauser, Raimund: *See*—
Freudenschuss, Otto, 3,432,229.

Haveg Industries, Inc.: *See*—
Weber, Walter O., 3,432,380.

Hay, Allan S., to General Electric Company. Process of making poly-(2,6-diaryl-1,4-phenylene ethers. 3,432,466, 03-11-69, Cl. 260-047.

Hay, Allan S., to General Electric Company. Process for producing high molecular weight polymers from impure 2,6-xylenol. 3,432,469, 03-11-69, Cl. 260-047.

Hayes, Ronald B.Impaling needle arrangement for a sausage slicing machine. 3,431,956, 03-11-69, Cl. 146-094.

Hays, Merlin B., to American Home Products Corporation. Attenuated infectious canine hepatitis live virus vaccine and method of producing same. 3,432,391, 03-11-69, Cl. 195-001.3

Heald Machine Company, The: *See*—
Hahn, Robert S., 3,431,685.

Hechler, Valentine. Hermetically sealed container. 3,431,941, 03-11-69, Cl. 137-604.

Hedberg, Lennart, to Aktiebolaget Siefvert & Fornander. Substantially automatic and continuously operating machinery for the manufacture of match splints and the like. 3,431,954, 03-11-69, Cl. 144-002.

Heffelfinger, Carl John, to Du Pont de Nemours, E. I., and Company. Biaxially oriented heat set film of high molecular weight polyethylene terephthalate. 3,432,591, 03-11-69, Cl. 264-289.

Heidrich, Walter, and Korner, Klaus, to Synfibrit G.m.b.H. & Co.Method and means for producing foamed silicate articles. 3,432,580, 03-11-69, Cl. 264-043.

Heller, Ferdinand P., to Amchem Products Inc.Method for determining nitrite concentration in acidic accelerated phosphating solutions. 3,432,270, 03-11-69, Cl. 023-230.

Hellmund, Rudolph L.Still-motion photographic apparatus. 3,432,228, 03-11-69, Cl. 352-169.

Helmig, Willem Hendrik Theodoor: *See—*
Reumerman, Theodorus, and Helmig, Willem Hendrik Theodoor 3,432,809.

Helvoigt, Kenneth. Hand-held gas-burning dental tool. 3,432,249, 03-11-69, Cl. 431-252.

Hemmann, Helmut: *See—*
Lohr, Alfred, Hemmann, Helmut, and Tropp, Karl 3,432,642.

Hemphill, Dean P.: *See—*
Richardson, Thomas W. G., Johnson, Glenn D., and Hemphill, Dean P. 3,431,739.

Hemus, Robert B., to Girling Limited. Seals for hydraulic apparatus. 3,432,010, 03-11-69, Cl. 188-152.

Hendrickson, Allen L., to Hendrickson, Olga T.Method and apparatus for installing new packing on a propeller shaft. 3,432,172, 03-11-69, Cl. 277-001.

Hendrickson, Olga T.: *See—*
Hendrickson, Allen L., 3,432,172.

Henkels and McCoy, Inc.: *See—*
Kinnan, Frank R., 3,431,741.

Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Hydraulic shock absorbers. 3,432,008, 03-11-69, Cl. 188-094.

Henry, George R., and Lewis, Thomas W., II, to Dresser Industries, Inc.Monolithic refractory. 3,432,315, 03-11-69, Cl. 106-059.

Heppenstall Company: *See—*
Stich, Wilhelm, and Sickbert, Adolf, 3,432,367.

Hercules Incorporated: *See—*
Foster, Stephen F., 3,431,848.

Hermann Wangner Kommanditgesellschaft: *See—*
Kurtz, Manfred, and Bangert, Lothar, 3,432,126.

Herrlinger, Richard, Kirkland, Claude James, and Ciesielski, Leo Frank, to Arizona Chemical Company. Recovery of turpentine from black liquor. 3,432,402, 03-11-69, Cl. 203-037.

Hersh, Harold R., and Boyce, John E., to Atlantic Richfield Company. Foamable polyvinyl chloride compositions and process of making foams therefrom. 3,432,452, 03-11-69, Cl. 260-002.5

Hertz, Warner Affiliated Corp.: *See—*
Kales, Rene, 3,432,451.

Heskett, Don E.Pressure responsive device for controlling liquid level in tanks. 3,432,038, 03-11-69, Cl. 210-096.

Hesston Corporation, Inc.: *See—*
Case, Cecil L., 3,431,993.

Hettlinger, Raymond C., and Smith, Robert L., to Chemetron Corporation. Medical service unit. 3,431,937, 03-11-69, Cl. 137-355.16

Hewitt, Fred G.: *See—*
Lundberg, Charles W., Hewitt, Fred G., James, Raymond H., and Korkowski, Vincent J. 3,432,818.
Korkowski, Vincent J., Hewitt, Fred G., and James, Raymond H. 3,432,819.

Hewitt, Fred G., to Sperry Rand Corporation. Two-core-per-bit memory. 3,432,820, 03-11-69, Cl. 340-174.

Hewitt, Fred G., to Sperry Rand Corporation. Radiation hardened recording system. 3,432,826, 03-11-69, Cl. 340-174.

Hewitt, Fred G., and James, Raymond H., to Sperry Rand Corporation. Radiation-hardened recording system. 3,432,829, 03-11-69, Cl. 340-174.

Hewlett-Packard Company: *See—*
Ingman, Eric M., 3,432,763.
Ritchie, Douglas Eugene, 3,432,802.

Heymann, Walter M.Automatic fruit sectioning apparatus. 3,431,955, 03-11-69, Cl. 146-003.

Heymer, Gero: *See—*
Kern, Winfried, and Heymer, Gero 3,432,260.

Hibbard, Billy B., to Dow Chemical Company, The. Viscous aqueous compositions comprising a polymer containing N-vinyl morpholinone and a polymer containing sulfo or carboxyl groups or their salts. 3,432,454, 03-11-69, Cl. 260-029.6

Hickox, Lester E.: *See—*
Gondeck, Frederick V., Hickox, Lester E., Kennedy, Thomas E., Perez, Arthur, and Thompson, James F. 3,432,378.

Hicks, Alan A.: *See—*
Swimmer, Ernest J., and Hicks, Alan A. 3,431,957.

Hill, George R., and Needham, Donald G., to Phillips Petroleum Company. Flame-proofing additives and resins containing the same. 3,432,461, 03-11-69, Cl. 260-045.75

Hill, Jacque A. F., and Draper, James S., to United States of America, Air Force. Fluidized particle dispenser. 3,432,208, 03-11-69, Cl. 302-053.

Hill, John L.: *See—*
Lynn, Richard G., Sr., Machulda, James R., and Hill, John L. 3,431,858.

Hillegass, Kenneth P., to Goodyear Tire & Rubber Company, The. Disc brake with quick change lining structure. 3,432,007, 03-11-69, Cl. 188-073.

Hiller, Fred L.: *See—*
Tsao, George T., Reid, Thornton H., Hiller, Fred L., and Hubbard, Lawrence H. 3,432,345.

Hines, Vernon C.Safety harness for flexible hose and the like. 3,431,947, 03-11-69, Cl. 138-106.

Hipp, Richard D., Jr., to Minnesota Mining and Manufacturing Company. Two piece mold for molding an undercut rim, and method of molding. 3,431,967, 03-11-69, Cl. 164-006.

Hirakis, Emanuel C.: *See—*
Yenswine, David L., and Hirakis, Emanuel C. 3,432,334.

Hirata, Takashi: *See—*
Watanabe, Tomoyoshi, Hishida, Yukio, and Hirata, Takashi 3,432,018.

Hirota, Yusaku: *See—*
Nitta, Yoshihiro, Namekata, Masaya, Tomita, Eiichi, and Hirota, Yusaku 3,432,489.

Hiscox, Harold C.: *See—*
Taylor, John W., Jr., Gobl, Gerhard E., and Hiscox, Harold C. 3,432,777.

Hishida, Yukio: *See—*
Watanabe, Tomoyoshi, Hishida, Yukio, and Hirata, Takashi 3,432,018.

Hittmair, Paul, Wohlfarth, Ernst, Nitsche, Siegfried, and Wick, Manfred, to Wacker-Chemie G.m.b.H.Room temperature vulcanizable organopolysiloxane elastomer stocks. 3,432,463, 03-11-69, Cl. 260-046.5

Hittman Associates, Inc.: *See—*
Frank, Louis, and Barr, Harold N., 3,432,295.

Hobrough, Gilbert L., to Itek Corporation. Photographic image registration. 3,431,694, 03m11-69, Cl. 250-220.

Hodgkinson, William Lloyd, to United Kingdom Atomic Energy Authority. Apparatus for examining the internal structure of a body. 3,432,661, 03-11-69, Cl. 250-083.3

Hoekstra, James, to Universal Oil Products Company. Molecular rearrangement of cycloalkadienic compounds. 3,432,564, 03-11-69, Cl. 260-666.

Hofer,Walter David. Eccentric bearing linkage for hoe drills. 3,431,981, 03-11-69, Cl. 172-269.

Hoffman, John D.: *See—*
Crawford, Donald C., Viitanen, Veikko K., and Hoffman, John D. 3,431,828.

Hoffman, William D., Burk, Emmett H., Jr., and Eichhorn, Robert M., to Sinclair Research, Inc.Process of shifting the double bond in mono- olefins to a terminal, non-tertiary position. 3,432,570, 03-11-69, Cl. 260-683.2

Hofrichter, Wilhelm, to Vornbaumen, E., & Co.Method and machines for twisting together strands of material. 3,431,718, 03-11-69, Cl. 057-059.

Hogg, Richard William: *See—*
Stillwell, Peter Frederic Thomas Cryer, Montgomery, Peter Murdo, and Hogg, Richard William 3,432,854.

Holland, Thomas E., to Technical Operations, Incorporated. Optical instruments of the interference type. 3,432,239, 03-11-69, Cl. 356-112.

Hollandsche Beton Maatschappij N.V.: *See—*
Jansz, Joost W., 3,431,986.

Holmstrom, Roy C., to Kelsey-Hayes Company. Wheel and method of manufacturing the same. 3,432,207, 03-11-69, Cl. 301-063.

Holtwijk, Theodoor, to North American Philips Company, Inc.Magnetoresistive readout of thin film memories. 3,432,832, 03-11-69, Cl. 340-174.

Holzhei, Don Earl: *See—*
Myers, Herbert Arthur, and Holzhei, Don Earl 3,432,075.

Honeywell Inc.: *See—*
Jensen, James Lee, 3,432,738.

Honiron, Inc.: *See—*
Farmer, John, 3,432,344.

Hood, Coy H.: *See—*
Martin, Alfred W., Walker, James W., McNair, William T., Jr., and Hood, Coy H. 3,432,560.

Hooker Chemical Corporation: *See—*
Currey, John E., 3,432,422.

Hooper, Harrison G., to Lathem Time Recorder Company. Card controlled printing and numbering means. 3,431,845, 03-11-69, Cl. 101-287.

Hoppen, Johannes, to North American Philips Company, Inc.Dishwasher spray apparatus with gradually increasing nozzle pressure. 3,432,103, 03-11-69, Cl. 239-255.

Horberg, Charles, Jr., to Paramount Textile Machinery Co.Method and apparatus for packaging pliant, elongate articles. 3,431,696, 03-11-69, Cl. 053-024.

Hori, Hideo. Multiple key lock having change key mechanism. 3,431,757, 03-11-69, Cl. 070-383.

Horn, Fordyce H., to General Electric Company. Method of analyzing materials to determine the impurity content thereof. 3,432,753, 03-11-69, Cl. 324-071.

Horsey, Sydney F., and Tyler, William J. L., to Canadian Bronze Company Limited. Railroad boxcar heater system. 3,432,097, 03-11-69, Cl. 237-005.

Hottman, Clarence E., and Van Meurs, Pieter, to Shell Oil Company. Sulfur steam drive. 3,432,205, 03-11-69, Cl. 299-004.

Houdaille Industries, Inc.: *See—*
Nelson, Paul C., and Rutz, Leon E., 3,431,758.

Houston Engineers, Inc.: *See—*
Webb, Derrel D., 3,431,990.

Houtz, Harold H., and Carl, Allen E., to Weyerhaeuser Company. Method of operating an electrolytic chlorine production cell. 3,432,411, 03-11-69, Cl. 204-128.

Howe, Ralph, to Imperial Chemical Industries Limited. 3-Aryloxy-1-amino-2-propanols and salts thereof. 3,432,545, 03-11-69, Cl. 260-501.17

Howell, Samuel G., and Akers, Dale M., to National Distillers and Chemical Corporation. Process for coating substrates with polymers. 3,432,339, 03-11-69, Cl. 117-132.

Howells, Francis Thomas, to Elliotts Liverpool Limited. Apparatus for automatically feeding articles from a store of batch. 3,432,049, 03-11-69, Cl. 214-089.

Howitt, James B.Transportable and stackable material handling baskets. 3,432,039, 03-11-69, Cl. 211-133.

Howmet Corporation: *See—*
Feagin, Roy C., Dahowski, Edward L., and Kosmos, Peter, 3,432,312.

Hrdina, Jiri, to Ceskoslovenska akademie ved. Drive mechanism for oscillating devices, particularly control rods. 3,431,789, 03-11-69, Cl. 074-054.

Hubbard, Lawrence H.: *See—*
Tsao, George T., Reid, Thornton H., Hiller, Fred L., and Hubbard, Lawrence H. 3,432,345.

Hubbard, Peter J., to Dorr-Oliver Incorporated. Cyclonic reactor. 3,432,101, 03-11-69, Cl. 239-214.17

Hudson, Virginia Z.Toothbrush with dentifrice holder. 3,432,245, 03-11-69, Cl. 401-132.

Hughes Aircraft Company: *See—*
Du Hamel, Raymond H., 3,432,775.
O'Brien, Lawrence H., 3,432,679.
Yaggy, Leon S., 3,432,717.

Hughes, David Owen: *See—*
Davies, Phineas, and Hughes, David Owen 3,432,443.

Hughes, George W.Road surface testing device. 3,431,776, 03-11-69, Cl. 073-146.

Hughes, Richard Lawrence: *See—*
Kuhr, Wayne Kenneth, Slakis, Albin Joseph, Hughes, Richard Lawrence, and Neilson, Anne Josephine 3,432,305.

Hull, Henry E., Trumbull, Harold E., and Zeidman, Gordon G., to Xerox Corporation. Fusing apparatus. 3,432,639, 03-11-69, Cl. 219-216.

Humber Limited: *See—*
Ludford, Peter, 3,432,142.

Hummel, Raymond J., and Ruhl, Horst, to H & H Plastics Mfg. Co.Method of making a cap. 3,431,561, 03-11-69, Cl. 002-192.

Hunnebeck Aktiengesellschaft: *See—*
Hunnebeck, Emil Mauritz, 3,431,694.

Hunnebeck, Emil Mauritz, to Hunnebeck Aktiengesellschaft. Rhombic girder. 3,431,694, 03m11-69, Cl. 052-695.

Hunt, Tyler R., to Goodyear Aerospace Corporation. Method for magnetic core readout with noise cancellation. 3,432,836, 03-11-69, Cl. 340-174.

Hunter, Ian, and Fitzgerald, William Patrick, to Marconi Company Limited, The. Regulated direct current supply circuit with energy return path. 3,432,737, 03-11-69, Cl. 321-002.

Hurst, Alan R., to Phillips Petroleum Company. Composite differential release tape. 3,432,333, 03-11-69, Cl. 117-068.

Hurst, Arthur: *See—*
Stephens, Frederick Allen, and Hurst, Arthur 3,432,059.

Hurst, Mowatt M., to Johnson, S. C., & Son, Inc.Automobile washing method. 3,432,346, 03-11-69, Cl. 134-034.

Husa, Ronald G., to United States of America, Atomic Energy Commission. Triggered volt - second generator. 3,432,682, 03-11-69, Cl. 307-088.

Huskins, Chester W.: *See—*
Ayers, Orval E., Huskins, Chester W., and Carter, Herbert A. 3,432,444.

Huss, Stanley B.Apparatus for continuously laminating webs. 3,432,377, 03-11-69, Cl. 156-494.

Hutchinson, William M., and Melvin, William J., to Collins Radio Company. Glass delay line recirculating memory. 3,432,816, 03-11-69, Cl. 340-173.

Hutchison Manufacturing Company: *See—*
Philipp, William C., 3,432,127.

Hutter, Wilhelm, to Niederrheinische Maschinenfabrik Becker & Van Hullen. Heated multistage press with synchronized closing device. 3,431,838, 03-11-69, Cl. 100-093.

Huyck Corporation: *See—*
Thorp, Benjamin Adelbert, 3,432,385.

Hyodo, Hiroshi: *See—*
Kan, Masao, Hyodo, Hiroshi, Watanabe, Akio, and Enami, Shigekazu 3,432,327.

Hypro, Inc.: *See—*
Cook, Ernest E., and Pareja, Ramon, 3,431,865.

Ichikawa, Yasushi: *See—*
Ohfuka, Toshio, Shiroda, Katsumi, and Ichikawa, Yasushi 3,432,482.

Igarashi, Yukio, Komatsu, Makoto, Fujiyama, Susumu, and Okamoto, Kazuo, to Japan Gas-Chemical Company, Inc.Process for producing acetone. 3,432,556, 03-11-69, Cl. 260-597.

Illinois Tool Works, Inc.: *See—*
Ryder, Francis E., 3,432,111.

Imperial Chemical Industries Limited: *See—*
Brown, Martin Granger, 3,432,318.
Davies, Phineas, and Hughes, David Owen, 3,432,443.
Davies, Trevor, East, Anthony Julian, and Mc Creath, Michael King, 3,432,467.
Howe, Ralph, 3,432,545.
Levy, Winifred Jane, Newport, John Prescott, and Reynolds, Reginald John William, 3,432,430.

Imperial Knife Associated Companies, Inc.: *See—*
Rakatansky, Harold, 3,432,159.

Inb. Max Grundig: *See—*
Schroder, Erich, 3,432,169.

Industrial Nucleonics Corporation: *See—*
Clement, John C., 3,431,761.

Ingberman, Arthur K.: *See—*
Levine, Isaac J., and Ingberman, Arthur K. 3,432,343.

Ingersoll-Rand Company: *See—*
Bowen, John T., 3,431,985.
Buehler, Alois A., and Peterson, Carl R., 3,431,984.
Chen, Hsin Sheng, 3,431,725.
Van Gassbeck, Richard L., 3,432,040.

Ingman, Eric M., to Hewlett-Packard Company. Amplifier employing nonlinear DC negative feedback to stabilize its DC operating point. 3,432,763, 03-11-69, Cl. 330-025.

Injeski, Stanley G., to Worldabest Industries, Inc.Friction held removable gate. 3,431,966, 03-11-69, Cl. 160-225.

Innings, Lars Sven Erik, and Hammarlund, Lars Arne, to AB Mekanprodukter Hans Holmm n of America. Valve means for damping the piston stroke in a pneumatic cylinder. 3,431,939, 03-11-69, Cl. 137-509.

Innocenti Societa Generale per l'IndustriaMetallurgica e'Meccanica: *See—*
Galberini, Maso, and Cotta Ramusino, 3,431,797.

Institut Francais du Petrole, des Carburants etLubrifiants: *See—*
Ongan, Maogh, Silly, Jean-Pierre, and Teyssie, Philippe, 3,432,445.

Instituto Chemioterapico Italiano S.p.A.: *See—*
Garzia, Aldo, 3,432,550.
Garzia, Aldo, 3,432,551.

Integral Process Systems, Inc.: *See—*
Harper, John D., Breyer, Frederick, and Wagner, Richard C., 3,431,745.

Intelligent Instruments Inc.: *See—*
Slavin, Peter Edmond, 3,432,657.

International Business Machines Corporation: *See—*
Annunziata, Eugene J., James, Robert S., King, Lewis E., and Pierce, Edwin B., 3,432,813.
Bertelsen, Bruce I., 3,432,822.
Blasbalg, Herman L., 3,432,619.
Caudill, Allison H., and Goff, Willie, Jr., 3,432,020.
Cordero, Humberto R., 3,432,810.
Crouse, William G., 3,432,616.
Davidse, Pieter D., and Maissel, Leon I., 3,432,417.
Douglas, Gavin L., and Simpson, Jack W., Sr., 3,432,845.
Dym, Herbert, 3,432,670.
Elfant, Robert F., 3,432,812.
Fan, George J., 3,432,837.
Fleisher, Harold, Kosanke, Kurt M., Kulcke, Werner W., and Max, Erhard, 3,432,222.
Foglia, Henry R., 3,432,835.
Garwin, Richard L., 3,432,768.
Hardy, Wilton A., 3,432,771.
Harris, Thomas J., and Max, Erhard, 3,432,221.
Krakinowski, Morris, 3,432,627.
Lem, Donald J., and Spruth, Wilhelm G., 3,432,815.
Myers, Robert A., and Pershan, Peter S., 3,432,224.
Owen, Charles E., Proudman, Antony, Taub, Daniel M., and Warwick, William A., 3,432,830.
Pole, Robert V., and Nunez, Jaen, 3,432,767.
Radke, William A., and Schomburg, John F., 3,432,669.
Rinaldi, Russell G., and Moore, Brian B., 3,432,811.
Schulz, Peter R., 3,432,282.
Stapper, Charles H., 3,432,839.
Stuckert, Paul E., 3,432,685.
Xylander, Melvin P., 3,432,831.

International Harvester Company: *See—*
Bouet, Jacques, 3,431,714.
Johnston, Edward J., 3,431,710.
May, Patrick L., and Ralston, William K., 3,431,837.

International Nickel Company, Inc., The: *See—*
Mayer, George, and Greenwood, Roger Kearsley, 3,432,291.

International Rectifier Corporation: *See—*
Villax, Ivan, 3,432,394.

International Telephone and Telegraph Corporation: *See—*
Clayton, Robert H., 3,432,711.

International Telephone & Telegraph Corporation: *See—*
Ray, William A., 3,432,140.

Interpace Corporation: *See—*
Valenziano, Frank P., 3,432,176.

Inventa A.G. fur Forschung und Patentverwertung: *See—*
Gabler, Rudolf, 3,432,468.

Irgens, Finn T., to Outboard Marine Corporation. Marine propulsion device. 3,431,882, 03-11-69, Cl. 115-017.

Irti, Ernest, and Mueller, John H., to Teledyne, Inc.Slide valves for full flow and fine metering. 3,432,141, 03-11-69, Cl. 251-172.

Irwin, John W., to General Electric Company. Furnace humidifier mounting means. 3,431,903, 03-11-69, Cl. 126-113

Ishikawajima-Harima Jukogyo Kabushiki Kaisha: *See—*
Nakamura, Hajime, 3,432,368.

Itek Corporation: *See—*
Hobrough, Gilbert L., 3,432,674.

Ito, Makoto, and Yamamoto, Kazumoto, to Asahi Kasei Kogyo Co., Ltd.Steel pipe tower using steel pipe joints and method for assembling the same. 3,432,192, 03-11-69, Cl. 285-382.2

Iversen, Kristian, to Danfoss A/S. Servomotor. 3,431,726, 03-11-69, Cl. 060-023.

Iwamatsu, Mayuki, and Fujimura, Akira, to Aida Iron Works & Co., Ltd.Clutch and brake combination. 3,432,014, 03-11-69, Cl. 192-018.

Iwasaki, Yasuhiro: *See—*
Sagara, Hideo, Iwasaki, Yasuhiro, Ohe, Tsutomu, and Mashimo, Tomoyuki 3,431,630.

Jackson, Byron, Inc.: *See—*
Alder, Robert L., 3,431,654.

Jackson, Earl V., to Bausch & Lomb Incorporated. Releasable locking latch. 3,432,195, 03-11-69, Cl. 287-189.36

Jackson, Harold Ernest, to Petrol Injection Limited. Fuel injection systems. 3,431,900, 03-11-69, Cl. 123-139.

Jackson, William L., to United States of America, Atomic Energy Commission. Laser optical aligning method and apparatus. 3,432,240, 03-11-69, Cl. 356-152.

Jacobsen, Harvey A.: *See—*
Solipuso, Victor M., 3,432,182.

Jacobson, Earl C.Positionable control assembly. 3,431,983, 03-11-69, Cl. 173-043.

Jager, Jolle: *See—*
Dijken, Reinder Hendrik, Jager, Jolle, and Krikke, Minne 3,432,701.

Jakaitis, Eugene A., Littler, Francis W., and Robiendano, Emilio A., to Mobil Oil Corporation. Wax emulsions stabilized with a methyl cellulose ether. 3,432,319, 03-11-69, Cl. 106-170.

James, Raymond H.: *See—*
Lundberg, Charles W., Hewitt, Fred G., James, Raymond H., and Korkowski, Vincent J. 3,432,818.
Korkowski, Vincent J., Hewitt, Fred G., and James, Raymond H. 3,432,819.
Harklau, Lanny L., and James, Raymond H. 3,432,821.
Hewitt, Fred G., and James, Raymond H. 3,432,829.

James, Robert S.: *See—*
Annunziata, Eugene J., James, Robert S., King, Lewis E., and Pierce, Edwin B. 3,432,813.

Jansz, Joost W., to Hollandsche Beton Maatschappij N.V.Hydraulic pile driving device. 3,431,986, 03-11-69, Cl. 173-134.

Jantzen, George H., to Steinthal, M., & Company Incorporated. Safety belt buckle. 3,431,606, 03-11-69, Cl. 024-230.

Japan Gas-Chemical Company, Inc.: *See—*
Igarashi, Yukio, Komatsu, Makoto, Fujiyama, Susumu, and Okamoto, Kazuo, 3,432,556.

Japan Synthetic Rubber Co. Ltd.: *See—*
Ueda, Kenichi, Yasunaga, Hidetoshi, and Komatsu, Kouei, 3,432,517.

Japanese National Railways: *See—*
Sato, Yutaka, 3,432,098.

Jarund, Harry Sigvard Valdemar: *See—*
Rausing, Gad Anders, and Jarund, Harry Sigvard Valdemar 3,431,700.

Jaybee Manufacturing Corporation: *See—*
Bereznak, John, 3,431,587.

Jayne, Max L., to Sylvania Electric Products Inc.Electrical connector having facile engagement means. 3,432,795, 03-11-69, Cl. 339-017.

Jennings, Clifton C., and Lankford, William L., Jr., to Geolograph Company, The. Apparatus for determining differences in elevation. 3,431,780, 03-11-69, Cl. 073-316.

Jennings, Lyston C., and Spooner, Howard C., to General Signal Corporation. Controls for overcenter motor-pump unit. 3,431,857, 03-11-69, Cl. 103-010.

Jensen Industries, Incorporated: *See—*
Spring, Claude L., 3,432,843.

Jensen, James Lee, to Honeywell Inc.Current driven voltage multiplication circuit. 3,432,738, 03-11-69, Cl. 321-015.

Jentoft, Arthur Philip, to Robertson, H. H., Co.Extensible plug valve. 3,432,139, 03-11-69, Cl. 251-061.1

Jeschke, Richard R.: *See—*
Tonkin, Kenneth J., Swanson, John L., and Jeschke, Richard R. 3,431,841.

Jet Research Center, Inc.: *See—*
Christopher, Glenn B., 3,431,850.

Joest, Herbert: *See—*
Sennewald, Kurt, Erpenbach, Heinz, Vogt, Wilhelm, and Joest, Herbert 3,432,544.
Joh Mustad AB: *See—*
Bergman, Sune Hearley, 3,432,607.
Johanson, John E.Encloaed adjustable capacitor with seals for operating rod. 3,432,734, 03-11-69, Cl. 317-245.
Johns Hopkins University, The : *See—*
Davis, Hugh J., and Jones, Edmund A., 3,431,905.
Johns Hopkins University, The: *See—*
Taylor, Carl E., 3,431,906.
Johns-Manville Corporation: *See—*
Collins, John Oliver, Jr., 3,432,381.
McMahon, Edward G., 3,432,373.
Johnsen, James Alvin, and Peterson, John Loran, to Teletype Corporation. Differential relaxation oscillator. 3,432,772, 03-11-69, Cl. 331-111.
Johnson, Alvin L., to General Industries, Inc.Permanent elastometric valve seat construction. 3,432,143, 03-11-69, Cl. 251-317.
Johnson, Charles A., to Bolton-Emerson, Inc.Pulper impeller vane. 3,432,107, 03-11-69, Cl. 241-046.17
Johnson, Edwin S., to Bell & Howell Co.Document transport and guide for office copiers. 3,432,234, 03-11-69, Cl. 355-075.
Johnson, Gerould A.: *See—*
Turner, George L., Johnson, Gerould A., Disbrow, Richard A., and Nestell, Donald E. 3,432,102.
Johnson, Glenn D.: *See—*
Richardson, Thomas W. G., Johnson, Glenn D., and Hemphill, Dean P. 3,431,739.
Johnson & Johnson: *See—*
Listner, Gregory J., 3,432,459.
Johnson, Kenneth C.Hollow wall fastener. 3,431,813, 03-11-69, Cl. 085-083.
Johnson, Leighton Clifford: *See—*
McCormick, James Benjamin, and Johnson, Leighton Clifford 3,431,886.
Johnston, Bruce R.: *See—*
Hagadorn, Marold Weston, and Johnston, Bruce R. 3,431,615.
Johnston, Edward J., to International Harvester Company. Hay conditioner roll arrangement. 3,431,710, 03-11-69, Cl. 056-001.
Jolles, Zvi Enrico, to Berk Limited. Use of brominated salicylanilide as a fire retardant for polymeric materials. 3,432,450, 03-11-69, Cl. 260-002.5
Jones, Charles B., Jr.Peristaltic pump. 3,431,864, 03-11-69, Cl. 103-149.
Jones, Chfford M., and Harnden, John D., Jr., to General Electric Company. Traveling sign controlled by logic circuitry and providing a plurality of visual display effects. 3,432,846, 03-11-69, Cl. 340-339.
Jones, Eddie M., Jr., to Meck-Pick, Inc.Fruit harvesting head. 3,431,715, 03-11-69, Cl. 056-328.
Jones, Edmund A.: *See—*
Davis, Hugh J., and Jones, Edmund A. 3,431,905.
Jones, Edwin Kermit, to Universal Oil Products Company. Alkylaryl production. 3,432,567, 03-11-69, Cl. 260-671.
Jones, Jean E., and Kalenda, Norman W., to Eastman Kodak Company. Silver halide emulsions containing supersensitizing dye combinations. 3,432,302, 03-11-69, Cl. 096-104.
Jones, Jean E., and Kalenda, Norman W., to Eastman Kodak Company. Silver halide emulsions containing dye combinations for supersensitization. 3,432,303, 03-11-69, Cl. 096-104.
Jones, John B., Jr., to Battelle Development Corporation, The. Fluid distributor for vertical vessels. 3,432,348, 03-11-69, Cl. 134-042.
Jones, Robert L.: *See—*
Langrod, Kasimir, and Jones, Robert L. 3,432,336.
Jones, Roy E., to San Antonio Chemicals, Inc.Apparatus for producing cesium. 3,432,156, 03-11-69, Cl. 266-034.
Jones, William A., to Deere & Company. Land measurer. 3,432,095, 03-11-69, Cl. 235-091.
Jonason, Erik, to Allmanna Svenska Elektriska Aktiebolaget. Control device for a nuclear reactor. 3,432,387, 03-11-69, Cl. 176-036.
Jordan, Thomas J., and Plant, Henry T., to General Electric Company. Radome and method for making same. 3,432,859, 03-11-69, Cl. 343-872.
Jost, Ernest M., to Texas Instruments Incorporated. Electrochemical power supply with movable anode material. 3,432,354, 03-11-69, Cl. 136-086.
Joyner, Frederick B.: *See—*
Cash, George O., Jr., and Joyner, Frederick B. 3,432,514.
Jucker, Ernst, Lindenmann, Adolf, Schenker, Erhard, and Gadient, Fulvio, to Sandoz Ltd. (also known as Sandoz A.G.). Benzene sulfonyl semicarbazides. 3,432,491, 03-11-69, Cl. 260-239.6
Jungermann, Eric: *See—*
Guttmann, Andrew T., Jungermann, Eric, and Linfield, Warner M. 3,432,547.
Justice, Mary E., to Saint Pauls Church, The Rector, Church Wardens and Vestrymen of Paul's Church, The. Religious article. 3,431,958, 03-11-69, Cl. 150-052.
Justus, Edgar J, to Beloit Corporation. Stationary pocket feeder apparatus for digester. 3,432,382, 03-11-69, Cl. 162-246.
Kabushiki Kaisha: *See—*
Kaneko, Tamaki, and Kagari, Yoshiharu, 3,431,843.
Kabushiki Kaisha Hitachi Seisakusho: *See—*
Suzuki, Yoshihisa, and Tanaka, Yoshio, 3,432,716.
Kabushiki Kaisha Keihin Seiki Seisakusho: *See—*
Sakuma, Masao, 3,431,944.
Kabushiki Kaisha Sanko Seisakusho: *See—*
Kawanami, Shunpei, 3,431,709.
Kagari, Yoshiharu: *See—*
Kaneko, Tamaki, and Kagari, Yoshiharu 3,431,843.
Kaiser, Robert G., to Clark & Vicario Corporation. Conditioning papermaking stock. 3,432,036, 03-11-69, Cl. 209-211.
Kalenda, Norman W.: *See—*
Jones, Jean E., and Kalenda, Norman W. 3,432,302.
Jones, Jean E., and Kalenda, Norman W. 3,432,303.
Kales, Rene, to Hertz, Warner Affiliated Corp.Polyolefin-modified polyurethanes and process of making same. 3,432,451, 03-11-69, Cl. 260-023.
Kalfaian, Meguer V.Speech sound wave analysis. 3,432,617, 03-11-69, Cl. 179-001.
Kallenbach, Lyle R., to Phillips Petroleum Company. Polymer hydrogenation. 3,432,518, 03-11-69, Cl. 260-094.9
Kalmus, Henry P., to United States of America, Army. Moving target indicator. 3,432,855, 03-11-69, Cl. 343-007.7
Kaltenbach, Theodore L.Seal spray gun siphon cup. 3,432,104, 03-11-69, Cl. 239-328.
Kamal, Marwan R., to General Mills, Inc.Schiff bases prepared by reacting unsaturated carbonyl compounds with amine-terminated polymeric fats. 3,432,574, 03-11-69, Cl. 260-834.
Kamibayashi, Tetsusaburo: *See—*
Oshima, Shintaro, and Kamibayashi, Tetsusaburo 3,432,681.
Kan, Masao, Hyodo, Hiroshi, Watanabe, Akio, and Enami, Shigekazu, to Pilot Man-Nen-Hitsu Kabushiki Kaisha. Pressure sensitive copying sheet and the production thereof. 3,432,327, 03-11-69, Cl. 117-036.2
Kand Rubber Company: *See—*
Craig, Walter J., 3,432,069.
Kaneko, Tamaki, and Kagari, Yoshiharu, to Kabishiki Kaisha. Detecting device for a copy sheet clamping device in an offset printing machine. 3,431,843, 03-11-69, Cl. 101-218.
Kasza, Louis, to Ohio State University, The. Melanoma cell line of canine origin, its propagation and use, and vaccines derived there- from. 3,432,595, 03-11-69, Cl. 424-089.
Kaszreiner, Endre, Borsi, Jozsef, Vargha, Laszlo, Boris, Meszaros, Erika, and Szilagyi, Geza, to Egyesult Gyogyszer- es Tapszergyar. Pharmacologically active new substituted benzamides. 3,432,549, 03-11-69, Cl. 260-559.
Katz, Norman H., and Binstock, Martin H., to North American Rockwell Corporation. Composite thermoelectric assembly having preformed intermediate layers of graded composition. 3,432,365, 03-11-69, Cl. 136-237.
Kauffman, Harry D., to Ohio Crankshaft Company, The. Voltage regulator for induction heating apparatus. 3,432,739, 03-11-69, Cl. 321-018.
Kauffman, Robert C.Optical photographic printing apparatus. 3,432,233, 03-11-69, Cl. 355-072.
Kaufmann, William F., Jr., to United States of America, Army. Discardable rotating band. 3,431,815, 03-11-69, Cl. 089-001.
Kavthekar, Keshav S., and Russell, Richard G., to Ford Motor Company. Attitude compensator device for a motor vehicle speed control system. 3,431,997, 03-11-69, Cl. 180-108.
Kawai, Teiichi, to Kubota Iron and Machinery Works, Ltd.Pipe joint which can be assembled from inside pipe. 3,432,175, 03-11-69, Cl. 277-104.
Kawanami, Shunpei, to Kabushiki Kaisha Sanko Seisakusho. Dust collector. 3,431,709, 03-11-69, Cl. 055-302.
Kawase, Yasutaka. Photoelectric control bimetal-type switch with plural heaters. 3,432,728, 03-11-69, Cl. 317-124.
Kawashima, Masao, Sakai, Masakatsu, and Kobayashi, Toshio, to Fujitsu Limited. Shift register with blocking oscillator stages using overshoot pulses as sequence trigger pulses. 3,432,683, 03-11-69, Cl. 307-221.
Kazantsev, Boris Afanasievich, Sitro, Igor Nikolaevich, Malyk, Vladimir Avksentievich, and Elyashev, Isaak Grigorievich. Screw pump. 3,431,855, 03-11-69, Cl. 103-003.
Keathley, Maurice F., and Mainers, Artez F., to Kentucky Fried Chicken Corporation. Apparatus for cooking. 3,431,834, 03-11-69, Cl. 099-336.
Keeler, Mary K.Automatic liquid sampler. 3,431,784, 03-11-69, Cl. 073-423.
Keil, Karl, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Olefins and process for purifying them. 3,432,573, 03-11-69, Cl. 260-683.15
Keith, Guy E., Turner, Calvin L., and Marsh, Max F., to Western Oil Tool & Manufacturing Company, Inc.Earth scraper with sliding vertical elevator guide means. 3,431,660, 03-11-69, Cl. 037-008.
Keller, John Walter, Jr., to Cordis Corporation. Standby cardiac pacer. 3,431,912, 03-11-69, Cl. 128-422.
Kelly, Thomas M., Mielenz, Richard C., and Peppler, Richard B., to Martin-Marietta Corporation. Hydraulic cement mix containing saccharide polymers. 3,432,317, 03-11-69, Cl. 106-092.
Kelly, Thomas M., Peppler, Richard B., and Ray, James A., to Martin-Marietta Corporation. Hydraulic cement mix and additive. 3,432,316, 03-11-69, Cl. 106-090.
Kelsey-Hayes Company: *See—*
Holmstrom, Roy C., 3,432,207.
Kennedy, Clifford F., and Shelton, Thomas M., to North American Rockwell Corporation. Tube tapering roller chuck. 3,431,764, 03-11-69, Cl. 072-078.
Kennedy, Thomas E.: *See—*
Gondeck, Frederick V., Hickox, Lester E., Kennedy, Thomas E., Perez, Arthur, and Thompson, James F. 3,432,378.
Kermicle, Harold A., to United States of America, Atomic Energy Commission. Specialized electrometer circuit. 3,432,764, 03-11-69, Cl. 330-087.
Kern, Forest L., Schwoyer, William L., and Dowling, Thomas P., to Trojan Powder Company. Primers for use with delay action blasting caps and process of blasting using the same. 3,431,851, 03-11-69, Cl. 102-024.
Kern, Forrest L., Schwoyer, William L., and Dowling, Thomas P., to Commercial Solvents Corporation. Primers for use with delay action blasting caps and process of blasting using the same. 3,431,849, 03-11-69, Cl. 102-024.
Kern, Winfried, and Heymer, Gero, to Knapsack Aktiengesellschaft. Process for the manufacture of sodium tripolyphosphate. 3,432,260, 03-11-69, Cl. 023-106.
Keraker, Theodore M., and Kovac, Frederick J., to Goodyear Tire & Rubber Company, The. Reinforement for pneumatic tires and the like. 3,431,962, 03-11-69, Cl. 152-355.
Kerstetter, Donald R.: *See—*
Hagadorn, Marold Weston, and Kerstetter, Donald R. 3,431,631.
Key Pharmaceuticals, Inc.: *See—*
Shepard, Mark, 3,432,593.
Khoury, Nick S., to Continental Can Company, Inc.Pull tab opening means. 3,432,067, 03-11-69, Cl. 220-054.
Kidera, Edward H., Kurth, Warren, and Whittingham, David J., to Walker Manufacturing Company. Forming apparatus. 3,431,759, 03-11-69, Cl. 072-007.
Kiefer Hans, Raff, Paul, and Schuster, Ludwig, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Dihydrotricyclopentadienylamine and preparation thereof. 3,432,552, 03-11-69, Cl. 260-563.
Kiernan, Henry E.Vehicle and driver safety device. 3,431,995, 03-11-69, Cl. 180-082.
Kijima, Shizumasa, and Konita, Takeshi, to Eisai Co., Ltd.Process for the production of alkaline earth metal salts of tocopherol dibasic acid hemiesters. 3,432,525, 03-11-69, Cl. 260-345.5
Kikuchi, Tatsuhiko: *See—*
Okuya, Eitaro, Sakaguchi, Adio, Komatsu, Kouei, Kikuchi, Tatsuhiko, Yasunaga, Hidetoshi, and Andueda, Kenichi 3,432,515.
Kilbride, William R.Vehicle shelter and article carrier. 3,431,922, 03-11-69, Cl. 135-001.

Kim, George A., to Teletype Corporation. Magentic actuator and latch. 3,432,784, 03-11-69, Cl. 335-254.
Kimberly-Clark Corporation: *See—*
Appel, David W., 3,431,602.
Kimble, Harry E., to United States of America, Atomic Energy Commission. Irradiation device for providing a constant dose rate. 3,432,665, 03-11-69, Cl. 250-106.
King, Bartley E.: *See—*
Polonsky, Samuel, and King, Bartley E. 3,432,625.
King, George W., Limited: *See—*
Burrows, Arthur Thomas Charles, 3,431,867.
King, Harry A., to Aerojet-General Corporation. Lightweight protective armor plate. 3,431,818, 03-11-69, Cl. 089-036.
King, James Ping, to Pennsalt Chemicals Corporation. Halo-chromium salts of acids of phosphorus and their esters. 3,432,532, 03-11-69, Cl. 260-438.5
King, Lewis E.: *See—*
Annunziata, Eugene J., James, Robert S., King, Lewis E., and Pierce, Edwin B. 3,432,813.
King, Paul A.: *See—*
Tinsley, Samuel W., and King, Paul A. 3,432,342.
King, Willam M.: *See—*
Cannon, Charles R., Cantor, Paul A., and King, Willam M. 3,432,584.
Kingsbury, L C James, Marker, Hannes, and Adam, Gunter, to General Electric Company. Toe iron for safety ski bindings Turntable braking mechanism for recording apparatus. 3,432,168, 03-11-69, Cl. 274-001.
Kinnan, Frank R., to Henkels and McCoy, Inc.Articulated vehicle. 3,431,741, 03-11-69, Cl. 061-072.6
Kinnavy, James W., to Continental Can Company, Inc.Method of forming coated friction closures. 3,431,877, 03-11-69, Cl. 113-121.
Kirkland, Claude James: *See—*
Herrlinger, Richard, Kirkland, Claude James, and Ciesielski, Leo Frank 3,432,402.
Klebe, Johann F.: *See—*
Finkbeiner, Herman L., and Klebe, Johann F. 3,432,488.
Kleiss, Louis D., to Phillips Petroleum Company. Polarographic analyzer. 3,432,418, 03-11-69, Cl. 204-195.
Klepac, Robert J.Beach cabana. 3,431,923, 03-11-69, Cl. 135-005.
Kliewer, Wesley P.Actuation device controlled by deformable key having end-to-end conformity. 3,432,017, 03-11-69, Cl. 194-004.
Knapp, William E.: *See—*
Bolkcom, Wilbur T., and Knapp, William E. 3,432,605.
Knapsack Aktiengesellschaft: *See—*
Kern, Winfried, and Heymer, Gero, 3,432,260.
Sennewald, Kurt, Erpenbach, Heinz, Vogt, Wilhelm, and Joest, Herbert, 3,432,544.
Knecht, Gerge W., to Murray Manufacturing Company. Magnetic trip latching system for circuit breakers. 3,432,781, 03-11-69, Cl. 335-172.
Knglsey, Jack D., and Prener, Jerome S., to General Electric Company. Coherent light source utilizing pentavalent manganese activated calcium chlorophosphate crystal. 3,432,769, 03-11-69, Cl. 331-094.5
Knicely, David R.: *See—*
Mark, Alexander H., and Knicely, David R. 3,431,713.
Kobayashi, Toshio: *See—*
Kawashima, Masao, Sakai, Masakatsu, and Kobayashi, Toshio 3,432,683.
Kocincin, Joseph J., to Esso Research and Engineering Company. Stabilized arcs in electric furnaces. 3,432,606, 03-11-69, Cl. 013-033.
Koenig, Harold R.: *See—*
Naydan, Theodore T., and Koenig, Harold R. 3,432,721.
Kohl, Douglas A., to Litton Systems, Inc.Data correlating device and process utilizing a reciprocating member. 3,432,749, 03-11-69, Cl. 324-140.
Kokubo, Ryo: *See—*
Abe, Kazuo, Kokubo, Ryo, Yamada, Yumizuru, Nagakura, Mizuhiko, and Shima, Koji 3,432,274.
Kokusai Denshin Denwa Kabushiki Kaisha: *See—*
Oshima, Shintaro, and Kamibayashi, Tetsusaburo, 3,432,681.
Kolx, Darrel D., to Procter & Gamble Company, The. Catamenial tampon. 3,431,910, 03-11-69, Cl. 128-285.
Komatsu, Kouei: *See—*
Okuya, Eitaro, Sakaguchi, Adio, Komatsu, Kouei, Kikuchi, Tatsuhiko, Yasunaga, Hidetoshi, and Anduoda, Kenichi 3,432,515.
Ueda, Kenichi, Yasunaga, Hidetoshi, and Komatsu, Kouei 3,432,517.
Komatsu, Makoto: *See—*
Igarashi, Yukio, Komatsu, Makoto, Fujiyama, Susumu, and Okamoto, Kazuo 3,432,556.
Konita, Takeshi: *See—*
Kijima, Shizumasa, and Konita, Takeshi 3,432,525.
Kono, Yuichi, Matsumoto, Shigeru, and Yoshikawa, Masaru, to Fuji Shashin Film Kabushiki Kaisha. Apparatus for producing hydroquinone. 3,432,273, 03-11-69, Cl. 023-263.
Konus-Kessel Gesellschaft fur Warmetechnikm.b.H. & Co. K. G.: *See—*
Sander, Wolfgang, 3,432,247.
Kopaska, Arnold F.Hydraulic coupler. 3,431,942, 03-11-69, Cl. 137-614.05
Koppers Company, Inc.: *See—*
Tucker, Linwood G., 3,432,400.
Korkowski, Vincent J.: *See—*
Lundberg, Charles W., Hewitt, Fred G., James, Raymond H., and Korkowski, Vincent J. 3,432,818.
Korkowski, Vincent J., Hewitt, Fred G., and James, Raymond H., to Sperry Rand Corporation. Radiation hardened recording system. 3,432,819, 03-11-69, Cl. 340-174.
Korner, Klaus: *See—*
Heidrich, Walter, and Korner, Klaus 3,432,580.
Kosanke, Kurt M.: *See—*
Fleisher, Harold, Kosanke, Kurt M., Kulcke, Werner W., and Max, Erhard 3,432,222.
Kosmos, Peter: *See—*
Feagin, Roy C., Dahowski, Edward L., and Kosmos, Peter 3,432,312.
Koucky, Frantisek: *See—*
Koucky, Josef, and Koucky, Frantisek 3,431,819.
Koucky, Josef, and Koucky, Frantisek, to Zavody Kans Svermy. Firing mechanism for firearms. 3,431,819, 03-11-69, Cl. 089-145.
Kouwenhoven, Herman W., and Douwes, Cornelis Th., to Shell Oil Company. Process for the hydrogenation of unsaturated hydrocarbons. 3,432,565, 03-11-69, Cl. 260-667.
Kovac, Frederick J.: *See—*
Kersker, Theodore M., and Kovac, Frederick J. 3,431,962.
Kovacs, /Desidrio, to Bracco, Fulvio. Hinge device. 3,431,592, 03-11-69, Cl. 016-178.
Krafft, Werner: *See—*
von Rintelen, Harald, Liebe, Werner, and Krafft, Werner 3,432,298.
Kraft, Paul. Umbrellas. 3,431,925, 03-11-69, Cl. 135-025.
Krajco, Wilfred J.Concrete form structure. 3,432,137, 03-11-69, Cl. 249-045.
Krakinowski, Morris, to International Business Machines Corporation. Record reading device. 3,432,627, 03-11-69, Cl. 200-046.
Kramer, David N.: *See—*
Guilbault, George G., and Kramer, David N. 3,432,269.
Kraus, Donald Edward. Rotary driven hairbrush. 3,431,571, 03-11-69, Cl. 015-023.
Kraushaar, Alfred: *See—*
Frank, Albert, Kraushaar, Alfred, Margreiter, Hans, and Schunk, Roland 3,432,490.
Krebs, Peter D.: *See—*
Bold, Eugene R., Krebs, Peter D., and McKeon, Patrick E. 3,431,642.
Krikke, Minne: *See—*
Dijken, Reinder Hendrik, Jager, Jolle, and Krikke, Minne 3,432,701.
Krimmel, Carl Peter, to Searle, G. D., & Co.Pyridinecarboxylic acid esters of pyridinedimethanols. 3,432,510, 03-11-69, Cl. 260-295.5
Kritzer, Richar W., to Peerless of America, Inc.Heat exchangers. 3,431,973, 03-11-69, Cl. 165-172.
Krohm, Fred A., and Rieckenberg, George W., to Anderson Company, The. Windshield wiper arm and blade assembly. 3,431,579, 03-11-69, Cl. 015-250.32
Krolik, Paul P., and Perlman, Theodore H.Vibratory devices for cleaning dentures or the like. 3,432,148, 03-11-69, Cl. 259-072.
Kroll, Wolfram R.Electrode catalyst for electrochemical cell prepared with organoaluminum reducing agent. 3,432,362, 03-11-69, Cl. 136-120.
Krusinski, Joseph, to Triax Company, The. Transfer means for a load carrier in a storage system. 3,432,046, 03-11-69, Cl. 214-016.4
Krusko, Evelyn H.Uncompressed tampon and applicator. 3,431,909, 03-11-69, Cl. 128-285.
Kubalek, Florence J.,: *See—*
Kubalek, Milo V., deceased, (by Kubalek, Florence J., executrix) 3,431,648.
Kubalek, Milo V., deceased, (by Kubalek, Florence J., executrix). Method of making dental impressions. 3,431,648, 03-11-69, Cl. 032-017.
Kubota Iron and Machinery Works, Ltd.: *See—*
Kawai, Teiichi, 3,432,175.
Kudlaty, Walter J., to Marvel Engineering Company. Pressure differential indicator forfilters. 3,431,883, 03-11-69, Cl. 116-070.
Kuhr, Wayne Kenneth, Slakis, Albin Joseph, Hughes, Richard Lawrence, and Neilson, Anne Josephine, to Abbott Laboratories. Process for improving taste in fruit products by adding cyclamic acid. 3,432,305, 03-11-69, Cl. 099-028.
Kulb, Wilhelm: *See—*
Schenk, Horst, Gunther, Karl-Georg, and Kulb, Wilhelm 3,431,625.
Kulcke, Werner W.: *See—*
Fleisher, Harold, Kosanke, Kurt M., Kulcke, Werner W., and Max, Erhard 3,432,222.
Kull, Albert R., and Rettig, Peter P., to Ajax Manufacturing Company, The. Stock feed mechanism for forging machines and the like. 3,431,768, 03-11-69, Cl. 072-419.
Kumiai Chemical Industry Co., Ldt.: *See—*
Okuda, Itsuki, Yoshinaga, Eiichi, and Tsuboi, Takeo, 3,432,601.
Kunz, Guenter Otto, to Aeroquip Corporation. Clamp-type hose fitting. 3,432,190, 03-11-69, Cl. 285-253.
Kurth, Warren: *See—*
Kidera, Edward H., Kurth, Warren, and Whittingham, David J. 3,431,759.
Kurtz, Abraham N., and Hamil, Henry F., to Union Carbide Corporation. Isomerization of acetylenic compounds to conjugated diolefins. 3,432,498, 03-11-69, Cl. 260-247.
Kurtz, Manfred, and Bangert, Lothar, to Hermann Wangner Kommanditgesellschaft. Endless metallic screen for the screen portion of a paper machine. 3,432,126, 03-11-69, Cl. 245-010.
Kuwabara, Michichika, Nawata, Kiyoshi, Tsunawaki, Kiyokazu, and Sakakibara, Seizaburo, to Teijin Limited. Synthetic linear copolyterephthalamides and shaped articles made therefrom. 3,432,476, 03-11-69, Cl. 260-078.
Kwan, Fred K. C., Ross, Richard C., and Svoboda, Glenn R., to Freeman Chemical Corporation. Thickened polymerizable unsaturated polyester resin compositions and fibrous substances impregnated therewith. 3,432,458, 03-11-69, Cl. 260-033.4
La Pierre, Albert C.Portable diving platform. 3,432,003, 03-11-69, Cl. 182-107.
La Porta, John J., to Spedcor Electronics, Inc.Sweep control system for an oscilloscope or the like. 3,432,762, 03-11-69, Cl. 328-179.
La Porta, John J., to Spedcor Electronics, Inc.Non-ambiguous switch system. 3,432,848, 03-11-69, Cl. 340-357.
La Russa, Joseph: *See—*
Shenker, Marvin, La Russa, Joseph, and Nershi, George Thomas 3,432,219.
La Tendresse, Philip E., to Pettibone Mulliken Corporation. Reaching loader with guided lift cylinders. 3,432,050, 03-11-69, Cl. 214-139.
Labana, Santokh S., to Xerox Corporation. Electrophoretic imaging process using photosensitive xanthenonium salts. 3,432,415, 03-11-69, Cl. 204-181.
Labet, Pierre, to Societe Anonyme de Vehicules Industriels et d'Equipment Mecaniques Saviem. Gear selector and control device for transmission mechanisms. 3,431,791, 03-11-69, Cl. 074-473.
Lacombe, Henry Marie Andre Rene: *See—*
Hardy, Jean Marie, and Lacombe, Henry Marie Andre Rene 3,432,100.
Lafferty, James M., to General Electric Company. High current vacuum gap devices with slotted electrode vanes. 3,432,713, 03-11-69, Cl. 313-231.
Lallement, Gerard: *See—*
Oudet, Claude, and Lallement, Gerard 3,431,808.
Lamb-Grays Harbor Co., Inc.: *See—*
Dale, Ingvald, and Lewis, Charles B., 3,432,161.
Lamprecht, Adolf K.G.: *See—*
Feldhege, Heinrich, 3,431,566.

Lamy, Jacques Edouard, to Societe d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara, S.E.G.A.N.S.Submarine conduit and method of laying the same. 3,431,740, 03-11-69, Cl. 061-072.4

Lamy, Jacques E., and Gris, Pierre A., to Societe Anonyme Francaise de Constructions Industrielles d'Isolation Isolfeu and Societe d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara. Storage tanks for flow temperature liquids, especially for liquefied gases. 3,432,062, 03-11-69, Cl. 220-015.

Land, Cecil E., and Schueler, Donald G., to United States of America, Atomic Energy Commission. Emitter-follower oscillator employing ferroelectric ceramic feedback network. 3,432,773, 03-11-69, Cl. 331-116.

Landis Tool Company: *See—*
Flohr, William P., Jr., 3,431,681.

Landow, Harold: *See—*
Eccles, Fred J., and Landow, Harold 3,432,847.

Landrum, Ralph A., Jr., to Pan American Petroleum Corporation. Correlating system. 3,432,649, 03-11-69, Cl. 235-181.

Lane, George A.: *See—*
Bash, Charles W., and Lane, George A. 3,432,370.

Lang, Josef Johann. Steerable, self-propelled vibratory rolling machine. 3,431,832, 03-11-69, Cl. 094-050.

Langer, Horst G., to Dow Chemical Company, The. Reducing acid aqueous mediums containing bivalent tin chelates. 3,432,438, 03-11-69, Cl. 252-188.

Langrod, Kasimir, and Jones, Robert L., to North American Rockwell Corporation. Impregnation of graphite with refractory carbides. 3,432,336, 03-11-69, Cl. 117-118.

Lankford, William L., Jr.: *See—*
Jennings, Clifton C., and Lankford, William L., Jr. 3,431,780.

Laporte Titanium Limited: *See—*
Wigginton, Raymond J., 3,432,323.

Larson, Frank William Douglas Landor, to St. Regis-Consolidated Packaging Limited. Control circuit for sequentially triggering plurality of silicon controlled rectifiers upon sequential actuations of a switch. 3,432,678, 03-11-69, Cl. 307-038.

Larsson, Ivar F., to Burroughs Corporation. Method for adjusting thin film resistors. 3,431,640, 03-11-69, Cl. 029-620.

Lassig, Wolfgang: *See—*
Saleck, Wilhelm, Lassig, Wolfgang, and Posse, Rolf-Fred 3,432,304.

Lathem Time Recorder Company: *See—*
Hooper, Harrison G., 3,431,845.

Lauen, James E.: *See—*
Lauen, Marguerite M., and Lauen, James E. 3,432,116.

Lauen, Marguerite M., and Lauen, James E.Spool construction having a snap-off end portion. 3,432,116, 03-11-69, Cl. 242-118.7

Lauler, Louis J.: *See—*
Thorson, Matthew T., and Lauler, Louis J. 3,432,744.

Lavine, Morris: *See—*
Davis, Glenn Gary, and Dahlin, Robert Walton, 3,431,916.

Lawrence Brothers, Inc.: *See—*
Foltz, Robert E., 3,431,585.

Lazy Eight (OO) Inc., The: *See—*
Hanmer, Richard Alan, 3,431,673.

Le Coz, Francois, Mombaxet, Rene, and Raynaud, Noel, to Commissariat a l'Energie Atomique. Device for assembling a nuclear fuel element support inside an annular sleeve. 3,431,618, 03-11-69, Cl. 029-200.

Le Flem, Roger, to Martin-Mailet & Cie. Electromagnetic pump. 3,431,859, 03-11-69, Cl. 103-053.

Le Hardy, Clement D., to Sonoco Products Company. Expansible chuck for tubular core. 3,432,112, 03-11-69, Cl. 242-068.2

Le Nickel, Societe Anonyme: *See—*
Cuenot, Charles, 3,432,410.

Leatherwood, James M.Rangefinder and automatic reticle setter. 3,431,652, 03-11-69, Cl. 033-050.

Lee, John V., and Love, Leon O., to United States of America, Atomic Energy Commission. Calutron ion source with magnetic field inducing coil within arc chamber. 3,432,709, 03-11-69, Cl. 313-063.

Lee, Nathan Dean, and Schwartz, Nelson Norman, to FMC Corporation. Regeneration of anthraquinone working solution used in the production of hydrogen peroxide. 3,432,267, 03-11-69, Cl. 023-207.

Lee, Robert E.Safety snap-on button baby's diaper. 3,431,908, 03-11-69, Cl. 128-284.

Leesona Corporation: *See—*
Bell, Charles C., 3,431,719.

Lefevre, Lloyd E.: *See—*
Breidt, Peter, Jr., and Lefevre, Lloyd E. 3,432,588.

Lefranc, Marcel, to North American Philips Company, Inc.Gas-expansion refrigerator. 3,431,750, 03-11-69, Cl. 062-514.

Leger, John E., to Union Carbide Corporation. Modular creel apparatus including strand guides. 3,432,117, 03-11-69, Cl. 242-131.

Lem, Donald J., and Spruth, Wilhelm G., to International Business Machines Corporation. Switching logic for a two-dimensional memory. 3,432,815, 03-11-69, Cl. 340-173.

Lemelson, Jerome H., to Dow Chemical Company, The. Method for coating pipe. 3,432,326, 03-11-69, Cl. 117-018.

Lemon, Stanley G., Eiseman, William F., and Donoho, Charles M., to Chesapeake Instrument Corporation. Velocity sensing apparatus. 3,431,778, 03-11-69, Cl. 073-181.

Lenk, Peter: *See—*
Schiller, Siegfried, Lenk, Peter, and Forster, Harry 3,432,335.

Leonard, Edward Oliver: *See—*
Chiddix, Max Eugene, and Leonard, Edward Oliver 3,432,494.
Chiddix, Max Eugene, and Leonard, Edward Oliver 3,432,495.

Leslie, Donald J., to Columbia Broadcasting System, Inc.Complementary harmonic system for flute type organs. 3,432,608, 03-11-69, Cl. 084-001.21

Lestina, Gregory J., and Reckhow, Warren A., to Eastman Kodak Company. 6-Hydroxy chromans used as stabilizing agents in a color photographic element. 3,432,300, 03-11-69, Cl. 096-074.

Letraset Limited: *See—*
Reed, Kenneth James, and Lythgoe, Alan Lennox, 3,432,376.

Levin, Gilbert V., to Du Pont de Nemours, E. I., and Company. Process for extraction and concentration of hydrophilic substances. 3,432,487, 03-11-69, Cl. 260-211.5

Levine, Isaac J., and Ingberman, Arthur K., to Union Carbide Corporation. Fibers and fabrics coated with an alkyl phosphite- polyolefin wax adduct and process therefor. 3,432,343, 03-11-69, Cl. 117-139.5

Levy, Winifred Jane, Newport, John Prescott, and Reynolds, Reginald John William, to Imperial Chemical Industries Limited. Clarification of aqueous systems. 3,432,430, 03-11-69, Cl. 210-051.

Lewis, Charles B.: *See—*
Dale, Ingvald, and Lewis, Charles B. 3,432,161.

Lewis, Kenneth D., to Perf-A-Roller Company, Inc.Wallpaper removing roller. 3,431,616, 03-11-69, Cl. 029-121.

Lewis, Thomas W., II: *See—*
Henry, George R., and Lewis, Thomas W., II 3,432,315.

Lewis, Wallace J.: *See—*
Nelson, Jerome W., and Lewis, Wallace J. 3,432,638.

Licis, Oswalds F., to Philip Morris Incorporated. Treatment of reconstituted tobacco sheet. 3,431,915, 03-11-69, Cl. 131-140.

Licitis, Gunars: *See—*
Glass, Marvin I., and Licitis, Gunars 3,432,230.

Liebe, Werner: *See—*
von Rintelen, Harald, Liebe, Werner, and Krafft, Werner 3,432,298.

Liederman, David: *See—*
Glass, John R., and Liederman, David 3,432,403.

Lindberg, Arthur F., to Teletype Corporation. Housing for light sensitive devices comprising light conducting tubes in transparent plastic support block. 3,432,676, 03-11-69, Cl. 250-239.

Linden, Gustave B., to Aerojet-General Corporation. Nitro-substituted dioxolanes and their method of preparation. 3,432,524, 03-11-69, Cl. 260-340.9

Lindenmann, Adolf: *See—*
Jucker, Ernst, Lindenmann, Adolf, Schenker, Erhard, and Gadient, Fulvio 3,432,491.

Lindholm, Ingemar: *See—*
von Krusenstierna, Otto, Lindholm, Ingemar, and Malmberg, Gunnar 3,432,353.

Lindsey, Joe P., to Phillips Petroleum Company. Signal interpretation. 3,432,807, 03-11-69, Cl. 340-015.5

Lindtveit, Herbert, to Harvey, Sid, Inc.Oil burner motor adaptor. 3,432,705, 03-11-69, Cl. 310-091.

Linfield, Warner M.: *See—*
Guttmann, Andrew T., Jungermann, Eric, and Linfield, Warner M. 3,432,547.

Lipscomb, Willis L.Modular die. 3,431,601, 03-11-69, Cl. 018-044.

Listner, Gregory J., to Johnson & Johnson. Stabilizable poly-α-olefin intermediates. 3,432,459, 03-11-69, Cl. 260-033.8

Littler, Francis W.: *See—*
Jakaitis, Eugene A., Littler, Francis W., and Robiendano, Emilio A. 3,432,319.

Litton Business Systems, Inc.: *See—*
Hare, Lloyd H., 3,432,019.
Morelli, Joseph L., 3,432,021.

Llewelyn, Geirionydd, and Ubank, Raymond George, to Bristol Siddeley Engines Limited. Refractory metal articles. 3,432,280, 03-11-69, Cl. 029-197.

Lloyd Dynamowerke G.m.b.H.: *See—*
Beyersdorf, Hartwig, and Bering, Gerhard, 3,432,706.

Lock, Joseph H., to Mead Corporation, The. Panel interlocking arrangement. 3,432,085, 03-11-69, Cl. 229-035.

Lockheed Aircraft Corporation: *See—*
Stucki, Frank F., 3,432,435.

Lohr, Alfred, Hemmann, Helmut, and Tropp, Karl, to Burger Eisenwerke Aktiengesellschaft. Cooking pan suitable for the preparation of dietetic and nondietetic foods. 3,432,642, 03-11-69, Cl. 219-439.

Lombard Corporation: *See—*
Lombard, Daniel L., 3,431,765.

Lombard, Daniel L., to Lombard Corporation. Hydraulic extrusion press. 3,431,765, 03-11-69, Cl. 072-255.

Lombardi, Frank G., to Union Carbide Corporation. Process for forming nonfoamed polyurethane elastomers using metal diorgano dithiocarbamates as latent curing catalysts. 3,432,474, 03-11-69, Cl. 260-077.5

Long, Ray S., and Tveter, Elmer C., to Dow Chemical Company, The. Hydrochlorination process for recovery of metal values. 3,432,255, 03-11-69, Cl. 023-016.

Lorenzen, Heinz-Christen: *See—*
Wahle, Gunter, and Lorenzen, Heinz-Christen 3,431,827.

Loria, Anthony, to Eastman Kodak Company. 4-Acyloxy-5-pyrazolones. 3,432,521, 03-11-69, Cl. 260-310.

Losert, Gerhard K.: *See—*
Ehner, William J., and Losert, Gerhard K. 3,431,720.

Lott, Jerry L.: *See—*
Hashemi, Hadi T., and Lott, Jerry L. 3,431,747.

Lotz, Horst K., to Messer Griesheim G.m.b.H.Torch control. 3,432,366, 03-11-69, Cl. 148-009.5

Loughridge, Raymond H., and Trybus, Conrad, to Goodyear Aerospace Corporation. High speed mechanical variable amplitude nutating mechanism. 3,432,218, 03-11-69, Cl. 350-006.

Louzos, Demetrious V.: *See—*
Davee, Robert L., and Louzos, Demetrious V. 3,432,351.

Love, Leon O.: *See—*
Lee, John V., and Love, Leon O. 3,432,709.

Love, Robert G., to Halliburton Company. Temperature compensating system for density meters. 3,431,785, 03-11-69, Cl. 073-434.

Lovelace, Byron K.: *See—*
Granberry, Doyle S., McCalip, Robert L., and Lovelace, Byron K. 3,431,636.

Loveless, Frederick C.: *See—*
Miller, Robert, Farber, Milton, and Loveless, Frederick C. 3,432,250.

Lovingham, Joseph J., and Soesong, Henry J., to Thiokol Chemical Corporation. Control for bipropellants in rocket engine. 3,431,732, 03-11-69, Cl. 060-247.

LTV Ling Altec, Inc.: *See—*
Cohen, Abraham B., 3,432,002.

Luber, Fredrick G.: *See—*
Peters, Robert W., and Luber, Fredrick G. 3,432,707.

Lubet-Moncla, Xavier Lucien, to Girardiere, Gustave. Adhesive strips for dressings or therapeutic treatments. 3,431,907, 03-11-69, Cl. 128-156.

Lucas, Horst, to Gebr. Eickhoff, Maxchinenfabrik und Eisengiesserei m.b.H.Apparatus for turning a box on a conveyor. 3,432,023, 03-11-69, Cl. 198-033.

Lucas, Joseph, (Industries) Limited: *See—*
Bottoms, Harry Simister, 3,431,862.

Lucie, Albert, to Wickman Lang Limited. Screw-cutting lathes and other screw-cutting machines. 3,431,800, 03-11-69, Cl. 082-005.

Lucien, Rene, to Societe Anonyme, Messier. Under-carriage with three wheels arranged on the same shaft. 3,432,124, 03-11-69, Cl. 244-103.

Luckenbach, Roy L., to Burlington Industries, Inc.Process and apparatus for finishing of hose. 3,431,656, 03-11-69, Cl. 034-012.

Ludeman, Edwin H., to Andrew Industries Incorporated. Separable coupling. 3,432,191, 03-11-69, Cl. 285-312.

Ludford, Peter, to Humber Limited. Ventilating valves for vehicles. 3,432,142, 03-11-69, Cl. 251-212.

Ludwick, William R.: *See—*
Duvall, William C., Ludwick, William R., and Brion, Albert E., Jr. 3,432,609.

Ludwig, A., & Co., Inc.: *See—*
Betso, Stephen, 3,431,591.

Ludwig, Carl, to McDowell Wellman Engineering Company. Bulk material handling apparatus with rotary digging device. 3,432,024, 03-11-69, Cl. 198-036.

Ludwig, Carl, to McDowell-Wellman Engineering Company. Swell control for bucket ladder. 3,432,043, 03-11-69, Cl. 214-014.

Lueddeke, Louis: *See—*
Lueddeke, Raymond Paul, and Lueddeke, Louis 3,431,598.

Lueddeke, Raymond Paul, and Lueddeke, Louis, to Eastern Target Company, Inc.Machine organization for manufacturing target discs. 3,431,598, 03-11-69, Cl. 018-005.

Luft, Genakh Maxovich: *See—*
Svilpe, Karl Yanovich, Luft, Genakh Maxovich, Betiyan, Andris Alfredovich, Milyaev, Viktor Vasilievich, Gurevich, Leib Borukhovich, and Seleznev, Ivan Vasilievich 3,432,790.

Luginbuhl, David E.: *See—*
Bullard, Calvin P., and Luginbuhl, David E. 3,431,600.

Luhe, Carl A.Insulated individual lunch case. 3,432,025, 03-11-69, Cl. 206-004.

Luke, Louzelle Albert, to Sperry Rand Corporation. Search memory match logic detector. 3,432,686, 03-11-69, Cl. 307-231.

Lundberg, Charles W., Hewitt, Fred G., James, Raymond H., and Korkowski, Vincent J., to Sperry Rand Corporation. Radiation hardened recording system. 3,432,818, 03-11-69, Cl. 340-174.

Lutz, Eugen, KG, Maschinenfabrik: *See—*
Bergler, Otto, 3,431,686.

Lynch, Charles: *See—*
Mazdiyasni, Khodabakhsh S., Lynch, Charles, and Smith, Jonathan S., II 3,432,314.

Lynch, Francis K.: *See—*
Mooney, Walter G., Dutton, Lloyd K., and Lynch, Francis K. 3,432,187.

Lynn, Lawrence, and Anderson, Roy M., to Riviana Foods Inc.Method for preparing precooked rice flour. 3,432,309, 03-11-69, Cl. 099-093.

Lynn, Richard G., Sr., Machukla, James R., and Hill, John L., to Control Data Corporation. Pumping system with inertia stabilization. 3,431,858, 03-11-69, Cl. 103-035.

Lyth, William W., to Eaton Yale & Towne Inc.Pneumatic cycle rationing control. 3,432,004, 03-11-69, Cl. 184-006.

Lythgoe, Alan Lennox: *See—*
Reed, Kenneth James, and Lythgoe, Alan Lennox 3,432,376.

M&T Chemical Inc.: *See—*
Passal, Frank, 3,432,509.

M&T Chemicals Inc.: *See—*
Natoli, Joseph G., 3,432,531.
Remes, Nathaniel L., and Ventura, John J., 3,432,534.

Mac Zura, George: *See—*
Gitzen, Walter H., and Mac Zura, George 3,432,313.

Machine-O-Matic, Inc.: *See—*
Bessonny, Al I., and Bowen, Howard, 3,432,672.

Machukla, James R.: *See—*
Lynn, Richard G., Sr., Machukla, James R., and Hill, John L. 3,431,858.

MacNab, Adrian J., and Treseder, Richard S., to Shell Oil Company. Corrosion prevention. 3,432,254, 03-11-69, Cl. 021-002.5

Mader, Lyle W., to Control Data Corporation. Line tracking reading machine having means to positionally normalize the character-video signals. 3,432,673, 03-11-69, Cl. 250-219.

Maeda, Hisao. Matrix memory device with conductors of which some have magnetic thin film coating. 3,432,825, 03-11-69, Cl. 340-174.

Magnavox Company, The: *See—*
Wilson, Loren R., 3,431,833.

Mahnken, Henry, to Millmaster Onyx Corporation. Process for producing amine oxides. 3,432,555, 03-11-69, Cl. 260-583.

Maier, Ludwig, to Monsanto Company. Process for preparing quaternary phosphonium halides. 3,432,559, 03-11-69, Cl. 260-606.5

Mainers, Artez F.: *See—*
Keathley, Maurice F., and Mainers, Artez F. 3,431,834.

Maissel, Leon I.: *See—*
Davidse, Pieter D., and Maissel, Leon I. 3,432,417.

Malec, Robert E., and Betty, Roy J., Jr., to Armour Industrial Chemical Company. Corrosion inhibitor composition and method. 3,432,527, 03-11-69, Cl. 252-392.

Mallinger, Morton A.: *See—*
East, Clarence Robert, and Mallinger, Morton A. 3,431,977.

Malmberg, Gunnar: *See—*
von Krusenstierna, Otto, Lindholm, Ingemar, and Malmberg, Gunnar 3,432,353.

Malott, Raymond A., to Shell Oil Company. Drill collars. 3,431,950, 03-11-69, Cl. 138-177.

Malyk, Vladimir Avksentievich: *See—*
Kazantsev, Boris Afanasievich, Sitro, Igor Nikolaevich, Malyk, Vladimir Avksentievich, and Elyashev, Isaak Grigorievich 3,431,855.

Mandelik, Bernard G.: *See—*
Bostwick, Louis E., and Mandelik, Bernard G. 3,432,264.

Mandell, Harry Creston, Jr., and Roth, Edwin S., to Pennsalt Chemicals Corporation. Polymer coating removal process. 3,432,347, 03-11-69, Cl. 134-036.

Maruntz Company, Inc.: *See—*
Marantz, Saul B., 3,431,884.

Marantz, Saul B., to Marantz Company, Inc.Tuning control for radio receivers. 3,431,884, 03-11-69, Cl. 116-124.1

Marble, Chester B.: *See—*
Albinger, Harry, Jr., and Marble, Chester B. 3,432,697.

Marchiorello, Giovanni. Process for constructing high-insulation panels, particularly sandwich panels for prefabricated freezers, and panels produced by this process. 3,432,196, 03-11-69, Cl. 287-189.36

Marconi Company Limited, The: *See—*
Hunter, Ian, and Fitzgerald, William Patrick, 3,432,737.

Marconi, Walter, Mzasci, Alessandro, de Malde', Marcello, and Cucinella, Salvatore, to Snam Progetti S.p.A.Process for the stereospecific polymerization of isoprene. 3,432,516, 03-11-69, Cl. 260-094.3

Marcus, Henry J.: *See—*
Gold, Marvin H., and Marcus, Henry J. 3,432,540.

Margreiter, Hans: *See—*
Frank, Albert, Kraushaar, Alfred, Margreiter, Hans, and Schunk, Roland 3,432,490.

Mark, Alexander H., and Knicely, David R., to Massey-Ferguson Inc.Crop harvesting and dewatering machine. 3,431,713, 03-11-69, Cl. 056-023.

Marker, Hannes: *See—*
Kingsbury, L C James, Marker, Hannes, and Adam, Gunter 3,432,168.

Markwardt, Fritz, Schafer, Gerhard, Topfer, Horst, and Walsmann, Peter, to VEB Arzneimittelwerk Dresden. Method for producing highly pure hirudine. 3,432,596, 03-11-69, Cl. 424-095.

Marquardt, J., & J., Firma: *See—*
Schenke, Werner, 3,432,632.

Marsh, Max F.: *See—*
Keith, Guy E., Turner, Calvin L., and Marsh, Max F. 3,431,660.

Marshall, Burton H.Magazine counting and destroying apparatus. 3,431,804, 03-11-69, Cl. 083-103.

Marshall, Burton H., to Canyon Research Corporation. Magazine counting and destroying apparatus. 3,431,805, 03-11-69, Cl. 083-103.

Marshall, John Donald: *See—*
Thibault, Harrison N., and Toaches, Anthony J., 3,431,951.

Martens, Alexander E., to Bausch & Lomb Incorporated. Analog measuring apparatus. 3,431,760, 03-11-69, Cl. 072-009.

Martin, Alfred W., Walker, James W., McNair, William T., Jr., and Hood, Coy H., to Celanese Corporation of America. Method for preparation of alkanediols. 3,432,560, 03-11-69, Cl. 260-635.

Martin, Carl E., to Clare-Pendar Co.Shock resistant multiple switch assembly. 3,432,624, 03-11-69, Cl. 200-005.

Martin, Hipolito Andres. Rotary variable-discharge pump with radially displaceable vanes and reversible direction of drive. 3,431,861, 03-11-69, Cl. 103-120.

Martin, James Alexander: *See—*
Giles, Cyril George, Martin, James Alexander, and Spindlow, John Richard 3,431,996.

Martin, John J., to Pullman Incorporated. Container storage stilt means. 3,432,131, 03-11-69, Cl. 248-188.8

Martin, Jon W., to Shell Oil Company. Conjugated diene polymer compositions stabilized with certain hydroxylamines. 3,432,578, 03-11-69, Cl. 260-880.

Martin-Mailet & Cie: *See—*
Le Flem, Roger, 3,431,859.

Martin-Marietta Corporation: *See—*
Kelly, Thomas M., Peppler, Richard B., and Ray, James A., 3,432,316.
Kelly, Thomas M., Mielenz, Richard C., and Peppler, Richard B., 3,432,317.
Trippe, Walter D., 3,432,757.
Wheaton, Harold L., 3,432,294.

Martin, Robert L., to Eaton Yale & Towne Inc.Vehicle safety mechanism. 3,431,998, 03-11-69, Cl. 180-112.

Marvel Engineering Company: *See—*
Kudlaty, Walter J., 3,431,883.

Marzocchi, Alfred, and Waugh, John A., to Owen-Corning Fiberglas Corporation. Method for the impregnation of fibrous glass. 3,432,332, 03-11-69, Cl. 117-062.

Mashimo, Tomoyuki: *See—*
Sagara, Hideo, Iwasaki, Yasuhiro, Ohe, Tsutomu, and Mashimo, Tomoyuki 3,431,630.

Maslow, Louis. Caster brake assembly. 3,431,584, 03-11-69, Cl. 016-035.

Massey-Ferguson Inc.: *See—*
Mark, Alexander H., and Knicely, David R., 3,431,713.

Massey, Gail A., to Sylvania Electric Products Inc.Method and apparatus for producing light having a single frequency. 3,432,770, 03-11-69, Cl. 331-094.5

Mast, Harm: *See—*
Ongkiehong, Leo, and Mast, Harm 3,432,000.

Mathieu, Pierre. Apparatus for washing and scrubbing paint rollers. 3,431,574, 03-11-69, Cl. 015-104.92

Mathis, Pierre, and Demol, Pierre, to Solvay et Cie. Articles coated with vinylidene chloride containing terpolymers. 3,432,340, 03-11-69, Cl. 117-132.

Matsumoto, Shigeru: *See—*
Kono, Yuichi, Matsumoto, Shigeru, and Yoshikawa, Masaru 3,432,273.

Matsumoto, Shuzo, to Shimano Kogyo Kabushiki Kaisha. Rear hub with built-in three stage speed change mechanism for a bicycle. 3,432,013, 03-11-69, Cl. 192-006.

Mattsson, Malte Kurt Einar, to Aktiebolaget Svenska Flaktfabriken. Method for increasing the permissible flow velocity of a liquid flowing on a metal surface. 3,431,927, 03-11-69, Cl. 137-001.

Max, Erhard: *See—*
Harris, Thomas J., and Max, Erhard 3,432,221.
Fleisher, Harold, Kosanke, Kurt M., Kulcke, Werner W., and Max, Erhard 3,432,222.

May, Clayton A., to Shell Oil Company. Polyhydroxy-containing unsaturated polyesters and their preparation. 3,432,478, 03-11-69, Cl. 260-078.5

May, Patrick L., and Ralston, William K., to International Harvester Company. Self-stripping wire twister hook for wire balers. 3,431,837, 03-11-69, Cl. 100-031.

Mayer, George, and Greenwood, Roger Kearsley, to International Nickel Company, Inc., The. Low alloy steel particularly suitable for cold forging. 3,432,291, 03-11-69, Cl. 075-124.

Mayo, Kenneth E.: *See—*
Fitzgerald, Joseph J., and Mayo, Kenneth E. 3,432,386.

Mazdiyasni, Khodabakhsh S., Lynch, Charles, and Smith, Jonathan S., II, to United States of America, Air Force. Transparent zirconia composition and process for making same. 3,432,314, 03-11-69, Cl. 106-057.

Maziuk, John: *See—*
Bodkin, Ernest A., and Maziuk, John 3,432,425.

Mc Carty, Clyde W., to General Electric Company. Adjustable torsion member mechanism for torsion member clocks. 3,432,698, 03-11-69, Cl. 310-036.

Mc Creath, Michael King: *See—*
Davies, Trevor, East, Anthony Julian, and Mc Creath, Michael King 3,432,467.

McCabe, Earl A., Jr.: *See—*
Dean, Richard A., and McCabe, Earl A., Jr. 3,432,390.

McCalip, Robert L.: *See—*
Granberry, Doyle S., McCalip, Robert L., and Lovelace, Byron K. 3,431,636.

McCallister, Robert A., and Sinclair, Alan M., to Foster Wheeler Corporation. Ammonia production process. 3,432,265, 03-11-69, Cl. 023-197.

McClaflin, Gifford G.: *See—*
Miller, Donald B., McClaflin, Gifford G., and Sorenson, Wayne R. 3,432,513.

McCormick, James Benjamin, and Johnson, Leighton Clifford, to Miles Laboratories, Inc. Apparatus for applying liquid to slides. 3,431,886, 03-11-69, Cl. 118-010.

McDonald, William Hugh. Portable Woodruff keyway cutter. 3,431,821, 03-11-69, Cl. 090-012.

McDonnell Douglas Corporation: *See—*
Nail, Donald H., 3,432,436.

McDowell-Wellman Engineering Co.: *See—*
Ban, Thomas E., 3,431,684.

McDowell Wellman Engineering Company: *See—*
Ludwig, Carl, 3,432,024.

McDowell-Wellman Engineering Company: *See—*
Ludwig, Carl, 3,432,043.

McElroy, Howard J.: *See—*
Bautz, Frederick H., and McElroy, Howard J. 3,432,042.

McGill, Robert W., and Hardee, Walter D., to Meyer, Geo. J., Mfg. Co. Package assembly film folding collar. 3,431,831, 03-11-69, Cl. 093-082.

McHattie, Earl E.: *See—*
Muska, William A., Schacker, James C., and McHattie, Earl E. 3,432,793.

McKee, Arthur G., & Company: *See—*
Greaves, Melvin J., and Werner, Tage, 3,431,691
Greaves, Melvin J., Werner, Tage, and Greenwalt, Richard B., 3,432,287.

McKee, Lee C. Toboggan construction. 3,432,181, 03-11-69, Cl. 280-018.

McKelvey, John B., Benerito, Ruth R., and Berni, Ralph J., to United States of America, Agriculture. Method for producing resilient cotton fabrics through partial esterification. 3,432,252, 03-11-69, Cl. 008-120.

McKeon, Patrick E.: *See—*
Bold, Eugene R., Krebs, Peter D., and McKeon, Patrick E. 3,431,642.

McKillip, William J., and Throckmorton, Peter E., to Ashland Oil & Refining Company. Radiation resistant polyurethanes. 3,432,475, 03-11-69, Cl. 260-077.5

McKinnon, Neil Alexander, Bennett, Colin Earl Garnsworthy, Williams, Lloyd Stuart, and McTaggart, Frederick Kenneth, to Commonwealth Scientific and Industrial Research Organization. Plasma sintering. 3,432,296, 03-11-69, Cl. 075-214.

McMahon, Edward G., to Johns-Manville Corporation. Method of forming a laminate and winding same into a roll. 3,432,373, 03-11-69, Cl. 156-184.

McMahon, Emmett P., to Bell Aerospace Corporation. Magnetic core of tapered tube form for progressive magnetic switching. 3,432,833, 03-11-69, Cl. 340-174.

McMillan, William Joseph: *See—*
Musgrove, Ronald Obie, and McMillan, William Joseph 3,432,048.

McNair, William T., Jr.: *See—*
Martin, Alfred W., Walker, James W., McNair, William T., Jr., and Hood, Coy H. 3,432,560.

McNamara, William A., Jr.: *See—*
Sherman, Albert, and McNamara, William A., Jr. 3,432,824.

McNeil Laboratories, Inc.: *See—*
Ploatnieks, Janis, 3,432,523.

McTaggart, Frederick Kenneth: *See—*
McKinnon, Neil Alexander, Bennett, Colin Earl Garnsworthy, Williams, Lloyd Stuart, and McTaggart, Frederick Kenneth 3,432,296.

McWhorter, Wayne F.: *See—*
Shimp, David A., McWhorter, Wayne F., and Wolfe, Norman G. 3,432,440.

Mead Corporation, The: *See—*
Ebelhardt, David P., 3,432,202.
Forrer, Homer W., 3,432,073.
Gentry, Hermond G., 3,431,826.
Lock, Joseph H., 3,432,085.

Meck-Pick, Inc.: *See—*
Jones, Eddie M., Jr., 3,431,715.

Meehl, David W.: *See—*
Schreyer, Kenneth D., and Meehl, David W. 3,432,147.

Megel, Laurence D. Oil processor apparatus and method of separating oil mixture components. 3,432,426, 03-11-69, Cl. 208-187.

Meierbachtol, Mark J. Liquid fuel atomizing attachment for intake manifolds. 3,432,281, 03-11-69, Cl. 048-180.

Meisel, Fred W., Jr., to Scott Paper Company. Absorbent pad. 3,431,911, 03-11-69, Cl. 128-287.

Meisner, Herbert I. Fishing reel with drag means. 3,432,114, 03-11-69, Cl. 242-084.45

Melin, Ginette nee Poncet: *See—*
Bugnon, Maurice, and Melin, Ginette nee Poncet 3,431,913.

Melvin, William J.: *See—*
Hutchinson, William M., and Melvin, William J. 3,432,816.

Mendelsohn, Lewis I., and Curran, Robert E., to General Electric Company. Molded magnetic powdered metal. 3,432,279, 03-11-69, Cl. 029-192.

Merck & Co., Inc.: *See—*
Pollak, Peter I., and Tull, Roger J., 3,432,502.

Merkurium A.G.: *See—*
Neidhart, Alfred, 3,431,899.

Mertens, Johan J., to American Enka Corporation. Process for producing a crimped multifilament yarn. 3,431,716, 03-11-69, Cl. 057-034.

Messer Griesheim G.m.b.H.: *See—*
Lotz, Horst K., 3,432,366.
Witting, Ernst, 3,432,637.

Mesars. Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Uto, Yoshimitsu, Yamazaki, Taizo, and Shinkawa, Toshikazu, 3,431,949.

Metivier, Jean, and Sauli, Michel, to Rhone-Poulenc S.A. Certain 3-substituted-5-thiophosphorylmethyl-1,2, 4-oxadiazoles. 3,432,519, 03-11-69, Cl. 260-307.

Metschnabl, Andreas, and Burkhardt, Gottfried, to Diehl. Four-species calculating machine. 3,432,094, 03-11-69, Cl. 235-063.

Metzler, Fred I. Prevention of popcorn polymer in the manufacture of rubber latex. 3,432,563, 03-11-69, Cl. 260-666.5

Metzler, Ronald H.: *See—*
Solipasso, Victor M., 3,432,182.

Meyer, Geo. J., Mfg. Co.: *See—*
McGill, Robert W., and Hardee, Walter D., 3,431,831.

Meyer, Walter, and Bedo, Zoltan, to Albiswerk Zurich A.G. Overload and short-circuit protection for a D.C. voltage regulator. 3,432,726, 03-11-69, Cl. 317-031.

Meyers, Gilbert. Power system for high rise apartment buildings. 3,432,677, 03-11-69, Cl. 307-017.

Mezoff, John G.: *See—*
Olstowski, Franciszek, and Mezoff, John G. 3,431,970.

Miale, Joseph N., and Weisz, Paul B., to Mobil Oil Corporation. Upgrading of hydrocarbons in the presence of a mixed alumino-silicate and metal catalyst. 3,432,568, 03-11-69, Cl. 260-676.

Miceli, Joseph S. Electric safety razor. 3,431,643, 03-11-69, Cl. 030-042.

Michael, Anthony D., and Pratt, George C., to Glacier Metal Company Limited, The. Bearing materials and method of making same. 3,432,293, 03-11-69, Cl. 075-138.

Michael, Richard W., and Porter, Grady T., to Phillips Petroleum Company. SCR ring counter having switching means to selectively eliminate stage from counting sequence. 3,432,684, 03-11-69, Cl. 307-223.

Micro-Mega: *See—*
Garnier, Marcel, 3,432,194.

Midland-Ross Corporation: *See—*
Stuart, Guy E., Jr., and De Vine, Barry F., 3,431,678.

Mielenz, Richard C.: *See—*
Kelly, Thomas M., Mielenz, Richard C., and Peppler, Richard B. 3,432,317.

Mihara, Kazuhiko, Yamashiki, Takashi, and Takano, Mitsuo, to Asahi Kasei Kogyo Kabushiki Kaisha. Method for maintaining the transfer amount of solid particles in a continuous solid-liquid contact apparatus at a constant level and apparatus therefor. 3,432,429, 03-11-69, Cl. 210-033.

Mikels, Frederick C. Digging head for water collector pipe. 3,431,991, 03-11-69, Cl. 175-400.

Miklas, John. Event indicator. 3,431,885, 03-11-69, Cl. 116-135.

Miller, Charles P., to Univis Inc. Ultrasonic hinge sinking apparatus. 3,431,593, 03-11-69, Cl. 018-001.

Miller, Donald B., McClaflin, Gifford G., and Sorenson, Wayne R., to Continental Oil Company. Olefin polymerization process for producing highly isotactic polymers. 3,432,513, 03-11-69, Cl. 260-093.7

Miller, Edward W. Helicopter. 3,432,119, 03-11-69, Cl. 244-006.

Miller, Jack V., and Froelich, Ronald W. Fluorescent lamp circuit employing a cathode follower configuration. 3,432,723, 03-11-69, Cl. 315-094.

Miller, Raphael W., and Worst, Harold J. Method of assembling a billiard cue. 3,431,628, 03-11-69, Cl. 029-450.

Miller, Robert, Farber, Milton, and Loveless, Frederick C., to Uniroyal, Inc. Chemical process for treating polymers with acids. 3,432,250, 03-11-69, Cl. 008-029.

Miller, William N., to Bartelt Engineering Company, Inc. Machine for filling cartons. 3,431,703, 03-11-69, Cl. 053-381.

Millet, Jacques F.: *See—*
Fabre, Jean, and Millet, Jacques F. 3,432,693.

Millmaster Onyx Corporation: *See—*
Mahnken, Henry, 3,432,555.

Milne, Alistair: *See—*
Crawley, John, Saunders, Alan, Milne, Alistair, and Campbell, William Henry 3,431,825.

Milyaev, Viktor Vasilievich: *See—*
Svilpe, Karl Yanovich, Luft, Genakh Maxovich, Betiyan, Andris Alfredovich, Milyaev, Viktor Vasilievich, Gurevich, Leib Borukhovich, and Seleznev, Ivan Vasilievich 3,432,790.

Minato, Hitoshi. Synthesis of furan compounds including pharmacologically active furyl steroids. 3,432,486, 03-11-69, Cl. 260-210.5

Minnesota Mining and Manufacturing Company: *See—*
Hipp, Richard D., Jr., 3,431,967.

Minnesota Rubber Company: *See—*
Rentschler, John H., and Sewall, Loren J., 3,432,083.

Minsky, Semen B. Wiper housing device. 3,431,577, 03-11-69, Cl. 015-250.04

Missouri Research Laboratories, Inc.: *See—*
Dickman, John J., 3,432,439.

Mitacek, Bill, to Philips Petroleum Company. Grease. 3,432,431, 03-11-69, Cl. 252-016.

Mitsubishi Jukgyo Kabushiki Kaisha: *See—*
Sagara, Hideo, Iwasaki, Yasuhiro, Ohe, Tsutomu, and Mashimo, Tomoyuki, 3,431,630.

Mobil Oil Corporation: *See—*
Armstrong, Eldon L., and Davis, Robert H., 3,432,434.
Bodkin, Ernest A., and Maziuk, John, 3,432,425.
Caldwell, Richard L., 3,432,667.
Glass, John R., and Liederman, David, 3,432,403.
Jakaitis, Eugene A., Littler, Francis W., and Roblendano, Emilio A., 3,432,319.
Miale, Joseph N., and Weisz, Paul B., 3,432,568.
Romberg, Francis M., 3,432,805.
Rousso, Jack J., Jr., 3,432,806.

Modern Manufacturing Company, Inc.: *See—*
Stuck, Matthew A., 3,431,706.

Molgard, Age: *See—*
Sorensen, Carl, and Molgard, Age 3,431,938.

Moller, Fritz, Groschopp, Heinz, and Wagenknecht, Rudolf, to Gerhard Collardin GmbH. Process for the currentless deposition of copper-tin layers. 3,432,337, 03-11-69, Cl. 117-130.

Mombaxet, Rene: *See—*
Le Coz, Francois, Mombaxet, Rene, and Raynaud, Noel 3,431,618.

Monforts, A., Maschinenfabrik: *See—*
Reiners, Franz, 3,431,608.

Monsanto Company: *See—*
Beer, Ludwig A., 3,432,576.
Maier, Ludwig, 3,432,559.
Shelby, Richard K., 3,432,640.

Montgomery, Peter Murdo: *See—*
Stillwell, Peter Frederic Thomas Cryer, Montgomery, Peter Murdo, and Hogg, Richard William 3,432,854.

Mooney Brothers Corp.: *See—*
Mooney, Walter G., Dutton, Lloyd K., and Lynch, Francis K., 3,432,187.

Mooney, Walter G., Dutton, Lloyd K., and Lynch, Francis K., to Mooney Brothers Corp. Tube coupling. 3,432,187, 03-11-69, Cl. 285-055.

Moore, Alvin Edward. Fluidfoil ringcraft. 3,431,878, 03-11-69, Cl. 114-066.5

Moore, Brian B.: *See—*
Rinaldi, Russell G., and Moore, Brian B. 3,432,811.

Moore, David E. Reclaiming saline soils. 3,431,675, 03-11-69, Cl. 047-058.

Moore, David E. Reclaiming saline waters. 3,432,427, 03-11-69, Cl. 210-004.

Moore, Edward J., to Moretrench Corporation. Vacuum line closure method and device for separation chambers in ground-water pumping systems. 3,431,708, 03-11-69, Cl. 055-055.

Morantz, Daniel Joseph, to National Research Development Corporation. Apparatus for producing stimulated emission of radiation. 3,432,766, 03-11-69, Cl. 331-094.5

Morelli, Joseph L., to Litton Business Systems, Inc. Ribbon spool. 3,432,021, 03-11-69, Cl. 197-151.

Moreno, Joe. Distress signalling device for submarine and aircraft. 3,432,755, 03-11-69, Cl. 325-112.

Moretrench Corporation: *See—*
Moore, Edward J., 3,431,708.

Morgan, Raymond E., to General Electric Company. Solid state power circuits. 3,432,740, 03-11-69, Cl. 321-043.

Mori, Hideo: *See—*
Shibata, Shinichi, Mori, Hideo, and Owada, Atsushi 3,432,732.

Morine, Louis A., to Bendix Corporation, The. Method and electronic system for improving a control signal-to-noise ratio in high noise environment electronic systems. 3,432,761, 03-11-69, Cl. 328-165.

Morris, Elmer S.: *See—*
Bounds, William E., and Morris, Elmer S. 3,431,749.

Morrow, Edward L., to Olin Mathieson Chemical Corporation. Firearm ejector. 3,431,669, 03-11-69, Cl. 042-025.

Moss, Theron V., and Dalhart, Austin Thomas, said Dalhart assor to said Moss. Attachment device for mops and the like. 3,431,576, 03-11-69, Cl. 015-229.

Moss, Theron V.: *See—*
Moss, Theron V., and Dalhart, Austin Thomas, 3,431,576.

Mosterd, Jacob H., to Apparatenbouw MOBA N.V. Weight sorting machine. 3,432,034, 03-11-69, Cl. 209-073.

Motorola, Inc.: *See—*
Neapolitakis, Nicholas T., and White, William H., Jr., 3,432,840.

Mr. Robot, Inc.: *See—*
Cirino, John F., and Brenner, Charles, 3,431,580.

Mudge, Clarence T., to Sunset Fuel Company. Mobile crane. 3,432,145, 03-11-69, Cl. 254-145.

Mudon, Thomas J. Protractor for a folding rule. 3,431,653, 03-11-69, Cl. 033-105.

Mueller, John H.: *See—*
Irti, Ernest, and Mueller, John H. 3,432,141.

Mueller, Martin, to Lily-Tulip Cup Corporation. Dispensing container assembly. 3,432,027, 03-11-69, Cl. 206-056.

Muller, Walter: *See—*
Weinrotter, Ferdinand, Schmidt, Alfred, Muller, Walter, and Bohler, Walter 3,432,501.

Munro, Ronald V., to Scantlin Electronics, Inc. Dial long line circuit. 3,432,620, 03-11-69, Cl. 179-016.

Munson, Whitney K. Handstamp with knee action type support. 3,431,840, 03-11-69, Cl. 101-111.

Murphy, Arthur J., to USM Corporation. Methods of making welted and outsoled true moccasins. 3,431,570, 03-11-69, Cl. 012-142.

Murphy, Raymond J. Twisting and tumbling belt. 3,432,163, 03-11-69, Cl. 272-060.

Murray Manufacturing Company: *See—*
Knecht, Gerge W., 3,432,781.

Murrell, Ruby E. Pie pan holder. 3,431,836, 03-11-69, Cl. 099-433.

Musgrove, Ronald Obie, and McMillan, William Joseph, to General Electric Company. Apparatus for inspecting and overhauling turbine diaphragms. 3,432,048, 03-11-69, Cl. 214-041.

Muska, William A., Schacker, James C., and McHattie, Earl E. Grounding connection for electrical unit. 3,432,793, 03-11-69, Cl. 339-014.

Mussell, Dorsey R., to Dow Chemical Company, The. Control of aquatic plants with dithiodiundecanoic acid. 3,432,286, 03-11-69, Cl. 071-066.

Muttart, Vincent H.: *See—*
Deutscher, Abe, Muttart, Vincent H., and Gilbert, Jack W. 3,432,631.

Myers, Herbert Arthur, and Holzhei, Don Earl, to Deere & Company. Precision seed planting apparatus and method. 3,432,075, 03-11-69, Cl. 221-178.

Myers, Robert A., and Pershan, Peter S., to International Business Machines Corporation. Standing wave electro-optic light modulator. 3,432,224, 03-11-69, Cl. 350-150.

Mzaaei, Alessandro: *See—*
Marconi, Walter, Mzaaei, Alessandro, de Malde', Marcello, and Cucinella, Salvatore 3,432,516.

Naastepad, Pieter Aarst, to North American Philips Company, Inc. Method of making magnetically anisotropic permanent magnets. 3,432,369, 03-11-69, Cl. 148-101.

Nagakura, Mizuhiko: *See—*
Abe, Kazuo, Kokubo, Ryo, Yamada, Yumizuru, Nagakura, Mizuhiko, and Shima, Koji 3,432,274.

Nail, Donald H., to McDonnell Douglas Corporation. Halogenated fluids. 3,432,436, 03-11-69, Cl. 252-078.

Nail, Donald H., to McDonnell Douglas Corporation. Fire resistant hydraulic fluid and lubricant compositions. 3,432,437, 03-11-69, Cl. 252-078.

Nakamura, Hajime, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Method for manufacturing nitride-containing low- carbon structural steels. 3,432,368, 03-11-69, Cl. 148-012.

Nalco Chemical Company: *See—*
Wirth, Louis F., Jr., and Robertson, Reed S., 3,432,428.

Namekata, Masaya: *See—*
Nitta, Yoshihiro, Namekata, Maasya, Tomita, Eiichi, and Hirota, Yusaku 3,432,489.

Nash, Geoffrey James Chetewoode, and Harding, Keith, to United Kingdom Atomic Energy Authority. Containers for transporting radioactive and/or fissile materials. 3,432,666, 03-11-69, Cl. 250-108.

Nathan, Bernard, and Tate, Gary L., to Hamilton of Indiana, Inc. Package for a mirror and the like. 3,432,028, 03-11-69, Cl. 206-062.

National Distillers and Chemical Corporation: *See—*
Emich, Karl H., 3,432,272.
Howell, Samuel G., and Akers, Dale M., 3,432,339.
Peoples, Leo C., and Beattly, Charles W., 3,432,483.

National Dust Collector Corporation: *See—*
Drum, Daniel D., 3,432,153.

National Plastic Products Co., Inc.: *See—*
Papps, Jon D., 3,432,590.

National Research Development Corporation: *See—*
Giles, Cyril George, Martin, James Alexander, and Spindlow, John Richard, 3,431,996.
Morantz, Daniel Joseph, 3,432,766.

Natoli, Joseph G., to M&T Chemicals Inc. Process for preparation of alkyltin compounds. 3,432,531, 03-11-69, Cl. 260-429.7

Nawata, Kiyoshi: *See—*
Kuwabara, Michichika, Nawata, Kiyoshi, Tsunawaki, Kiyokazu, and Sakakibara, Seizaburo 3,432,476.

Naydan, Theodore T., and Koenig, Harold R., to General Electric Company. Beam plasma high frequency wave generating system. 3,432,721, 03-11-69, Cl. 315-039.

Naydan, Theodore T., and Tomiyasu, Kiyo, to General Electric Company. Electromagnetic wave generating and translating apparatus. 3,432,722, 03-11-69, Cl. 315-039.

Naylor, Robert M., and Carpenter, Herbert L., Jr., to Greif Bros. Cooperage Corporation, The. Trapezoidal pallet for parts. 3,431,870, 03-11-69, Cl. 108-055.

Neapolitakis, Nicholas T., and White, William H., Jr., to Motorola, Inc. Fluid level indicator. 3,432,840, 03-11-69, Cl. 340-244.

Needham, Donald G.: *See—*
Hill, George R., and Needham, Donald G. 3,432,461.

Neidhart, Alfred, to Merkurium A.G. Device for delivering supplementary air to the fuel-air mixture in four-stroke-cycle engines. 3,431,899, 03-11-69, Cl. 123-119.

Neier, Reinhard, to Sandoz Ltd. (also known as Sandoz A.G.). Chromium containing mixed azo dyes. 3,432,485, 03-11-69, Cl. 260-145.

Neilson, Anne Josephine: *See—*
Kuhr, Wayne Kenneth, Siakis, Albin Joseph, Hughes, Richard Lawrence, and Neilson, Anne Josephine 3,432,305.

Nelson, Arthur J. Submergible apparatus motor drive. 3,432,704, 03-11-69, Cl. 310-087.

Nelson, Donald M., to North American Rockwell Corporation. Cable control. 3,431,794, 03-11-69, Cl. 074-529.

Nelson, Jerome W., and Lewis, Wallace J., to Battelle Development Corp., The. Apparatus for guiding electrodes. 3,432,638, 03-11-69, Cl. 219-125.

Nelson, Paul C., and Rutz, Leon E., to Houdaille Industries, Inc. Power bending machine and control means therefor. 3,431,758, 03-11-69, Cl. 072-002.

Nelson, Robert R. Portable shower. 3,431,565, 03-11-69, Cl. 004-154.

Nershi, George Thomas: *See—*
Shenker, Marvin, La Russa, Joseph, and Nershi, George Thomas 3,432,219.

Nestell, Donald E.: *See—*
Turner, George L., Johnson, Gerould A., Disbrow, Richard A., and Nestell, Donald E. 3,432,102.

Neumann, Charles W.: *See—*
Neumann, Meta N., and Neumann, Charles W. 3,431,918.

Neumann, Meta N., and Neumann, Charles W. Multiple cosmetic stick container. 3,431,918, 03-11-69, Cl. 132-079.

Neuschotz, Robert. Threaded fastener with deformable anchoring portion. 3,431,960, 03-11-69, Cl. 151-041.72

Newport, John Prescott: *See—*
Levy, Winifred Jane, Newport, John Prescott, and Reynolds, Reginald John William 3,432,430.

Nice, Nathan C., to Philco-Ford Corporation. High voltage connection for cathode ray tube. 3,432,803, 03-11-69, Cl. 339-144.

Niederrheinische Maschinesfabrik Becker & Van Hullen: *See—*
Hutter, Wilhelm, 3,431,838.
Plum, Hans, Feldges, Werner, Enger, Helmut, and Grefen, Hans, 3,431,595.

Niedrach, Leonard W., and Alford, Harvey R., to General Electric Company. Polytetrafluoroethylene coated and bonded cell structures. 3,432,355, 03-11-69, Cl. 136-086.

Nilson, Edward B.: *See—*
Field, Milton Scott, and Nilson, Edward B. 3,432,629.

Nippon Electric Company, Limited: *See—*
Uchida, Teiji, 3,432,223.

Nissan Kagaku Kogyo Kabushiki Kaisha: *See—*
Abe, Kazuo, Kokubo, Ryo, Yamada, Yumizuru, Nagakura, Mizuhiko, and Shima, Koji, 3,432,274.

Nitsche, Siegfried: *See—*
Hittmair, Paul, Wohlfarth, Ernst, Nitsche, Siegfried, and Wick, Manfred 3,432,463.

Nitta, Yoshihiro, Namekata, Maasya, Tomita, Eiichi, and Hirota, Yusaku, to Chugai Seiyzku K.K. Disaccharide polysulfate aluminium compound and method. 3,432,489, 03-11-69, Cl. 260-234.

Noddings, Charles R., and Cleary, Robert D., to Dow Chemical Company, The. Process for producing dimers of tertiary olefins. 3,432,571, 03-11-69, Cl. 260-683.15

Norfleet, Glenn D., to United States of America, Air Force. Device to increase uncontaminated run time of a reflected shock tunnel. 3,431,777, 03-11-69, Cl. 073-147.

Normandin, Camille. Racing game with power accumulating means. 3,432,167, 03-11-69, Cl. 273-086.

North American Philips Company, Inc.: *See—*
Backers, Franciscus Theodorus, and Wessels, Johannes Hendrik, 3,432,614.
Dijken, Reinder Hendrik, Jager, Jolle, and Krikke, Minne, 3,432,701.
du Pre, Frits Karel, 3,431,788.
Holtwijk, Theodoor, 3,432,832.
Hoppen, Johannes, 3,432,103.
Lefranc, Marcel, 3,431,750.
Naastepad, Pieter Aarat, 3,432,369.
van den Bussche, Willem, 3,432,084.
van der Hilst, Jan, 3,431,617.
Veilex, Robert, and Parquet, Pierre, 3,431,744.

North American Rockwell Corporation: *See—*
Frederickson, Lyle R., Rovelsky, Leon A., and Wood, Robert L., 3,432,752.
Frost, John S., 3,432,724.
Katz, Norman H., and Binstock, Martin H., 3,432,365.
Kennedy, Clifford F., and Shelton, Thomas M., 3,431,764.
Langrod, Kasimir, and Jones, Robert L., 3,432,336.
Nelson, Donald M., 3,431,794.

Northern Electric Company Limited: *See—*
Thompson, Gordon Bruce, 3,432,650.

Nowak, Robert M., and Giesner, William K., to Dow Chemical Company, The. Apparatus for dispensing viscous materials into molds. 3,431,597, 03-11-69, Cl. 018-005.

Nuclear-Chicago Corporation, formerly namedSearle Nuclear Corporation: *See—*
Emmer, Thomas Lee, 3,432,687.

Nunez, Jaen: *See—*
Pole, Robert V., and Nunez, Jaen 3,432,767.

O'Brien, Jeremiah Wagner, to United Engineering and Foundry Company. Constant gap rolling mill. 3,431,762, 03-11-69, Cl. 072-019.

O'Brien, Lawrence H., to Hughes Aircraft Company. Magnetic pulse modulator. 3,432,679, 03-11-69, Cl. 307-088.

O'Leary, John P., to Interpace Corporation. Place setting packer. 3,432,026, 03-11-69, Cl. 206-047.

O'Loughlin, Bernard T., and Tindell, William A., Jr., to Halliburton Co.Portable sand-fluid blender. 3,432,151, 03-11-69, Cl. 259-148.

Oertel, Harald, Rinke, Heinrich, and Thoma, Wilhelm, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethanes prepared from dihydrazides. 3,432,456, 03-11-69, Cl. 260-030.2

Office National d'Etudes et de RecherchesAerospatiales: *See—*
Girard, Andre Jean, 3,432,238.
Girard, Andre Jean, 3,432,241.

Office National Industriel de l'Azote: *See—*
Garlet, Robert, and Grandet, Louis, 3,432,266.

Ogden, Peter James, to Vickers Limited. Sheet-fed printing presses. 3,431,844, 03-11-69, Cl. 101-234.

Ohe, Tsutomu: *See—*
Sagara, Hideo, Iwasaki, Yasuhiro, Ohe, Tsutomu, and Mashimo, Tomoyuki 3,431,630.

Ohfuka, Toshio, Shirode, Katsumi, and Ichikawa, Yasushi, to Asahi Kasei Kogyo Kabushiki Kaisha. Proces for the preparation of polymer. 3,432,482, 03-11-69, Cl. 260-085.5

Ohio Crankshaft Company, The: *See—*
Kauffman, Harry D., 3,432,739.

Ohio State University, The: *See—*
Kasza, Louis, 3,432,595.

Ohsol, Ernest O., to Chemical Construction Corporation. High pressure sulfuric acid process. 3,432,263, 03-11-69, Cl. 023-168.

Okamoto, Kazuo: *See—*
Igarashi, Yukio, Komatsu, Makoto, Fujiyama, Susumu, and Okamoto, Kazuo 3,432,556.

Okuda, Itsuki, Yoshinaga, Eiichi, and Tsuboi, Takeo, to Kumiai Chemical Industry Co., Ldt.Control of powdery mildew with nitronaphthonitriles. 3,432,601, 03-11-69, Cl. 424-304.

Okuya, Eitaro, Sakaguchi, Adio, Komatsu, Kouei, Kikuchi, Tatsuhiko, Yasunaga, Hidetoshi, and Andueda, Kenichi. Method of producing butadiene polymer having high percentage of cis-1,4 configuration. 3,432,515, 03-11-69, Cl. 260-094.3

Olin Mathieson Chemical Corporation: *See—*
Creamer, Robert J., 3,431,668.
Morrow, Edward L., 3,431,669.

Olivier, James P., to Freeport Sulphur Company. Process for treating minerals. 3,432,030, 03-11-69, Cl. 209-005.

Olstowski, Franciszek, and Mezoff, John G., to Dow Chemical Company, The. Process for producing structures containing shaped voids. 3,431,970, 03-11-69, Cl. 164-097.

Olzak, Henry F.: *See—*
Blanch, Charles H., and Olzak, Henry F. 3,432,623.

Omega Louis Brandt & Frere S.A.: *See—*
Vogt, Kurt, 3,432,016.

Ongkiehong, Leo, and Mast, Harm, to Shell Oil Company. Submersible detector for sensing underwater sounds. 3,432,000, 03-11-69, Cl. 181-000.5

Optical Coating Laboratory, Inc.: *See—*
Rock, Frank C., 3,432,225.

Orenick, Emil H., and Orenick, Emil J.Casting bobber. 3,431,671, 03-11-69, Cl. 043-044.87

Orenick, Emil J.: *See—*
Orenick, Emil H., and Orenick, Emil J. 3,431,671.

Oringer, Kenneth, Gallagher, Gerald T., Bunin, Donald S., and Easton, Bernard E., to FMC Corporation. Manufacture of peracetic acid. 3,432,546, 03-11-69, Cl. 260-502.

Orlita, Franz. Diaphragm assembly for a diaphragm pump. 3,431,823, 03-11-69, Cl. 092-079.

Ortho Pharmaceutical Corp.: *See—*
Davis, Hugh J., and Jones, Edmund A., 3,431,905.

Osgan, Maseh, Silly, Jean-Pierre, and Teyssie, Philippe, to Institut Francais du Petrole, des Carburants et Lubrifiants. Catalyst compositions based on bivalent metals and the application thereof, particularly for the polymerization of cyclic ethers. 3,432,445, 03-11-69, Cl. 260-002.

Oshima, Shintaro, and Kamibayashi, Tetsusaburo, to Kokusai Denshin Denwa Kabushiki Kaisha. Oscillation circuits controlled with ferromagnetic thin films. 3,432,681, 03-11-69, Cl. 307-088.

Osterreichische Stickstoffwerke Aktiengesellschaft: *See—*
Weinrotter, Ferdinand, Schmidt, Alfred, Muller, Walter, and Bohler, Walter, 3,432,501.

Oudet, Claude, and Lallement, Gerard, to Societe Jaz S. A.Torsion-operated oscillators. 3,431,808, 03-11-69, Cl. 084-457.

Outboard Marine Corporation: *See—*
Irgens, Finn T., 3,431,882.

Over, William Roderick: *See—*
Gurley, Grey Manning, and Over, William Roderick 3,431,621.

Owada, Atsushi: *See—*
Shibata, Shinichi, Mori, Hideo, and Owada, Atsushi 3,432,732.

Owen, Charles E., Proudman, Antony, Taub, Daniel M., and Warwick, William A., to International Business Machines Corporation. Transformer read-only storage construction. 3,432,830, 03-11-69, Cl. 340-174.

Owen-Corning Fiberglas Corporation: *See—*
Marzocchi, Alfred, and Waugh, John A., 3,432,332.

Owens-Illinois, Inc.: *See—*
Braddy, John E., and Wiens, Bradley E., 3,432,331.
Richards, Raymond S., 3,432,278.

Oxford, James G.Spring hinge structure. 3,432,193, 03-11-69, Cl. 287-100.

Packard, Leslie M., and Chance, Maynard R., to ACF Industries, Incorporated. Machine for bonding abutting strips. 3,432,374, 03-11-69, Cl. 156-366.

Painton & Company Limited: *See—*
Richards, Claude L., Cartwright, John A., and Pearce, Graham, 3,432,799.

Palmer, Norman Harold George, to Eaton Yale & Towne Inc.Throttle pedal unit for an industrial truck. 3,432,791, 03-11-69, Cl. 338-198.

Pan American Petroleum Corporation: *See—*
East, Clarence Robert, and Mallinger, Morton A., 3,431,977.
Landrum, Ralph A., Jr., 3,432,649.
Silverman, Daniel, 3,432,648.

Pan, Pei-Tai, to Fairbanks Morse Inc.Electrolytic cell assemblies. 3,432,420, 03-11-69, Cl. 204-216.

Pannell, Otis R., to United States of America, Navy. Explosive embedment rock anchor. 3,431,880, 03-11-69, Cl. 114-206.

Papenguth, Richard P., to Parker-Hannifin Corporation. Journal box sealing device. 3,432,173, 03-11-69, Cl. 277-029.

Papps, Jon D., to National Plastic Products Co., Inc.Process for spinning elastic polypropylene fibers. 3,432,590, 03-11-69, Cl. 264-210.

Papst, Georg Friedrich. Propeller fan. 3,431,978, 03-11-69, Cl. 170-159.

Paquette, Leo A., to Upjohn Company, The. Certain diazatricyclododecadienones and their preparation. 3,432,507, 03-11-69, Cl. 260-293.

Parametron Institute): *See—*
Goto, Eiichi, 3,432,680.

Paramount Textile Machinery Co.: *See—*
Horberg, Charles, Jr., 3,431,696.

Pareja, Ramon: *See—*
Cook, Ernest E., and Pareja, Ramon 3,431,865.

Parker-Hannifin Corporation: *See—*
Papenguth, Richard P., 3,432,173.

Parquet, Pierre: *See—*
Veilex, Robert, and Parquet, Pierre 3,431,744.

Passal, Frank, to M&T Chemical Inc.Certain quarternary N-propargyl pyridinum salts. 3,432,509, 03-11-69, Cl. 260-295.

Patterson, William A., Schirmer, Henry G., and Weissman, Stanley N., to Grace, W. R., and Co.Foamable polyethylene/styrene bodies. 3,432,447, 03-11-69, Cl. 260-002.5

Pattin, Howard S.: *See—*
Cleveland, Clark C., French, Harry F., deceased (by Cleveland Trust Company, executor), and Pattin, Howard S. 3,432,359.

Paul's Church, The: *See—*
Justice, Mary E., 3,431,958.

Pearce, Graham: *See—*
Richards, Claude L., Cartwright, John A., and Pearce, Graham 3,432,799.

Peerless of America, Inc.: *See—*
Kritzer, Richar W., 3,431,973.

Penney, Lee E.Memorial flowerpot holder. 3,432,136, 03-11-69, Cl. 248-315.

Pennsalt Chemicals Corporation: *See—*
King, James Ping, 3,432,532.
Mandell, Harry Creston, Jr., and Roth, Edwin S., 3,432,347.

Peoples, Leo C., and Beattly, Charles W., to National Distillers and Chemical Corporation. Continuous process for preparing finely divided polymers. 3,432,483, 03-11-69, Cl. 260-087.3

Peppler, Richard B.: *See—*
Kelly, Thomas M., Peppler, Richard B., and Ray, James A. 3,432,316.
Kelly, Thomas M., Mielenz, Richard C., and Peppler, Richard B. 3,432,317.

Peras, Lucien, to Regie Nationale des Usines Renault. Apparatus to generate curves by elemental arcs. 3,432,651, 03-11-69, Cl. 235-197.

Perez, Arthur: *See—*
Gondeck, Frederick V., Hickox, Lester E., Kennedy, Thomas E., Perez, Arthur, and Thompson, James F. 3,432,378.

Perkin-Elmer Corporation, The: *See—*
Venghiattis, Alexis A., 3,432,655.

Perlman, Theodore H.: *See—*
Krolik, Paul P., and Perlman, Theodore H. 3,432,148.

Perry, Edward Gordon, Jr., to Recognition Equipment Incorporated. Retina character reader. 3,432,646, 03-11-69, Cl. 235-061.11

Pershan, Peter S.: *See—*
Myers, Robert A., and Pershan, Peter S. 3,432,224.

Pesek, Cyril P., to Colight, Inc.Apparatus for chemical etching. 3,431,921, 03-11-69, Cl. 134-127.

Pesterfield, Enos Charles, Jr., to Geigy Chemical Corporation. Preparation of 2-imidazolone derivatives by catalytic cyclization. 3,432,520, 03-11-69, Cl. 260-309.6

Pet, Incorporated: *See—*
Sargeant, Ralph G., 3,432,636.

Peters, John, and Grigor, James, to United States of America, Navy. 2,2-Bis(difluoroamino)-alkanes by reacting aliphatic ketone with difluoramine and BF_3. 3,432,554, 03-11-69, Cl. 260-583.

Peters, Robert W., and Luber, Fredrick G., to Gorski, Henry J.Three phase concentric stator windings and method of winding. 3,432,707, 03-11-69, Cl. 310-180.

Petersen, Andreas. Long-handled brush. 3,431,575, 03-11-69, Cl. 015-176.

Peterson, Carl R.: *See—*
Buehler, Alois A., and Peterson, Carl R. 3,431,984.

Peterson, Evald O., to Compo Shoe Machinery Corporation. Die-cutting machine with rotatable die- supporting platen. 3,431,806, 03-11-69, Cl. 083-561.

Peterson, John Loran: *See—*
Johnsen, James Alvin, and Peterson, John Loran 3,432,772.

Peterson, Roswald M.Method for making dies. 3,431,767, 03-11-69, Cl. 072-327.

Petrides, Christie, to General Electric Company. Synchronous motor. 3,432,735, 03-11-69, Cl. 318-138.

Petrol Injection Limited: *See—*
Jackson, Harold Ernest, 3,431,900.

Pettibone Mulliken Corporation: *See—*
La Tendresse, Philip E., 3,432,050.

Pettigrew, Carl K., Siminski, Michael C., Jr., and Swavely, Donald F., to Polymer Corporation, The. Apparatus for coating articles in a fluidized bed. 3,431,887, 03-11-69, Cl. 118-011.

Pfoertner, Rolf. Elastomeric traction link element. 3,431,961, 03-11-69, Cl. 152-222.

Phaff, G.M., A.G.: *See—*
Schneider, Franz, 3,431,874.

Philadelphia Handle Company Inc.: *See—*
Bush, George W., 3,431,586.

Philco-Ford Corporation: *See—*
Frank, Edward, and Bray, Ralph, 3,431,787.
Nice, Nathan C., 3,432,803.

Philip Morris Incorporated: *See—*
Licis, Osvalds F., 3,431,915.

Philipp, William C., to Hutchison Manufacturing Company. Mounting device. 3,432,127, 03-11-69, Cl. 248-015.

Phillips Petroleum Company: *See—*
Boultinghouse, Harold D., 3,431,875.
Folz, John M., 3,432,569.
Gardner, Lloyd E., 3,432,441.
Gardner, Lloyd E., 3,432,562.
Harvey, Robert R., and Vaclaw, Mike M., 3,431,976.
Hill, George R., and Needham, Donald G., 3,432,461.
Hurst, Alan R., 3,432,333.
Kallenbach, Lyle R., 3,432,518.
Kleiss, Louis D., 3,432,418.
Lindsey, Joe P., 3,432,807.
Michael, Richard W., and Porter, Grady T., 3,432,684.
Mitacek, Bill, 3,432,431.
Pitchford, Armin C., 3,432,320.
Sanford, Richard A., and Ayers, Buell O., 3,431,770.
Stratton, Charles A., 3,432,480.
Zavasnik, Fred J., 3,432,579.

Phillipson, Alan, Spiller, Basil Harry Royston, Smith, Robin, and Cheesman, Harry, to Decca Limited. Packaging of phonograph records. 3,431,697, 03-11-69, Cl. 053-051.

Pickel, James Brennan, to Gillette Company, The. Strip inspection system. 3,431,624, 03-11-69, Cl. 029-407.

Pierce, Aaron E.: *See—*
Buck, Henry M., Bruecher, Judith F., Carlton, Louis A., and Pierce, Aaron E. 3,431,974.

Pierce, Edwin B.: *See—*
Annunziata, Eugene J., James, Robert S., King, Lewis E., and Pierce, Edwin B. 3,432,813.

Pierce, Stanley L., Jr., to Ford Motor Company. Multiple stage governor valve assembly for establishing a speed-pressure signal. 3,431,928, 03-11-69, Cl. 137-054.

Pigment-Chemie, G.m.b.H.: *See—*
Rohrborn, Hans-Joachim, Clausen, Heinrich, Grassmann, Wolfgang, and Valet, Gerhard, 3,432,324.

Pilling, David J., and Dumesnil, Maurice E., to Fairchild Camera and Instrument Corporation. Selective masking method of silicon during anodization. 3,432,405, 03-11-69, Cl. 204-015.

Pilot Man-Nen-Hitsu Kabushiki Kaisha: *See—*
Kan, Masao, Hyodo, Hiroshi, Watanabe, Akio, and Enami, Shigekazu, 3,432,327.

Pitchford, Armin C., to Phillips Petroleum Company. Nonionic oil-in-water asphalt emulsions. 3,432,320, 03-11-69, Cl. 106-277.

Pitney-Bowes, Inc.: *See—*
Beeken, Basil B., 3,432,804.

Pixley, William I.Magnetic separator. 3,432,037, 03-11-69, Cl. 209-223.

Plant, Henry T.: *See—*
Jordan, Thomas J., and Plant, Henry T. 3,432,859.

Plostnieks, Janis, to McNeil Laboratories, Inc.11,11a-Dihydro-2-(lower alkyl)-6-hydroxy-6H-benzo [5,6]cyclohept-[1,2,3-cd]indolin-1-ones. 3,432,523, 03-11-69, Cl. 260-326.5

Plum, Hans, Feldges, Werner, Enger, Helmut, and Grefen, Hans, to Niederrheinische Maschinenfabrik Becker & Van Hullen. Presses for the production of chipboard. 3,431,595, 03-11-69, Cl. 018-004.

Pochiman, Edmund F., Jr., to Fuse Indicator Corporation. Fuseholder for electrical circuits. 3,432,789, 03-11-69, Cl. 337-242.

Pole, Robert V., and Nunez, Jaen, to International Business Machines Corporation. Apparatus employing electronic light shutters for switching the direction of a laser beam along discrete paths. 3,432,767, 03-11-69, Cl. 331-094.5

Pollak, Peter I., and Tull, Roger J., to Merck & Co., Inc.Preparation of pyrazinoylguanidine and pyraznamidoguanidine products. 3,432,502, 03-11-69, Cl. 260-250.

Polonsky, Samuel, and King, Bartley E., to General Electric Company. Timer switch. 3,432,625, 03-11-69, Cl. 200-035.

Polzin, Donald Herman: *See—*
Ten Pas, Warren Edward, Schnell, Ernst Emil, and Polzin, Donald Herman 3,432,064.

Porret, Daniel, to Ciba Limited. Derivatives of isocyanuric acid. 3,432,500, 03-11-69, Cl. 260-248.

Porsch, Hans: *See—*
Reimer, Carl, and Porsch, Hans 3,431,639.

Portable Electric Tool, Inc.: *See—*
Scott, William H., 3,431,647.

Porter, Grady T.: *See—*
Michael, Richard W., and Porter, Grady T. 3,432,684

Posse, Rolf-Fred: *See—*
Saleck, Wilhelm, Lassig, Wolfgang, and Posse, Rolf-Fred 3,432,304.

Posso, Pierre A. L.Box for storing a spool of tape or film. 3,432,066, 03-11-69, Cl. 220-046.

Potts, Bill L.: *See—*
Hallauer, William J., and Potts, Bill L. 3,431,614.

Powell, Alfred H.Electrician's tool for removing insulation from wires. 3,431,645, 03-11-69, Cl. 030-090.6

Powell, Patrick L., to Stewart-Warner Corporation. Pinion assembly. 3,432,096, 03-11-69, Cl. 235-096.

Poznanski, Robert L.Money container with integral holdup alarm. 3,432,842, 03-11-69, Cl. 340-280.

PPG Industries, Inc.: *See—*
Galey, William F., 3,432,283.
Gulotta, Joseph A., 3,432,284.
Gulotta, Joseph A., 3,432,285.

Pratt, George C.: *See—*
Michael, Anthony D., and Pratt, George C. 3,432,293.

Pratt, Warren R., to Control Data Corporation. Balanced line pulse receiver. 3,432,689, 03-11-69, Cl. 307-255.

Pratt & Whitney, Inc.: *See—*
Fox, Harry W., 3,431,680.

Preau, Nicole Marie, to Rhone-Poulenc S.A.Pyrrole-2-carboxamido alkylene amidines. 3,432,522, 03-11-69, Cl. 260-326.3

Preisig, Joseph O., to Radio Corporation of America. Television focus voltage supply. 3,432,718, 03-11-69, Cl. 315-022.

Prener, Jerome S.: *See—*
Knglsey, Jack D., and Prener, Jerome S. 3,432,769.

Price, Frank B.: *See—*
Silver, Harold F., and Price, Frank B. 3,431,839.

Price, William L.: *See—*
Cox, Andrew P., Jr., and Price, William L. 3,432,851.

Priebs, Horst, to Anker-Werke Aktiengesellschaft. Multiple-color printing structure for bookkeeping machines and the like. 3,432,022, 03-11-69, Cl. 197-153.

Probsting, Bernhard, to Deere & Company. Ensilage harvester. 3,431,712, 03-11-69, Cl. 056-023.

Procter & Gamble Company, The: *See—*
Kokx, Darrel D., 3,431,910.

Proudman, Antony: *See—*
Owen, Charles E., Proudman, Antony, Taub, Daniel M., and Warwick, William A. 3,432,830.

Puetz, Jordan F., to Square D Company. Interlock structure for two manually operated toggle switches. 3,432,628, 03-11-69, Cl. 200-050.

Puetz, Jordan F., to Square D Company. Manually operated switch. 3,432,787, 03-11-69, Cl. 337-153.

Pullman Incorporated: *See—*
Bostwick, Louis E., and Mandelik, Bernard G., 3,432,264.
Martin, John J., 3,432,131.

Pusch, Gunter: *See—*
Enders, Heinz, and Pusch, Gunter 3,432,553.

Puthet, Robert Raphael: *See—*
Guinet, Paul Alfred Eugene, and Puthet, Robert Raphael 3,432,537.

Putterman, Harry, to General Precision Systems, Inc.Non-destructive read-out memory. 3,432,834, 03-11-69, Cl. 340-174.

Quercia, Marcel, to Societe Flaminaire Marcel Quercia. Recharge vessels for a liquified gas under pressure. 3,432,072, 03-11-69, Cl. 220-067.

Quinn, Joseph G., to General Electric Company. Stereoscopic X-ray apparatus employing image converting and polarizing means. 3,432,658, 03-11-69, Cl. 250-060.

Quittner, George F., to API Instruments Company. Spot recording and pickup methods and apparatus for the determination of hardness of relatively moving magnetic material without contacting the same. 3,432,747, 03-11-69, Cl. 324-034.

Rabenhorst, David W., to United States of America, Navy. Passive separation system. 3,431,854, 03-11-69, Cl. 102-049.4

Radder, Johannes: *See—*
Spitzer, Ernst L. Th. M., and Radder, Johannes 3,432,257.

Radgens, Thomas H.Chromatograph tape septum injection port. 3,431,783, 03-11-69, Cl. 073-422.

Radio Corporation of America: *See—*
Adams, Robert L., 3,432,035.
Brunner, Eduard R., 3,432,720.
Preisig, Joseph O., 3,432,718.
Solmos, Gene R., 3,432,785.
Ulary, Russell R., 3,431,890.

Radke, William A., and Schomburg, John F., to International Business Machines Corporation. Noise cancellation circuit for a photomultiplier tube. 3,432,669, 03-11-69, Cl. 250-207.

Raff, Paul: *See—*
Kiefer Hans, Raff, Paul, and Schuster, Ludwig 3,432,552.

Rairden, John R., III, and Furey, James T., to General Electric Company. High purity niobium films formed by glow discharge cathode sputtering. 3,432,416, 03-11-69, Cl. 204-192.

Raitt, John Stewart: *See—*
Ewart, George, and Raitt, John Stewart 3,432,261.

Rakatansky, Harold, to Imperial Knife Associated Companies, Inc.Portable pneumatically operated clamp for gripping a group of elongated spaced parallel articles for finishing operations. 3,432,159, 03-11-69, Cl. 269-020.

Ralston, William K.: *See—*
May, Patrick L., and Ralston, William K. 3,431,837.

Rand, Royden N., to Bausch & Lomb Incorporated. Electrophoretic process with continuous scanning. 3,432,414, 03-11-69, Cl. 204-180.

Randol, Glenn T.Dual master cylinder with warning signal system. 3,431,729, 03-11-69, Cl. 060-054.5

Ransley, Derek L., to Chevron Research Company. Polymeric sulfur compounds from allene. 3,432,542, 03-11-69, Cl. 260-481.

Rascov, Anthony. Toilet utilizing oil as a flushing agent. 3,431,563, 03-11-69, Cl. 004-001.

Rasicci, Vincent M., to Standard Brands Chemical Industries, Inc.Emulsion polymerization of unsaturated monomers. 3,432,455, 03-11-69, Cl. 260-029.7

Rasmussen, George, and Spellmire, Robert J., to Pike Corporation of America. Rescue signaling system. 3,432,857, 03-11-69, Cl. 343-018.

Rauhut, Herbert, and Sus, Oskar, to Keuffel & Esser Company. Reproduction material. 3,432,301, 03-11-69, Cl. 096-091.

Rausing, Gad Anders, and Jarund, Harry Sigvard Valdemar, to AB Tetra Pak. Apparatus for manufacturing sterile packages starting from a flattened tube having a sterilized inner surface. 3,431,700, 03-11-69, Cl. 053-182.

Ravich, Leonard E., to White Consolidated Industries, Inc.Method for the production of amorphous cadmium sulphide. 3,432,262, 03-11-69, Cl. 023-134.

Ravve, Abraham: *See—*
Fitko, Chester W., and Ravve, Abraham 3,432,464.

Rawlings, Richard F., and Austin, George E., said Austin assor. to said Rawlings. Shell stringer apparatus. 3,431,803, 03-11-69, Cl. 083-095.

Rawlings, Richard F.: *See—*
Rawlings, Richard F., and Austin, George E., 3,431,803.

Ray, James A.: *See—*
Kelly, Thomas M., Peppler, Richard B., and Ray, James A. 3,432,316.

Ray, William A., to International Telephone & Telegraph Corporation. Solenoid valve. 3,432,140, 03-11-69, Cl. 251-129.

Raynaud, Noel: *See—*
Le Coz, Francois, Mombaxet, Rene, and Raynaud, Noel 3,431,618.

Realisations Ultrasoniques Limited Company: *See—*
Dory, Jacques, 3,431,774.

Reardon, John, to Uni-Tech Chemical Manufacturing Company. Salicylate method for the quantitative determination of ammonia nitrogen. 3,432,395, 03-11-69, Cl. 195-103.5

Reas, William H., to General Electric Company. Neptunium recovery process. 3,432,276, 03-11-69, Cl. 023-338.

Reckhow, Warren A.: *See—*
Lestina, Gregory J., and Reckhow, Warren A. 3,432,300.

Recognition Equipment Incorporated: *See—*
Perry, Edward Gordon, Jr., 3,432,646.

Redmond, Peater van Dillard. Boat with air propulsion and support means. 3,431,881, 03-11-69, Cl. 115-011.

Reed, David S.: *See—*
Darigo, Julius, Dickey, Rex E., and Reed, David S. 3,431,612.

Reed, Kenneth James, and Lythgoe, Alan Lennox, to Letraset Limited. Dry transfer sheets and processes for using the same. 3,432,376, 03-11-69, Cl. 156-234.

Regie Nationale des Usines Renault: *See—*
Peras, Lucien, 3,432,651.

Reich, Simon, to General Signal Corporation. Vehicle remote control system. 3,432,654, 03-11-69, Cl. 246-187.

Reid, Thornton H.: *See—*
Tsao, George T., Reid, Thornton H., Hiller, Fred L., and Hubbard, Lawrence H. 3,432,345.

Reiling, Victor G., to Duriron Company, Inc., The. Processing of plastic materials. 3,432,511, 03-11-69, Cl. 260-092.1

Reimer, Carl, and Porsch, Hans, to Siemens Aktiengesellschaft. Method of producing slot windings for electrical machines. 3,431,639, 03-11-69, Cl. 029-605.

Reimer, William A., to Automatic Electric Laboratories, Inc.Multiplanar electrical connection techniques. 3,432,796, 03-11-69, Cl. 339-018.

Reimers-Getriebe A.G.: *See—*
Steuer, Herbert, 3,431,724.

Reimus, Richard G., and Saporito, Anthony, to Struthers Scientific and International Corporation. Concentration process. 3,432,308, 03-11-69, Cl. 099-077.

Rein, Arnold Robert, to American Can Company. Method of raw edge protection. 3,432,375, 03-11-69, Cl. 156-202.

Reiner Industries, Inc.: *See—*
Wright, George H., 3,431,632.

Reiners, Franz, to Monforts, A., Maschinenfabrik. Apparatus for compacting fibrous webs. 3,431,608, 03-11-69, Cl. 026-018.6

Remes, Nathaniel L., and Ventura, John J., to M&T Chemicals Inc.Method for preparing organoantimony halides. 3,432,534, 03-11-69, Cl. 260-446.

Remington Arms Company, Inc.: *See—*
Darigo, Julius, Dickey, Rex E., and Reed, David S., 3,431,612.

Rendall, Ian, to Wimpey, George, & Company Limited. Apparatus for temporarily stowing detachable portions of suspended loads. 3,431,987, 03-11-69, Cl. 173-141.

Rentachler, John H., and Sewall, Loren J., to Minnesota Rubber Company. Pinch roller. 3,432,083, 03-11-69, Cl. 226-186.

Rentz, John C., to General Electric Company. Method for forming nonwoven electric blanket shells. 3,431,611, 03-11-69, Cl. 028-072.2

Rettig, Peter P.: *See—*
Kull, Albert R., and Rettig, Peter P. 3,431,768.

Retzler, William, to Colibri Lighters Limited. Cigarette lighters. 3,432,248, 03-11-69, Cl. 431-149.

Reumerman, Theodorus, and Helmig, Willem Hendrik Theodoor. Device for character recognition. 3,432,809, 03-11-69, Cl. 340-146.3

Reynolds, Reginald John William: *See—*
Levy, Winifred Jane, Newport, John Prescott, and Reynolds, Reginald John William 3,432,430.

Reynolds, Robert W.: *See—*
Saeger, Waldemar, Reynolds, Robert W., Green, Leland Dale, Tanguay, Armand R., and Shimabukuro, George T. 3,432,613.

Rhone-Poulenc S.A.: *See—*
Guinet, Paul Alfred Eugene, and Puthet, Robert Raphael, 3,432,537.
Metivier, Jean, and Sauli, Michel, 3,432,519.
Preau, Nicole Marie, 3,432,522.

Ricci, Anthony J.Method of anodizing aluminum wire. 3,432,407, 03-11-69, Cl. 204-028.

Rice, Leonard M., and Grogan, Charles H., to Geschickter Fund for Medical Research, Inc.Trifluoromethylazaspirancs and azaspirane diones. 3,432,499, 03-11-69, Cl. 260-247.5

Richards, Claude L., Cartwright, John A., and Pearce, Graham, to Painton & Company Limited. Electrical connectors for ribbon conductors of cable tape. 3,432,799, 03-11-69, Cl. 339-099.

Richards, Homer: *See—*
Driscoll, Tommy, and Richards, Homer 3,431,898.

Richards, Raymond S., to Owens-Illinois, Inc.Composite metal article with a platinum coating. 3,432,278, 03-11-69, Cl. 029-183.5

Richardson, Thomas W. G., Johnson, Glenn D., and Hemphill, Dean P., to Shell Oil Company. Method for laying underwater pipeline. 3,431,739, 03-11-69, Cl. 061-072.3

Richter, Willy, to Hauni-Werke Korber & Co. K.G.Method of and machine for producing a tobacco rod. 3,431,914, 03-11-69, Cl. 131-021.

Rieckenberg, George W.: *See—*
Krohm, Fred A., and Rieckenberg, George W. 3,431,579.

Riethmuller, Heinz, and Thomaier, Dieter, to Teldix Luftfahrt-Ausrustungs G.m.b.H.Symmetrical gyroscope. 3,431,786, 03-11-69, Cl. 074-005.

Rinaldi, Russell G., and Moore, Brian B., to International Business Machines Corporation. Data compression/expansion and compressed data processing. 3,432,811, 03-11-69, Cl. 340-172.5

Rinke, Heinrich: *See—*
Oertel, Harald, Rinke, Heinrich, and Thoma, Wilhelm 3,432,456.

Riordan, Hugh E., to General Precision Inc.Self-modulating pulse fluid switching valve. 3,431,934, 03-11-69, Cl. 137-119.

Risdon Manufacturing Company, The: *See—*
Venus, Frank, Jr., 3,432,080.

Ritchie, Douglas Eugene, to Hewlett-Packard Company. Edge board and flat cable connector. 3,432,802, 03-11-69, Cl. 339-128.

Ritter, Josef: *See—*
Gott, Hans, and Ritter, Josef 3,431,952.

RIV-SKF Officine di Villar Perosa S.p.A.: *See—*
Giulietti, Luciano, 3,431,896.

Riviana Foods Inc.: *See—*
Lynn, Lawrence, and Anderson, Roy M., 3,432,309.

Robbins, Jim, Seat Belt Co.: *See—*
Stoffel, Robert W., and Stevenson, Wendell, 3,432,115.

Robbins, Owen G.: *See—*
Glenn, John D., Robbins, Owen G., Schwemer, Warren C., and Silverman, Joseph R. 3,431,753.

Robert, Andre Charles, and Tauzia, Jacques, to Sud-Aviation Societe Nationale de Constructions Aeronautiques. Automatic signal searching receiver. 3,432,758, 03-11-69, Cl. 325-420.

Robertson, H. H., Co.: *See—*
Jentoft, Arthur Philip, 3,432,139.

Robertson, John R., to Uniroyal Limited. Method of moulding. 3,432,583, 03-11-69, Cl. 264-046.

Robertson, Reed S.: *See—*
Wirth, Louis F., Jr., and Robertson, Reed S. 3,432,428.

Robeson, Charles D.: *See—*
Chechak, Albert J., and Robeson, Charles D. 3,432,566.

Robillard, Hubert A.Plumber's pneumatic plug. 3,431,945, 03-11-69, Cl. 138-090.

Robinette Research Laboratories, Inc. : *See—*
Fisher, Sallie A., 3,432,251.

Robins, Janis, to Ashland Oil & Refining Company. Process for preparing sand cores. 3,431,969, 03-11-69, Cl. 164-043.

Robins, Janis. Resinous composition comprising benzylic ether resin, polyisocyanate, and tertiary amine. 3,432,457, 03-11-69, Cl. 260-030.4

Robins, Kenneth E.: *See—*
Britton, Richard B., Robins, Kenneth E., and Sampson, William B. 3,432,783.

Robinson, Myron L.Apparatus for measurement of fluid conductivity using D. C. power in a conductivity cell. 3,432,746, 03-11-69, Cl. 324-030.

Robison, James Berkeley, to United States of America, Atomic Energy Commission. High voltage field-reversal pulse generator using a laser switching means to activate a field emission X-ray tube. 3,432,664, 03-11-69, Cl. 250-098.

Roblendano, Emilio A.: *See—*
Jakaitis, Eugene A., Littler, Francis W., and Roblendano, Emilio A. 3,432,319.

Roby, S. Kingsley. Optical programming with crossed light guides. 3,432,675, 03-11-69, Cl. 250-227.

Rocco, William A.: *See—*
White, Donald W., Tragert, William E., and Rocco, William A. 3,432,352.

Rock, Frank C., to Optical Coating Laboratory, Inc.Anti-reflection coating and assembly having synthesized layer of index of refraction. 3,432,225, 03-11-69, Cl. 350-164.

Rocket Research Corporation: *See—*
Green, Charles J., 3,431,742.
Green, Charles J., 3,431,743.

Rodrigues, Anthony F., and Eaton, Roy W., to Becton, Dickinson of California, Inc.Dip molding apparatus-double conveyor. 3,431,596, 03-11-69, Cl. 018-004.

Roesky, Herbert W., to Du Pont de Nemours, E. I., and Company. Derivatives of phosphinodithionic acid and method for their preparation. 3,432,277, 03-11-69, Cl. 023-357.

Rogers, Dilworth T., to Esso Research and Engineering Company. Process of making structural elements with compacted aggregate. 3,432,322, 03-11-69, Cl. 106-281.

Rogers, Ralph P.Railroad boxcar door construction. 3,431,964, 03-11-69, Cl. 160-023.

Rogers, William Paul. Electronic ignition circuit. 3,431,901, 03-11-69, Cl. 123-148.

Rohrborn, Hans-Joachim, Clausen, Heinrich, Grassmann, Wolfgang, and Valet, Gerhard, to Pigment-Chemie, G.m.b.H.Antimony and arsenic compound treatment of TiO_2 for laminate papers. 3,432,324, 03-11-69, Cl. 106-300.

Romberg, Francis M., to Mobil Oil Corporation. Time break corrector for marine seismic signals. 3,432,805, 03-11-69, Cl. 340-015.5

Roper Corporation: *See—*
Smith, Hugh Edward, 3,431,792.

Rose, Stanley, to Aylesbury Automation Limited. Bobbin stripper. 3,431,610, 03-11-69, Cl. 028-019.

Rosen, Jacob J., to Dublon, Incorporated. Making foamed articles and articles produced thereby. 3,432,581, 03-11-69, Cl. 264-045.

Rosenberg, Harold, to United States of America, Air Force. Perfluoroalkyl and perfluoroacyl ferrocenes. 3,432,533, 03-11-69, Cl. 260-439.

Rosenbrook, William, Jr., and Sinclair, Arthur Charles, to Abbott Laboratories. Process for making 1-hydroxy-6- alkoxyphenazine-5,10-dioxides. 3,432,505, 03-11-69, Cl. 260-267.

Rosengren, Eric. Jointing and sealing means. 3,432,185, 03-11-69, Cl. 285-039.

Rosengren, Kjell: *See—*
Sunner, Stig, and Rosengren, Kjell 3,431,772.

Ross, Richard C.: *See—*
Kwan, Fred K. C., Ross, Richard C., and Svoboda, Glenn R. 3,432,458.

Ross, Robert S.: *See—*
Flickinger, Maynard L., and Ross, Robert S. 3,432,122.

Rostler, Fritz S., to Witco Chemical Company, Inc.Methods for improvement of asphalts and oil emulsions useful therein. 3,432,321, 03-11-69, Cl. 106-277.

Rotch, Abbott L., to EG & G, Inc.Electric-discharge system having automatically controlled power supply. 3,432,725, 03-11-69, Cl. 315-241.

Roth, Edwin S.: *See—*
Mandell, Harry Creston, Jr., and Roth, Edwin S. 3,432,347.

Roussel-UCLAF: *See—*
Bellet, Paul, and Van Thuong, Truong, 3,432,393.

Rousselet, Joseph Antoine Noel. Self cleaning centrifugal separator. 3,432,092, 03-11-69, Cl. 233-022.

Rousso, Jack J., Jr., to Mobil Oil Corporation. Method and apparatus for recording identifying data on seismic records. 3,432,806, 03-11-69, Cl. 340-015.5

Rovelsky, Leon A.: *See—*
Frederickson, Lyle R., Rovelsky, Leon A., and Wood, Robert L. 3,432,752.

Rowley, Gene V.: *See—*
Watson, Ellwood R., Rowley, Gene V., and Wunderlich, Charles R. 3,432,585.

Rubin, Jack: *See—*
Buell, Heinz, Gannon, Joseph A., and Rubin, Jack 3,432,856.

Rudd, Milo O., and Woronoff, Alexander M., to Univis, Inc.Method for processing of ophthalmic lens. 3,431,688, 03-11-69, Cl. 051-284.

Rudiger, Albrecht: *See—*
Billing, Heinz, Rudiger, Albrecht, and Gundlach, Karl-Heinz 3,432,817.

Ruhl, Horst: *See—*
Hummel, Raymond J., and Ruhl, Horst 3,431,561.

Ruotolo, Michael, to Dynamics Corporation of America. Patchboard programming system. 3,432,801, 03-11-69, Cl. 339-126.

Russell, Frank H., to Bolton-Emerson, Inc.Method for cleaning the orifices of shower tubes by applying suction and brushing. 3,432,383, 03-11-69, Cl. 162-272.

Russell, Richard G.: *See—*
Kavthekar, Keshav S., and Russell, Richard G. 3,431,997.

Russell, Richard, to Willcox & Gibbs Sewing Machine Co.Single needle, three-thread edge stitch. 3,431,876, 03-11-69, Cl. 112-433.

Rutherford, Russell G.Measured liquid dispenser. 3,431,953, 03-11-69, Cl. 141-361.

Rutz, Leon E.: *See—*
Nelson, Paul C., and Rutz, Leon E. 3,431,758.

Ryder, Francis E., to Illinois Tool Works, Inc.Web transporting cartridge formed of a pair of identical housing members. 3,432,111, 03-11-69, Cl. 242-055.13

Ryland, Lloyd B., to Shell Oil Company. Organic catalytic oxidation and catalysts therefor. 3,432,558, 03-11-69, Cl. 260-604.

S & C Electric Company: *See—*
Evans, David M., and Stene, Manfred, 3,432,780.

Saeger, Waldemar, Reynolds, Robert W., Green, Leland Dale, Tanguay, Armand R., and Shimabukuro, George T., to Xerox Corporation. Facsimile transceiver system with supervisor logic control. 3,432,613, 03-11-69, Cl. 178-006.

Sagara, Hideo, Iwasaki, Yasuhiro, Ohe, Tsutomu, and Mashimo, Tomoyuki, to Mitsubishi Jukgyo Kabushiki Kaisha. Method of fixing pipe base in multilayer container. 3,431,630, 03-11-69, Cl. 029-480.

Saginaw Machine and Tool Company: *See—*
Cushman, Robert, and Wasco, Anthony, Jr., 3,432,214.

Saint Pauls Church, The Rector,Church Wardens and Vestrymen of: *See—*
Justice, Mary E., 3,431,958.

Sakaguchi, Adio: *See—*
Okuya, Eitaro, Sakaguchi, Adio, Komatsu, Kouei, Kikuchi, Tatsuhiko, Yasunaga, Hidetoshi, and Anduoda, Kenichi 3,432,515.

Sakai, Masakatsu: *See—*
Kawashima, Masao, Sakai, Masakatsu, and Kobayashi, Toshio 3,432,683.

Sakakibara, Seizaburo: *See—*
Kuwabara, Michichika, Nawata, Kiyoshi, Tsunawaki, Kiyokazu, and Sakakibara, Seizaburo 3,432,476.

Sakuma, Masao, to Kabushiki Kaisha Keihin Seiki Seisakusho. Metering valve. 3,431,944, 03-11-69, Cl. 138-045.

Saleck, Wilhelm, Lassig, Wolfgang, and Posse, Rolf-Fred, to Agfa-Gevaert Aktiengesellschaft. Photographic emulsions containing mercury compounds and azaindenes. 3,432,304, 03-11-69, Cl. 096-109.

Salvi, A., & Co. S.p.A.: *See—*
Claren, Rodolfo, 3,432,610.

Sambeth, Joerg, and Archipoff, Alexis, to Elekal. Method of producing hydrophilic polyurethane foam employing a monoalkoxy-polyethylene glycol. 3,432,448, 03-11-69, Cl. 260-002.5

Sampson, William B.: *See—*
Britton, Richard B., Robins, Kenneth E., and Sampson, William B. 3,432,783.

Samsonite Corporation: *See—*
Ellsworth, Arthur W., Fujioka, Robert K., and Uyeda, Tim M., 3,431,871.
Winter, Roger D., 3,432,012.

Sander, Wolfgang, to Konus-Kessel Gesellschaft fur Warmetechnik m.b.H. & Co. K. G.Boiler for heating combustible fluids. 3,432,247, 03-11-69, Cl. 431-117.

Sanders Nuclear Corporation: *See—*
Fitzgerald, Joseph J., and Mayo, Kenneth E., 3,432,386.

Sandoz Inc.: *See—*
Galantay, Eugene E., 3,432,526.

Sandoz Ltd. (also known as Sandoz A.G.): *See—*
Jucker, Ernst, Lindenmann, Adolf, Schenker, Erhard, and Gadient, Fulvio 3,432,491.
Neier, Reinhard, 3,432,485.

Sandoz Ltd. (also known as Sandoz AG): *See—*
Sigg, Hans-Peter, and Stoll, Christian, 3,432,598.

Sanford, Richard A., and Ayers, Buell O., to Phillips Petroleum Company. Analyzer for determining hydrogen-to-carbon ratio in a material. 3,431,770, 03-11-69, Cl. 073-023.

Santa Rita Technology, Inc.: *See—*
Stewart, John L., 3,432,618.

Santucci, Kenneth E.Saddle clip. 3,432,129, 03-11-69, Cl. 248-069.

Saporito, Anthony: *See—*
Reimus, Richard G., and Saporito, Anthony 3,432,308.

Sargeant, Ralph G., to Pet, Incorporated. Method of and apparatus for producing dry concentrates from liquid materials. 3,432,636, 03-11-69, Cl. 219-010.65

Sarno, Andrew N., to DI/AN Controls, Inc.Stacked magnetic memory system. 3,432,827, 03-11-69, Cl. 340-174.

Sato, Yutaka, to Japanese National Railways. Method of filling gaps in permanent rail beds. 3,432,098, 03-11-69, Cl. 238-283.

Satterwhite, Fred B., to Klinger Manufacturing Company, Limited, The. Apparatus for processing yarn. 3,431,609, 03-11-69, Cl. 028-001.

Sauli, Michel: *See—*
Metivier, Jean, and Sauli, Michel 3,432,519.

Saunders, Alan: *See—*
Crawley, John, Saunders, Alan, Milne, Alistair, and Campbell, William Henry 3,431,825.

Sawan, George A.Safety automatic brake. 3,432,211, 03-11-69, Cl. 303-018.

Sawyer, Willard A.Inflatable pipe plug. 3,431,946, 03-11-69, Cl. 138-093.

Scantlin Electronics, Inc.: *See—*
Munro, Ronald V., 3,432,620.

Schacht, Ulrich, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning Hydrogenated moenomycin and process of preparation. 3,432,597, 03-11-69, Cl. 424-118.

Schacker, James C.: *See—*
Muska, William A., Schacker, James C., and McHattie, Earl E. 3,432,793.

Schafer, Gerhard: *See—*
Markwardt, Fritz, Schafer, Gerhard, Topfer, Horst, and Walsmann, Peter 3,432,596.

Schenck, Hermann, and Wenzel, Werner, to Steinmuller, L. & C. G.m.b.H.Apparatus for making carbon lamellae, carbon discs, carbon sheets and the like. 3,431,594, 03-11-69, Cl. 018-004.

Schenk, Horst, Gunther, Karl-Georg, and Kulb, Wilhelm, to Siemens Aktiengesellschaft. Method for the precise assembly of apparatus. 3,431,625, 03-11-69, Cl. 029-421.

Schenke, Werner, to Marquardt, J., & J., Firma. Electrical snap action switch. 3,432,632, 03-11-69, Cl. 200-067.

Schenker, Erhard: *See—*
Jucker, Ernst, Lindenmann, Adolf, Schenker, Erhard, and Gadient, Fulvio 3,432,491.

Scherb, Gustave A.Fluid pressure switch utilizing an axially movable floating disk assembly. 3,432,633, 03-11-69, Cl. 200-083.

Scheuerman, Frank J.: *See—*
Earling, Roy, and Scheuerman, Frank J. 3,431,695.

Schibbye, Lauritz Benedictus, to Svenska Rotor Maskiner Aktiebolag. Screw rotor machine for an elastic working medium. 3,432,089, 03-11-69, Cl. 230-138.

Schiller, Siegfried, Lenk, Peter, and Forster, Harry, to Veb Lokomotivbau-Elektrotechnische Werke Hans Beimler. Cyclically moving electron beam for uniform vapor deposited coating. 3,432,335, 03-11-69, Cl. 117-106.

Schirmer, Henry G.: *See—*
Patterson, William A., Schirmer, Henry G., and Weissman, Stanley N. 3,432,447.

Schmermund, Alfred. Packaging machines. 3,431,705, 03-11-69, Cl. 053-388.

Schmid, Oswald Charles. Shovel holder attachment for vehicles. 3,432,133, 03-11-69, Cl. 248-201.

Schmidt, Alfred: *See—*
Weinrotter, Ferdinand, Schmidt, Alfred, Muller, Walter, and Bohler, Walter 3,432,501.

Schmidt, Fred J., to United States of America, Army. Fast warmup cathode. 3,432,714, 03-11-69, Cl. 313-/337.

Schmidt, Lawrence D., to Allied Chemical Corporation. Charging coke oven with hot coarsely comminuted coal. 3,432,398, 03-11-69, Cl. 201-038.

Schnabel, Herbert W., to Armour and Company. Scouring pad. 3,431,689, 03-11-69, Cl. 051-400.

Schnatter, William P.: *See—*
Chinn, George M., Schnatter, William P., and Watson, Henry F. 3,431,820.

Schneider, Franz, to Pfaff, G.M., A.G.Stopping mechanism for sewing machines. 3,431,874, 03-11-69, Cl. 112-219.

Schnell, Ernst Emil: *See—*
Ten Pas, Warren Edward, Schnell, Ernst Emil, and Polzin, Donald Herman 3,432,064.

Schoeller, Alexander, to Firma Alexander Schoeller & Co.Bottle crate of synthetic material. 3,432,063, 03-11-69, Cl. 220-021.

Schomburg, John F.: *See—*
Radke, William A., and Schomburg, John F. 3,432,669.

Schor, Wayne E.: *See—*
Beville, Ross H., Schor, Wayne E., and Durst, David R. 3,432,082.

Schreiner, Gilbert O.Device, variable-density stereoviewing spectacles. 3,432,220, 03-11-69, Cl. 350-132.

Schreyer, Kenneth D., and Mechl, David W.: to Standard Pressed Steel Co.Decking construction with rail members. 3,432,147, 03-11-69, Cl. 256-059.

Schroder, Erich, to Grundig Elektro-Machanische Versuchsanstalt Inb. Max Grundig. Tape cartridge ejecting arrangement. 3,432,169, 03-11-69, Cl. 274-004.

Schroeder, Joseph W.: *See*—
Whitney, Gilbert C., Jr., and Schroeder, Joseph W. 3,431,763.

Schroeder, Paul M., Jr., to General Dynamics Corporation. Stowable aft fairing for a reusable rocket. 3,432,125, 03-11-69, Cl. 244-130.

Schubert, Alfred, and Eichas, Heinz, to Feldmuhle Aktiengesellschaft. Wire-drawing capstan. 3,432,146, 03-11-69, Cl. 254-150.

Schueler, Donald G.: *See*—
Land, Cecil E., and Schueler, Donald G. 3,432,773.

Schuler, Mathias John, and Smeltz, Kenneth Cleon, to Du Pont de Nemours, E. I., and Company. Electrolytic process for making tetraalkylammonium polybromides. 3,432,409, 03-11-69, Cl. 204-072.

Schulpen, Karel H. N.Device for the manufacture of objects of yieldably deformable material. 3,431,802, 03-11-69, Cl. 083-004.

Schulz, Peter R., to International Business Machines Corporation. Method for adjusting contacts in reed switches. 3,432,282, 03-11-69, Cl. 065-032.

Schunk, Roland: *See*—
Frank, Albert, Kraushaar, Alfred, Margreiter, Hans, and Schunk, Roland 3,432,490.

Schuster, Ludwig: *See*—
Kiefer Hans, Raff, Paul, and Schuster, Ludwig 3,432,552.

Schutt, Hermann C., to Fluor Corporation, Ltd., The. Still and column with submerged combustion burners in the still. 3,432,399, 03-11-69, Cl. 202-153.

Schwab, Milton I.: *See*—
Spitz, Albert W., and Schwab, Milton I. 3,432,289.

Schwartz, Edmund I., to Devenco Incorporated. Matched signal transmitter-receiver arrangement. 3,432,754, 03-11-69, Cl. 325-038.

Schwartz, Nelson Norman: *See*—
Lee, Nathan Dean, and Schwartz, Nelson Norman 3,432,267.

Schwemer, Warren C.: *See*—
Glenn, John D., Robbins, Owen G., Schwemer, Warren C., and Silverman, Joseph R. 3,431,753.

Schwerdhofer, Hans Joachim, to Fichtel & Sachs A.G.Reversible one-way clutch with pilot brake. 3,432,015, 03-11-69, Cl. 192-043.1

Schwinn Bicycle Co.: *See*—
Brilando, Frank P., 3,432,204.

Schwoyer, William L.: *See*—
Kern, Forrest L., Schwoyer, William L., and Dowling, Thomas P. 3,431,849.
Kern, Forest L., Schwoyer, William L., and Dowling, Thomas P. 3,431,851.

Scofield, John D.: *See*—
Basso, Michael J., 3,432,634.

Scott Paper Company: *See*—
Meisel, Fred W., Jr., 3,431,911.

Scott, Paul R., to Shell Oil Company. Transport of solids with petroleum in pipelines. 3,432,209, 03-11-69, Cl. 302-066.

Scott, William H., to Portable Electric Tool, Inc.Hedge trimmer. 3,431,647, 03-11-69, Cl. 030-210.

Scottish Agricultural Industries Limited: *See*—
Ewart, George, and Raitt, John Stewart, 3,432,261.

Seal Basin Marine Company: *See*—
Brown, Paul R., 3,431,568.

Sealectro Corporation: *See*—
Brishka, Alexander R., 3,432,798.

Sealomatic Electronics Corp.: *See*—
Gross, Jenoe, 3,431,822.

Searle, G. D., & Co.: *See*—
Krimmel, Carl Peter, 3,432,510.

Seay, Mark O.Roller bearing for digging wheel of excavating machinery. 3,432,215, 03-11-69, Cl. 308-187.

Sebesta, George J., and Carlisle, Richard W., to Dyna Magnetic Devices,Inc.Sub-miniature sound transducers. 3,432,622, 03-11-69, Cl. 179-115.

Seeliger, Wolfgang, to Chemische Werke Huls Aktiengesellschaft. Process for the production of aliphatic or cycloaliphatic polyesters of carbonic acid. 3,432,473, 03-11-69, Cl. 260-077.5

Seleznev, Ivan Vasilievich: *See*—
Svilpe, Karl Yanovich, Luft, Genakh Maxovich, Betiyan, Andris Alfredovich, Milyaev, Viktor Vasilievich, Gurevich, Leib Borukhovich, and Seleznev, Ivan Vasilievich 3,432,790.

Senger, Egon. Hydraulic hoist for motor vehicles. 3,432,006, 03-11-69, Cl. 187-008.72

Sennewald, Kurt, Erpenbach, Heinz, Vogt, Wilhelm, and Joest, Herbert, to Knapsack Aktiengesellschaft. Process for removing formic acid from mixtures rich in acetic acid. 3,432,544, 03-11-69, Cl. 260-499.

Serniuk, George E., to Esso Research and Engineering Company. Graft polymerization. 3,432,577, 03-11-69, Cl. 260-879.

Sewall, Loren J.: *See*—
Rentschler, John H., and Sewall, Loren J. 3,432,083.

Sewell, Donald Nelson, to Dielectric Products Engineering Company, Inc.Low RF noise axial compensation connector. 3,432,779, 03-11-69, Cl. 333-097.

Sharp, Chester H.: *See*—
Spitz, Melvin P., Sharp, Chester H., and Sproule, John W. 3,431,567.

Shelby, Richard K., to Monsanto Company. Infrared heating method for molding machines and the like. 3,432,640, 03-11-69, Cl. 219-354.

Shell Oil Company: *See*—
Anderson, Victor F., 3,432,061.
Burns, William C., and Vlig, Meye, 3,432,071.
De Acetis, William, and Smutny, Edgar J., 3,432,465.
Fraatz, Robert E., 3,431,889.
Hackmann, Johannes T., 3,432,599.
Hottman, Clarence E., and Van Meurs, Pieter, 3,432,205.
Kouwenhoven, Herman W., and Douwes, Cornelis Th., 3,432,565.
MacNab, Adrian J., and Treseder, Richard S., 3,432,254.
Malott, Raymond A., 3,431,950.
Martin, Jon W., 3,432,578.
May, Clayton A., 3,432,478.
Ongkiehong, Leo, and Mast, Harm, 3,432,000.
Richardson, Thomas W. G., Johnson, Glenn D., and Hemphill, Dean P., 3,431,739.
Ryland, Lloyd B., 3,432,558.
Scott, Paul R., 3,432,209.
Spitzer, Ernst L. Th. M., and Radder, Johannes, 3,432,257.
Wittner, Eugene, and Wendler, Kenneth T., 3,432,433.

Shelton, Thomas M.: *See*—
Kennedy, Clifford F., and Shelton, Thomas M. 3,431,764.

Shenker, Marvin, La Russa, Joseph, and Nershi, George Thomas, to Farrand Optical Co., Inc.Wide field optical viewer with concave mirror eyepiece. 3,432,219, 03-11-69, Cl. 350-029.

Shepard, Mark, to Key Pharmaceuticals, Inc.Delayed and sustained release type pharmaceutical preparation. 3,432,593, 03-11-69, Cl. 424-020.

Shephard, Harry D., Jr.Foseco, Inc., mesne Ingot mold with opposed exothermic sideboards. 3,432,138, 03-11-69, Cl. 249-106.

Sheps, Martin I., Beckering, Jacobus J., and Bednarski, Thaddeus E., to Black and Decker Manufacturing Company, The. Portable electric drill. 3,432,703, 03-11-69, Cl. 310-050.

Sherman, Albert, and McNamara, William A., Jr., to United States of America, Air Force. Multi-apertured magnetic memory element. 3,432,824, 03-11-69, Cl. 340-174.

Sherman, H. B., Manufacturing Company: *See*—
Turner, George L., Johnson, Gerould A., Disbrow, Richard A., and Nestell, Donald E., 3,432,102.

Shibata, Shinichi, Mori, Hideo, and Owada, Atsushi, to Tokyo Shibaura Electric Co., Ltd.Semiconductive electromechanical transducers. 3,432,732, 03-11-69, Cl. 317-235.

Shima, Koji: *See*—
Abe, Kazuo, Kokubo, Ryo, Yamada, Yumizuru, Nagakura, Mizuhiko, and Shima, Koji 3,432,274.

Shimabukuro, George T.: *See*—
Saeger, Waldemar, Reynolds, Robert W., Green, Leland Dale, Tanguay, Armand R., and Shimabukuro, George T. 3,432,613.

Shimano Kogyo Kabushiki Kaisha: *See*—
Matsumoto, Shuzo, 3,432,013.

Shimp, David A., McWhorter, Wayne F., and Wolfe, Norman G., to Celanese Coatings Company. Epoxy curing agents comprising a fluoborate salt and a hydrolyzable ester. 3,432,440, 03-11-69, Cl. 252-429.

Shinkawa, Toshikazu: *See*—
Uto, Yoshimitsu, Yamazaki, Taizo, and Shinkawa, Toshikazu 3,431,949.

Shinn, Byron H., and Todd, Herbert E., to United Aircraft Corporation. Process for preparing polytetrafluoroethylene gas- kets. 3,432,587, 03-11-69, Cl. 264-120.

Shirode, Katsumi: *See*—
Ohfuka, Toshio, Shirode, Katsumi, and Ichikawa, Yasushi 3,432,482.

Shoh, Andrew, to Branson Instruments, Incorporated. Oscillatory circuit for electro-acoustic converter. 3,432,691, 03-11-69, Cl. 310-008.1

Short, James Harold, to Abbott Laboratories. Substituted sulfanilamides. 3,432,493, 03-11-69, Cl. 260-239.75

Sickbert, Adolf: *See*—
Stich, Wilhelm, and Sickbert, Adolf 3,432,367.

Sickles, Ralph E., to Diamond Shamrock Corporation. Electroless nickel, cobalt and nickel-cobalt alloy plating from fluoborates sources. 3,432,338, 03-11-69, Cl. 117-130.

Siemens Aktiengesellschaft: *See*—
Diederichs, Artur, 3,432,700.
Reimer, Carl, and Porsch, Hans, 3,431,639.
Schenk, Horst, Gunther, Karl-Georg, and Kulb, Wilhelm, 3,431,625.
Winkler, Klaus, 3,432,838.

Sierra Electric Corporation: *See*—
Gaines, Jack H., and Edmisson, Russell C., 3,432,611.

Sigg, Hans-Peter, and Stoll, Christian, to Sandoz Ltd. (also known as Sandoz AG). Antibiotic SL 2266. 3,432,598, 03-11-69, Cl. 424-122.

Silly, Jean-Pierre: *See*—
Osgan, Maseh, Silly, Jean-Pierre, and Teyssie, Philippe 3,432,445.

Silver, Francis M.: *See*—
Fraze, Ermal C., and Silver, Francis M. 3,432,068.

Silver, Harold F., and Price, Frank B.; to American Factors Associates, Limited. Press for separating liquids from solids. 3,431,839, 03-11-69, Cl. 100-158.

Silverman, Daniel, to Pan American Petroleum Corporation. Cross-correlator. 3,432,648, 03-11-69, Cl. 235-181.

Silverman, Joseph R.: *See*—
Glenn, John D., Robbins, Owen G., Schwemer, Warren C., and Silverman, Joseph R. 3,431,753.

Siminski, Michael C., Jr.: *See*—
Pettigrew, Carl K., Siminski, Michael C., Jr., and Swavely, Donald F. 3,431,887.

Simoneau, Edward T., to General Electric Company. Organopolysiloxane fluids substituted with methylolated amidoalkyl groups. 3,432,536, 03-11-69, Cl. 260-448.2

Simpson, Alden H.Tent stake. 3,431,924, 03-11-69, Cl. 135-015.

Simpson, Jack W., Sr.: *See*—
Douglas, Gavin L., and Simpson, Jack W., Sr. 3,432,845.

Sims, John C., Jr., to Mohawk Data Sciences Corporation. Intermittent motion devices. 3,432,695, 03-11-69, Cl. 310-015.

Sims, Martin H.: *See*—
Harvey, Herbert, Sims, Martin H., and Clay, Charles L. 3,432,841.

Sinclair, Alan M.: *See*—
McCallister, Robert A., and Sinclair, Alan M. 3,432,265.

Sinclair, Arthur Charles: *See*—
Rosenbrook, William, Jr., and Sinclair, Arthur Charles 3,432,505.

Sinclair Research, Inc.: *See*—
Hoffman, William D., Burk, Emmett H., Jr., and Eichhorn, Robert M., 3,432,570.
Verdol, Joseph A., and Carrow, Donald J., 3,432,479.

Sindaco S.A.: *See*—
Haas, Peter, 3,431,722.

Singer-General Precision, Inc.: *See*—
Buell, Heinz, Gannon, Joseph A., and Rubin, Jack, 3,432,856.
Flower, Robert A., Stavis, Gus, and Gamertsfelder, George R., 3,432,237.

Singer, Marshall V., Jr.Grader blade. 3,431,980, 03-11-69, Cl. 172-040.

Sitro, Igor Nikolaevich: *See*—
Kazantsev, Boris Afanasievich, Sitro, Igor Nikolaevich, Malyk, Vladimir Avksentievich, and Elyashev, Isaak Grigorievich 3,431,855.

Sittner, Edward H.: *See*—
Cordani, Eugene J., and Sittner, Edward H. 3,431,868.

Slakis, Albin Joseph: *See*—
Kuhr, Wayne Kenneth, Slakis, Albin Joseph, Hughes, Richard Lawrence, and Neilson, Anne Josephine 3,432,305.

Slaugh, James R., to Hamilton Watch Company. Timepiece. 3,431,721, 03-11-69, Cl. 058-127.

Slavin, Peter Edmond, to Intelligent Instruments Inc.X-ray helical scanning means for displaying an image of an object within the body being scanned. 3,432,657, 03-11-69, Cl. 250-053.

Smedlund, Egon Gunnar. Supporting and moving device for refuse sacks. 3,431,704, 03-11-69, Cl. 053-384.

Smeets, Gerard Gaston Fras. Slotted locking ferrule. 3,431,623, 03-11-69, Cl. 029-240.

Smeltz, Kenneth Cleon: *See*—
Schuler, Mathias John, and Smeltz, Kenneth Cleon 3,432,409.

Smith-Blair Inc.: *See*—
Turner, Frank E., 3,432,188.

Smith, George B.: *See*—
Smith, George B., and Vested, Robert A., 3,431,847.

Smith, George B., and Vested, Robert A., said Vested assor to said Smith. Perforating printing improvement. 3,431,847, 03-11-69, Cl. 101-426.

Smith, Hugh Edward, to Roper Corporation. Control means for hydrostatic transmission. 3,431,792, 03-11-69, Cl. 074-481.

Smith, James L., and Willen, Donald W., to United States of America, Atomic Energy Commission. Gage device for measurement of density profiles of snowpack. 3,432,656, 03-11-69, Cl. 250-043.5

Smith, Jonathan S., II: *See*—
Mazdiyasni, Khodabakhsh S., Lynch, Charles, and Smith, Jonathan S., II 3,432,314.

Smith Kline & French Laboratories: *See*—
Whitecar, Alten E., 3,431,992.

Smith, Robert L.: *See*—
Hettlinger, Raymond C., and Smith, Robert L. 3,431,937.

Smith, Robin: *See*—
Phillipson, Alan, Spiller, Basil Harry Royston, Smith, Robin, and Cheesman, Harry 3,431,697.

Smithe, F. L., Machine Co., Inc.: *See*—
Stovall, Milton A., 3,431,830.

Smutny, Edgar J.: *See*—
De Acetis, William, and Smutny, Edgar J. 3,432,465.

Snam Progetti S.p.A.: *See*—
Marconi, Walter, Mzaaei, Alessandro, de Malde', Marcello, and Cucinella, Salvatore, 3,432,516.

Snyder, Richard L.Memory with cores threaded by single conductors. 3,432,823, 03-11-69, Cl. 340-174.

Sobotka, Walter: *See*—
Arnaud, Jacques, Sobotka, Walter, and Desbrueres, Maurice 3,432,776.

Societe Anonyme Anciens EtablissementsWalton & Place: *See*—
Avot, Jean-Pierre, 3,432,372.

Societe Anonyme Andre Citroen: *See*—
Henry-Biabaud, Edmond, 3,432,008.

Societe Anonyme de Vehicules Industriels etd'Equipment Mecaniques Saviem: *See*—
Labat, Pierre, 3,431,791.

Societe Anonyme, Fabrique Nationale d'Armeside Guerre: *See*—
Stassart, Joseph Antoine Marie, 3,431,801.

Societe Anonyme Francaise de ConstructionsIndustrielles d'Isolation Isolfeu and: *See*—
Lamy, Jacques E., and Gris, Pierre A., 3,432,062.

Societe Anonyme, Messicr: *See*—
Lucien, Nere, 3,432,124.

Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine: *See*—
Tcherkawsky, Claude, 3,432,401.

Societe d'Etude du Transport et de la Volorisationdes Gaz Naturels du Sahara: *See*—
Lamy, Jacques E., and Gris, Pierre A., 3,432,062.

Societe d'Etude du Transport et de laValorisation des Gaz Naturels du Sahara, S.E.G.A.N.S.: *See*—
Lamy, Jacques Edouard, 3,431,740.

Societe Flaminaire Marcel Quercia: *See*—
Quercia, Marcel, 3,432,072.

Societe Jaz S. A.: *See*—
Oudet, Claude, and Lallement, Gerard, 3,431,808.

Societe Nationale d'Etude et de Constructionde Moteurs d'Aviation: *See*—
Hardy, Jean Marie, and Lacombe, Henry Marie Andre Rene, 3,432,100.

Solipasso, Victor M., to Jacobsen, Harvey A. Metzler, Ronald H.Coasting vehicle. 3,432,182, 03-11-69, Cl. 280-018.

Solmos, Gene R., to Radio Corporation of America. Coil form. 3,432,785, 03-11-69, Cl. 336-198.

Solvay et Cie: *See*—
Mathis, Pierre, and Demol, Pierre, 3,432,340.

Sonoco Products Company: *See*—
Le Hardy, Clement D., 3,432,112.

Sons, Charles C., Jr., to Caterpiller Tractor Co.Ply configuration for pneumatic tires. 3,431,963, 03-11-69, Cl. 152-356.

Soper, Jaeph W.Keratometer with adjustable fixation target attachment for determining corneal topogarphy. 3,432,227, 03-11-69, Cl. 351-013.

Soprani, Paolo Settimio. Switches and mechanism for forming chords in electronic musical instruments. 3,432,635, 03-11-69, Cl. 200-166.

Sorensen, Carl, and Molgard, Age, to Danfoss A/S. Surface mount mixing valve. 3,431,938, 03-11-69, Cl. 137-359.

Sorenson, Wayne R.: *See*—
Miller, Donald B., McClaflin, Gifford G., and Sorenson, Wayne R. 3,432,513.

Sorrell, John E.Portable travel lock. 3,432,199, 03-11-69, Cl. 292-292.

Sossong, Henry J.: *See*—
Lovingham, Joseph J., and Sossong, Henry J. 3,431,732.

Souders, Elsie Natalie. Removable maternity insert panels. 3,431,562, 03-11-69, Cl. 002-221.

Spacht, Ronald B., to Goodyear Tire & Rubber Company, The. Antiozonants. 3,432,460, 03-11-69, Cl. 260-045.9

Spaulding, Harold Ernest, to American Can Company. Machine for handling and treating articles in groups. 3,431,702, 03-11-69, Cl. 053-281.

Speiser, Peter, to Ciba Corporation. Injection-moulded oral medicament in solid form. 3,432,592, 03-11-69, Cl. 424-019.

Spellmire, Robert J.: *See*—
Rasmussen, George, and Spellmire, Robert J. 3,432,857.

Sperry Rand Corporation: *See*—
Barker, Paul D., and Torok, Ernest J., 3,432,828.
Harklau, Lanny L., and James, Raymond H., 3,432,821.
Hewitt, Fred G., 3,432,820.
Hewitt, Fred G., 3,432,826.
Hewitt, Fred G., and James, Raymond H., 3,432,829.
Korkowski, Vincent J., Hewitt, Fred G., and James, Raymond H., 3,432,819.
Luke, Louzelle Albert, 3,432,686.
Lundberg, Charles W., Hewitt, Fred G., James, Raymond H., and Korkowski, Vincent J., 3,432,818.

Spiegel, Walter J., and Tamburro, Peter J., to United States of America, Navy. Underwater connector. 3,432,612, 03-11-69, Cl. 174-088.

Spiller, Basil Harry Royston: *See*—
Phillipson, Alan, Spiller, Basil Harry Royston, Smith, Robin, and Cheesman, Harry 3,431,697.

Spindlow, John Richard: *See*—
Giles, Cyril George, Martin, James Alexander, and Spindlow, John Richard 3,431,996.

Spink, Edward C., to Gar Wood Industries, Inc.Wheel cover. 3,432,206, 03-11-69, Cl. 301-037.

Spitz, Albert W., and Schwab, Milton I.Method of refining copper. 3,432,289, 03-11-69, Cl. 075-073.

Spitz, Melvin P., Sharp, Chester H., and Sproule, John W., to Bedline, Inc.Means for anchoring flexible fabrics in sofa- beds. 3,431,567, 03-11-69, Cl. 005-051.

Spitzer, Ernst L. Th. M., and Radder, Johannes, to Shell Oil Company. Use of sulfonium salts in liquid/liquid metal extraction. 3,432,257, 03-11-69, Cl. 023-087.

Spohr, Albert R., to Sunbeam Corporation. Illuminated electric shaver. 3,432,652, 03-11-69, Cl. 240-002.

Spooner, Howard C.: *See*—
Jennings, Lyston C., and Spooner, Howard C. 3,431,857.

Spring, Claude L., to Jensen Industries, Incorporated. Signal means. 3,432,843, 03-11-69, Cl. 340-283.

Sproule, John W.: *See*—
Spitz, Melvin P., Sharp, Chester H., and Sproule, John W. 3,431,567.

Spruth, Wilhelm G.: *See*—
Lem, Donald J., and Spruth, Wilhelm G. 3,432,815.

Square D Company: *See*—
Puetz, Jordan F., 3,432,628.
Puetz, Jordan F., 3,432,787.

St. Clair, John C.Rotary switch with NαOH solution between rotor and stator. 3,432,742, 03-11-69, Cl. 321-050.

St. Regis-Consolidated Packaging Limited: *See*—
Larson, Frank William Douglas Landor, 3,432,678.

Staar, Theophiel Clement Jozef Lodewijk, to Starr S. A.Record changing apparatus. 3,432,170, 03-11-69, Cl. 274-010.

Stalberg, Nils Gustav, and Berglund, Erling Gotthard. Apparatus for stirring a liquid. 3,432,149, 03-11-69, Cl. 259-075.

Stamatis, Sam P., to Wells-Gardner Electronics Corporation. Keyed AGC circuit utilizing composite video signal supplied from detector. 3,432,615, 03-11-69, Cl. 178-007.3

Standard Brands Chemical Industries, Inc.: *See*—
Rasicci, Vincent M., 3,432,455.

Standard Pressed Steel Co.: *See*—
Schreyer, Kenneth D., and Meehl, David W., 3,432,147.

Stapper, Charles H., to International Business Machines Corporation. Magnetic multihead assembly with shielding means. 3,432,839, 03-11-69, Cl. 340-174.1

Starr S. A.: *See*—
Staar, Theophiel Clement Jozef Lodewijk, 3,432,170.

Startin, Kenneth John, to AMP Incorporated. Fuse end connector. 3,432,788, 03-11-69, Cl. 337-201.

Stassart, Joseph Antoine Marie, to Societe Anonyme, Fabrique Nationale d'Armes de Guerre. Tool set for copying machines. 3,431,801, 03-11-69, Cl. 082-014.

Stauber, Hans. Powerplants and water supply system therefor within the eternal ice. 3,431,735, 03-11-69, Cl. 061-019.

Stavis, Gus: *See*—
Flower, Robert A., Stavis, Gus, and Gamertsfelder, George R. 3,432,237.

Stefanyk, Michael. Municipal incinerator. 3,431,872, 03-11-69, Cl. 110-007.

Steiger, Anton, to Sulzer Brothers Limited. Free piston-type internal combustion pumping engine. 3,432,088, 03-11-69, Cl. 230-056.

Steigerwald, Delbert: *See*—
Boegli, Charles P., and Steigerwald, Delbert 3,431,891.

Steinmuller, L. & C. G.m.b.H.: *See*—
Schenck, Hermann, and Wenzel, Werner, 3,431,594.

Steinthal, M., & Company Incorporated: *See*—
Jantzen, George H., 3,431,606.

Stene, Manfred: *See*—
Evans, David M., and Stene, Manfred 3,432,780.

Stenger, Hans G., to American Can Company. Process for forming plastic containers. 3,432,586, 03-11-69, Cl. 264-094.

Stephens, Frederick Allen, and Hurst, Arthur, said Stephens assor to British Needle Company Ltd., The. Teats for infants' feeding bottles. 3,432,059, 03-11-69, Cl. 215-011.

Stephens, Roger C., to Dresser Industries, Inc.Hanger structure. 3,431,693, 03-11-69, Cl. 052-485.

Sterling Drug Inc.: *See*—
Zenitz, Bernard L., 3,432,603.

Stern, Fred M., to Combustion Engineering, Inc.Core design for nuclear reactor. 3,432,389, 03-11-69, Cl. 176-040.

Steuer, Herbert, to Reimers-Getriebe A.G.One-piece chain link. 3,431,724, 03-11-69, Cl. 059-035.

Stevens, Fred C.Inertia responsive nonskid system. 3,432,212, 03-11-69, Cl. 303-021.

Stevens, J. P., & Co. Inc.: *See—*
Boehm, Ernest Robert, 3,431,814.
Stevenson, Wendell: *See—*
Stoffel, Robert W., and Stevenson, Wendell 3,432,115.
Stewart, John L., to Santa Rita Technology, Inc.Method and system of analyzing the inner ear. 3,432,618, 03-11-69, Cl. 179-001.
Stewart-Warner Corporation: *See—*
Powell, Patrick L., 3,432,096.
Stich, Wilhelm, and Sickbert, Adolf, to Heppenstall Company. Process for the reduction of hot-rolled strip with very fine structural grain size. 3,432,367, 03-11-69, Cl. 148-012.
Stienen, Karl Heinz. Installation for storing articles, particularly for parking vehicles. 3,432,044, 03-11-69, Cl. 214-016.1
Stillwell, Peter Frederic Thomas Cryer, Montgomery, Peter Murdo, and Hogg, Richard William, to Electric & Musical Industries Limited. Radar apparatus. 3,432,854, 03-11-69, Cl. 343-007.4
Stockard, Ralph H.: *See—*
United States of America, National Aeronautics and Space Administration, 3,432,730.
Stockard, Ralph H.: United States of America, National Aeronautics and Space Administration, 3,432,730.
Stoffel, Robert W., and Stevenson, Wendell, to Robbins, Jim, Seat Belt Co.Belt securing means. 3,432,115, 03-11-69, Cl. 242-107.
Stokely, Raymond E., to Borg-Warner Corporation. Anti-backlash universal joint. 3,431,751, 03-11-69, Cl. 064-007.
Stoll, Christian: *See—*
Sigg, Hans-Peter, and Stoll, Christian 3,432,598.
Stone, Charles S., to Tracor, Inc.Noise-eliminating balanced modulator-mixer employing two complementarily controlled switches and a differential amplifier. 3,432,759, 03-11-69, Cl. 325-450.
Stovall, Milton A., to Smithe, F. L., Machine Co., Inc.Envelope patch cutting and collating apparatus. 3,431,830, 03-11-69, Cl. 093-061.
Strachanow, Grigory, to Zenith Radio Corporation. Transistorized scanning circuit with series-connected circuit. 3,432,719, 03-11-69, Cl. 315-027.
Stratton, Charles A., to Phillips Petroleum Company. Method for sulfonating cis 1,4-polybutadiene. 3,432,480, 03-11-69, Cl. 260-079.3
Strome, Murray W.: *See—*
Godby, Ensley A., Baker, Ralph C., and Strome, Murray W. 3,432,751.
Stroup, Philip T., and Terrill, James R., to Aluminum Company of America. Joining aluminum. 3,431,629, 03-11-69, Cl. 029-471.1
Struthers Scientific and International Corporation: *See—*
Grover, Kenneth M., and Ganiaris, Neophytos, 3,431,655.
Reimus, Richard G., and Saporito, Anthony, 3,432,308.
Stuart, Guy E., Jr., and De Vine, Barry F., to Midland-Ross Corporation. Position responsive actuator. 3,431,678, 03-11-69, Cl. 049-360.
Stuck, Matthew A., to Modern Manufacturing Company, Inc.Floral sacker. 3,431,706, 03-11-69, Cl. 053-390.
Stuckert, Paul E., to International Business Machines Corporation. Sense circuit for bistable memory devices. 3,432,685, 03-11-69, Cl. 307-231.
Stucki, Frank F., to Lockheed Aircraft Corporation. Ferrimagnetic pressure transducer. 3,432,435, 03-11-69, Cl. 252-062.61
Studiengesellschaft m.b.H.: *See—*
Wilke, Gunther, 3,432,530.
Sud-Aviation Societe Nationale de ConstructionsAeronautiques: *See—*
Robert, Andre Charles, and Tauzia, Jacques, 3,432,758.
Suhner, Willy. Heel engaging unit for a safety ski binding. 3,432,180, 03-11-69, Cl. 280-011.35
Sulzer Brothers Limited: *See—*
Steiger, Anton, 3,432,088.
Sunbeam Corporation: *See—*
Chambers, Worthy L., 3,432,702.
Spohr, Albert R., 3,432,652.
Sunner, Stig, and Rosengren, Kjell. Method and apparatus for determining the permeability of a material. 3,431,772, 03-11-69, Cl. 073-038.
Sunset Fuel Company: *See—*
Mudge, Clarence T., 3,432,145.
Sus, Oskar: *See—*
Rauhut, Herbert, and Sus, Oskar 3,432,301.
Suzuki, Yoshihisa, and Tanaka, Yoshio, to Kabushiki Kaisha Hitachi Seisakusho. Microwave transducer and electron device with microwave transducer. 3,432,716, 03-11-69, Cl. 315-003.5
Svenska Rotor Maskiner Aktiebolag: *See—*
Schibbye, Lauritz Benedictus, 3,432,089.
Svilpe, Karl Yanovich, Luft, Genakh Maxovich, Betiyan, Andris Alfredovich, Milyaev, Viktor Vasilievich, Gurevich, Leib Borukhovich, and Seleznev, Ivan Vasilievich. Adjustable rheostat means for liquid level gauges. 3,432,790, 03-11-69, Cl. 338-033.
Svoboda, Glenn R.: *See—*
Kwan, Fred K. C., Ross, Richard C., and Svoboda, Glenn R. 3,432,458.
Svoboda, James: *See—*
Borer, Herbert W., Ehlke, Charles C., and Svoboda, James 3,432,051.
Swanson, John L.: *See—*
Tonkin, Kenneth J., Swanson, John L., and Jeschke, Richard R. 3,431,841.
Swavely, Donald F.: *See—*
Pettigrew, Carl K., Siminski, Michael C., Jr., and Swavely, Donald F. 3,431,887.
Sweeney, Frank B.Fuel injection system. 3,432,152, 03-11-69, Cl. 261-034.
Swimmer, Ernest J., and Hicks, Alan A.Toy paste-strip forming device for peanuts and the like. 3,431,957, 03-11-69, Cl. 146-182.
Swiss Aluminium Ltd.: *See—*
Gyongyos, Ivan, 3,431,971.
Sylvania Electric Products Inc.: *See—*
Arnold, Charles E., 3,432,852.
Benda, David, 3,432,712.
Hagadorn, Marold Weston, and Johnston, Bruce R., 3,431,615.
Hagadorn, Marold Weston, and Kerstetter, Donald R., 3,431,631.
Jayne, Max L., 3,432,795.
Massey, Gail A., 3,432,770.
Syntex Corporation: *See—*
Fried, John H., 3,432,492.
Szilagyi, Geza: *See—*
Kasztreiner, Endre, Borsi, Jozsef, Vargha, Laszlo, Boris, Meszaros, Erika, and Szilagyi, Geza 3,432,549.
Takano, Mitsuo: *See—*
Mihara, Kazuhiko, Yamashiki, Takashi, and Takano, Mitsuo 3,432,429.
Tamburro, Peter J.: *See—*
Spiegel, Walter J., and Tamburro, Peter J. 3,432,612.
Tanaka, Yoshio: *See—*
Suzuki, Yoshihisa, and Tanaka, Yoshio 3,432,716.
Tanguay, Armand R.: *See—*
Saeger, Waldemar, Reynolds, Robert W., Green, Leland Dale, Tanguay, Armand R., and Shimabukuro, George T. 3,432,613.
Tardieu, Pierre. Jack-controlled system for multiple connections. 3,432,797, 03-11-69, Cl. 339-018.
Tate, Gary L.: *See—*
Nathan, Bernard, and Tate, Gary L. 3,432,028.
Taub, Daniel M.: *See—*
Owen, Charles E., Proudman, Antony, Taub, Daniel M., and Warwick, William A. 3,432,830.
Tauzia, Jacques: *See—*
Robert, Andre Charles, and Tauzia, Jacques 3,432,758.
Taylor, Carl E., to Johns Hopkins University, The. Contraceptive device. 3,431,906, 03-11-69, Cl. 128-130.
Taylor, James Howard, and Eidt, Clarence Martin, Jr., to Esso Research and Engineering Company. Two-step process for the oxidation of aluminum alkyls. 3,432,535, 03-11-69, Cl. 260-448.
Taylor, John W., Jr., Gobl, Gerhard E., and Hiscox, Harold C., to United States of America, Army. Hydrodynamic delay line. 3,432,777, 03-11-69, Cl. 333-031.
Tazuma, James J., and Zadra, Mario D., to Goodyear Tire & Rubber Company, The. Codimerization process. 3,432,572, 03-11-69, Cl. 260-683.15
Tcherkawsky, Claude, to Societe d'Electro-Chimie d'Electro- Metallurgie et des Acieries Electriques d'Ugine. Process for production of glacial acrylic acid by azeotropic distillation with a water entrainer. 3,432,401, 03-11-69, Cl. 203-015.
Technical Operations, Incorporated: *See—*
Holland, Thomas E., 3,432,239.
Techniservice Corporation: *See—*
Fisher, Sallie A., 3,432,251.
Teijin Limited: *See—*
Kuwabara, Michichika, Nawata, Kiyoshi, Tsunawaki, Kiyokazu, and Sakakibara, Seizaburo, 3,432,476.
Teldix Luftfahrt-Ausrustungs G.m.b.H.: *See—*
Riethmuller, Heinz, and Thomaier, Dieter, 3,431,786.
Teledyne, Inc.: *See—*
Hatcher, Owen W., Jr., 3,432,792.
Teletype Corporation: *See—*
Johnsen, James Alvin, and Peterson, John Loran, 3,432,772.
Kim, George A., 3,432,784.
Lindberg, Arthur F., 3,432,676.
Winston, Charles R., 3,432,844.
Ten Pas, Warren Edward, Schnell, Ernst Emil, and Polzin, Donald Herman, to Deere & Company. Adjustable partition for combination grain and fertilizer hopper. 3,432,064, 03-11-69, Cl. 220-022.
Terrill, James R.: *See—*
Stroup, Philip T., and Terrill, James R. 3,431,629.
Teske, Fritz, and Teske, Lothar. Slide-ring seal. 3,432,174, 03-11-69, Cl. 277-080.
Teske, Lothar: *See—*
Teske, Fritz, and Teske, Lothar 3,432,174.
Texas Instruments Incorporated: *See—*
Curry, James W., 3,432,538.
Ertel, Alfred, 3,432,778.
Finnegan, Francis, and Flanagan, Charles D., 3,432,643.
Granberry, Doyle S., McCalip, Robert L., and Lovelace, Byron K., 3,431,636.
Jost, Ernest M., 3,432,354.
Teyssie, Philippe: *See—*
Osgan, Maseh, Silly, Jean-Pierre, and Teyssie, Philippe 3,432,445.
Therapeutic Research Corporation Limited: *See—*
Cowley, John James, 3,432,060.
Thibault, Harrison N., and Tosches, Anthony J., to Marshall, John Donald and Bomar, Horace L. as trustees. Loom filling positioner. 3,431,951, 03-11-69, Cl. 139-122.
Thiokol Chemical Corporation: *See—*
Lovingham, Joseph J., and Sossong, Henry J., 3,431,732.
Townsley, John J., and Gershon, Milton, 3,432,106.
Thoma, Wilhelm: *See—*
Oertel, Harald, Rinke, Heinrich, and Thoma, Wilhelm 3,432,456.
Thomaier, Dieter: *See—*
Riethmuller, Heinz, and Thomaier, Dieter 3,431,786.
Thomas & Betts Corporation: *See—*
Churla, John J., 3,432,794.
Thompson, Gordon Bruce, to Northern Electric Company Limited. Signal multiplier providing an output signal substantially free of components proportional to the individual input signals. 3,432,650, 03-11-69, Cl. 235-194.
Thompson, James F.: *See—*
Gondeck, Frederick V., Hickox, Lester E., Kennedy, Thomas E., Perez, Arthur, and Thompson, James F. 3,432,378.
Thompson, Josephus B., to Grover Musical Products, Inc.Guitar machine. 3,431,807, 03-11-69, Cl. 084-306.
Thorp, Benjamin Adelbert, to Huyck Corporation. Water extraction devices. 3,432,385, 03-11-69, Cl. 162-352.
Thorson, Matthew T., and Lauler, Louis J., to Fairbanks Morse Inc., mense. Control circuits for card operated batcher. 3,432,744, 03-11-69, Cl. 323-074.
Throckmorton, Peter E.: *See—*
McKillip, William J., and Throckmorton, Peter E. 3,432,475.
Thuillier, Helene Suzanne. Electrically operated safety razor. 3,431,644, 03-11-69, Cl. 030-045.
Thurston, John M.Structural joining system. 3,432,132, 03-11-69, Cl. 248-188.91
Tidd, Howard A.Intermittently reversing control valve. 3,431,933, 03-11-69, Cl. 137-119.
Tillman, Cassius L., III. Well pressure control apparatus. 3,431,965, 03-11-69, Cl. 166-089.

Tindell, William A., Jr.: *See—*
O'Loughlin, Bernard T., and Tindell, William A., Jr. 3,432,151.
Tinnerman, George A.Utility clip. 3,431,607, 03-11-69, Cl. 024-243.
Tinsley, Samuel W., and King, Paul A., to Union Carbide Corporation. Epoxyalkyldioxanes and their use as textile finishing agents. 3,432,342, 03-11-69, Cl. 117-139.4
Todd, Herbert E.: *See—*
Shinn, Byron H., and Todd, Herbert E. 3,432,587.
Tokyo International Products, Inc.: *See—*
Baba, Hideshige, 3,432,325.
Tokyo Shibaura Electric Co., Ltd.: *See—*
Shibata, Shinichi, Mori, Hideo, and Owada, Atsushi, 3,432,732.
Tomita, Eiichi: *See—*
Nitta, Yoshihiro, Namekata, Masaya, Tomita, Eiichi, and Hirota, Yusaku 3,432,489.
Tomiyasu, Kiyo: *See—*
Naydan, Theodore T., and Tomiyasu, Kiyo 3,432,722.
Tompkins, Edgar M., to Xerox Corporation. Illumination system. 3,432,232, 03-11-69, Cl. 095-001.7
Tonkin, Kenneth J., Swanson, John L., and Jeschke, Richard R., to Dick, A. B., Co.Offset duplicating machines with master loading and ejecting mechanisms. 3,431,841, 03-11-69, Cl. 101-142.
Topfer, Horst: *See—*
Markwardt, Fritz, Schafer, Gerhard, Topfer, Horst, and Walsmann, Peter 3,432,596.
Torok, Ernest J.: *See—*
Barker, Paul D., and Torok, Ernest J. 3,432,828.
Tosches, Anthony J.: *See—*
Thibault, Harrison N., and Tosches, Anthony J. 3,431,951.
Towne Robinson Fastener Company: *See—*
Beebe, Jerry T., and DeLoe, O. Paul, 3,431,959.
Townsley, John J., and Gershon, Milton, to Thiokol Chemical Corporation. Magnetically controlled fluid injector. 3,432,106, 03-11-69, Cl. 239-585.
Tracor, Inc.: *See—*
Stone, Charles S., 3,432,759.
Tragert, William E., to General Electric Company. Electric storage cell. 3,432,349, 03-11-69, Cl. 136-006.
Tragert, William E.: *See—*
White, Donald W., Tragert, William E., and Rocco, William A. 3,432,352.
Trepanier, Donald L., to Dow Chemical Company, The. 2-Amino-5,6-dihydro-4H-1,3,4-oxadiazines. 3,432,497, 03-11-69, Cl. 260-244.
Treseder, Richard S.: *See—*
MacNab, Adrian J., and Treseder, Richard S. 3,432,254.
Trisa Company, The: *See—*
Chasar, Anthony R., 3,432,056.
Krusinski, Joseph, 3,432,046.
Trippe, Walter D., to Martin-Marietta Corporation. Leading edge gating technique for pulse receiver. 3,432,757, 03-11-69, Cl. 325-322.
Trojan Powder Company: *See—*
Kern, Forest L., Schwoyer, William L., and Dowling, Thomas P., 3,431,851.
Tropp, Karl: *See—*
Lohr, Alfred, Hemmann, Helmut, and Tropp, Karl 3,432,642.
Trumbull, Harold E.: *See—*
Hull, Henry E., Trumbull, Harold E., and Zeidman, Gordon G. 3,432,639.
Trybus, Conrad: *See—*
Loughridge, Raymond H., and Trybus, Conrad 3,432,218.
Tsao, George T., Reid, Thornton H., Hiller, Fred L., and Hubbard, Lawrence H., to Union Starch & Refining Co., Inc.Production of fructose from dextrose. 3,432,345, 03-11-69, Cl. 127-042.
Tsien, Hsue C., to Esso Research and Engineering Company. Universal diffusion-sorption type gas analyzer. 3,431,771, 03-11-69, Cl. 073-023.
Tsuboi, Takeo: *See—*
Okuda, Itsuki, Yoshinaga, Eiichi, and Tsuboi, Takeo 3,432,601.
Tsunawaki, Kiyokazu: *See—*
Kuwabara, Michichika, Nawata, Kiyoshi, Tsunawaki, Kiyokazu, and Sakakibara, Seizaburo 3,432,476.
Tucker, Linwood G., to Koppers Company, Inc.Coke oven door. 3,432,400, 03-11-69, Cl. 202-248.
Tull, Roger J.: *See—*
Pollak, Peter I., and Tull, Roger J. 3,432,502.
Turbo Machine Company: *See—*
Carruthers, George A., 3,432,118.
Turner, Calvin L.: *See—*
Keith, Guy E., Turner, Calvin L., and Marsh, Max F. 3,431,660.
Turner, Frank E., to Smith-Blair Inc.Plastic pipe saddle. 3,432,188, 03-11-69, Cl. 285-197.
Turner, George L., Johnson, Gerould A., Disbrow, Richard A., and Nestell, Donald E., to Sherman, H. B., Manufacturing Company. Liquid dispensing apparatus, motor and method. 3,432,102, 03-11-69, Cl. 239-242.
Tveter, Elmer C.: *See—*
Long, Ray S., and Tveter, Elmer C. 3,432,255.
Tweedy, Robert H., to United States Steel Corporation. Power actuated tractor hitch. 3,432,184, 03-11-69, Cl. 280-479.
Tyler, William J. L.: *See—*
Horsey, Sydney F., and Tyler, William J. L. 3,432,097.
Ubank, Raymond George: *See—*
Llewelyn, Geirionydd, and Ubank, Raymond George 3,432,280.
Uchida, Teiji, to Nippon Electric Company, Limited. Modulator for a light beam. 3,432,223, 03-11-69, Cl. 350-150.
Udylite Corporation, The: *See—*
Brown, Henry, Becking, Donald H., and Valayil, Sylvester P., 3,432,408.
Ueda, Kenichi, Yasunaga, Hidetoshi, and Komatsu, Kouei, to Japan Synthetic Rubber Co. Ltd.Method for polymerizing butadiene; a catalyst for use in said method and a method for producing the catalyst. 3,432,517, 03-11-69, Cl. 260-094.3
Ueda, Shinhachiro. Method of constructing underground concrete walls. 3,431,736, 03-11-69, Cl. 061-035.
Ulary, Russell R., to Radio Corporation of America. Apparatus for replenishing developer in an electrophotographic system. 3,431,890, 03-11-69, Cl. 118-637.
Ulinski, Bronislaus I., to Eaton Yale & Towne Inc.Side loading industrial truck. 3,432,054, 03-11-69, Cl. 214-670.
Unger, Hans Peter Olof. Display slide for wet biological preparates. 3,432,275, 03-11-69, Cl. 023-292.
Unger, Peter. Method and apparatus for testing cell suspensions. 3,432,268, 03-11-69, Cl. 023-230.
Uni-Tech Chemical Manufacturing Company: *See—*
Reardon, John, 3,432,395.
Union Carbide Corporation: *See—*
Amthor, Helmut K., and Conte, Alfred L., 3,431,622.
Davee, Robert L., and Louzos, Demetrious V., 3,432,351.
Kurtz, Abraham N., and Hamil, Henry F., 3,432,498.
Leger, John E., 3,432,117.
Levine, Isaac J., and Ingberman, Arthur K., 3,432,343.
Lombardi, Frank G., 3,432,474.
Tinsley, Samuel W., and King, Paul A., 3,432,342.
Welch, Frank J., 3,432,484.
Union Starch & Refining Co., Inc.: *See—*
Tsao, George T., Reid, Thornton H., Hiller, Fred L., and Hubbard, Lawrence H., 3,432,345.
Uniroyal, Inc.: *See—*
Miller, Robert, Farber, Milton, and Loveless, Frederick C., 3,432,250.
Uniroyal Limited: *See—*
Robertson, John R., 3,432,583.
United Aircraft Corporation: *See—*
Delaney, Everett W., 3,432,121.
Shinn, Byron H., and Todd, Herbert E., 3,432,587.
Yenawine, David L., and Hirakis, Emanuel C., 3,432,334.
United Engineering and Foundry Company: *See—*
O'Brien, Jeremiah Wagner, 3,431,762.
United Kingdom Atomic Energy Authority: *See—*
Hodgkinson, William Lloyd, 3,432,661
Nash, Geoffrey James Chetewoode, and Harding, Keith, 3,432,666.
United States Dill Head Company: *See—*
Bashor, James R., 3,431,799.
United States of America
Agriculture: *See—*
McKelvey, John B., Benerito, Ruth R., and Berni, Ralph J., 3,432,252.
Air Force: *See—*
Sherman, Albert, and McNamara, William A., Jr., 3,432,824.
Hill, Jacque A. F., and Draper, James S., 3,432,208.
Mazdiyasni, Khodabakhsh S., Lynch, Charles, and Smith, Jonathan S., II, 3,432,314.
Norfleet, Glenn D., 3,431,777.
Rosenberg, Harold, 3,432,533.
Army: *See—*
Alexander, Nelson E., 3,432,748.
Autry, Wallace M., and Chapman, Clifford P., 3,432,297.
Ayers, Orval E., Huskins, Chester W., and Carter, Herbert A., 3,432,444.
Blume, Alan E., 3,432,690.
Chin, Ball, 3,432,756.
Guilbault, George G., and Kramer, David N., 3,432,269.
Kalmus, Henry P., 3,432,855.
Kaufmann, William F., Jr., 3,431,815.
Wise, Charles R., 3,432,853.
Atomic Energy Commission: *See—*
Anderson, Malkolm V., 3,432,379.
Anger, Hal O., 3,432,660
Atz, Robert W., 3,431,860.
Britton, Richard B., Robins, Kenneth E., and Sampson, William B., 3,432,783.
Fick, Oliver A., 3,432,774.
Fortescue, Peter, 3,432,388.
Jackson, William L., 3,432,240.
Kermicle, Harold A., 3,432,764.
Kimble, Harry E., 3,432,665.
Land, Cecil E., and Schueler, Donald G., 3,432,773.
Lee, John V., and Love, Leon O., 3,432,709.
Robison, James Berkeley, 3,432,664.
Smith, James L., and Willen, Donald W., 3,432,656.
Walker, Robert H., and Walker, Robert J., 3,432,662.
Interior: *See—*
Deardorff, Donald K., 3,431,766.
National Aeronautics and Space Administration, Administrator, with respect to an invention of:
Wortman, Jimmie J., and Stockard, Ralph H., 3,432,730, 03-11-69, Cl. 317-234.
Navy: *See—*
Damm, Carl A., 3,431,824.
Elton, Raymond C., 3,432,659.
Ford, Floyd E., 3,432,743.
Gerke, Merrill D., 3,431,569.
Pannell, Otis R., 3,431,880.
Peters, John, and Grigor, James, 3,432,554.
Rabenhorst, David W., 3,431,854.
Warren, Raymond W., 3,432,144.
Wilson, Burton J., 3,432,350.
United States Steel Corporation: *See—*
Coleman, Homer B., and Gardner, Robert E., Jr., 3,432,396.
Tweedy, Robert H., 3,432,184.
Wovcha, Sidney N., 3,432,160.
Universal Oil Products Company: *See—*
Gleim, William K. T., 3,432,442.
Hockstra, James, 3,432,564.
Jones, Edwin Kermit, 3,432,567.
Univis Inc.: *See—*
Miller, Charles P., 3,431,593.
Univis, Inc.: *See—*
Rudd, Milo O., and Woronoff, Alexander M., 3,431,688.
Upjohn Company, The: *See—*
Paquette, Leo A., 3,432,507.
USM Corporation: *See—*
Murphy, Arthur J., 3,431,570.
Uto, Yoshmitsu, Yamazaki, Taizo, and Shinkawa, Toshikazu, to Messrs. Mitsubishi Jukogyo Kabushiki Kaisha. Laminated wall pressure vessel for use in hydrogen atmospheres. 3,431,949, 03-11-69, Cl. 138-143.

Uyeda, Tim M.: *See—*
Ellsworth, Arthur W., Fujioka, Robert K., and Uyeda, Tim M. 3,431,871.

Vaclaw, Mike M.: *See—*
Harvey, Robert R., and Vaclaw, Mike M. 3,431,976.

Valayil, Sylvester P.: *See—*
Brown, Henry, Becking, Donald H., and Valayil, Sylvester P. 3,432,408.

Valbjorn, Knud V., to Danfoss A/S. Operative connection between a piston and a piston. 3,431,796, 03-11-69, Cl. 074-587.

Valenziano, Frank P., to Interpace Corporation. Pipe joint. 3,432,176, 03-11-69, Cl. 277-168.

Valet, Gerhard: *See—*
Rohrborn, Hans-Joachim, Clausen, Heinrich, Grassmann, Wolfgang, and Valet, Gerhard 3,432,324.

van den Bussche, Willem, to North American Philips Company, Inc.Guide plate for magnetic tape. 3,432,084, 03-11-69, Cl. 226-197.

Van den Heuvel, Walter August, Vanhaist, Johan Eugeen, Van Engerland, Jozef Leonard, and De Volder, Noel Jozef, to Gevaert-Photo Production, N.V.Erasure-proof development of electrostatic images. 3,432,329, 03-11-69, Cl. 117-037.

van der Bosch, Rinaldo. Cosmetic package. 3,431,919, 03-11-69, Cl. 132-079.

van der Hilst, Jan, to North American Philips Company, Inc.Cylindrical drum. 3,431,617, 03-11-69, Cl. 029-123.

Van Emden, Bernard M., to Advance Data Systems. A. C. motor phase reversing circuit. 3,432,736, 03-11-69, Cl. 318-202.

Van Engerland, Jozef Leonard: *See—*
Van den Heuvel, Walter August, Vanhaist, Johan Eugeen, Van Engerland, Jozef Leonard, and De Volder, Noel Jozef 3,432,329.

Van Gaasbeck, Richard L., to Ingersoll-Rand Company. Fluid supported hoist. 3,432,040, 03-11-69, Cl. 212-134.

van Ginneken, Adriaan Johannes Josephus: *See—*
van Ginneken, Christiaan Marie, and van Ginneken, Adriaan Johannes Josephus 3,432,307.

van Ginneken, Christiaan Marie, and van Ginneken, Adriaan Johannes Josephus. Method and apparatus for preparing a mixed product. 3,432,307, 03-11-69, Cl. 099-056.

van Huet, Aloysius Theodorus. Apparatus for transferring pipes or the like. 3,432,041, 03-11-69, Cl. 214-001.

Van Meurs, Pieter: *See—*
Hottman, Clarence E., and Van Meurs, Pieter 3,432,205.

Van Thuong, Truong: *See—*
Bellet, Paul, and Van Thuong, Truong 3,432,393.

Vanderbilt, R. J., Company, Inc.: *See—*
Deal, Kenneth M., and Waterman, Raymond R., 3,432,449.

Vanderhoff, John W., to Dow Chemical Company, The. Method for carrying out chemical reactions using microwave energy. 3,432,413, 03-11-69, Cl. 204-159.22

Vanhaist, Johan Eugeen: *See—*
Van den Heuvel, Walter August, Vanhaist, Johan Eugeen, Van Engerland, Jozef Leonard, and De Volder, Noel Jozef 3,432,329.

Vargas, Yamail C.Article-wrapping machine. 3,431,701, 03-11-69, Cl. 053-209.

Vargha, Laszlo: *See—*
Kasztreiner, Endre, Borsi, Jozsef, Vargha, Laszlo, Boris, Meszaros, Erika, and Szilagyi, Geza 3,432,549.

Vattuone, Giuseppe. Totally or partially prefabricated structure bar-dam for the protection of harbors. 3,431,734, 03-11-69, Cl. 061-004.

Vaurio, Frans V. E., to Fox River Paper Corporation. Raised printing. 3,432,328, 03-11-69, Cl. 117-038.

Vautrey, Louis, to Commissariat a l'Energie Atomique. Mechanism for effecting the positional adjustment of nuclear reactor control rods. 3,432,047, 03-11-69, Cl. 214-027.

VEB Arzneimittelwerk Dresden: *See—*
Markwardt, Fritz, Schafer, Gerhard, Topfer, Horst, and Walsmann, Peter, 3,432,596.

Veb Lokomotivbau-Elektrotechnische WerkeHans Beimler: *See—*
Schiller, Siegfried, Lenk, Peter, and Forster, Harry, 3,432,335.

Veilez, Robert, and Parquet, Pierre, to North American Philips Company, Inc.Pump for liquefield gases. 3,431,744, 03-11-69, Cl. 062-055.

Venghiattis, Alexis A., to Perkin-Elmer Corporation, The. Method for vaporizing elements by igniting a mixture including the element. 3,432,655, 03-11-69, Cl. 250-043.5

Ventura, John J.: *See—*
Remes, Nathaniel L., and Ventura, John J. 3,432,534.

Venus, Frank, Jr., to Risdon Manufacturing Company, The. Self-venting dispensing and recharging aerosol valve assembly. 3,432,080, 03-11-69, Cl. 222-402.16

Vercoulen, Johannes Cornelis Augustinus, to Chemische Fabriek L. van der Grinten N.V.Photoprinting apparatus. 3,432,236, 03-11-69, Cl. 355-109.

Verdol, Joseph A., and Carrow, Donald J., to Sinclair Research, Inc.Reaction product of monoamine polyamine and polymer of a monovinyl monomer and maleic anhydride. 3,432,479, 03-11-69, Cl. 260-078.5

Vereschagin, Alex A., and Vereschagin, John J., to Automotive bin carrying machine. . 3,432,053, 03-11-69, Cl. 214-505.

Vereschagin, John J.: *See—*
Vereschagin, Alex A., and Vereschagin, John J. 3,432,053.

Verson Allsteel Press Company: *See—*
Bautz, Frederick H., and McElroy, Howard J., 3,432,042.

Vested, Robert A.: *See—*
Smith, George B., and Vested, Robert A. 3,431,847.

Vickers Limited: *See—*
Crawley, John, Saunders, Alan, Milne, Alistair, and Campbell, William Henry, 3,431,825.
Ogden, Peter James, 3,431,844.

Viitanen, Veikko K.: *See—*
Crawford, Donald C., Viitanen, Veikko K., and Hoffman, John D. 3,431,828.

Viking Oil Company: *See—*
Berry, Charles E., 3,432,093.

Villax, Ivan, to International Rectifier Corporation. Fermentative production of tetracycline. 3,432,394, 03-11-69, Cl. 195-080.

Vind, Holger V., to Danfoss A/S. Electrical switches having a rest contact and self-holding means. 3,432,786, 03-11-69, Cl. 337-095.

Vischer, Alfred, III: *See—*
Vischer, Alfred, Jr., 3,431,902.

Vischer, Alfred, Jr., 2/30 each to Vischer, William, Vischer, Alfred, III Vischer, Peter and Bouton, Gertrude V., 4/30 each to Zitzewitz, Walter W. and Zitzewitz, Elmer K. and 1/3 each to Zitzewitz, Gertrude J. and Zitzewitz, Barbara O.Pressure cooking system including pressure operated drain valve. 3,431,902, 03-11-69, Cl. 126-020.

Vischer, Peter : *See—*
Vischer, Alfred, Jr., 3,431,902.

Vischer, William,: *See—*
Vischer, Alfred, Jr., 3,431,902.

Vitacco, Nicholas P., to Belke Manufacturing Company. Variable, commutating contact electroplating barrel. 3,432,419, 03-11-69, Cl. 204-213.

Vlig, Meye: *See—*
Burns, William C., and Vlig, Meye 3,432,071.

Vockenhuber, Karl: *See—*
Freudenschusz, Otto, 3,432,229.

Vogt, Kurt, to Omega Louis Brandt & Frere S.A.Magnetic roller clutch. 3,432,016, 03-11-69, Cl. 192-045.

Vogt, Wilhelm: *See—*
Sennewald, Kurt, Erpenbach, Heinz, Vogt, Wilhelm, and Joest, Herbert 3,432,544.

Voll, Samuel T.Nightstick having pressurized spray. 3,432,077, 03-11-69, Cl. 222-078.

von Krusenstierna, Otto, Lindholm, Ingemar, and Malmberg, Gunnar, to Allmanna Svenska Elektriska Aktiebolaget. Fuel cell electrode. 3,432,353, 03-11-69, Cl. 136-086.

von Portatius, Hans, to Chemische Werke Huls Aktiengesellschaft. Process for the production of polyoxymethylenes by catalytic polymerization of monomeric formaldehyde. 3,432,470, 03-11-69, Cl. 260-067.

von Rintelen, Harald, Liebe, Werner, and Krafft, Werner, to Agfa-Gevaert Aktiengesellschaft. Silver salt diffusion process. 3,432,298, 03-11-69, Cl. 096-029.

Vornbaumen, E., & Co.: *See—*
Hofrichter, Wilhelm, 3,431,718.

Vulcan Materials Company: *See—*
Wilson, Harold Paul, 3,432,256.

Wacker-Chemie G.m.b.H.: *See—*
Hittmair, Paul, Wohlfarth, Ernst, Nitsche, Siegfried, and Wick, Manfred, 3,432,463.

Wagenknecht, Rudolf: *See—*
Moller, Fritz, Groschopp, Heinz, and Wagenknecht, Rudolf 3,432,337.

Wagner Electric Corporation: *See—*
Bucler, Richard C., 3,431,730.

Wagner, Richard C.: *See—*
Harper, John D., Breyer, Frederick, and Wagner, Richard C. 3,431,745.

Wahle, Gunter, and Lorenzen, Heinz-Christen, to Hauni Werke, Korber & Co. K. G.Apparatus for producing and applying tear strips. 3,431,827, 03-11-69, Cl. 093-001.

Waldorff, Jorgen F., to Danfoss A/S. Guide means. 3,431,863, 03-11-69, Cl. 103-131.

Walker, James W.: *See—*
Martin, Alfred W., Walker, James W., McNair, William T., Jr., and Hood, Coy H. 3,432,560.

Walker Manufacturing Company: *See—*
Kidera, Edward H., Kurth, Warren, and Whittingham, David J., 3,431,759.

Walker, Robert H., and Walker, Robert J., to United States of America, Atomic Energy Commission. Automatic separation column product analyzer. 3,432,662, 03-11-69, Cl. 250-083.1

Walker, Robert J.: *See—*
Walker, Robert H., and Walker, Robert J. 3,432,662.

Walkup, William B., to General Electric Company. Anti double feed device. 3,431,817, 03-11-69, Cl. 089-012.

Walsmann, Peter: *See—*
Markwardt, Fritz, Schafer, Gerhard, Topfer, Horst, and Walsmann, Peter 3,432,596.

Wanser, Henry G.: *See—*
Winks, Fred H., and Wanser, Henry G. 3,432,653.

Warner, Albert C., and Allen, Manton E.Defensive weapon and cartridge therefor. 3,431,853, 03-11-69, Cl. 102-039.

Warren, Raymond W., to United States of America, Navy. Prime mover limit control. 3,432,144, 03-11-69, Cl. 253-001.

Warren, William E., to Western Machinery Corporation. Glue applicator for panel patching machine. 3,431,888, 03-11-69, Cl. 118-238.

Warwick, William A.: *See—*
Owen, Charles E., Proudman, Antony, Taub, Daniel M., and Warwick, William A. 3,432,830.

Wasco, Anthony, Jr.: *See—*
Cushman, Robert, and Wasco, Anthony, Jr. 3,432,214.

Wasilewski, Joseph C., to American Instrument Co., Inc.Automatic analytical apparatus. 3,432,271, 03-11-69, Cl. 023-253.

Wassill, Terry. Spring trip release for a chisel plow. 3,431,982, 03-11-69, Cl. 172-710.

Watanabe, Akio: *See—*
Kan, Masao, Hyodo, Hiroshi, Watanabe, Akio, and Enumi, Shigekazu 3,432,327.

Watanabe, Tomoyoshi, Hishida, Yukio, and Hirata, Takashi, to Brother Kogyo Kabushiki Kaisha. Type bar assembly for typewriters. 3,432,018, 03-11-69, Cl. 197-036.

Waterman, Betty Jo, : *See—*
Waterman, Willis D., deceased (by Waterman, Betty Jo, administratrix) 3,431,989.

Waterman, Raymond R.: *See—*
Deal, Kenneth M., and Waterman, Raymond R. 3,432,449.

Waterman, Willis D., deceased (by Waterman, Betty Jo, administratrix). Planetary excavator. 3,431,989, 03-11-69, Cl. 175-095.

Watson, Ellwood R., Rowley, Gene V., and Wunderlich, Charles R., to Aerojet-General Corporation. Method and apparatus for continuous fabrication of desalination membranc. 3,432,585, 03-11-69, Cl. 264-049.

Watson, Henry F.: *See—*
Chinn, George M., Schnatter, William P., and Watson, Henry F. 3,431,820.

Wattler, Wilhelm. Chain making machines. 3,431,723, 03-11-69, Cl. 059-025.

Waugh, John A.: *See—*
Marzocchi, Alfred, and Waugh, John A. 3,432,332.

Webb, Derrel D., to Houston Engineers, Inc.Keyseat wiper. 3,431,990, 03-11-69, Cl. 175-295.

Webber, William O., to Esso Research and Engineering Company. Hydrogenation process. 3,432,481, 03-11-69, Cl. 260-082.

Weber, Walter O., to Haveg Industries, Inc.Windowed foam package. 3,432,380, 03-11-69, Cl. 161-124.

Webster, Thomas J., and Garrett, Michael E., to British Oxygen Company Limited, The. Pulse tube refrigeration process. 3,431,746, 03-11-69, Cl. 062-086.

Weeks, Richard C., to Campbell Soup Company. Bread package. 3,432,310, 03-11-69, Cl. 099-172.

Wehner, Donald Clifford: *See—*
Berenson, Herman, Dornbush, Albert Carl, and Wehner, Donald Clifford 3,432,341.

Weinrotter, Ferdinand, Schmidt, Alfred, Muller, Walter, and Bohler, Walter, to Osterreichische Stickstoffwerke Aktiengesellschaft. Process for the preparation of melamine. 3,432,501, 03-11-69, Cl. 260-249.7

Weir, Henry John. Sheet spreading device. 3,431,665, 03-11-69, Cl. 038-143.

Weissman, Stanley N.: *See—*
Patterson, William A., Schirmer, Henry G., and Weissman, Stanley N. 3,432,447.

Weisz, Paul B.: *See—*
Miale, Joseph N., and Weisz, Paul B. 3,432,568.

Welch, Frank J., to Union Carbide Corporation. Preparation of thermoplastic polymers by low temperature polymerization of vinyl monomers. 3,432,484, 03-11-69, Cl. 260-088.7

Welke, Robert J.Portable heating device. 3,432,641, 03-11-69, Cl. 219-433.

Wells-Gardner Electronics Corporation: *See—*
Stamatis, Sam P., 3,432,615.

Wendler, Kenneth T.: *See—*
Wittner, Eugene, and Wendler, Kenneth T. 3,432,433.

Wendt, Alfred, : *See—*
Bininda, Norbert, and Wendt, Alfred, deceased, (by Wendt, Frau Alfred, sole heir) 3,432,621.

Wendt, Frau Alfred, : *See—*
Bininda, Norbert, and Wendt, Alfred, deceased, (by Wendt, Frau Alfred, sole heir) 3,432,621.

Wenzel, Werner: *See—*
Schenck, Hermann, and Wenzel, Werner 3,431,594.

Werner, Tage: *See—*
Greaves, Melvin J., and Werner, Tage 3,431,691.
Greaves, Melvin J., Werner, Tage, and Greenwalt, Richard B. 3,432,287.

Wessels, Johannes Hendrik: *See—*
Backers, Franciscus Theodorus, and Wessels, Johannes Hendrik 3,432,614.

Western Machinery Corporation: *See—*
Warren, William E., 3,431,888.

Western Oil Tool & Manufacturing Company, Inc.: *See—*
Keith, Guy E., Turner, Calvin L., and Marsh, Max F., 3,431,660.

Westinghouse Electric Corporation: *See—*
Cox, Andrew P., Jr., and Price, William L., 3,432,851.

Westling, Randolph E., to Gulf Oil Corporation. Method and apparatus for offshore anchoring. 3,431,879, 03-11-69, Cl. 114-206.

Weston Instruments, Inc.: *See—*
Brophy, William R., Jr., 3,431,782.

Weyerhaeuser Company: *See—*
Houtz, Harold H., and Carl, Allen E., 3,432,411.

Wheaton, Harold L., to Martin-Marietta Corporation. Cobalt-base alloy. 3,432,294, 03-11-69, Cl. 075-171.

White Consolidated Industries, Inc.: *See—*
Ravich, Leonard E., 3,432,262.

White, Donald W., to General Electric Company. Method of preparing chromium-lithium alloys. 3,432,292, 03-11-69, Cl. 075-135.

White, Donald W., Tragert, William E., and Rocco, William A., to General Electric Company. High temperature fuel cell having a palladium film between the anode and electrolyte. 3,432,352, 03-11-69, Cl. 136-086.

White, William H., Jr.: *See—*
Neapolitakis, Nicholas T., and White, William H., Jr. 3,432,840.

Whitecar, Alten E., to Smith Kline & French Laboratories. Lift truck scale. 3,431,992, 03-11-69, Cl. 177-140.

Whitmore, Charles H., and Ernst, Walter, to Continental Machines, Inc.Two-stage pumping apparatus. 3,431,856, 03-11-69, Cl. 103-005.

Whitney, Gilbert C., Jr., and Schroeder, Joseph W., to Foster Wheeler Corporation. Explosive formation. 3,431,763, 03-11-69, Cl. 072-056.

Whittaker Corporation: *See—*
Carr, Donald R., 3,432,135.

Whittier, Ronald J., to Fairchild Camera and Instrument Corporation. Planar high voltage four layer structures. 3,432,731, 03-11-69, Cl. 317-235.

Whittingham, David J.: *See—*
Kidera, Edward H., Kurth, Warren, and Whittingham, David J. 3,431,759.

Wick, Manfred: *See—*
Hittmair, Paul, Wohlfarth, Ernst, Nitsche, Siegfried, and Wick, Manfred 3,432,463.

Wickman Lang Limited: *See—*
Lucie, Albert, 3,431,800.

Wieland, Peter: *See—*
Antler, Georg, and Wieland, Peter 3,432,528.

Wiens, Bradley E.: *See—*
Braddy, John E., and Wiens, Bradley E. 3,432,331.

Wiggin, Blanton C., to Advanced Instruments Inc.Clinical thermometer. 3,431,781, 03-11-69, Cl. 073-362.

Wigginton, Raymond J., to Laporte Titanium Limited. Polymeric organic titanate treated TiO_2 pigment. 3,432,323, 03-11-69, Cl. 106-300.

Wilbourn, David S.: *See—*
Dadekian, Zaven A., and Wilbourn, David S. 3,432,561.

Wild, A. G., & Co. Limited: *See—*
Bower, Lewis Robert, 3,431,737.

Wilder, John W.: *See—*
Gigniliat, William W., and Wilder, John W. 3,432,462.

Wile, Ronald H., to Celanese Corporation. Aldoling process. 3,432,557, 03-11-69, Cl. 260-603.

Wilke, Gunther, to Studiengesellschaft m.b.H.11-Allyl transition metal compounds. 3,432,530, 03-11-69, Cl. 260-429.

Wilken, George Henry, and Ginter, Robert Aloyious, to Deere & Company. Monitoring device for internal combustion engine. 3,431,779, 03-11-69, Cl. 073-291.

Willcox & Gibbs Sewing Machine Co.: *See—*
Russell, Richard, 3,431,876.

Willen, Donald W.: *See—*
Smith, James L., and Willen, Donald W. 3,432,656.

Williams, Edward C.Particulate materials dispenser. 3,432,079, 03-11-69, Cl. 222-199.

Williams, Lloyd Stuart: *See—*
McKinnon, Neil Alexander, Bennett, Colin Earl Garnsworthy, Williams, Lloyd Stuart, and McTaggart, Frederick Kenneth 3,432,296.

Williamsburg Steel Products Company: *See—*
Halpern, Ernst, 3,431,690.

Wilmotte, Raymond M.Electro-optical correlator. 3,432,647, 03-11-69, Cl. 235-181.

Wilson, Burton J., to United States of America, Navy. Sea water battery. 3,432,350, 03-11-69, Cl. 136-090.

Wilson, Harold Paul, to Vulcan Materials Company. Production of stannous fluoborate. 3,432,256, 03-11-69, Cl. 023-059.

Wilson, Loren R., to Magnavox Company, The. Data processing apparatus. 3,431,833, 03-11-69, Cl. 095-012.

Wimpey, George, & Company Limited: *See—*
Rendall, Ian, 3,431,987.

Winkler & Dunnebier Maschinenfabrik und: *See—*
Winkler, Richard, and Dunnebier, Kurt, 3,431,842.

Winkler, Klaus, to Siemens Aktiengesellschaft. Magnetically decoupled magnetic read-write transducer assembly. 3,432,838, 03-11-69, Cl. 340-174.1

Winkler, Richard, and Dunnebier, Kurt, to Winkler & Dunnebier Maschinenfabrik und Eisengiesserei KG. Wetting mechanism for offset printing machines. 3,431,842, 03-11-69, Cl. 101-142.

Winks, Fred H., and Wanser, Henry G.Self-adjusting track circuits. 3,432,653, 03-11-69, Cl. 246-034.

Winston, Charles R., to Teletype Corporation. Character generation logic. 3,432,844, 03-11-69, Cl. 340-324.

Winter, Roger D., to Samsonite Corporation. Luggage cases. 3,432,012, 03-11-69, Cl. 190-049.

Wirth, Armin, to Wirth, Gallo & Co.Resilient body for dynamometer. 3,431,775, 03-11-69, Cl. 073-141.

Wirth, Gallo & Co.: *See—*
Wirth, Armin, 3,431,775.

Wirth, Louis F., Jr., and Robertson, Reed S., to Nalco Chemical Company. Polyphosphate glasses and water treatment uses thereof. 3,432,428, 03-11-69, Cl. 210-029.

Wise, Charles R., to United States of America, Army. Bidirectional flow beacon. 3,432,853, 03-11-69, Cl. 343-006.8

Witco Chemical Company, Inc.: *See—*
Rostler, Fritz S., 3,432,321.

Witting, Ernst, to Messer Griesheim G.m.b.H.Gas shielded arc welding torch with automatic adjustable shielding gas feed. 3,432,637, 03-11-69, Cl. 219-074.

Wittner, Eugene, and Wendler, Kenneth T., to Shell Oil Company. Lubricant compositions. 3,432,433, 03-11-69, Cl. 252-032.5

Wohlfarth, Ernst: *See—*
Hittmair, Paul, Wohlfarth, Ernst, Nitsche, Siegfried, and Wick, Manfred 3,432,463.

Wolf, Calvin N., to Ethyl Corporation. Polyoxymethylene-norbornylene copolymers. 3,432,471, 03-11-69, Cl. 260-067.

Wolfe, Norman G.: *See—*
Shimp, David A., McWhorter, Wayne F., and Wolfe, Norman G. 3,432,440.

Wolownik, Stephen, to Abbott Laboratories. N-alkylated piperidines. 3,432,508, 03-11-69, Cl. 260-293.2

Wood, Garfield A., Jr.Electric drive for bicycles. 3,431,994, 03-11-69, Cl. 180-031.

Wood, Robert L.: *See—*
Frederickson, Lyle R., Rovelsky, Leon A., and Wood, Robert L. 3,432,752.

Woodcock, Ray E.: *See—*
Ardito, Victor P., Bishop, Harry L., and Woodcock, Ray E. 3,432,288.

Woods, Richard M.X-ray film mount. 3,431,667, 03-11-69, Cl. 040-158.

Worldsbest Industries, Inc.: *See—*
Injeski, Stanley G., 3,431,966.

Worner, Howard Knox, to Conzinc Riotinto of Australia Limited. Apparatus for refining metals. 3,432,157, 03-11-69, Cl. 266-035.

Woronoff, Alexander M.: *See—*
Rudd, Milo O., and Woronoff, Alexander M. 3,431,688.

Worst, Harold J.: *See—*
Miller, Raphael W., and Worst, Harold J. 3,431,628.

Wortman, Jimmie J.: *See—*
United States of America, National Aeronautics and Space Administration, 3,432,730.

Wortman, Jimmie J.: United States of America, National Aeronautics and Space Administration, 3,432,730.

Wovcha, Sidney N., to United States Steel Corporation. Support for bars undergoing a flame- cutting operation. 3,432,160, 03-11-69, Cl. 269-287.

Wright, George H., to Reiner Industries, Inc.Method and apparatus for connecting the ends of flexible or resilient strings to tubular elements having closed ends. 3,431,632, 03-11-69, Cl. 029-520.

Wright, Ronald Frederick, to Flexibox Limited. Lapping machine having wear ring positioning means. 3,431,683, 03-11-69, Cl. 051-129.

Wunderlich, Charles R.: *See—*
Watson, Ellwood R., Rowley, Gene V., and Wunderlich, Charles R. 3,432,585.

Xander, Heinz Peter. Device for rolling baby carriages on stairs. 3,432,178, 03-11-69, Cl. 280-005.22

Xerox Corporation: *See—*
Gardner, John F., 3,432,231.
Hull, Henry E., Trumbull, Harold E., and Zeidman, Gordon G., 3,432,639.
Labana, Santokh S., 3,432,415.
Saeger, Waldemar, Reynolds, Robert W., Green, Leland Dale, Tanguay, Armand R., and Shimabukuro, George T., 3,432,613.
Tompkins, Edgar M., 3,432,232.

Xylander, Melvin P., to International Business Machines Corporation. Gated difference amplifier. 3,432,831, 03-11-69, Cl. 340-174.

Yaggy, Leon S., to Hughes Aircraft Company. Moving target visual indicator tube. 3,432,717, 03-11-69, Cl. 315-012.

Yamada, Yumizuru: *See*—
Abe, Kazuo, Kokubo, Ryo, Yamada, Yumizuru, Nagakura, Mizuhiko, and Shima, Koji 3,432,274.

Yamamoto, Kazumoto: *See*—
Ito, Makoto, and Yamamoto, Kazumoto 3,432,192.

Yamashiki, Takashi: *See*—
Mihara, Kazuhiko, Yamashiki, Takashi, and Takano, Mitsuo 3,432,429.

Yamazaki, Taizo: *See*—
Uto, Yoshimitsu, Yamazaki, Taizo, and Shinkawa, Toshikazu 3,431,949.

Yang, Peter Quay. Sectional cabinet. 3,432,216, 03-11-69, Cl. 312-111.

Yasunaga, Hidetoshi: *See*—
Okuya, Eitaro, Sakaguchi, Adio, Komatsu, Kouei, Kikuchi, Tatsuhiko, Yasunaga, Hidetoshi, and Andueda, Kenichi 3,432,515.
Ueda, Kenichi, Yasunaga, Hidetoshi, and Komatsu, Kouei 3,432,517.

Yenawine, David L., and Hiralis, Emanuel C., to United Aircraft Corporation. Method of applying oxidation protective coatings to columbium. 3,432,334, 03-11-69, Cl. 117-070.

Yerouchalmi, David, to Commissariat a l'Energie Atomique. Composite electrode for MHD conversion duct. 3,432,715, 03-11-69, Cl. 313-346.

Yonkers, William A. Mounting and scaling nut. 3,431,811, 03-11-69, Cl. 085-032.

Yoshikawa, Masaru: *See*—
Kono, Yuichi, Matsumoto, Shigeru, and Yoshikawa, Masaru 3,432,273.

Yoshinaga, Eiichi: *See*—
Okuda, Itsuki, Yoshinaga, Eiichi, and Tsuboi, Takeo 3,432,601.

Young, James L. Pipe cutting and beveling apparatus. 3,431,646, 03-11-69, Cl. 030-097.

Zadra, Mario D.: *See*—
Tazuma, James J., and Zadra, Mario D. 3,432,572.

Zaidan Hojin Parametion Kenkyusho (known as: *See*—
Goto, Eiichi, 3,432,680.

Zavasnik, Fred J., to Phillips Petroleum Company. Process for producing low-density pellets from slurries containing film-forming materials. 3,432,579, 03-11-69, Cl. 264-014.

Zavitz, Arnold L., to General Dynamics Corporation. Electroplating apparatus. 3,432,423, 03-11-69, Cl. 204-297.

Zavody Kana Svermy: *See*—
Koucky, Josef, and Koucky, Frantisek, 3,431,819.

Zec, Zvonimir Juan, to Beckman Instruments, Inc. Immunoelectrophoresis antiserum strips. 3,432,424, 03-11-69, Cl. 204-299.

Zeidman, Gordon G.: *See*—
Hull, Henry E., Trumbull, Harold E., and Zeidman, Gordon G. 3,432,639.

Zenith Radio Corporation: *See*—
Strachanow, Grigory, 3,432,719.

Zenitz, Bernard L., to Sterling Drug Inc. Process for weight reduction. 3,432,603, 03-11-69, Cl. 424-325.

Zimmerman, Joseph, to Du Pont de Nemours, E. I., and Company. Polyoctamethylene oxalamide blended with a second fiber forming linear polycarbonamide. 3,432,575, 03-11-69, Cl. 260-857.

Zimmermann, Gert. Method and apparatus for sorting and counting coins and other workpieces. 3,431,920, 03-11-69, Cl. 133-003.

Zitzewitz, Barbara O.: *See*—
Vischer, Alfred, Jr., 3,431,902.

Zitzewitz, Elmer K.: *See*—
Vischer, Alfred, Jr., 3,431,902.

Zitzewitz, Gertrude J.: *See*—
Vischer, Alfred, Jr., 3,431,902.

Zitzewitz, Walter W.: *See*—
Vischer, Alfred, Jr., 3,431,902.

Zola, Meyer J., to Ferroxcube Corporation of America. Sense amplifier for memory system. 3,432,688, 03-11-69, Cl. 307-239.

Zoltok, Harry: *See*—
Ehret, Yale W., and Zoltok, Harry 3,431,677.

Zuppiger, Paul: *See*—
Bouladon, Gabriel, and Zuppiger, Pau

CLASSIFICATION OF PATENTS

ISSUED MARCH 11, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

2– 2	3,431,560	29–183.5	3,432,278	53–384	3,431,704	74– 54	3,431,789	102– 32	3,431,852	128–284	3,431,908
192	3,431,561	192	3,432,279	388	3,431,705	471	3,431,790	39	3,431,853	285	3,431,909
221	3,431,562	197	3,432,280	390	3,431,706	473	3,431,791	49.4	3,431,854		3,431,910
4– 1	3,431,563	200	3,431,618	55– 20	3,431,707	481	3,431,792	103– 3	3,431,855	287	3,431,911
40	3,431,564		3,431,619	55	3,431,708	512	3,431,793	5	3,431,856	422	3,431,912
154	3,431,565	202	3,431,620	302	3,431,709	529	3,431,794	10	3,431,857	546	3,431,913
198	3,431,566	203	3,431,621	56– 1	3,431,710	545	3,431,795	35	3,431,858	131– 21	3,431,914
5– 51	3,431,567	204	3,431,622	21	3,431,711	587	3,431,796	53	3,431,859	140	3,431,915
8– 29	3,432,250	240	3,431,623	23	3,431,712	665	3,431,797	111	3,431,860	256	3,431,916
102	3,432,251	407	3,431,624		3,431,713	688	3,431,798	120	3,431,861	132– 42	3,431,917
120	3,432,252	421	3,431,625	296	3,431,714	75– 5	3,432,287	126	3,431,862	79	3,431,918
142	3,432,253	423	3,431,626	328	3,431,715	60	3,432,288	131	3,431,863		3,431,919
9– 8	3,431,568		3,431,627	57– 34	3,431,716	73	3,432,289	149	3,431,864	133– 3	3,431,920
311	3,431,569	450	3,431,628	.5	3,431,717	123	3,432,290	228	3,431,865	134– 34	3,432,346
12–142	3,431,570	471.1	3,431,629	59	3,431,718	124	3,432,291	104– 25	3,431,866	38	3,432,347
13– 13	3,432,604	480	3,431,630	108	3,431,719	135	3,432,292	172	3,431,867	42	3,432,348
20	3,432,605	498	3,431,631	58– 22.9	3,431,720	138	3,432,293	105–366	3,431,868	127	3,431,921
33	3,432,606	520	3,431,632	127	3,431,721	171	3,432,294	106– 38.3	3,432,312	135– 1	3,431,922
15– 23	3,431,571	568	3,431,633	152	3,431,722	206	3,432,295	46	3,432,313	5	3,431,923
93	3,431,572		3,431,634	59– 25	3,431,723	214	3,432,296	57	3,432,314	15	3,431,924
98	3,431,573		3,431,635	35	3,431,724	77– 32.3	3,431,799	59	3,432,315	25	3,431,925
104.92:	3,431,574	578	3,431,636	60– 1	3,431,725	82– 5	3,431,800	90	3,432,316	34	3,431,926
176	3,431,575	588	3,431,637	23	3,431,726	14	3,431,801	92	3,432,317	136– 6	3,432,349
229	3,431,576	598	3,431,638	52	3,431,727	83– 4	3,431,802	110	3,432,318	67	3,432,351
250.04:	3,431,577	605	3,431,639	54	3,431,728	95	3,431,803	170	3,432,319	86	3,432,352
.12:	3,431,578	620	3,431,640	.5	3,431,729	103	3,431,804	277	3,432,320		3,432,353
.32:	3,431,579	625	3,431,641	.6	3,431,730		3,431,805		3,432,321		3,432,354
302	3,431,580	629	3,431,642	225	3,431,731	561	3,431,806	281	3,432,322		3,432,355
313	3,431,581	30– 42	3,431,643	247	3,431,732	84– 1.17:	3,432,607	300	3,432,323		3,432,356
321	3,431,582	45	3,431,644	258	3,431,733	.21:	3,432,608		3,432,324		3,432,357
326	3,431,583	90.6	3,431,645	61– 4	3,431,734	306	3,431,807	107– 4	3,431,869		3,432,358
16– 35	3,431,584	97	3,431,646	19	3,431,735	457	3,431,808	108– 55	3,431,870	90	3,432,350
94	3,431,585	210	3,431,647	35	3,431,736	85– 8.8	3,431,809	153	3,431,871		3,432,359
115	3,431,586	32– 17	3,431,648	45	3,431,737	11	3,431,810	110– 7	3,431,872		3,432,360
145	3,431,587	20	3,431,649		3,431,738	32	3,431,811	18	3,431,873		3,432,361
	3,431,588	33– 1	3,431,650	72.3	3,431,739	62	3,431,812	112–219	3,431,874	120	3,432,362
	3,431,589	18	3,431,651	.4	3,431,740	83	3,431,813	410	3,431,875	153	3,432,363
168	3,431,590	50	3,431,652	.6	3,431,741	87– 2	3,431,814	433	3,431,876	181	3,432,364
171	3,431,591	105	3,431,653	62– 52	3,431,742	89– 1	3,431,815	113–121	3,431,877	237	3,432,365
178	3,431,592	205	3,431,654		3,431,743	8	3,431,816	114– 66.5	3,431,878	137– 1	3,431,927
18– 1	3,431,593	34– 5	3,431,655	55	3,431,744	12	3,431,817	206	3,431,879	54	3,431,928
4	3,431,594	12	3,431,656	63	3,431,745	36	3,431,818		3,431,880	56	3,431,929
	3,431,595	209	3,431,657	86	3,431,746	145	3,431,819	115– 11	3,431,881	81.5	3,431,930
	3,431,596	36– 58.5	3,431,658	123	3,431,747	161	3,431,820	17	3,431,882	102	3,431,931
5	3,431,597	37– 4	3,431,659	262	3,431,748	90– 12	3,431,821	116– 70	3,431,883		3,431,932
	3,431,598	8	3,431,660	293	3,431,749	91–210	3,431,822	124.1	3,431,884	119	3,431,933
12	3,431,599	46	3,431,661	514	3,431,750	92– 79	3,431,823	135	3,431,885		3,431,934
30	3,431,600	118	3,431,662	64– 7	3,431,751	132	3,431,824	117– 12	3,432,325	269	3,431,935
44	3,431,601	129	3,431,663	65– 32	3,432,282	165	3,431,825	18	3,432,326	323	3,431,936
19– 66	3,431,602	142	3,431,664	99	3,432,283	93– 1	3,431,826	36.2	3,432,327	355.16:	3,431,937
159	3,431,603	38–143	3,431,665		3,432,284		3,431,827	37	3,432,329	359	3,431,938
21– 2.5	3,432,254	40–135	3,431,666		3,432,285	13	3,431,828	38	3,432,328	509	3,431,939
23– 16	3,432,255	158	3,431,667	66– 96	3,431,752	35	3,431,829	46	3,432,330	565	3,431,940
59	3,432,256	42– 16	3,431,668	68– 9	3,431,753	61	3,431,830		3,432,331	604	3,431,941
87	3,432,257	25	3,431,669	70–144	3,431,754	82	3,431,831	62	3,432,332	614.05:	3,431,942
91	3,432,258	43– 21.2	3,431,670	181	3,431,755	94– 50	3,431,832	68	3,432,333	625.31:	3,431,943
106	3,432,259	44.87:	3,431,671	259	3,431,756	95– 12	3,431,833	70	3,432,334	132– 45	3,431,944
	3,432,260	46– 78	3,431,672	383	3,431,757	96– 27	3,432,297	106	3,432,335	90	3,431,945
107	3,432,261	208	3,431,673	71– 66	3,432,286	29	3,432,298	118	3,432,336	93	3,431,946
134	3,432,262	244	3,431,674	72– 2	3,431,758	36	3,432,299	130	3,432,337	106	3,431,947
168	3,432,263	47– 58	3,431,675	7	3,431,759	74	3,432,300		3,432,338	109	3,431,948
	3,432,264		3,431,676	9	3,431,760	91	3,432,301	132	3,432,339	143	3,431,949
197	3,432,265	48–180	3,432,281		3,431,761	104	3,432,302		3,432,340	177	3,431,950
203	3,432,266	49–141	3,431,677	19	3,431,762		3,432,303	138.5	3,432,341	139–122	3,431,951
207	3,432,267	360	3,431,678	56	3,431,763	109	3,432,304	139.4	3,432,342	140–112	3,431,952
230	3,432,268	51– 5	3,431,679	78	3,431,764	99– 28	3,432,305	.5	3,432,343	141–361	3,431,953
	3,432,269	94	3,431,680	255	3,431,765	54	3,432,306	118– 10	3,431,886	144– 2	3,431,954
	3,432,270	103	3,431,681	285	3,431,766	56	3,432,307	11	3,431,887	146– 3	3,431,955
253	3,432,271	123	3,431,682	327	3,431,767	77	3,432,308	238	3,431,888	94	3,431,956
254	3,432,272	129	3,431,683	419	3,431,768	93	3,432,309	315	3,431,889	182	3,431,957
263	3,432,273	164	3,431,684	468	3,431,769	172	3,432,310	637	3,431,890	221	Re.26,543
285	3,432,274	166	3,431,685	73– 23	3,431,770	208	3,432,311	119– 72.5	3,431,891	148– 9.5	3,432,366
292	3,432,275	170	3,431,686		3,431,771	336	3,431,834	122– 4	3,431,892	12	3,432,367
338	3,432,276	206	3,431,687	38	3,431,772	408	3,431,835	32	3,431,893		3,432,368
357	3,432,277	284	3,431,688	49.2	3,431,773	433	3,431,836	123– 8	3,431,894	101	3,432,369
24– 68	3,431,604	400	3,431,689	67.8	3,431,774	100– 31	3,431,837	32	3,431,895	149– 19	3,432,370
205.12:	3,431,605	52–204	3,431,690	141	3,431,775	93	3,431,838	90	3,431,896	21	3,432,371
230	3,431,606	223	3,431,691	146	3,431,776	158	3,431,839	117	3,431,897	150– 52	3,431,958
243	3,431,607	467	3,431,692	147	3,431,777	101–111	3,431,840	119	3,431,898	151– 21	3,431,959
26– 18.6	3,431,608	485	3,431,693	181	3,431,778	142	3,431,841		3,431,899	41.72:	3,431,960
28– 1	3,431,609	695	3,431,694	291	3,431,779		3,431,842	139	3,431,900	152–222	3,431,961
19	3,431,610	53– 15	3,431,695	316	3,431,780	218	3,431,843	148	3,431,901	355	3,431,962
72.2	3,431,611	24	3,431,696	362	3,431,781	234	3,431,844	126– 20	3,431,902	356	3,431,963
29– 1.23:	3,431,612	51	3,431,697	363.9	3,431,782	267	3,431,845	113	3,431,903	156–151	3,432,372
6.2	3,431,613	61	3,431,698	422	3,431,783	426	3,431,846	127– 3	3,432,344	184	3,432,373
25.12:	3,431,614	67	3,431,699	423	3,431,784		3,431,847	42	3,432,345	202	3,432,375
.14:	3,431,615	182	3,431,700	434	3,431,785	102– 24	3,431,848	128– 85	3,431,904	234	3,432,376
103	Re.26,544	209	3,431,701	74– 5	3,431,786		3,431,849	130	3,431,905	366	3,432,374
121	3,431,616	281	3,431,702	10.27:	3,431,787		3,431,850		3,431,906	494	3,432,377
123	3,431,617	381	3,431,703	44	3,431,788		3,431,851	156	3,431,907	160– 23	3,431,964

160–225 : 3,431,966
161– 44 : 3,432,378
68 : 3,432,379
124 : 3,432,380
162–152 : 3,432,381
246 : 3,432,382
272 : 3,432,383
338 : 3,432,384
352 : 3,432,385
164– 6 : 3,431,967
39 : 3,431,968
43 : 3,431,969
97 : 3,431,970
278 : 3,431,971
165– 47 : 3,431,972
172 : 3,431,973
166– 89 : 3,431,965
136 : 3,431,974
227 : 3,431,975
274 : 3,431,976
281 : 3,431,977
170–159 : 3,431,978
171– 63 : 3,431,979
172– 40 : 3,431,980
269 : 3,431,981
710 : 3,431,982
173– 43 : 3,431,983
78 : 3,431,984
119 : 3,431,985
134 : 3,431,986
141 : 3,431,987
174– 35 : 3,432,609
42 : 3,432,610
66 : 3,432,611
88 : 3,432,612
175– 56 : 3,431,988
95 : 3,431,989
295 : 3,431,990
400 : 3,431,991
176– 16 : 3,432,386
36 : 3,432,387
37 : 3,432,388
40 : 3,432,389
78 : 3,432,390
177–140 : 3,431,992
178– 6 : 3,432,613
.6 : 3,432,614
7.3 : 3,432,615
66 : 3,432,616
179– 1 : 3,432,617
3,432,618
15 : 3,432,619
16 : 3,432,620
18 : 3,432,621
115 : 3,432,622
180– 6.48: 3,431,993
31 : 3,431,994
82 : 3,431,995
98 : 3,431,996
108 : 3,431,997
112 : 3,431,998
181– .5 : 3,431,999
3,432,000
31 : 3,432,001
3,432,002
182–107 : 3,432,003
184– 6 : 3,432,004
3,432,005
187– 8.72: 3,432,006
188– 73 : 3,432,007
94 : 3,432,008
106 : 3,432,009
152 : 3,432,010
185 : Re.26,542
196 : 3,432,011
190– 49 : 3,432,012
191– 12.2 : 3,432,623
192– 6 : 3,432,013
8 : Re.26,540
18 : 3,432,014
43.1 : 3,432,015
45 : 3,432,016
194– 4 : 3,432,017
195– 1.3 : 3,432,391
6 : 3,432,392
51 : 3,432,393
80 : 3,432,394
103.5 : 3,432,395
197– 36 : 3,432,018
91 : 3,432,019
151 : 3,432,020
3,432,021
153 : 3,432,022
198– 33 : 3,432,023
36 : 3,432,024
200– 5 : 3,432,624
35 : 3,432,625
38 : 3,432,626
46 : 3,432,627
50 : 3,432,628
51.07: 3,432,629
61.34: 3,432,630
.67: 3,432,631
67 : 3,432,632
83 : 3,432,633
159 : 3,432,634

200–166 : 3,432,635
201– 2 : 3,432,396
32 : 3,432,397
38 : 3,432,398
202–153 : 3,432,399
248 : 3,432,400
203– 15 : 3,432,401
37 : 3,432,402
204– 1 : 3,432,403
3,432,404
15 : 3,432,405
18 : 3,432,406
28 : 3,432,407
51 : 3,432,408
72 : 3,432,409
112 : 3,432,410
128 : 3,432,411
158 : 3,432,412
159.22: 3,432,413
180 : 3,432,414
181 : 3,432,415
192 : 3,432,416
3,432,417
195 : 3,432,418
213 : 3,432,419
216 : 3,432,420
247 : 3,432,421
258 : 3,432,422
297 : 3,432,423
299 : 3,432,424
206– 4 : 3,432,025
47 : 3,432,026
56 : 3,432,027
62 : 3,432,028
65 : 3,432,029
208– 80 : 3,432,425
187 : 3,432,426
209– 5 : 3,432,030
10 : 3,432,031
73 : 3,432,032
3,432,033
3,432,034
74 : 3,432,035
211 : 3,432,036
223 : 3,432,037
210– 4 : 3,432,427
29 : 3,432,428
33 : 3,432,429
51 : 3,432,430
96 : 3,432,038
211–133 : 3,432,039
212–134 : 3,432,040
214– 1 : 3,432,041
3,432,042
14 : 3,432,043
16.1 : 3,432,044
.4 : 3,432,045
3,432,046
27 : 3,432,047
41 : 3,432,048
89 : 3,432,049
139 : 3,432,050
140 : 3,432,051
501 : 3,432,052
505 : 3,432,053
670 : 3,432,054
730 : 3,432,055
3,432,056
764 : 3,432,057
215– 9 : 3,432,058
11 : 3,432,059
219– 10.65: 3,432,636
74 : 3,432,637
125 : 3,432,638
216 : 3,432,639
354 : 3,432,640
433 : 3,432,641
439 : 3,432,642
501 : 3,432,643
220– 3 : 3,432,060
7 : 3,432,061
15 : 3,432,062
21 : 3,432,063
22 : 3,432,064
40 : 3,432,065
46 : 3,432,066
54 : 3,432,067
3,432,068
63 : 3,432,069
3,432,070
66 : 3,432,071
67 : 3,432,072
113 : 3,432,073
221–117 : 3,432,074
178 : 3,432,075
295 : 3,432,076
222– 78 : 3,432,077
80 : 3,432,078
199 : 3,432,079
402.16: 3,432,080
225– 39 : 3,432,081
226–110 : 3,432,082
186 : 3,432,083
197 : 3,432,084
229– 35 : 3,432,085
37 : 3,432,086

229– 51 : 3,432,090
62.5 : 3,432,087
230– 56 : 3,432,088
138 : 3,432,089
233– 1 : 3,432,091
22 : 3,432,092
235– 61 : 3,432,093
.11: 3,432,644
3,432,645
3,432,646
63 : 3,432,094
91 : 3,432,095
96 : 3,432,096
181 : 3,432,647
3,432,648
3,432,649
194 : 3,432,650
197 : 3,432,651
237– 5 : 3,432,097
238–283 : 3,432,098
239– 18 : 3,432,099
127.3 : 3,432,100
214.17: 3,432,101
242 : 3,432,102
255 : 3,432,103
328 : 3,432,104
455 : 3,432,105
585 : 3,432,106
240– 2 : 3,432,652
241– 46.17: 3,432,107
100 : 3,432,108
172 : 3,432,109
191 : 3,432,110
242– 55.13: 3,432,111
68.2 : 3,432,112
71.8 : 3,432,113
84.45: 3,432,114
107 : 3,432,115
118.7 : 3,432,116
131 : 3,432,117
.1 : 3,432,118
244– 6 : 3,432,119
12 : 3,432,120
17.11: 3,432,121
31 : 3,432,122
53 : 3,432,123
103 : 3,432,124
130 : 3,432,125
245– 10 : 3,432,126
246– 34 : 3,432,653
187 : 3,432,654
248– 15 : 3,432,127
68 : 3,432,128
69 : 3,432,129
96 : 3,432,130
188.8 : 3,432,131
.91: 3,432,132
201 : 3,432,133
235 : 3,432,134
287 : 3,432,135
315 : 3,432,136
249– 45 : 3,432,137
106 : 3,432,138
250– 43.5 : 3,432,655
3,432,656
53 : 3,432,657
60 : 3,432,658
71.5 : 3,432,659
3,432,660
83.1 : 3,432,662
.3 : 3,432,661
98 : 3,432,663
3,432,664
106 : 3,432,665
108 : 3,432,666
3,432,667
207 : 3,432,668
3,432,669
211 : 3,432,670
217 : 3,432,671
219 : 3,432,672
3,432,673
220 : 3,432,674
227 : 3,432,675
239 : 3,432,676
251– 61.1 : 3,432,139
129 : 3,432,140
172 : 3,432,141
212 : 3,432,142
317 : 3,432,143
252– 16 : 3,432,431
25 : 3,432,432
32.5 : 3,432,433
49.5 : 3,432,434
62.61: 3,432,435
78 : 3,432,436
3,432,437
188 : 3,432,438
359 : 3,432,439
392 : 3,432,527
429 : 3,432,440
435 : 3,432,442
441 : 3,432,441
459 : 3,432,443
253– 1 : 3,432,144
254–145 : 3,432,145

254–150 : 3,432,146
256– 59 : 3,432,147
259– 72 : 3,432,148
75 : 3,432,149
106 : 3,432,150
147 : Re.26,545
148 : 3,432,151
260– 2 : 3,432,444
3,432,445
.5 : 3,432,446
3,432,447
3,432,448
3,432,449
3,432,450
3,432,452
23 : 3,432,451
29.3 : 3,432,453
.6 : 3,432,454
.7 : 3,432,455
30.2 : 3,432,456
.4 : 3,432,457
33.4 : 3,432,458
.8 : 3,432,459
45.75: 3,432,461
.85: 3,432,462
.9 : 3,432,460
46.5 : 3,432,463
47 : 3,432,464
3,432,465
3,432,466
3,432,467
3,432,468
3,432,469
67 : 3,432,470
3,432,471
75 : 3,432,472
77.5 : 3,432,473
3,432,474
3,432,475
78 : 3,432,476
3,432,477
.5 : 3,432,478
3,432,479
79.3 : 3,432,480
82 : 3,432,481
85.5 : 3,432,482
87.3 : 3,432,483
88.7 : 3,432,484
91.3 : 3,432,512
92.1 : 3,432,511
93.7 : 3,432,513
3,432,514
94.3 : 3,432,515
3,432,516
3,432,517
.9 : 3,432,518
145 : 3,432,485
210.5 : 3,432,486
211.5 : 3,432,487
212 : 3,432,488
234 : 3,432,489
239 : 3,432,490
.55: 3,432,492
.6 : 3,432,491
.75: 3,432,493
242 : 3,432,494
3,432,495
3,432,496
244 : 3,432,497
247 : 3,432,498
.5 : 3,432,499
248 : 3,432,500
249.7 : 3,432,501
250 : 3,432,502
251 : 3,432,503
256.6 : 3,432,504
267 : 3,432,505
289 : 3,432,506
293 : 3,432,507
.2 : 3,432,508
295 : 3,432,509
.5 : 3,432,510
307 : 3,432,519
309.6 : 3,432,520
310 : 3,432,521
326.3 : 3,432,522
.5 : 3,432,523
340.9 : 3,432,524
345.5 : 3,432,525
.9 : 3,432,526
397.3 : 3,432,528
412.4 : 3,432,529
429 : 3,432,530
.7 : 3,432,531
438.5 : 3,432,532
439 : 3,432,533
446 : 3,432,534
448 : 3,432,535
.2 : 3,432,536
3,432,537
3,432,538
462 : 3,432,539
465.7 : 3,432,540
468 : 3,432,541
481 : 3,432,542
497 : 3,432,543

260–499 : 3,432,544
501.17: 3,432,545
502 : 3,432,546
.5 : 3,432,547
539 : 3,432,548
559 : 3,432,549
3,432,550
3,432,551
563 : 3,432,552
583 : 3,432,554
3,432,555
585 : 3,432,553
597 : 3,432,556
603 : 3,432,557
604 : 3,432,558
606.5 : 3,432,559
635 : 3,432,560
652 : 3,432,561
653.5 : 3,432,562
666 : 3,432,564
.5 : 3,432,563
667 : 3,432,565
668 : 3,432,566
671 : 3,432,567
676 : 3,432,568
680 : 3,432,569
683.15: 3,432,571
3,432,572
3,432,573
.2 : 3,432,570
834 : 3,432,574
857 : 3,432,575
878 : 3,432,576
879 : 3,432,577
880 : 3,432,578
261– 34 : 3,432,152
108 : 3,432,153
122 : 3,432,154
263– 21 : 3,432,155
264– 14 : 3,432,579
43 : 3,432,580
45 : 3,432,581
46 : 3,432,583
47 : 3,432,582
49 : 3,432,584
3,432,585
94 : 3,432,586
120 : 3,432,587
171 : 3,432,588
197 : 3,432,589
210 : 3,432,590
289 : 3,432,591
266– 34 : 3,432,156
35 : 3,432,157
267– 57 : 3,432,158
269– 20 : 3,432,159
287 : 3,432,160
271– 46 : 3,432,161
272– 58 : 3,432,162
60 : 3,432,163
73 : 3,432,164
273– 61 : 3,432,165
86 : 3,432,166
3,432,167
274– 1 : 3,432,168
4 : 3,432,169
10 : 3,432,170
23 : 3,432,171
277– 1 : 3,432,172
29 : 3,432,173
80 : 3,432,174
104 : 3,432,175
168 : 3,432,176
205 : 3,432,177
280– 5.22: 3,432,178
11.35: 3,432,179
3,432,180
18 : 3,432,181
3,432,182
150 : 3,432,183
479 : 3,432,184
285– 39 : 3,432,185
53 : 3,432,186
55 : 3,432,187
197 : 3,432,188
232 : 3,432,189
253 : 3,432,190
311 : 3,432,191
382.2 : 3,432,192
287–100 : 3,432,193
119 : 3,432,194
189.36: 3,432,195
3,432,196
3,432,197
292–216 : 3,432,198
292 : 3,432,199
293– 71 : 3,432,200
294– 74 : 3,432,201
87.2 : 3,432,202
297–109 : 3,432,203
214 : 3,432,204
299– 4 : 3,432,205
301– 37 : 3,432,206
63 : 3,432,207
302– 53 : 3,432,208
66 : 3,432,209

303– 3 : 3,432,210
18 : 3,432,211
21 : 3,432,212
307– 17 : 3,432,677
38 : 3,432,678
88 : 3,432,679
3,432,680
3,432,681
3,432,682
221 : 3,432,683
223 : 3,432,684
229 : 3,432,687
231 : 3,432,685
3,432,686
239 : 3,432,688
255 : 3,432,689
308– 5 : 3,432,213
15 : 3,432,214
187 : 3,432,215
310– 4 : 3,432,690
8.1 : 3,432,691
11 : 3,432,692
3,432,693
3,432,694
15 : 3,432,695
36 : 3,432,696
3,432,697
3,432,698
41 : 3,432,699
42 : 3,432,700
47 : 3,432,701
50 : 3,432,702
3,432,703
87 : 3,432,704
91 : 3,432,705
157 : 3,432,706
160 : 3,432,707
239 : 3,432,708
312–111 : 3,432,216
242 : 3,432,217
313– 63 : 3,432,709
69 : 3,432,710
79 : 3,432,711
181 : 3,432,712
231 : 3,432,713
337 : 3,432,714
346 : 3,432,715
315– 3.5 : 3,432,716
12 : 3,432,717
22 : 3,432,718
27 : 3,432,719
3,432,720
39 : 3,432,721
3,432,722
94 : 3,432,723
169 : 3,432,724
241 : 3,432,725
317– 31 : 3,432,726
99 : 3,432,727
124 : 3,432,728
234 : 3,432,729
3,432,730
235 : 3,432,731
3,432,732
3,432,733
245 : 3,432,734
318–138 : 3,432,735
202 : 3,432,736
321– 2 : 3,432,737
15 : 3,432,738
18 : 3,432,739
43 : 3,432,740
45 : 3,432,741
50 : 3,432,742
323– 3 : 3,432,743
74 : 3,432,744
324– 24 : 3,432,745
30 : 3,432,746
34 : 3,432,747
40 : 3,432,748
41 : 3,432,750
43 : 3,432,751
57 : 3,432,752
71 : 3,432,753
140 : 3,432,749
325– 38 : 3,432,754
112 : 3,432,755
300 : 3,432,756
322 : 3,432,757
420 : 3,432,758
450 : 3,432,759
452 : 3,432,760
328–165 : 3,432,761
179 : 3,432,762
330– 25 : 3,432,763
87 : 3,432,764
126 : 3,432,765
331– 94.5 : 3,432,766
3,432,767
3,432,768
3,432,769
3,432,770
3,432,771
111 : 3,432,772
116 : 3,432,773
141 : 3,432,774

333– 11 : 3,432,775
31 : 3,432,776
3,432,777
81 : 3,432,778
97 : 3,432,779
335– 68 : 3,432,780
170 : 3,432,782
172 : 3,432,781
216 : 3,432,783
254 : 3,432,784
336–198 : 3,432,785
337– 95 : 3,432,786
153 : 3,432,787
201 : 3,432,788
242 : 3,432,789
338– 33 : 3,432,790
198 : 3,432,791
311 : 3,432,792
339– 14 : 3,432,793
17 : 3,432,794
3,432,795
18 : 3,432,796

339– 18 : 3,432,797
89 : 3,432,798
99 : 3,432,799
109 : 3,432,800
126 : 3,432,801
128 : 3,432,802
144 : 3,432,803
340– 15 : 3,432,804
.5 : 3,432,805
3,432,806
84 : 3,432,808
146.3 : 3,432,809
172.5 : 3,432,810
3,432,811
3,432,812
3,432,813
173 : 3,432,814
3,432,815
3,432,816
174 : 3,432,817
3,432,818

340–174 : 3,432,819
3,432,820
3,432,821
3,432,822
3,432,823
3,432,824
3,432,825
3,432,826
3,432,827
3,432,828
3,432,829
3,432,830
3,432,831
3,432,832
3,432,833
3,432,834
3,432,835
3,432,836
.1 : 3,432,837
3,432,838
3,432,839
244 : 3,432,840

340–248 : 3,432,841
280 : 3,432,842
283 : 3,432,843
324 : 3,432,844
3,432,845
339 : 3,432,846
347 : 3,432,847
357 : 3,432,848
388 : 3,432,849
343– 5 : 3,432,850
6.5 : 3,432,851
3,432,852
.8 : 3,432,853
7.4 : 3,432,854
.7 : 3,432,855
9 : 3,432,856
18 : 3,432,857
752 : 3,432,858
872 : 3,432,859
350– 6 : 3,432,218
29 : 3,432,219
132 : 3,432,220

350–149 : 3,432,221
3,432,222
150 : 3,432,223
3,432,224
164 : 3,432,225
214 : 3,432,226
351– 13 : 3,432,227
352–169 : 3,432,228
176 : 3,432,229
353–120 : 3,432,230
355– 8 : 3,432,231
3,432,232
72 : 3,432,233
75 : 3,432,234
84 : 3,432,235
109 : 3,432,236
356– 28 : 3,432,237
97 : 3,432,238
99 : 3,432,241
112 : 3,432,239
116 : 3,432,242

356–152 : 3,432,240
176 : 3,432,243
401–113 : 3,432,244
132 : 3,432,245
424– 19 : 3,432,592
20 : 3,432,593
33 : 3,432,594
89 : 3,432,595
95 : 3,432,596
118 : 3,432,597
122 : 3,432,598
203 : 3,432,599
227 : Re.26,541
272 : 3,432,600
304 : 3,432,601
307 : 3,432,602
325 : 3,432,603
431– 27 : 3,432,246
117 : 3,432,247
149 : 3,432,248
252 : 3,432,249

CLASSIFICATION OF DESIGNS

D 1– 1 : 213,490
D 9–219 : 213,491
213,492
D13– 1 : 213,493
D15– 1 : 213,494
8 : 213,495
11 : 213,496
D22– 27 : 213,497
D23– 19 : 213,498

D26– 13 : 213,499
14 : 213,500
D29– 1 : 213,501
D33– 2 : 213,502
3 : 213,503
D34– 5 : 213,504
213,505
213,506

D34– 5 : 213,507
213,508
213,509
15 : 213,510
213,511
D35– 2 : 213,512
D44– 29 : 213,513
213,514

D46– 1 : 213,515
D48– 24 : 213,516
27 : 213,517
213,518
31 : 213,519
213,520
213,521
D52– 6 : 213,522

D52– 6 : 213,523
D54– 10 : 213,524
D56– 1 : 213,525
D57– 1 : 213,526
D64– 11 : 213,527
D71– 1 : 213,528
213,529
D72– 1 : 213,530

D74– 17 : 213,531
D80– 11 : 213,532
D81– 10 : 213,533
D83– 1 : 213,534
D87– 1 : 213,535
D88– 3 : 213,536
5 : 213,537
D90– 16 : 213,538

CLASSIFICATION OF PLANTS

P. – 70 : 2,870
P. – 73 : 2,871

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,431,795
3,432,396
3,432,444
6 : 3,431,567
3,431,569
3,431,573
3,431,587
3,431,596
3,431,601
3,431,616
3,431,632
3,431,637
3,431,641
3,431,643
3,431,649
3,431,654
3,431,670
3,431,673
3,431,676
3,431,701
3,431,731
3,431,749
3,431,764
3,431,784
3,431,794
3,431,818
3,431,828
3,431,833
3,431,860
3,431,871
3,431,889
3,431,898
3,431,916
3,431,950
3,431,960
3,431,988
3,432,017
3,432,032
3,432,053
3,432,058
3,432,105
3,432,116
3,432,119
3,432,125
3,432,128
3,432,132
3,432,135
3,432,140
3,432,156
3,432,158
6 : 3,432,163
3,432,166
3,432,172
3,432,173
3,432,182
3,432,188
3,432,189
3,432,197
3,432,199
3,432,217
3,432,225
3,432,239
3,432,240
3,432,245
3,432,249
3,432,253
3,432,254
3,432,255
3,432,276
3,432,281
3,432,321
3,432,336
3,432,346
3,432,365
3,432,379
3,432,388
3,432,389
3,432,395
3,432,397
3,432,405
3,432,423
3,432,424
3,432,432
3,432,435
3,432,436
3,432,437
3,432,465
3,432,478
3,432,492
3,432,540
3,432,542
3,432,558
3,432,578
3,432,584
3,432,585
3,432,608
3,432,611
3,432,613
3,432,617
3,432,618
6 : 3,432,620
3,432,638
3,432,656
3,432,659
3,432,660
3,432,662
3,432,664
3,432,669
3,432,671
3,432,674
3,432,679
3,432,704
3,432,710
3,432,717
3,432,723
3,432,724
3,432,731
3,432,736
3,432,746
3,432,752
3,432,755
3,432,763
3,432,770
3,432,774
3,432,775
3,432,792
3,432,814
3,432,816
3,432,823
3,432,841
3,432,857
8 : 3,431,599
3,431,839
3,431,943
3,431,947
3,432,012
3,432,099
3,432,130
3,432,348
3,432,426
9 : 3,431,612
3,431,668
3,431,669
3,431,727
3,431,847
3,431,918
3,431,922
3,432,019
3,432,021
3,432,029
9 : 3,432,033
3,432,080
3,432,101
3,432,121
3,432,310
3,432,334
3,432,385
3,432,449
3,432,587
3,432,655
3,432,691
3,432,804
3,432,847
10 : 3,431,787
3,432,263
3,432,380
3,432,539
3,432,548
3,432,575
3,432,600
3,432,647
11 : 3,432,730
3,432,855
12 : 3,431,564
3,431,621
3,431,688
3,431,715
3,431,752
3,431,879
3,431,912
3,431,933
3,431,994
3,432,114
3,432,364
3,432,402
3,432,593
3,432,633
3,432,636
3,432,744
3,432,757
13 : 3,431,826
3,431,845
3,431,923
3,432,030
3,432,073
3,432,085
15 : 3,432,344
16 : 3,432,624
17 : 3,431,568
3,431,571
17 : 3,431,579
3,431,585
3,431,590
3,431,642
3,431,647
3,431,658
3,431,672
3,431,692
3,431,696
3,431,703
3,431,710
3,431,745
3,431,751
3,431,759
3,431,792
3,431,810
3,431,841
3,431,877
3,431,881
3,431,883
3,431,886
3,431,895
3,431,902
3,431,937
3,431,940
3,431,941
3,431,953
3,431,963
3,431,973
3,432,001
3,432,027
3,432,038
3,432,042
3,432,051
3,432,067
3,432,069
3,432,071
3,432,075
3,432,096
3,432,111
3,432,129
3,432,148
3,432,153
3,432,168
3,432,177
3,432,193
3,432,202
3,432,204
3,432,228
3,432,230
17 : 3,432,234
3,432,235
3,432,272
3,432,294
3,432,305
3,432,311
3,432,313
3,432,333
3,432,345
3,432,419
3,432,428
3,432,442
3,432,458
3,432,464
3,432,479
3,432,493
3,432,505
3,432,508
3,432,510
3,432,527
3,432,564
3,432,567
3,432,570
3,432,615
3,432,629
3,432,640
3,432,652
3,432,672
3,432,676
3,432,702
3,432,719
3,432,772
3,432,780
3,432,784
3,432,796
3,432,808
3,432,840
3,432,844
3,432,858
18 : 3,431,627
3,431,653
3,431,664
3,431,677
3,431,980
3,432,011
3,432,028
3,432,081
3,432,306
3,432,497
3,432,711

18 : 3,432,785
19 : 3,431,756
3,431,779
3,431,793
3,431,942
3,431,975
3,432,391
3,432,843
20 : 3,431,604
3,431,836
3,431,989
3,431,993
21 : 3,431,720
3,431,820
3,431,864
3,432,020
3,432,440
3,432,714
3,432,845
22 : 3,431,965
3,432,048
3,432,252
3,432,535
3,432,800
24 : 3,431,572
3,431,695
3,431,729
3,431,778
3,431,852
3,431,854
3,431,905
3,431,906
3,431,930
3,432,082
3,432,243
3,432,269
3,432,271
3,432,295
3,432,297
3,432,350
3,432,487
3,432,499
3,432,590
3,432,619
3,432,673
3,432,703
3,432,743
3,432,745
3,432,748
3,432,777
3,432,789
3,432,850
3,432,851
25 : RE.26,545
3,431,570
3,431,600
3,431,619
3,431,624
3,431,685
3,431,687
3,431,781
3,431,806
3,431,812
3,431,814
3,431,817
3,431,924
3,431,935
3,431,951
3,432,076
3,432,086
3,432,107
3,432,143
3,432,208
3,432,262
3,432,279
3,432,351
3,432,354
3,432,356
3,432,357
3,432,383
3,432,386
3,432,399
3,432,438
3,432,446
3,432,576
3,432,625
3,432,643
3,432,657
3,432,695
3,432,696
3,432,697
3,432,698
3,432,699
3,432,708
3,432,725
3,432,735
3,432,779
3,432,802
3,432,827
3,432,852
26 : RE.26,540
RE.26,544
3,431,561
3,431,578
3,431,588
3,431,589
26 : 3,431,597
3,431,614
3,431,628
3,431,633
3,431,650
3,431,678
3,431,713
3,431,755
3,431,783
3,431,897
3,431,908
3,431,928
3,431,929
3,431,945
3,431,959
3,431,997
3,431,998
3,432,005
3,432,050
3,432,102
3,432,115
3,432,190
3,432,198
3,432,200
3,432,206
3,432,207
3,432,214
3,432,286
3,432,370
3,432,371
3,432,378
3,432,408
3,432,413
3,432,454
3,432,509
3,432,571
3,432,588
3,432,630
3,432,634
3,432,641
3,432,849
27 : 3,431,582
3,431,661
3,431,758
3,431,829
3,431,856
3,431,858
3,431,865
3,431,873
3,431,917
3,431,921
3,431,964
3,431,967
3,431,969
3,432,025
3,432,057
3,432,083
3,432,160
3,432,181
3,432,457
3,432,475
3,432,574
3,432,686
3,432,689
3,432,749
3,432,793
3,432,818
3,432,819
3,432,820
3,432,821
3,432,826
3,432,828
3,432,829
3,432,839
28 : 3,431,878
29 : 3,431,562
3,431,565
3,431,730
3,431,868
3,432,037
3,432,220
3,432,433
3,432,439
30 : 3,432,077
33 : 3,431,679
3,432,117
3,432,377
34 : RE.26,541
3,431,577
3,431,586
3,431,598
3,431,605
3,431,640
3,431,702
3,431,708
3,431,725
3,431,732
3,431,767
3,431,771
3,431,782
3,431,811
3,431,840
3,431,846
3,431,870
3,431,890
3,431,901
34 : 3,431,903
3,431,934
3,431,936
3,431,985
3,431,992
3,432,035
3,432,036
3,432,061
3,432,074
3,432,106
3,432,113
3,432,133
3,432,164
3,432,176
3,432,187
3,432,191
3,432,265
3,432,267
3,432,312
3,432,322
3,432,326
3,432,341
3,432,343
3,432,362
3,432,373
3,432,381
3,432,392
3,432,403
3,432,409
3,432,425
3,432,434
3,432,452
3,432,459
3,432,502
3,432,524
3,432,526
3,432,531
3,432,534
3,432,546
3,432,555
3,432,568
3,432,577
3,432,586
3,432,606
3,432,612
3,432,675
3,432,718
3,432,734
3,432,741
3,432,754
3,432,761
3,432,762
3,432,765
3,432,794
3,432,824
3,432,834
3,432,848
35 : 3,431,853
3,432,215
3,432,682
3,432,773
3,432,853
36 : 3,431,591
3,431,606
3,431,620
3,431,638
3,431,655
3,431,666
3,431,690
3,431,693
3,431,748
3,431,760
3,431,763
3,431,788
3,431,804
3,431,805
3,431,813
3,431,822
3,431,857
3,431,876
3,431,884
3,431,926
3,431,931
3,431,932
3,431,948
3,431,955
3,431,957
3,431,958
3,431,995
3,432,040
3,432,070
3,432,134
3,432,152
3,432,195
3,432,212
3,432,216
3,432,219
3,432,221
3,432,222
3,432,224
3,432,226
3,432,231
3,432,232
3,432,237
3,432,264
3,432,282
36 : 3,432,292
3,432,299
3,432,300
3,432,302
3,432,303
3,432,319
3,432,330
3,432,352
3,432,355
3,432,358
3,432,398
3,432,406
3,432,412
3,432,414
3,432,415
3,432,416
3,432,417
3,432,421
3,432,422
3,432,451
3,432,466
3,432,469
3,432,471
3,432,488
3,432,503
3,432,504
3,432,520
3,432,521
3,432,536
3,432,561
3,432,566
3,432,581
3,432,603
3,432,616
3,432,622
3,432,627
3,432,631
3,432,644
3,432,653
3,432,654
3,432,670
3,432,677
3,432,685
3,432,688
3,432,690
3,432,705
3,432,712
3,432,713
3,432,721
3,432,722
3,432,740
3,432,753
3,432,760
3,432,767
3,432,768
3,432,769
3,432,771
3,432,781
3,432,783
3,432,798
3,432,801
3,432,810
3,432,811
3,432,812
3,432,813
3,432,815
3,432,822
3,432,831
3,432,833
3,432,835
3,432,837
3,432,846
3,432,856
3,432,859
37 : 3,431,603
3,431,611
3,431,656
3,431,717
38 : 3,431,821
3,432,805
39 : 3,431,563
3,431,576
3,431,607
3,431,622
3,431,659
3,431,663
3,431,671
3,431,680
3,431,684
3,431,689
3,431,691
3,431,754
3,431,765
3,431,768
3,431,799
3,431,807
3,431,809
3,431,831
3,431,872
3,431,891
3,431,910
3,431,956
3,431,962
3,432,004
3,432,007
3,432,009
39 : 3,432,024
3,432,043
3,432,046
3,432,056
3,432,068
3,432,122
3,432,141
3,432,210
3,432,218
3,432,278
3,432,287
3,432,314
3,432,316
3,432,317
3,432,338
3,432,339
3,432,349
3,432,455
3,432,460
3,432,483
3,432,507
3,432,511
3,432,533
3,432,547
3,432,563
3,432,572
3,432,591
3,432,595
3,432,609
3,432,623
3,432,639
3,432,739
3,432,742
3,432,747
3,432,836
40 : RE.26,543
3,431,613
3,431,675
3,431,747
3,431,770
3,431,780
3,431,785
3,431,798
3,431,875
3,431,946
3,431,976
3,431,977
3,432,002
3,432,151
3,432,427
3,432,431
3,432,441
3,432,461
3,432,480
3,432,513
3,432,562
3,432,569
3,432,579
3,432,648
3,432,649
3,432,684
3,432,807
3,432,812
41 : 3,431,648
3,431,741
3,431,766
3,431,888
3,431,983
3,432,078
3,432,145
3,432,663
3,432,842
42 : 3,431,580
3,431,584
3,431,615
3,431,629
3,431,631
3,431,651
3,431,681
3,431,721
3,431,761
3,431,762
3,431,773
3,431,790
3,431,815
3,431,816
3,431,824
3,431,830
3,431,849
3,431,851
3,431,869
3,431,887
3,431,904
3,431,909
3,431,911
3,431,968
3,431,984
3,432,026
3,432,045
3,432,054
3,432,055
3,432,131
3,432,138
3,432,139
3,432,147
3,432,183
42 : 3,432,184
3,432,233
3,432,251
3,432,256
3,432,270
3,432,283
3,432,284
3,432,285
3,432,288
3,432,289
3,432,308
3,432,315
3,432,331
3,432,347
3,432,390
3,432,400
3,432,407
3,432,494
3,432,495
3,432,496
3,432,512
3,432,523
3,432,532
3,432,604
3,432,605
3,432,750
3,432,795
3,432,803
44 : 3,431,593
3,431,674
3,431,719
3,432,003
3,432,159
3,432,332
45 : 3,432,112
3,432,250
3,432,447
47 : 3,431,777
3,431,834
3,431,837
3,432,052
3,432,472
3,432,506
3,432,514
3,432,665
3,432,687
3,432,709
3,432,764
48 : 3,431,560
3,431,636
3,431,646
3,431,652
3,431,667
3,431,739
3,431,753
3,431,776
3,431,848
3,431,850
3,431,970
3,431,974
3,431,990
3,432,127
3,432,205
3,432,209
3,432,227
3,432,242
3,432,309
3,432,374
3,432,418
3,432,462
3,432,481
3,432,518
3,432,538
3,432,543
3,432,557
3,432,560
3,432,582
3,432,646
3,432,667
3,432,756
3,432,759
3,432,778
3,432,806
49 : 3,432,031
3,432,258
50 : 3,432,359
3,432,360
3,432,361
51 : 3,431,609
3,431,662
3,431,733
3,431,880
3,431,915
3,432,120
3,432,144
53 : 3,431,645
3,431,742
3,431,743
3,431,803
3,431,979
3,431,991
3,432,161
3,432,213
3,432,411
54 : 3,432,093
3,432,342

54 : 3,432,474	55 : 3,431,602	55 : 3,431,966	55 : 3,432,137	55 : 3,432,375	55 : 3,432,658
3,432,484	3,431,706	3,432,064	3,432,162	3,432,382	3,432,707
3,432,498	3,431,882	3,432,104	3,432,328	3,432,420	3,432,787
55 : 3,431,581	3,431,885	3,432,108	3,432,363	3,432,628	56 : 3,431,660
3,431,583	3,431,894	3,432,136			

Design Patents

4 : 213,509	12 : 213,528	17 : 213,533	26 : 213,504	34 : 213,513	37 : 213,515
6 : 213,498	17 : 213,502	213,536	213,505	213,514	39 : 213,490
213,532	213,512	18 : 213,494	213,508	213,523	213,526
213,534	213,519	19 : 213,529	27 : 213,506	213,525	213,537
213,538	213,520	25 : 213,535	213,522	36 : 213,495	40 : 213,497
9 : 213,491	213,521	26 : 213,496	29 : 213,500	213,507	41 : 213,493
213,492	213,524	213,499	34 : 213,510	213,530	42 : 213,503
213,516					

Plant Patents

25 : 2,870	25 : 2,871				

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 11, 1969 Volume 860 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic syrup or beverage; **Reg. No. 47,189,** same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145,** same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146,** same; **Reg. No. 415,755** (COKE), same, Nonalcoholic maltless beverages and the syrups for making such beverages, **filed** July 19, 1968, D.C., E.D. Va. (Norfolk), Doc. C/A–6898N, *The Coca Cola Company* v. *ALK Corp., doing business as The Paper Box et al.* Consent judgment, defendant perpetually enjoined, Nov. 18, 1968.

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 617,131 (VOLKSWAGEN), Volkswagenwerk, GmbH, Vehicles—namely, automobiles and trucks, aircraft, boats; and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 631,649** (VW IN CIRCLE), same; **Reg. No. 653,695** (VW), same; **Reg. No. 790,621** (VOLKSWAGEN), same, Automobiles and trucks, aircraft, and boats; and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 790,959** (VW AND DESIGN), same; **Reg. No. 791,311** (VW), same; **Reg. No. 804,869** (VW AND DESIGN), same, Repair and reconditioning of motor vehicles, aircraft and boats; **Reg. No. 808,881** (VOLKSWAGEN), same, Vehicles—namely, automobiles and trucks, aircraft, and boats; and parts and accessories for automobiles and trucks, aircraft and boats—namely, radiators, direction indicators, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 815,632** (VW), same, Repair, reconditioning and replacement of motors and accessories and parts thereof, and repair and reconditioning of motor vehicles, aircraft, and boats; **Reg. No. 819,297** (VOLKSWAGEN), same, **filed** Nov. 22, 1968, D.C., S.D. Ind. (Indianapolis), Doc. IP68–C–496, *Volkswagenwerk Aktiengesellschaft* v. *Gene Coalburn, doing business as Gene's Volkswagen Service.* **Same, filed** Aug. 2, 1968, D.C., Oreg. (Portland), Doc. 68–428, *Volkswagenwerk Aktiengesellschaft* v. *Eugene A. Teal et al.* Final judgment in favor of plaintiff, Nov. 12, 1968. **Same, filed** Nov. 6, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1857–F, *Volkswagenwerk Aktiengesellschaft* v. *Audley Campbell and John Gunnell et al.*

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	16,535
Date of oldest new application	January 3, 1968
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	5–8 –68	9–8 –66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	5–21–68	10–18–65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	5–12–68	7–30–64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1–3 –68	9–22–65
Renewals (All Classes)	12–9 –68	----------
Sec. 12(c) Publications (All Classes)	12–11–68	----------

Applications filed during the month of January 1969—2,803

Registrations Issued ---------- 711—No. 865,971 to No. 866,681
Renewals Issued ---------- 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 631,649. (See Reg. No. 617,131.)

Reg. No. 653,695. (See Reg. No. 617,131.)

Reg. No. 768,600. (See 2,974,432.)

Reg. No. 790,621. (See Reg. No. 617,131.)

Reg. No. 790,959. (See Reg. No. 617,131.)

Reg. No. 791,311. (See Reg. No. 617,131.)

Reg. No. 804,860. (See Reg. No. 617,131.)

Reg. No. 808,381. (See Reg. No. 617,131.)

Reg. No. 815,632. (See Reg. No. 617,131.)

Reg. No. 816,674. (See 2,974,432.)

Reg. No. 819,297. (See Reg. No. 617,131.)

Reg. No. 844,833 (ELEPHANT DESIGN), R. F. Winans, Smoking pipes, filed Oct. 9, 1968, D.C., E.D. Pa. (Philadelphia), Doc. C.A. 68–2211, *Tanganyika Meerschaum Corp., Ltd., Ries Distributors, Inc.* v. *Amboseli Meerschaum Corp. Importers et al.*

2,974,432, Warnock and Hubener, PRESS-FREE CREASE RETAINED GARMENTS AND METHOD OF MANUFACTURE THEREOF; **3,268,915,** same, PROCESS OF MANUFACTURING PRESS-FREE GARMENT WITH RETAINED CREASES; **Reg. No. 769,600** (KORATRON), Koret of California, Inc., Women's, misses' and children's dresses, halters, outer shorts, outer shirts, blouses, slacks, pedal pushers, and jackets; and men's, student's and boys' pants, slacks, jackets, jacket and slack combinations, walking shorts, shirts and blouses; **Reg. No. 816,674** (KORATRON AND DESIGN), Koratron Company, Inc., same, filed Oct. 3, 1968, D.C. Colo. (Denver), Doc. C–1109, *Bayly Manufacturing Company* v. *Koracorp Industries, Inc. and Koratron Company.*

3,268,915. (See 2,974,432.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 242,872. AB. Bo Landberg & Co., Ormaryd, Sweden. Filed Apr. 7, 1966.

MIKO

Class 29—Brooms, Brushes, and Dusters

For Unimpregnated Artificial Pads, Artificial Sponges, Artificial Chamois Cloths, and Artificial Sponge Mops (Int. Cl. 21).

Class 52—Detergents and Soaps

For Artificial Pads, Artificial Sponges, Artificial Chamois Cloths, and Artificial Sponge Mops Impregnated With Cleaning Materials (Int. Cl. 21).

First use 1961; in commerce Oct. 15, 1965.

SN 259,732. I.M.C. Incorporated, d.b.a. Imco Plastics Division, Elkhart, Ind. Filed Nov. 30, 1966.

SYLCA-STONE

Class 12—Construction Materials

For Synthetic Tile for Patios, Hearths and Entrance Ways (Int. Cl. 19).

Class 32—Furniture and Upholstery

For Synthetic Tile Table Tops (Int. Cl. 20).

First use Nov. 8, 1966.

SN 265,863. American Micro-Systems, Inc., Santa Clara, Calif. Filed Mar. 3, 1967.

AMI

The mark consists of the letters "AMI."

Class 21—Electrical Apparatus, Machines, and Supplies

For Semiconductive Devices and Apparatus and Thin Film Devices (Int. Cl. 9).

Class 38—Prints and Publications

For Engineering Prints, Engineering Manuals, and Technical Publications Issued From Time to Time (Int. Cl. 16).

Class 107—Education and Entertainment

For Engineering Training Services—Namely, Preparing and Presenting Educational Courses in the Field of Semiconductive and Thin Film Devices and Apparatus and for the Production and Testing Thereof (Int. Cl. 41).

First use Oct. 27, 1966.

SN 266,274. Renuzit Home Products Co., Philadelphia, Pa. Filed Mar. 9, 1967.

RENUZIT'S

Owner of Reg. Nos. 298,956, 593,180, and others.

Class 4—Abrasives and Polishing Materials

For Spray Wax for Furniture and Spray Shoeshine (Int. Cl. 3).

First use 1959.

Class 6—Chemicals and Chemical Compositions

For Spray Air Fresheners, Spray Starch, Spray Sizing for Use on Fabrics, and Chemical Compound Sprayed on Dust Cloths and Mops To Attract and Retain Dust (Int. Cls. 1, 3, and 5).

First use as early as 1956.

SN 270,822. Justin Tharaud & Son, Inc., New York, N.Y. Filed May 5, 1967.

THARAUD DESIGNS

Applicant disclaims the word "Designs" apart from the mark as shown.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Stainless Steel Holloware (Int. Cl. 21).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Flatware (Int. Cl. 8).

Class 30—Crockery, Earthenware, and Porcelain

For Table Chinaware and Table Earthenware (Int. Cl. 21).

Class 33—Glassware

For Table Glassware (Int. Cl. 21).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Linens (Int. Cl. 24).

First use Dec. 12, 1966.

SN 278,978. McDonald Products Corporation, Buffalo, N.Y. Filed Aug. 24, 1967.

TIP-ACTION

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ash Trays (Int. Cl. 34).

Class 32—Furniture and Upholstery

For Ash Receptacles—Namely, Wall and Floor Urns (Int. Cl. 20).

First use at least as early as 1949.

SN 281,236. Sound of Music, Inc., St. Paul, Minn. Filed Sept. 26, 1967.

BARRON

The drawing is lined for the colors red and silver.

Class 21—Electrical Apparatus, Machines, and Supplies

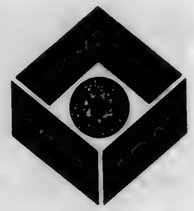
For Stereo Head Phones (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Diamond Phonograph Needles, Phonograph Record Brush, Tone Arm Lift, Phonograph Record Inserts, Magnetic Recording Tape and Phonograph Record Cleaning Cloths (Int. Cls. 9 and 21).

First use Aug. 24, 1967.

SN 281,448. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.

Class 7—Cordage

For Ribbons for Giftwrapping (Int. Cl. 16).

Class 21—Electrical Apparatus, Machines, and Supplies

For Lamps (Int. Cl. 11).

Class 32—Furniture and Upholstery

For Bookends (Int. Cl. 20).

First use Aug. 30, 1966.

SN 282,341. Angelique International, Inc., Union, N.J. Filed Oct. 12, 1967.

ROYAL SATIN

Class 51—Cosmetics and Toilet Preparations

For Bath Oil, Perfume for Bath, Perfume Mist, Cologne, Solid Perfume in a Pendant and Dusting Power (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Oct. 28, 1964.

SN 284,960. George Mazur Enterprises, Inc., Washington, D.C. Filed Nov. 16, 1967.

TURKEY TOWN

The word "Turkey" is disclaimed.

Class 46—Foods and Ingredients of Foods

For Fresh and Frozen Turkey Parts (Int. Cl. 29).
First use on or about Nov. 7, 1966.

Class 101—Advertising and Business

For Retail Store Service Specializing in Poultry (Int. Cl. 35).
First use on or about August 1967.

SN 285,692. Ajax Plastic Products, Inc., Des Plaines, Ill. Filed Nov. 28, 1967.

AJAX

Class 2—Receptacles

For Pails, Baskets, Decanters, Clothes Baskets, Stackable Bins, Food Containers, Dish Pans, Cereal Bowls, Basins, Utility Bins, Tumblers, Food Storage Dishes Used Particularly in Refrigerators and Freezers, and Crispers All Made of Plastic (Int. Cl. 21).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Plastic Drainboards (Int. Cl. 21).

Class 31—Filters and Refrigerators

For Plastic Ice Cube Trays (Int. Cl. 21).

First use 1955.

SN 290,441. Harris Paint Company, d.b.a. Home-Craft Products, Tampa, Fla. Filed Feb. 7, 1968.

HOME-CRAFT

Class 16—Protective and Decorative Coatings

For Enamel, Floor Enamel, Varish Stains, Spray Paints, and Paint Thinners (Int. Cl. 2).

Class 52—Detergents and Soaps

For Paint and Varish Remover (Int. Cl. 3).

First use in or about August 1947.

SN 294,990. W. Mimeles Company, Inc., d.b.a. Torino Manufacturing Co., New Orleans, La. Filed Apr. 5, 1968.

TORINO THE CREATIVE Comb

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Wallets (Int. Cl. 18).
First use prior to March 1965.

Class 39—Clothing

For Apparel Belts (Int. Cl. 25).
First use prior to September 1962.

SN 300,265. Desert Palace, Inc., Las Vegas, Nev. Filed June 12, 1968.

CAESARS PALACE

Class 100—Miscellaneous

For Hotel and Restaurant Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Nightclub Entertainment Services Featuring Music, Dancing and Comedy, and Casino Services (Int. Cl. 41).

First use on or about Aug. 5, 1966.

SN 300,270. Desert Palace, Inc., Las Vegas, Nev. Filed June 12, 1968.

CAESARS PALACE

Class 100—Miscellaneous

For Hotel and Restaurant Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Nightclub Entertainment Services Featuring Music, Dancing and Comedy, and Casino Services (Int. Cl. 41).

First use on or about Aug. 5, 1966.

SN 305,173. Conwood Corporation, Memphis, Tenn. Filed Aug. 15, 1968.

CC

Class 4—Abrasives and Polishing Materials

For Leather Polish (Int. Cl. 3).
First use December 1967.

Class 6—Chemicals and Chemical Compositions

For Insect Repellents and Insecticides (Int. Cl. 5).
First use February 1968.

Class 46—Foods and Ingredients of Foods

For Popcorn (Int. Cl. 30).
First use June 17, 1968.

SN 308,940. Binney & Smith Inc., New York, N.Y. Filed Oct. 7, 1968.

BINNEY & SMITH CRAYOLA

Applicant makes no claim to the exclusive use of the representation of a stick of crayon apart from the mark as shown. Owner of Reg. Nos. 643,831, 645,768, and 650,515.

Class 1—Raw or Partly Prepared Materials

For Modeling Clay (Int. Cl. 16).
First use at least as early as June 30, 1964.

Class 5—Adhesives

For Paste and Glue (Int. Cl. 1).
First use at least as early as Apr. 30, 1963.

Class 16—Protective and Decorative Coatings

For Finger Paint, Finger Paint Powder, Powder Paint, Tempera Paint and Water Colors (Int. Cl. 2).
First use May 2, 1956.

Class 37—Paper and Stationery

For Crayons, Chalk, Chalkboard Erasers and Oil Pastel Crayons (Int. Cl. 16).
First use May 2, 1956.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 275,461. Perstorp Aktiebolag, Perstory, Sweden. Filed July 6, 1967.

Owner of Swedish Reg. No. 112,230, dated Feb. 19, 1965.
For Charcoal, Tar, and Plastic Sold in the Form of Sheets, Tubes, Rods, and Pre-Formed Shapes (Int. Cls. 4, 17, and 19).

SN 283,012. Topco Associates, Inc., Skokie, Ill., assignee of The Kingston Company, Skokie, Ill. Filed Oct. 20, 1967.

GAYLORD

For Charcoal Briquets (Int. Cl. 4).
First use July 8, 1967.

SN 286,775. Rexall Drug and Chemical Company, d.b.a. Fiberfil, Los Angeles, Calif. Filed Dec. 12, 1967.

XYLODE

Owner of Reg. Nos. 797,924 and 852,977.
For Thermoplastic Molding Resins (Int. Cl. 1).
First use Nov. 7, 1967.

SN 296,159. J. M. Huber Corporation, Borger, Tex. Filed Apr. 22, 1968.

NUCAP

For Clay (Int. Cl. 19).
First use Mar. 27, 1968.

SN 298,447. Hules Mexicanos S.A., Tamaulipas, Mexico. Filed May 17, 1968.

HUMEX

For Synthetic Resins and Synthetic Rubber (Int. Cls. 1 and 17).
First use Jan. 1, 1964.

SN 299,673. Hastings & Co., Inc., Philadelphia, Pa. Filed June 4, 1968.

NULEAF

For Coated Plastic Films for Use in the Industrial Arts (Int. Cl. 17).
First use May 20, 1968.

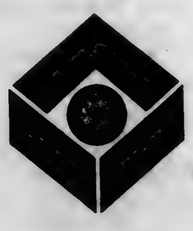
Class 2 — Receptades

SN 278,568. Atlantic Company, Atlanta, Ga. Filed Aug. 18, 1967.

WORLD BAZAAR

Owner of Reg. Nos. 833,913, 842,439, and others.
For Iron Vases, Carved Small Wood Boxes and Carved Wood Trays (Int. Cl. 21).
First use on or about Nov. 15, 1965.

SN 281,438. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,088.
For Waste Paper Baskets (Int. Cl. 21).
First use Aug. 30, 1966.

SN 286,725. Phillips Petroleum Company, Bartlesville, Okla., assignee of Sealright Co., Inc., Fulton, N.Y. Filed Dec. 11, 1967.

SEALRIGHT

Owner of Reg. No. 800,176.
For Receptacles Made Wholly or Partially of Plastic (Int. Cl. 20).
First use June 14, 1965.

SN 290,156. Bestpak, Inc., Natick, Mass. Filed Feb. 2, 1968.

BESTPAK

Owner of Reg. No. 760,479.
For Packaging Products—Namely, Paperboard Cartons and Formed, Self-Supporting Plastic Packages (Int. Cl. 16).
First use Oct. 30, 1950.

SN 304,383. Phillips Petroleum Company, Bartlesville, Okla. Filed Aug. 5, 1968.

PIGGIE POKES

The term "Pokes" is disclaimed apart from the mark as shown.
For Plastic Bags (Int. Cl. 21).
First use Feb. 26, 1968.

SN 307,213. Kimberly-Clark Corporation, Neenah, Wis. Filed Sept. 12, 1968.

DELSEY

Owner of Reg. Nos. 354,948 and 610,924.
For Dispenser for Cosmetic Cleansing Lotion (Int. Cl. 21).
First use Aug. 30, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 273,053. Excelsior Associates, Inc., New York, N.Y. Filed June 5, 1967.

FLIGHT ONE

For Ladies' Handbags (Int. Cl. 18).
First use May 2, 1967.

SN 281,286. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Sept. 27, 1967.



Owner of Reg. Nos. 509,124, 744,454, and others.
For Carrying Cases, and Head Straps and Neck Straps for Carrying Cameras and Other Photographic Apparatus and Materials (Int. Cl. 18).
First use December 1965.

SN 281,439. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,088.
For Luggage, Flight Bags, Duffel Bags, Wallets, Purses, and Coin Purses (Int. Cl. 18).
First use Aug. 30, 1966.

SN 299,011. Estancia Incorporated, New York, N.Y. Filed May 24, 1968.

ESTANCIA

The English translation of the foreign word "Estancia" is believed to be "ranch."
For Leather Handbags, Hand Luggage, and Luggage (Int. Cl. 18).
First use Apr. 15, 1968.

Class 4 — Abrasives and Polishing Materials

SN 295,447. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed Apr. 11, 1968.

PATH MARK

Owner of Reg. Nos. 854,358, 854,884, and 856,671.
For Floor Waxes (Int. Cl. 3).
First use Feb. 12, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 227,660. The C. B. Dolge Company, Westport, Conn. Filed Sept. 13, 1965.

MINTOL

For Disinfectant (Int. Cl. 5).
First use October 1954.

SN 253,354. Stauffer Chemical Company, New York, N.Y. Filed Aug. 26, 1966.

SI-O-SIL

Owner of Reg. Nos. 823,261, 831,327, and 836,932.
For Silicone Functional Fluid for Use as Hydraulic, Dielectric or Heating Fluids, Release Agents, Lubricants, Water Repellents, and for Use in Polishes and Cosmetics, etc. (Int. Cl. 1).
First use July 8, 1966.

SN 275,053. International Dioxide, New York, N.Y. Filed June 29, 1967.

DOXIFOR

For Powdered Deodorant for Industrial Purposes (Int. Cl. 5).
First use Mar. 9, 1967.

SN 281,616. Perfax Corporation, d.b.a. Perry-Sherwood Corp., Fort Lee, N.J. Filed Oct. 2, 1967.



For Chemical Liquid Fixative and Developing Preparations for Use in Electrostatic Copying Machines (Int. Cl. 1).
First use on or about Sept. 8, 1967.

SN 281,617. Perfax Corporation, d.b.a. Perry-Sherwood Corp., Fort Lee, N.J. Filed Oct. 2, 1967.



For Chemical Liquid Toning Preparations for Use in Electrostatic Copying Machines (Int. Cl. 1).
First use on or about Sept. 8, 1967.

SN 282,016. United Oil Manufacturing Company, Erie, Pa. Filed Oct. 6, 1967.

DEEP-SET

For Catalyst for Reaction With a Companion Binding Agent for Forming a Sand Binder for Foundry Purposes (Int. Cl. 1).
First use on or about Sept. 19, 1967.

SN 282,227. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 10, 1967.

ACCORD

For Disinfectant for Use on Cow Udders, Farm Bulk Tanks, Milking Utensils and Equipment and for Food Processing Equipment (Int. Cl. 5).
First use Sept. 7, 1967.

SN 282,308. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Oct. 11, 1967.

POWERAID

For Boiler Compound With Corrosion and Scale Inhibitor (Int. Cl. 2).
First use July 7, 1967.

SN 283,593. Esrolko A.G., Dubendorf, Switzerland. Filed Aug. 11, 1967.

ESROLKO

For Essential Oils and Essences Used in the Manufacture of Perfumes, Cosmetics, and Soaps; Natural and Synthetic Flavoring Essences for Use in the Manufacture of Foods, Beverages, Feeds, Tobacco Products, and Medicines (Int. Cl. 3).
First use in or about the year 1945.

SN 283,777. Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. Filed Oct. 31, 1967.

DEHYDOPLAST

Owner of German Reg. No. 539,444, dated Nov. 30, 1940.
For Film-Forming Compositions for Use in the Manufacture of Skin or Wound Dressings (Int. Cl. 1).

SN 286,522. W. R. Grace & Co., New York, N.Y. Filed Dec. 8, 1967.

NI-LATE

For Insecticide (Int. Cl. 5).
First use Oct. 24, 1967.

SN 287,506. American Can Company, New York, N.Y. Filed Dec. 26, 1967.

CHELIG 32

For Lignosulfonate Compound Used as a Sequestering Agent (Int. Cl. 1).
First use July 13, 1967.

SN 288,505. Foseco International Limited, Birmingham, England. Filed Jan. 10, 1968.

ESRADEX

Priority claimed under Sec. 44(d) on British Reg. No. 912,403, dated July 24, 1967.
For Exothermic Starter Tablets Used To Aid Electro-Slag Refining in the Metallurgical Industry (Int. Cl. 1).

SN 288,560. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 10, 1968.

ERLEN A-91

For Steam Boiler Scale and Corrosion Inhibitor for Soft or Softened Water (Int. Cl. 2).
First use Aug. 8, 1962.

SN 288,564. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 10, 1968.

ERLEN B-86

For Steam Boiler Scale and Corrosion Inhibitor for Hard Water (Int. Cl. 2).
First use Aug. 1, 1962.

SN 288,565. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 10, 1968.

ERLEN L-71

For Scale and Corrosion Inhibitor for Closed Hot Water Heating and Chilled Water Systems (Int. Cl. 2).
First use Aug. 1, 1962.

SN 292,095. Globus-Werke Fritz Schuls Jun., Neuburg (Danube), Bavaria, Germany. Filed Feb. 28, 1968.

GLOBOL

Owner of German Reg. No. 186,122, dated Dec. 27, 1913.
For Insecticides and Rodenticides (Int. Cl. 5).

SN 292,116. Merck & Co., Inc., Rahway, N.J. Filed Feb. 28, 1968.

VACUMETAL

For High Purity Mercury for Industrial Use (Int. Cl. 1).
First use June 21, 1944.

SN 293,545. Milchem Incorporated, Houston, Tex. Filed Mar. 18, 1968.

PETROCOTE

For Drilling Mud Additive Composition Having Penetrating and Lubricating Properties Useful in Releasing Stuck Drill Pipe (Int. Cl. 1).
First use May 3, 1967.

SN 301,602. Avon Products, Inc., New York, N.Y. Filed June 28, 1968.

CLEAR DAY

For Room Freshener (Int. Cl. 5).
First use June 10, 1968.

SN 301,632. Metacomet Inc., Teterboro, N.J. Filed June 28, 1968.

METACHROME

For Processing Chemicals for Photographic Color Films and Papers (Int. Cl. 1).
First use Feb. 20, 1968.

SN 309,562. Farmers Union Central Exchange, Incorporated, South St. Paul, Minn. Filed Oct. 14, 1968.

GREEN HOUSE

For Fungicide, Insecticide, and Herbicide (Int. Cl. 5).
First use Apr. 20, 1967.

Class 7—Cordage

SN 308,429. Patrician Products, Inc., Brooklyn, N.Y. Filed Sept. 30, 1968.

FENCE-WEAVE

For Plastic Ribbon or Tape for Application to Fences (Int. Cl. 17).
First use Mar. 1, 1963.

Class 8—Smokers' Artides, Not Induding Tobacco Products

SN 281,440. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Pipes, Cigarette Boxes and Cases, Ash Trays, Cigarette Holders, and Cigarette Lighters (Int. Cl. 34).
First use Aug. 30, 1966.

SN 310,625. Highlands Briar Inc., Kew Gardens, N.Y. Filed Nov. 20, 1968.

BIG BILL

For Smoking Pipes (Int. Cl. 34).
First use in 1963.

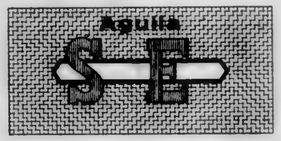
Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 277,343. Cartuchos Deportivos de Mexico, S.A., Morelos, Mexico. Filed Aug. 2, 1967.

AGUILA

The translation of the Spanish word "Aguila" is "eagle." Owner of Mexican Reg. No. 112,572, dated Feb. 11, 1963.
For Firearms, Cartridges for Firearms, and Detonating Capsules for Mining and Industrial Use (Int. Cl. 13).

SN 277,344. Cartuchos Deportivos de Mexico, S.A., Morelos, Mexico. Filed Aug. 2, 1967.



The drawing is lined for the colors red and yellow. The translation of the Spanish word "Aguila" is "eagle." Owner of Mexican Reg. No. 129,961, dated Dec. 18, 1965.
For Firearms, Cartridges for Firearms, and Detonating Capsules for Mining and Industrial Use (Int. Cl. 13).

SN 287,431. Tang Kuen Hung, d.b.a. Yick Loong Fireworks Company, and Kwan Yick Fireworks Company, Hong Kong. Filed Dec. 22, 1967.



The words "Brand" and "Macau" are disclaimed apart from the mark as shown. The Chinese characters appearing on the drawing translate as "Kwan Yick Fireworks Company."
For Fireworks (Int. Cl. 13).
First use 1950; in commerce December 1953.

SN 287,432. Tang Kuen Hung, d.b.a. Yick Loong Fireworks Company, Hong Kong. Filed Dec. 22, 1967.



Applicant disclaims the word "Brand" apart from the mark as shown. The Chinese characters in the drawing are translated as "Yick Loong Firm."
For Fireworks (Int. Cl. 13).
First use 1950; in commerce July 1953.

Class 10—Fertilizers

SN 273,494. Farmers Union Central Exchange, Incorporated, South St. Paul, Minn. Filed June 9, 1967.

GREEN HOUSE

For Fertilizer (Int. Cl. 1).
First use Apr. 20, 1967.

Class 12—Construction Materials

SN 288,949. Georgia-Pacific Corporation, Augusta, Ga. Filed Jan. 16, 1968.

VISTA·PANEL

Owner of Reg. No. 760,213.
For Hardboard Building Panels (Int. Cl. 19).
First use July 15, 1965.

SN 299,892. Vertex Distributing Inc., Los Angeles, Calif. Filed June 6, 1968.

FALCON-FOAM

For Insulating Material—Namely, Molded Plastic in Sheet Form for Thermal Insulation (Int. Cl. 17).
First use Sept. 29, 1966.

SN 301,545. Paeco, Inc., Perth Amboy, N.J. Filed June 27, 1968.



Applicant disclaims the representation of the goods apart from the mark as a whole.
For Decorative Beams (Int. Cl. 19).
First use June 1, 1967.

SN 301,746. W. R. Grace & Co., Cambridge, Mass. Filed July 1, 1968.

MORTARPLAST

For Free Flowing Powder Which Functions as a Replacement for Lime in Mortar (Int. Cl. 19).
First use June 20, 1967.

SN 306,616. William L. Marshall, Ltd., New York, N.Y. Filed Sept. 5, 1968.

WE'RE NOT OUT OF THE WOODS YET!

For Wood and Lumber Products, i.e., Veneers, Pre-Notched Logs, and Lumber (Int. Cl. 19).
First use on or about Aug. 16, 1968.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 258,892. Brand Hydraulics Co., Omaha, Nebr. Filed Nov. 17, 1966.

BRAND

For Hydraulic Valves (Int. Cl. 6).
First use on or about Apr. 12, 1957.

SN 278,968. International-Giftime, Inc., Leominster, Mass. Filed Aug. 24, 1967.

INTERNATIONAL-GIFTIME

For Small Decorative Receptacles Entirely of Non-Precious Metals, Being Trays, Vases, Bowls and Goblets, of Iron, Aluminum, and Brass (Int. Cl. 21).
First use May 25, 1967.

SN 288,200. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Jan. 5, 1968.

AJUSTO-GAP

For Springs, Pins, Retainer Rings and Wire for Maintaining a Uniform Air Gap in Electromagnetic Friction Clutches and Brakes (Int. Cl. 7).
First use Jan. 2, 1968.

SN 304,379. Oakland Corporation, Troy, Mich. Filed Aug. 5, 1968.

VC-3

For Threaded and Unthreaded Fastening Devices (Int. Cl. 6).
First use July 1, 1968.

SN 312,164. Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y. Filed Nov. 14, 1968.

XP

For Metal Threaded Fasteners—Namely, Bolts, Nuts, and Screws (Int. Cl. 6).
First use June 17, 1968.

Class 14—Metals and Metal Castings and Forgings

SN 297,756. Birdsboro Corporation, Birdsboro, Pa. Filed May 9, 1968.

B

For Steel Castings of Carbon, Low Alloy, and High Alloy, Including Stainless and Heat Resistant, Steel (Int. Cl. 6).
First use Mar. 12, 1968.

Class 15—Oils and Greases

SN 284,098. Murphy Oil Corporation, El Dorado, Ark. Filed Nov. 3, 1967.

EMO

The mark is lined for red, but is not limited to that color.
For Motor Oil (Int. Cl. 4).
First use Oct. 19, 1967.

SN 288,987. Snap-On Tools Corporation, Kenosha, Wis. Filed Nov. 22, 1967.

SNAP-ON

Owner of Reg. Nos. 662,736, 788,618, 804,474, and others.
For Lubricant Specialties—Namely, Reamer Cutting Oil, Power Tool Lubricants, Anti-Seize and Sealing Greases, Flushing and Cleaning Oils for Power Tools, and Special Greases for Power Tools and the Like (Int. Cl. 4).
First use since the year 1949.

SN 307,261. A. I. Root Co. of Texas, Inc., d.b.a. A. I. Root Company, The Root Candle Co., San Antonio, Tex. Filed Sept. 13, 1968.

ARISTA

For Candles (Int. Cl. 4).
First use Aug. 14, 1968.

Class 16—Protective and Decorative Coatings

SN 119,899. Spe-De-Way Products Co., Inc., Portland, Oreg. Filed May 12, 1961.



Applicant disclaims the words "Water White-Crystal Clear Finish for Asphalt Tile" and "Eliminates Waxing" apart from the mark shown. The lining on the drawing represents shading only and does not indicate color.
For Asphalt Tile Protecting Finish (Int. Cl. 2).
First use Dec. 29, 1954.

SN 267,745. The Flecto Company, Inc., Oakland, Calif. Filed Mar. 28, 1967.

FLECTO

Owner of Reg. No. 755,336.
For Paints; Varnishes; Enamels; Liquid Plastic Coatings; Lacquers; Wood Stains; Surface Fillers; Sealers for Wood, Masonry, Metals and the Like; Surface Coating Oils; and Pigments for Surface Coatings (Int. Cl. 2).
First use on or about Oct. 27, 1933.

SN 297,837. Associated Hardware Supply Company, Pittsburgh, Pa. Filed May 10, 1968.

Designer

For Paints (Int. Cl. 2).
First use at least as early as Dec. 15, 1965.

SN 305,940. Koppers Company, Inc., Pittsburgh, Pa. Filed Aug. 26, 1968.

GLAMORGLAZE

Owner of Reg. No. 402,715.
For Epoxy Enamel (Int. Cl. 2).
First use May 9, 1966.

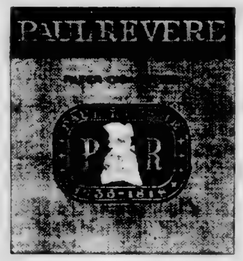
SN 307,191. Cam-Chem Co., Wayne, Mich. Filed Sept. 12, 1968.

C3

For Paint Thinner and Lacquer Thinner (Int. Cl. 2).
First use Jan. 8, 1968.

Class 17—Tobacco Products

SN 277,070. Rembrandt Tobacco Corporation (Overseas), Limited, Zurich, Switzerland. Filed July 28, 1967.



Applicant makes no claim to the words "Filter Cigarettes" apart from the mark as shown. Paul Revere was a famous Eighteenth Century American patriot. The drawing is lined for the colors red and gold.
For Cigarettes (Int. Cl. 34).
First use July 19, 1966.

SN 310,413. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Oct. 24, 1968.

MR. SPEARMINT

Applicant disclaims the word "Spearmint" apart from the mark as a whole.
For Cigarettes (Int. Cl. 34).
First use Sept. 17, 1968.

SN 310,417. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Oct. 24, 1968.

MR. LIME

Applicant disclaims the word "Lime" apart from the mark as a whole.
For Cigarettes (Int. Cl. 34).
First use Sept. 17, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 233,661. Arnaldo L. Vargas, d.b.a. Tropical Pharmaceutical Lab., Santurce, Puerto Rico. Filed Nov. 30, 1965.

BRONCO-FEDRIN

For Cough, Antasthmatic and Expectorant Syrup (Int. Cl. 5).
First use Nov. 3, 1959.

SN 271,514. Brunswig Drug Company, El Segundo, Calif. Filed May 15, 1967.

BRUCO

For Vitamins (Int. Cl. 5).
First use Feb. 5, 1963.

SN 282,634. Sportabs International Inc., Granada Hills, Calif., assignee of Sportabs, Inc., Los Angeles, Calif. Filed Oct. 16, 1967.



The drawing is lined for the color blue but on claim is made to color
For Food Supplement Vitamin Tablets (Int. Cl. 5).
First use on or about June 1, 1967.

SN 283,240. Carlo Erba S.p.A., Milan, Italy. Filed Oct. 24, 1967.

ERBAPLAST

Owner of Italian Reg. No. 111,820, dated May 28, 1953; and U.S. Reg. No. 513,602.
For Pharmaceutical Preparations—namely, Medicated Adhesive Plasters (Int. Cl. 5).

SN 285,162. Vincent Chemical Company Pty. Ltd., Gladesville, New South Wales, Australia. Filed Nov. 17, 1967.

GENUINE (PINK) VINCENTS

Without waiving any common law rights, applicant disclaims the words "Genuine Pink" apart from the mark as shown.
For Medicinal Preparations in Powder and Tablet Form for the Symptomatic Relief of Headaches, Nerve and Muscular Pains, Rheumatism, Lumbago, Sciatica, Neuritis, Toothache, Influenza, Colds and Sleeplessness Due to Pain (Int. Cl. 5).
First use July 26, 1962; in commerce July 26, 1962.

SN 292,473. Dermik Laboratories, Inc., Syosset, N.Y. Filed Mar. 5, 1968.

TOLIRATE

For Preparation for the Prevention and Treatment of Acne or Other Skin Disorders (Int. Cl. 5).
First use Feb. 12, 1966.

SN 293,494. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. Filed Mar. 18, 1968.

KESSO-BAMATE

For Meprobamate (Int. Cl. 5).
First use at least as early as Mar. 6, 1968.

SN 295,199. The Upjohn Company, Kalamazoo, Mich. Filed Apr. 8, 1968.

DALACIN C

Owner of Reg. No. 643,180.
For Antibiotic (Int. Cl. 5).
First use Feb. 9, 1968.

SN 295,229. Martz Mountain Products Corp., New York, N.Y. Filed Apr. 9, 1968.

VITA-BIRD

For Vitamin Concentrate for Pet Birds (Int. Cl. 5).
First use Nov. 21, 1967.

SN 295,689. The Vitarine Co. Inc., Springfield Gardens, N.Y. Filed Apr. 15, 1968.

CAPRON

For Systemic Analgesic Capsules (Int. Cl. 5).
First use September 1967.

SN 295,753. Merck & Co., Inc., Rahway, N.J. Filed Apr. 16, 1968.

THROAT-COTE

For Pharmaceutical Preparation for the Relief of Sore Throat and Minor Throat Irritations (Int. Cl. 5).
First use Apr. 2. 1968.

SN 296,034. Merck & Co., Inc., Rahway, N.J. Filed Apr. 19, 1968.

TRACKDOWN

For Pharmaceutical Preparation for the Relief of Sore Throat and Minor Throat Irritations (Int. Cl. 5).
First use Apr. 2. 1968.

SN 296,626. Abbott Laboratories, North Chicago, Ill. Filed Apr. 26, 1968.

STRONSCAN

For Radioactive Strontium for Pharmaceutical Use (Int. Cl. 5).
First use Dec. 6, 1967.

SN 297,962. Bristol-Myers Company. New York, N.Y. Filed May 13, 1968.

HETAPEN

For Antibiotic Preparation (Int. Cl. 5).
First use Apr. 5, 1968.

SN 297,963. Bristol-Myers Company, New York, N.Y. Filed May 13, 1968.

TADPEN

For Antibiotic Preparation (Int. Cl. 5).
First use Apr. 5, 1968.

SN 298,653. The J. B. Williams Company, Inc., New York, N.Y. Filed May 20, 1968.

CHEWFERS

For Chewable Vitamin To Be Used as a Nutritional Supplement (Int. Cl. 5).
First use May 17, 1968.

SN 298,689. Bristol-Myers Company, New York, N.Y. Filed May 21, 1968.

LOGIC

For Analgesic and Cold Tablets (Int. Cl. 5).
First use Mar. 25, 1968.

SN 298,692. Bristol-Myers Company, New York, N.Y. Filed May 21, 1968.

CLINITREX

For Analgesic (Int. Cl. 5).
First use Mar. 19, 1968.

SN 298,793. Bristol-Myers Company, New York, N.Y. Filed May 22, 1968.

COMPARICIN

For Analgesic (Int. Cl. 5).
First use Mar. 25, 1968.

SN 298,794. Bristol-Myers Company, New York, N.Y. Filed May 22, 1968.

COMPUTE

For Analgesic (Int. Cl. 5).
First use Apr. 1, 1968.

SN 298,795. Bristol-Myers Company, New York, N.Y. Filed May 22, 1968.

COMPARISIN

For Analgesic (Int. Cl. 5).
First use Mar. 25, 1968.

SN 298,919. Boehringer Ingelheim, G.m.b.H., Ingelheim am Rhine, Germany, Filed May 23, 1968.

ALUPENT-SED

Owner of U.S. Reg. Nos.722,168 and 757,604.
For Antiasthmatic (Int. Cl. 5).
First use Apr. 16, 1968; in commerce Apr. 16, 1968.

SN 299,105. Cole Pharmacal Company, Inc., St. Louis, Mo. Filed May 27, 1968.

MUSLAX

For Muscular Relaxant, Spasmolytic and Sedative (Int. Cl. 5).
First use at least as early as Oct. 29, 1953.

SN 299,975. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 7, 1968.

GEIGY

Owner of Reg. Nos. 398,710, 702,128, and 712, 419.
For Medicines and Pharmaceutical Preparations (Int. Cl. 5).
First use Oct. 2, 1946.

SN 300,896. Bristol-Myers Company, New York, N.Y. Filed June 20, 1968.

COMPARINOL

For Analgesic (Int. Cl. 5).
First use May 14, 1968.

SN 300,898. Bristol-Myers Company, New York, N.Y. Filed June 20, 1968.

COMPARISON

For Analgesic (Int. Cl. 5).
First use May 14, 1968.

SN 301,871. Laboratorios Dida Ltd., Guatemala, Guatemala. Filed May 27, 1968.

BUTALIVE

For Pharmaceutical for Use in Animals or Humans for the Control of Hemorrhages and the Prevention of Shock (Int. Cl. 5).
First use prior to Jan. 19, 1967; in commerce on or about Mar. 15, 1968.

SN 306,993. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 10, 1968.

CLEAR-MAN

For Medicated Preparation for Use in the Treatment of Acne, Pimples, and Other Skin Conditions (Int. Cl. 5).
First use Aug. 21, 1968.

SN 306,994. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 10, 1968.

CLEAR DELIGHT

For Medicated Preparation for Use in the Treatment of Acne, Pimples, and Other Skin Conditions (Int. Cl. 5).
First use July 31, 1968.

SN 310,388. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 24, 1968.

RESUME

For Laxative (Int. Cl. 5).
First use June 26, 1968.

SN 310,827. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 30, 1968.

COMBIMAST

For Antibiotic Hormone Preparation for Veterinary Use (Int. Cl. 5).
First use Oct. 11, 1968.

SN 310,987. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Oct. 31, 1968.

ESKALITH

For Psychopharmaceutical Preparation (Int. Cl. 5).
First use Oct.24, 1968.

Class 19—Vehicles

SN 268,060. Nordex Industries, Zenda, Wis., assignee of Herbert E. Peterson, Crystal Lake, Ill. Filed Mar. 31, 1967.

nordex

For Boats (Int. Cl. 12).
First use March 1966.

SN 291,738. Grizzly Manufacturing Company, St. Paul, Minn. Filed Feb. 23, 1968.

GRIZZLY

For Chassis Campers of the Type Mounted on Pickup Truck Beds, Travel Trailers of the Type Towed by Automobile or Truck, Tent Trailers and Canopy-Like Structural Units Mounted Over Pickup Truck Beds (Int. Cl. 12).
First use 1959.

SN 295,658. Midland-Ross Corporation, Cleveland, Ohio. Filed Apr. 15, 1968.

For Railway Freight Car Structural Parts—Namely, Drop Bottom and Drop End Doors, Discharge Gates, Door and Gate Frames, Door and Gate Operating Mechanisms, Door Locks, Door Balancers, Side Bearings, Ladders and Brake Balancers (Int. Cl. 12).
First use Mar. 27, 1968.

SN 300,588. Hardware and Industrial Tool Company Inc., Philadelphia, Pa. Filed June 17, 1968.

HULA TOTE

For Utility Cart Sold With Plastic Bags Designed for Use Therewith (Int. Cl. 12).
First use June 7, 1968.

SN 300,616. Pivotract Corporation, New York, N.Y. Filed June 17, 1968.

PIVOTRACT

For Vehicle Bumper Attachment for Pushing Vehicles (Int. Cl. 12).
First use May 13, 1968.

SN 300,940. The Johnson Corporation, Monroeville, Ind. Filed June 20, 1968.



For Campers for Pick-Up Trucks (Int. Cl. 12).
First use Jan. 31, 1967.

SN 301,376. Universal Oil Products Company, d.b.a. UOP Bostrom Division, Des Plaines, Ill. Filed June 25, 1968.

VIKING-T-BAR

Owner of Reg. No. 750,785.
For Seats and Parts Thereof for Automotive Land Vehicles (Int. Cl. 12).
First use Oct. 1, 1960.

SN 306,033. Kenmore Supply Co., Inc., Chicago, Ill. Filed Aug. 27, 1968.

REFLECTO

For Side Trim Features for Fenders of Cars Made of Plastic and Metal and Containing Red or Amber Reflective Material (Int. Cl. 12).
First use May 1, 1968.

SN 307,655. Mallard Coach Corporation, West Bend, Wis. Filed Sept. 18, 1968.



Owner of Reg. Nos. 746,486 and 746,487.
For Travel Trailers, Tent Trailers, Truck Campers, and Snowmobiles (Int. Cl. 12).
First use Oct. 25, 1960, on travel trailers.

SN 307,976. The Commodore Corporatoin, Omaha, Nebr. Filed Sept. 23, 1968.

Centurion

For Mobile Homes and House Trailers (Int. Cl. 12).
First use Aug. 2, 1968.

SN 311,566. Beagle Aircraft Limited, Shoreham-by-Sea, Sussex, England. Filed Nov. 7, 1968.

PUP

For Aircraft (Int. Cl. 12).
First use April 1967; in commerce September 1968.

SN 311,567. Beagle Aircraft Limited, Shoreham-by-Sea, Sussex, England. Filed Nov. 7, 1968.

BEAGLE

For Aircraft (Int. Cl. 12).
First use October 1960; in commerce September 1967.

SN 311,701. Stutz Motor Car Company of America, New York, N.Y. Filed Nov. 8, 1968.

BLACK HAWK

For Automobiles (Int. Cl. 12).
First use Nov. 4, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 179,322. Crown Radio Corporation, Taito-ku, Tokyo, Japan. Filed Oct. 18, 1963.

CROWN

For Radio Receiving Sets, Television Receiving Sets, and Transceivers (Int. Cl. 9).
First use Mar. 1, 1956; in commerce June 18, 1956.

SN 252,865. Peter Micha, Richmond Hill, Ontario, Canada. Filed Aug. 22, 1966.

PEM

Owner of Reg. No. 799,402.
For Electrical Fountain Equipment—Namely, Underwater Light Fixtures, Junctions Boxes, Cord Seals, Control Valves, and Control Panels (Int. Cls. 9 and 11).
First use Nov. 30, 1965; in commerce Nov. 30, 1965.

SN 260,430. HF Image Systems, Inc., Culver City, Calif., assignee of Houston Fearless Corporation, Los Angeles, Calif. Filed Dec. 9, 1966.

CARD

For Equipment for Storage, Retrieval and Display of Microfiche (Int. Cl. 9).
First use on or about June 30, 1966.

SN 260,610. Technique & Produits, Societe Anonyme, Boulogne-Billancourt, Hauts-de-Seine, France. Filed Dec. 12, 1966.

MATREX

Priority claimed under Sec. 44(d) on French Reg. No. 710,336, dated Aug. 12, 1966.
For Switchboards for Multiple Connections (Int. Cl. 9).

SN 275,464. Perstorp Aktiebolag, Perstorp, Sweden. Filed July 6, 1967.



Owner of Swedish Reg. No. 112,230, dated Feb. 19, 1965.
For Electrical Switches, Electrical Sockets, Electrical Connectors, Plastic Materials for Electrical Insulation, and Plastic Laminates for Printed Circuits (Int. Cls. 9 and 17).

SN 277,086. Tensor Corporation, Brooklyn, N.Y. Filed July 28, 1967.



The mark comprises a fanciful letter "T." Owner of Reg. No. 793,277.
For Electrical Lamps, Combination Clock-Lamps, and Bulbs; and Accessories Therefor—Namely, Extension Cords, Extension Arms, Magnifier Arms, Clamps, Shelf and Wall Brackets, Floor Stands, Carrying Cases, Beam Illuminating Tubes, and Spotlights (Int. Cl. 11).
First use June 2, 1964.

SN 285,361. Topco Associates, Inc., Skokie, Ill. Filed Nov. 21, 1967.



No registration rights are claimed for the word "Noel" apart from the mark shown in the drawing, but applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof. Owner of Reg. No. 766,510.
For Electric Christmas Lights (Int. Cl. 28).
First use Aug. 25, 1961.

SN 298,153. Ross Electronics Corporation, Chicago, Ill. Filed May 14, 1968.

WORLD MASTER

For Radios (Int. Cl. 9).
First use April 1967.

SN 298,517. A.R.F. Products, Inc., Raton, N. Mex. Filed May 20, 1968.

PENMITTER

For Transmitters for Actuating Remotely Controlled Devices Including Garage Door Operators (Int. Cl. 9).
First use Apr. 3, 1968.

SN 299,117. Emerson Electric Co., St. Louis, Mo. Filed May 27, 1968.

HALLMARK

For Commercial Fluorescent Lighting Fixtures (Int. Cl. 11).
First use May 7, 1968.

SN 299,195. American District Telegraph Company, New York, N.Y. Filed May 28, 1968.

AERO

For Automatic Fire Alarm Devices and Parts Thereof (Int. Cl. 9).
First use on or about Apr. 10, 1920.

SN 299,344. Gemco Electric Company, Clawson, Mich. Filed May 29, 1968.

NUDRALIC

For Pressure Operated Electrical Relays (Int. Cl. 9).
First use on or about May 10, 1968.

SN 300,303. Yardney Electric Corporation, New York, N.Y. Filed June 12, 1968.

NYZIN

For Electrochemical Cells and Batteries (Int. Cl. 9).
First use Mar. 17, 1968.

SN 301,553. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed June 27, 1968.

TRINITRON

For Television Receivers (Int. Cl. 9).
First use June 4, 1968; in commerce June 4, 1968.

SN 301,555. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed June 27, 1968.

SMD

For Semiconductors (Int. Cl. 9).
First use Apr. 11, 1968; in commerce Apr. 11, 1968.

SN 301,957. Northwest Handicapped Sales, Inc., Seattle, Wash. Filed July 3, 1968.



For Light Bulbs (Int. Cl. 11).
First use Sept. 1, 1965.

SN 302,309. Eagle-Picher Industries, Inc., Cincinnati, Ohio. Filed July 9, 1968.

TWINKIE

For Battery Supported Emergency Light Activated by Immersion in Water (Int. Cl. 11).
First use June 24, 1968.

SN 302,734. Fisher Radio Corporation, Long Island City, N.Y. Filed July 15, 1968.

175-T

For Radio Receivers (Int. Cl. 9).
First use May 24, 1968.

SN 304,298. Avnet, Inc., Pawtucket, R.I. Filed Aug. 5, 1968.
For Electrical Wire and Cable (Int. Cl. 9).

THRIFT-FOAM

First use on or about June 17, 1968.

SN 304,485. Metex Corporation, Edison, N.J. Filed Aug. 6, 1968.

POLA-STICK

For Adhesive Backed Radio Frequency Interference Shielding in Gasketing Form (Int. Cl. 17).
First use April 1968.

SN 304,576. Bell Hospital Systems, Inc., Bridgeport, Conn. Filed Aug. 7, 1968.

STERISYSTEMS

Owner of Reg. Nos. 819,040, 851,364, and 852,215.
For Intercommunication Equipment Comprising Electronic Signalling and Audio and Television Apparatus, for Communicating Between Patients' and Nurses' Stations, and Parts Thereof (Int. Cl. 9).
First use Sept. 5, 1967.

SN 305,230. Microwave Development Laboratories, Inc., Needham Heights, Mass. Filed Aug. 15, 1968.

ARM

For Electrical Connectors, Jacks, Plugs, and Receptacles; Electrical Filters; Electrical Power Dividing Connectors; Adapters for Interconnecting Different Types or Sizes of Jacks and Plugs; and Adapters, Such as Waveguide to Coaxial Adapters, for Connecting Different Types of Electrical Transmission Lines (Int. Cl. 9).
First use May 9, 1967.

SN 309,813. Gas Guard Corporation of America, Westmont, N.J. Filed Oct. 17, 1968.

GAS-GUARD

For Burglary Protection System Consisting of Mechanical and Electrical Devices Which Release Irritant, Non-Toxic Gases Upon Actuation of the Mechanisms (Int. Cl. 9).
First use 1954.

Class 22 — Games, Toys, and Sporting Goods

SN 266,689. Red Box Company Limited, Kennedy Town, Hong Kong. Filed Mar. 14, 1967.

SPECIAL AGENT 707

For General Line of Toy Sets; Toy Combat Equipment and Weapons Sets; Futuristic and Scientific Items and Kits; Puzzles; Dolls; and Toy Human Figures (Int. Cl. 28).
First use in or about March 1966; in commerce on or about Nov. 15, 1966.

SN 273,326. Stebco Products Corporation, Chicago, Ill., assignee of Stebco Industries, Inc., Chicago, Ill. Filed June 7, 1967.

Stebco

Owner of Reg. No. 670,240.
For Air Mattresses for Outdoor or Campers' or Similar Recreational Use, and Pillows, Air Pumps and Repair Kits Therefor; Inflatable Vests; and Bowling Bags (Int. Cls. 7, 9, 20, and 28).
First use Jan. 2, 1959.

SN 281,441. California Exposition and Fair Corporation. Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Stuffed Toy Animals, Dolls and Action Figures, Board Games, Electrical and Mechanical Games, and Card Games (Int. Cl. 28).
First use Aug. 30, 1966.

SN 284,088. Integral Engineering & Mfg. Corp., Detroit, Mich. Filed Nov. 3, 1967.

MINI TENT

The word "Tent" is disclaimed apart from the mark as shown.
For Tents (Int. Cl. 22).
First use July 21, 1967.

SN 289,996. Clifford Alan Lindroth, San Diego, Calif. Filed Jan. 31, 1968.

SPECULATION

For Equipment (or Apparatus), Sold as a Unit for Playing a Board-Type Game (Int. Cl. 28).
First use Jan. 1, 1967.

SN 291,032. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.

THE PEACEMAKER

Owner of Reg. Nos. 753,165 and 757,133.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 292,736. Skaggs Pay Less Drug Stores, Oakland, Calif. Filed Mar. 8, 1968.

SPORTSMAN

For Salmon Eggs Used for Fish Bait; and Golf Balls (Int. Cl. 28).
First use in 1916.
Subj. to Intf. with SN 287,668.

SN 295,254. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Apr. 9, 1968.

SNARK

For Underwater Skin-Diving Equipment—Namely, Breathing Apparatus Consisting of a Rubber Mouthpiece, Removable Bridle, Hose, and Safety Air Relief Valve (Int. Cl. 9).
First use Mar. 7, 1960.

SN 295,735. Holbrook-Patterson, Inc., Coldwater, Mich. Filed Apr. 16, 1968.



For Toy Cupboard (Int. Cl. 28).
First use Dec. 21, 1966.

SN 296,052. State Line Service, Inc., Sussex, N.J. Filed Apr. 19, 1968.



For Fishing Tackle (Int. Cl. 28).
First use Mar. 8, 1967.

SN 296,302. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 23, 1968.

GUESS AGAIN

For Equipment for Playing a Question and Answer Type Game, Comprising a Battery Operated Game Board Having Electrical Contacts for Lighting Lights Thereon Responsive to Answers to Questions Contained on a Plurality of Apertured Game Cards (Int. Cl. 28).
First use Mar. 1, 1968.

SN 296,514. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 25, 1968.

POP YER TOP!

For Equipment for Playing a Parlor Type Game, Comprising a Game Board and a Playing Piece Movable About the Game Board (Int. Cl. 28).
First use Mar. 1, 1968.

SN 296,515. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 25, 1968.

RECALL

For Equipment for Playing a Parlor Type Game, Comprising a Turntable for Briefly Exposing Designs, and a Plurality of Playing Pieces Corresponding to Said Designs (Int. Cl. 28).
First use Mar. 1, 1968.

SN 296,586. A. G. Spalding & Bros. Inc., Chicopee, Mass. Filed Apr. 25, 1968.

ALUMISHAFT

Owner of Reg. No. 695,595.
For Golf Clubs (Int. Cl. 28).
First use Apr. 11, 1968.

SN 297,431. Northwestern Golf Company, Chicago, Ill. Filed May 6, 1968.

PRESIDENTIAL

For Golf Clubs (Int. Cl. 28).
First use January 1966.

SN 297,444. Thomas B. Semans, Jr., Philadelphia, Pa. Filed May 6, 1968.

All-In-One

For Golf Balls (Int. Cl. 28).
First use Apr. 11, 1968.

SN 297,608. South Bend Tackle Company Inc., South Otselic, N.Y. Filed May 7, 1968.

FERRULE FLEX

Owner of Reg. No. 702,507.
For Fishing Rods (Int. Cl. 28).
First use August 1967.

SN 297,609. South Bend Tackle Company Inc., South Otselic, N.Y. Filed May 7, 1968.

SPIN-I-DIDDEE

Owner of Reg. No. 521,516.
For Fishing Lures (Int. Cl. 28).
First use August 1952.

SN 298,245. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed May 15, 1968.

GAUCHO

For Underwater Spear Guns (Int. Cl. 28).
First use November 1966.

SN 298,849. Northwestern Golf Company, Chicago, Ill. Filed May 22, 1968.

SWINGWEIGHTED

For Golf Clubs (Int. Cl. 28).
First use Jan. 1, 1961.

SN 299,030. William Thomas Mann, d.b.a. Mann's Bait Company, Eufaula, Ala. Filed May 24, 1968.

ROAD RUNNER

For Fishing Lures (Int. Cl. 28).
First use Mar. 27, 1968.

SN 299,096. Brownell & Company Incorporated, Moodus, Conn. Filed May 27, 1968.

SUPER B-43

For Bowstrings (Int. Cl. 28).
First use on or before Sept. 21, 1967.

SN 299,255. Standard Toycraft, Inc., Brooklyn, N.Y. Filed May 28, 1968.



For Toys—Namely, Clay Sets, Serving Sets, Slate and Chalk Sets, Paper Doll Sets, Cosmetic and Grooming Sets, Coloring Sets, Baking Sets, Bead Sets; and Parlor Games Including Chess, Checkers, Lotto and Dominos (Int. Cl. 28).
First use Mar. 1, 1962.

SN 299,371. Northwestern Golf Company, Chicago, Ill. Filed May 29, 1968.

PRO-BILT

For Golf Clubs (Int. Cl. 28).
First use Jan. 1, 1937.

SN 299,580. Northwestern Golf Company, Chicago, Ill. Filed June 3, 1968.

VIRGINIAN

For Golf Clubs (Int. Cl. 28).
First use January 1960.

SN 302,246. Planet Hop Game Company, St. Catharines, Ontario, Canada. Filed July 8, 1968.



Owner of Canadian Reg. No. 156,131, dated Mar. 22, 1968.
For Gameboards (Int. Cl. 28).
First use Mar. 12, 1968; in commerce Mar. 12, 1968.

SN 302,318. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

MARK 106

For Toy Electronic Question and Answer Machine (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,320. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

BUBBLE-UP

For Toy Set Comprising a Bathtub, Doll, Bath Powder, and Towel (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,321. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

DOLLY AND ME

For Toy Hair Dryer (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,324. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

LOVE

For Equipment for Playing a Toy Game (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,325. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

PENGUIN POLO

For Equipment for Playing a Toy Game (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,326. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

PIE FACE

For Equipment for Playing a Toy Game (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,327. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.



For Toy Jewelry and Cosmetic Sets, Toy Beauty Mirror, Toy Steam Iron, Toy Hair Dryer, Toy Refrigerator, and Toy Set Comprising Bathtub, Doll, Bath Powder, and Towel (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,328. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.



For Toy Set Comprising Components for Making Unusual Jewelry (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 302,459. Texia Corporation, Euless, Tex. Filed July 10, 1968.

ZIPSLIDE

For Play Slides (Int. Cl. 28).
First use Feb. 5, 1968.

SN 303,946. Wonder Products Co., Collierville, Tenn. Filed July 30, 1968.

YELL-A-PHONE

For Megaphones (Int. Cl. 9).
First use Sept. 29, 1959.

SN 307,854. Newport Opti-Sonics Company, Newport Beach, Calif. Filed Sept. 20, 1968.

OLLY-O

For Stuffed Toys (Int. Cl. 28).
First use on or about Sept. 22, 1966.

SN 310,406. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

MAGIC-MAKER

For Toys of the Magic-Type for Producing Tricks, Sleight of Hand Demonstrations, and the Like (Int. Cl. 28).
First use Sept. 6, 1968.

SN 310,407. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

SPACE BUBBLE

For Toy Vehicle for a Doll (Int. Cl. 28).
First use Oct. 2, 1968.

SN 310,408. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

EEEEKS!

For Make and Play Toys, Comprising Toy Plastic Casting Unit, Including Molds, Plastic Material, Cooling Tray, Paints, Cement, Hardware, and Instructions (Int. Cl. 28).
First use Sept. 24, 1968.

SN 310,409. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

BLIPPY

For Jack-in- the-Box Toy (Int. Cl. 28).
First use Sept. 25, 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 254,059. McGraw-Edison Company, Elgin, Ill. Filed Sept. 8, 1966.

SABRE-LATHE

For Electrically Driven Bench Tool of Multi-Purpose Including a Lathe, Grinder, Polisher, Buffer, Sabre Saw, Disk Sander, and Drum Sander (Int. Cl. 7).
First use May 9, 1966.

SN 275,466. Perstorp Aktiebolag, Perstorp, Sweden. Filed July 6, 1967.



Owner of Swedish Reg. No. 112,230, dated Feb. 19, 1965.
For Hand Tools for Domestic and Industrial Use in Processing Food—Namely, Scoops, Beaters, Kneaders, Scrapes, and Spades (Int. Cl. 8).

SN 276,346. Pauli & Griffin Company, San Francisco, Calif. Filed July 19, 1967.



Applicant disclaims the representation of the goods apart from the mark as shown.
For Sandblasting Machines and Parts Thereof (Int. Cl. 7).
First use Feb. 1, 1963.

SN 276,487. Union Manufacturing Company, New Britain, Conn. Filed July 20, 1967.

UNIVERSAL

For Hand-Operated Mechanical Food Choppers (Int. Cl. 21.)
First use March 1897.

SN 276,877. Studebaker Corporation, South Bend, Ind. Filed July 26, 1967.

STUD-O-MATIC

For Tire Studding Machine and Accessories Therefor, Including Tire Stud Gun, Tire Stud Feed Mechanism, and Studding Stand (Int. Cl. 7).
First use June 1966.

SN 279,803. Carter Diamond Tool Corporation, Willoughby, Ohio. Filed Sept. 7, 1967.



Owner of Reg. No. 426,073.
For Core Drills, Reamers; Grinding Wheel Dressing and Cutting Tools, and Diamond Turning and Boring Tools for Direct Machining of Materials (Int. Cl. 7).
First use on or about Sept. 24, 1945.

SN 282,127. The Sherwin-Williams Company, Cleveland, Ohio, assignee of The Osborn Manufacturing Company, Cleveland, Ohio. Filed Oct. 9, 1967.

DURA FLEX

For Power Driven Rotary Brushes (Int. Cl. 7).
First use on or about Jan. 23, 1967.

SN 282,713. Oglebay Norton Company, Cleveland, Ohio. Filed Oct. 17, 1967.

FERROBOARD

For Insulating Panels for Use in Hot-Topping (Int. Cl. 17).
First use April 1967.

SN 282,942. Harry G. Yetter, Joan Whalen and Joseph H. Whalen (firm), Colchester, Ill. Filed Oct. 19, 1967.

SPIRAL

For Mechanically Actuated Grain Shifters and Separators, Primarily for Commercial and Industrial Use (Int. Cl. 7).
First use Sept. 1, 1967.

SN 283,880. Cummins Engine Company, Inc., Columbus, Ind. Filed Nov. 1, 1967.

CUSTOM TORQUE

The word "Torque" is disclaimed apart from the mark as shown.
For Internal Combustion Engines and Parts Thereof (Int. Cl. 7).
First use June 12, 1967.

SN 285,245. Melrose Company, Gwinner, N. Dak. Filed Nov. 20, 1967.

MELROE

Owner of Reg. Nos. 659,026 and 822,806.
For Self-Propelled Vehicles Having Front End Mounting Means and Various Attachments Actuated by the Power Means of the Vehicles, Attachments Therefor, Plows, Harrows, Pickups for Harvesters, and Parts and Accessories Therefor (Int. Cl. 12).
First use 1956.

SN 288,757. AMP Incorporated, Harrisburg, Pa. Filed Jan. 15, 1968.

SOF-TOUCH

For Hand Crimping Tools for the Pressure Application of Electrical Connectors (Int. Cl. 8).
First use Jan. 4, 1968.

SN 290,459. Ametek, Inc., New York, N.Y. Filed Feb. 7, 1968.

WINDJAMMER

For Multi-Purpose Blowers for Pneumatic, Mechanical, and Electrical Applications, Both With and Without Assembled Electric Drive Motors (Int. Cl. 7).
First use Sept. 15, 1967.

SN 292,895. Dia-Chrome, Inc., d.b.a. Dia-Chrome Co., Glendale, Calif. Filed Mar. 11, 1968.



The representation of a diamond is disclaimed apart from the mark as shown. Owner of Reg. No. 659,953.
For Diamond Coated Tools—Namely, Wheels, Saws, Band Saw Blades, Mounted Saws, Drills, Burrs, and End Mills (Int. Cl. 7).
First use May 1, 1954.

SN 295,150. Robert M. L. Lindquist, d.b.a. Expansion Products Co., Minneapolis, Minn. Filed Apr. 8, 1968.

WINDBAG

For Pneumatic Pumps (Int. Cl. 7).
First use Feb. 15, 1968.

SN 295,528. Illinois Tool Works Inc., Chicago, Ill. Filed Apr. 12, 1968.

DUO TRAK

For Differential Mechanisms for Vehicles and Parts Therefor (Int. Cl. 12).
First use as early as Sept. 5, 1967.

SN 295,578. Washington Forge, Incorporated, Englishtown N.J. Filed Apr. 12, 1968.

Sussex House Cutlery

No claim is made to the word "Cutlery" apart from the mark.
For Stainless Steel Steak Knives, Kitchen Knives, Carving Sets, and Kitchen Utensils—Namely, Ladles, Mashers, Basting Spoons, and Spatulas (Int. Cl. 8).
First use on or about Feb. 20, 1968.

SN 296,670. Daido Corporation, North Bergen, N.J. Filed Apr. 26, 1968.

DAIDO RUSTLESS CHAIN

Applicant disclaims the words "Rustless Chain" apart from the mark as shown, but disclaimer does not constitute a waiver of applicant's common law rights. Owner of Reg. No. 715,001.
For Roller Chains (Int. Cl. 6).
First use Mar. 18, 1968.

SN 297,174. Crane Engineering Co., Inc., Hallandale, Fla. Filed May 2, 1968.

BLUEPRINTED

For Internal Combustion Engine Camshafts and Cam Profiles (Int. Cl. 7).
First use at least as early as Dec. 28, 1967.

SN 297,175. Crane Engineering Co., Inc., Hallandale, Fla. Filed May 2, 1968.

COMPUDYNE

For Internal Combustion Engine Camshafts and Cam Profiles (Int. Cl. 7).
First use at least as early as Mar. 1, 1968.

SN 299,169. Stercal, Inc., d.b.a. Oceana Tool Manufacturing Co., Venice, Calif. Filed May 27, 1968.

OCEANA

For Power Driven Router Bits, Engraving Cutters, and End Mills for Wood, Plastics, and Metals (Int. Cl. 7).
First use at least as early as 1947.

SN 299,251. Ro-Band Corporation, Menomonee Falls, Wis. Filed May 28, 1968.

WRAPIDFLEX

For Package Wrapping Machines Utilizing Paper or Plastic Sheet Material (Int. Cl. 7).
First use Feb. 19, 1968.

SN 300,929. Gerbing Manufacturing Corporation, Elgin, Ill. Filed June 20, 1968.

DURA-CONE

For Variable Speed Motor Pulleys (Int. Cl. 7).
First use Jan. 20, 1968.

SN 300,989. Toro Manufacturing Corporation, Minneapolis, Minn. Filed June 20, 1968.

ROUGHMASTER

For Mowers (Int. Cl. 7).
First use at least as early as 1936.

SN 301,215. Etablissement Aesup, Vaduz, Liechtenstein. Filed June 24, 1968.

BROXOSHAVE

Owner of Liechtenstein Reg. No. 1,936, dated June 28, 1965; and U.S. Reg. Nos. 677,317 and 698,137.
For Electric Razors (Int. Cl. 8).

SN 301,910. Wylie A. Byrd, Tulia, Tex. Filed July 3, 1968.

ROLL-A-HOE

Owner of Reg. No. 776,552.
For Agricultural Cultivating Implement of the Harrow Type (Int. Cl. 7).
First use Oct. 1, 1966.

SN 301,959. Olivetti Underwood Corporation, New York, N.Y. Filed July 3, 1968.

VENTURA

For Typewriters and Parts Thereof (Int. Cl. 16).
First use June 17, 1968.

Class 24 — Laundry Appliances and Machines

SN 300,056. Borg-Warner Corporation, Chicago, Ill. Filed June 10, 1968.

NORGETOWN

Owner of Reg. Nos. 331,103, 756,843, and others.
For Washing Machines, Clothes Dryers and Dry Cleaning Equipment, and Parts Thereof for Replacement and Repair (Int. Cl. 7).
First use on or prior to Mar. 14, 1968.

Class 26 — Measuring and Scientific Appliances

SN 258,878. McCall Corporation, New York, N.Y., assignee, by mesne assignment, of Elsie Millray Ames, Kaneohe, Hawaii. Filed Nov. 17, 1966.

POLYNESIAN PATTERN



Owner of Reg. No. 859,672.
For Patterns for Use in the Marking of Clothing (Int. Cl. 16).
First use Aug. 3, 1959.

SN 265,907. McGraw-Edison Company, Elgin, Ill. Filed Mar. 3, 1967.

E | R | E
EDISON | RESPONSIVE | ENVIRONMENT
TALKING TYPEWRITER

Applicant disclaims "Typewriter" except as used in conjunction with this mark. The lining on the drawing indicates the color blue, however, such color is not an integral part of the mark and such color is disclaimed.
For Electronic Equipment—Namely, Teaching Machines Which Are Audio-Visual Tactile Responsive Devices To Assist a Subject in the Docility of Academic Subjects Such as History, Mathematics, Reading, and Writing (Int. Cl. 9).
First use June 29, 1965.

SN 265,908. McGraw-Edison Company, Elgin, Ill. Filed Mar. 3, 1967.

E R E

The letters "ERE" are lined in the drawing with the color blue, but color is not an essential of the mark and applicant disclaims the color blue as an integral portion of the mark.
For Electronic Equipment—Namely, Teaching Machines Which Are Audio-Visual, Tactile Responsive Teaching Machines for Academic Subjects, Such as History, Mathematics, Reading and Writing (Int. Cl. 9).
First use June 29, 1965.

SN 265,909. McGraw-Edison Company, Elgin, Ill. Filed Mar. 3, 1967.

EDISON RESPONSIVE ENVIRONMENT

For Electronic Equipment—Namely, Teaching Machines, Tactile Responsive Multi-Sensory, Computer Based, Fully Synchronized Machines To Assist a Subject in Learning Academic Subjects Such as Language Arts (Int. Cl. 9).
First use June 29, 1965.

SN 265,910. McGraw-Edison Company, Elgin, Ill. Filed Mar. 3, 1967.

TALKING TYPEWRITER

The word "Typewriter" is disclaimed apart from the mark as shown.

For Electronic Equipment—Namely, Teaching Machines Which Are Audio, Visual Responsive Typewriter-Like Machines for Teaching Purposes, viz, To Read and Write (Int. Cl. 9).

First use June 29, 1965.

SN 275,516. Data Resolved Tools Pty. Ltd., Plympton, South Australia, Australia. Filed July 7, 1967.

IBES

For Advanced State Electro-Mechanical Data Processor for Geometric, Analog-Digital Data Accumulation and Conversion (Int. Cl. 9).

First use Apr. 13, 1967; in commerce May 2, 1967.

SN 284,159. Burtek, Inc., Tulsa, Okla. Filed Nov. 6, 1967.

MOD CELL

For Simulation and Display Equipment—Namely, Animated Backlighted Trainers, and Display Panels (Int. Cl. 9).

First use at least as early as Mar. 17, 1965.

SN 284,595. Shoel Burstein, d.b.a. Burson Industries, Winnipeg, Manitoba, Canada. Filed Nov. 13, 1967.

BURSON

For Microscopes, Telescopes, Monoscopes, Rifle Scopes, Gun Scopes, Periscopes, Monoculars, Binoculars, Field Glasses, Opera Glasses, Magnifying Glasses; Eye Glasses; Photographic Cameras, Film Projectors, and Slide Projectors (Int. Cl. 9).

First use at least as early as September 1961; in commerce at least as early as September 1961.

SN 287,273. Burtek, Inc., Tulsa, Okla. Filed Dec. 20, 1967.

MOD CELL

For Simulation and Display Equipment—Namely, Animated Backlighted Trainers, and Display Panels (Int. Cl. 9).

First use at least as early as Mar. 17, 1965.

SN 288,016. Harmonic Reed Corporation, d.b.a. Nova Laboratories, West Conshohocken, Pa. Filed Jan. 3, 1968.

NOVA

For Planetariums (Int. Cl. 9).

First use Jan. 1, 1966.

SN 288,034. Simplex Specialty Co., Inc., Hackensack, N.J. Filed Jan. 3, 1968.

SIMPLEX

For Matte Dryers for Photographic Papers, Glossy Dryers for Photographic Papers, Film Dryer for Photographic Film, and Manual and Automatic Processors for Photographic Film (Int. Cl. 9).

First use June 1916.

SN 290,069. Behringwerke Aktiengesellschaft, Marburg/Lahn, Germany. Filed Feb. 1, 1968.

PARTIGEN

For Diffusion Plates for Quantitative Determination of Plasma Protein (Int. Cl. 9).

First use October 1967; in commerce Oct. 23, 1967.

SN 294,758. Turomatic Machine Co., Inc., Hawaiian Gardens, Calif. Filed Apr. 2, 1968.

STAR TRACK

The representation of a telescope is disclaimed apart from the mark as shown.

For Telescopes or the Like, Particularly Reflector Telescopes (Int. Cl. 9).

First use Jan. 12, 1968.

SN 295,323. Entwistle Manufacturing Corporation, Providence, R.I. Filed Apr. 10, 1968.

Templapunch

For Peripheral Data Processing Machines for Automatically Printing and Key Punching Information From Templates to Various Data Processing Vehicles, With Electrical or Manual Operation (Int. Cl. 9).

First use in or about February 1958.

SN 297,471. Watchemoket Optical Co., Inc., Providence, R.I. Filed May 6, 1968.

ALL-WETHA

For Safety Goggles (Int. Cl. 9).

First use on or about Jan. 29, 1968.

SN 297,698. Albert V. Petrik, d.b.a. A. V. Petrik Company, Roslyn, Pa. Filed May 8, 1968.

BAZOOKA BOB

For purposes of registration applicant disclaims the word "Bob" apart from the mark as a whole.

For Plumb Bob (Int. Cl. 9).

First use Apr. 17, 1968.

SN 299,563. Leupold & Stevens Instruments, Inc., Portland, Oreg. Filed June 3, 1968.

GOLDEN RING

For Rifle Scopes (Int. Cl. 9).

First use January 1964.

SN 305,104. Unitek Corporation, Monrovia, Calif. Filed Aug. 14, 1968.

MICROPULL

For Pull Tester for Push and Pull Testing of the Strength of Welded and Bonded Electrical Connections (Int. Cl. 9).

First use at least as early as June 24, 1964.

SN 307,394. Polacoat Incorporated, Blue Ash, Ohio. Filed Sept. 16, 1968.

LENSCREEN

For Translucent Viewing Panels for Rear Projected Images in Rigid, Semi-Rigid, and Flexible Form, and Also Mounted and Portable Screens in Incorporating Such Panels (Int. Cl. 9).

First use at least Dec. 6, 1955.

SN 311,342. Thexton Manufacturing Company, Hopkins, Minn. Filed Nov. 5, 1968.

CHARG-CHEK

For Battery Tester (Int. Cl. 9).

First use Oct. 1, 1968.

Class 27 — Horological Instruments

SN 307,459. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

BEVERLY

For Clocks (Int. Cl. 14).

First use June 16, 1961.

SN 307,461. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

ROMANCE

For Clocks (Int. Cl. 14).

First use Oct. 6, 1961.

SN 307,462. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

MANTELETTE

For Clocks (Int. Cl. 14).

First use Apr. 6, 1962.

SN 307,464. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

CORSAIR

For Clocks (Int. Cl. 14).

First use August 1941.

SN 307,465. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

HELMSMAN

For Clocks (Int. Cl. 14).

First use July 1936.

SN 307,467. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

FACET

For Clocks (Int. Cl. 14).

First use June 6, 1961.

SN 307,469. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

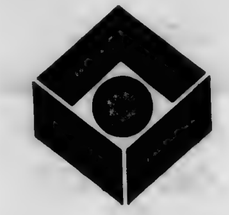
EXETER

For Clocks (Int. Cl. 14).

First use June 10, 1960.

Class 28 — Jewelry and Precious-Metal Ware

SN 281,442. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.

For Tie Pins, Tie Clasps, Bracelets, Necklaces, Cuff Links, and Money Clips (Int. Cl. 14).

First use Aug. 30, 1966.

SN 298,561. Bellavance, Inc., Attleboro, Mass. Filed May 20, 1968.

PROTEUS

For Watchbands and Cuff Links (Int. Cl. 14).

First use on or about May 3, 1968.

SN 304,625. Boris Shteinshleifer, d.b.a. N. L. Shteinshleifer Co., New York, N.Y. Filed Aug. 7, 1968.

BOSCO

For Jewelry Findings (Int. Cl. 14).

First use May 10, 1968.

Class 30—Crockery, Earthenware, and Porcelain

SN 281,443. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Tableware, Dinnerware of China and Porcelain, Crockery, and Earthenware (Int. Cl. 21).
First use Aug. 30, 1966.

SN 307,312. H. F. Coors Company, Inc., Inglewood, Calif. Filed Sept. 13, 1968.

ALOX

For Porcelain Dinnerware and Cooking Ware (Int. Cl. 21).
Filed Aug. 12, 1968.

Class 31—Filters and Refrigerators

SN 297,897. The Tappan Company, Mansfield, Ohio. Filed May 10, 1968.

NAUTILUS

Owner of Reg. No. 684,450.
For Air Purifiers (Int. Cl. 11).
First use March 1960.

Class 32—Furniture and Upholstery

SN 266,655. Joseph J. Gildea, Villanova, Pa. Filed Mar. 14, 1967.

Neo-Lé·gi·le

"Legile" is a Latin word meaning "lectern."
For Dual Book-Supporting Device (Int. Cl. 16).
First use Feb. 16, 1967.

SN 287,439. Donald M. Levy, Hollywood, Calif. Filed Dec. 22, 1967.



For Phonograph Record Display Racks (Int. Cl. 20).
First use Nov. 14, 1967.

SN 289,015. Drexel Enterprises, Inc., Drexel, N.C., assignee of Drexel Enterprises, Inc., Drexel, N.C. Filed Jan. 17, 1968.

COMPATICA

For Bedroom, Dining Room, Occasional, and Living Room Furniture (Int. Cl. 20).
First use November 1967.

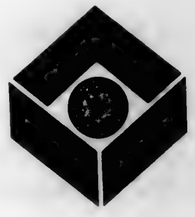
SN 308,338. Wassell Organization Inc., Westport, Conn. Filed Sept. 26, 1968.

EXPAN-TRAC

For Rotary Files for Cards and the Like (Int. Cl. 20).
First use Aug. 2, 1968.

Class 33—Glassware

SN 281,444. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Glassware—Namely, Glasses, Dishes, Trays, Coasters, Pitchers, Mugs, Salt and Pepper Shakers, Jars, Vases, Planters, and Bottles and Figurines (Int. Cl. 21).
First use Aug. 30, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 280,424. Katona Metal Fabricators Inc., Ossining, N.Y. Filed Sept. 15, 1967.

CONVERT-AIRE

For Accessories Used in the Installation of Air-Conditioning Systems—Namely, Roof Plenums, Dampers, and Louvers (Int. Cl. 11).
First use April 1964.

SN 280,699. Vesta Corporation, Denver, Colo., assignee of Funtime, Inc., Denver, Colo. Filed Sept. 19, 1967.

Vesta

For Grills for Patio and Analogous Use (Int. Cl. 11).
First use Feb. 1, 1967.

SN 281,376. Katona Metal Fabricators Inc., Ossining, N.Y. Filed Sept. 28, 1967.

PRE-Y-ER

For Control Systems for Air-Conditioning (Int. Cl. 11).
First use April 1967.

SN 287,270. S. Blickman, Inc., Weehawken, N.J. Filed Dec. 20, 1967.



The drawing is lined for the color green. Owner of Reg. Nos. 607,541, 657,199, and others.
For Electric Dish and Tray Drying Units for Commercial and Institutional Use (Int. Cl. 7).
First use May 12, 1967.

SN 303,849. Weld Mold Company, Brighton, Mich. Filed July 29, 1968.

KIILOY

For Welding Electrodes (Int. Cl. 9).
First use May 27, 1968.

Class 36—Musical Instruments and Supplies

SN 275,080. Scientific Music Industries, Inc., Chicago, Ill. Filed June 29, 1967.



Applicant claims the musical symbols as a part of its mark but not otherwise.
For Xylophones, Melody Bells, Musical Tone Bar Sets, and Mallets for Xylophones and Tone Bars (Int. Cl. 15).
First use on or about Dec. 17, 1965.

SN 289,807. Kabushiki Kaisha Sankei Seisakusho, d.b.a. Sankei Mfg. Co., Ota-ku, Tokyo-to, Japan. Filed Jan. 29, 1968.

SUNSONIC

For Tape Recorders, Stereo Tape Players for Car and Home Use, and Pre-Recorded Magnetic Tape (Int. Cl. 9).
First use June 21, 1967; in commerce Oct. 21, 1967.

SN 291,647. Walter E. Smith, Caldwell, Idaho. Filed Feb. 21, 1968.



Applicant disclaims the word "Music" apart from the mark as shown.
For Guitars (Int. Cl. 15).
First use Dec. 12, 1967.

SN 295,759. The Ohio Art Company, Bryan, Ohio. Filed Apr. 16, 1968.

BASIN BEAT

For Drum Sets (Int. Cl. 15).
First use Mar. 5, 1968.

SN 300,119. Sceneville Musical Record Company, Queens N.Y. Filed June 10, 1968.



For Phonograph Records (Int. Cl. 9).
First use May 1, 1968.

SN 306,495. Leban Imports, Inc., Baltimore, Md. Filed Sept. 3, 1968.

CLUB DATE

For Drum Outfits, Bass Drums, Snare Drums, Side Tom Tom Drums, Floor Tom Tom Drums, Cymbals, Cymbal Holders, Bass Drum Spurs, Bass Drum Pedals, Drum Heads, Drum Sticks, Drummer's Brushes, Cowbells, Wood Blocks, Hi-Hat Stands, Drummer's Throne (Seat), Floor Cymbal Stands, Snare Drum Stands, and Drum Cases (Int. Cl. 15).
First use July 15, 1967.

Class 37—Paper and Stationery

SN 281,445. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Writing Papers, Envelopes, Labels, Napkins, Paperweights, Paper Doilies, Wallpaper, and Giftwrap Paper (Int. Cls. 16 and 27).
First use Aug. 30, 1966.

Class 38—Prints and Publications

SN 273,103. Printpack Incorporated, Atlanta, Ga. Filed June 5, 1967.

COLOR-TROL

For Folder Containing Samples of Printed Colored Package Designs and Color Swatches Therefrom for Comparison in Subsequent Printing Runs for the Purpose of Color Quality Control (Int. Cl. 16).
First use May 12, 1967.

SN 277,923. Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 9, 1967.

MARVEL

For Comic Books and Magazines, and Pamphlets, Newsletters, Paperbacks, and Small Pocket-Size Books (Int. Cl. 16).
First use on or about Aug. 31, 1939.

SN 281,446. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Maps, Commemorative Handbooks, Programs, and Guidebooks (Int. Cl. 16).
First use Aug. 30, 1966.

SN 284,479. Inter-Varsity Christian Fellowship of the United States of America, Chicago, Ill. Filed Nov. 9, 1967.

involved

For Four-Page Religious Newsletter (Int. Cl. 16).
First use Nov. 5, 1967.

SN 294,378. William B. Dana Company, New York, N.Y. Filed Mar. 28, 1968.

THE O-T-C MARKET CHRONICLE

Applicant disclaims the term "O-T-C Market" apart from the mark as shown.
For Weekly Publication—Namely, a Newspaper (Int. Cl. 16).
First use May 1, 1967.

SN 296,010. Bernard T. Corbin, Atlanta, Ga. Filed Apr. 19, 1968.

The fantasticks

For Prints and Decals (Int. Cl. 16).
First use Feb. 1, 1968.
Subj. to Intf. with SN 299,244.

SN 296,348. Eugene G. Reid, d.b.a. Yardage Publications, Weston, Conn. Filed Apr. 23, 1968.

YARDAGE

For Monthly Newsletter (Int. Cl. 16).
First use Apr. 1, 1968.

SN 297,843. Close-Up, Inc., New York, N.Y. Filed May 10, 1968.

REGGIE AND ME

For Comic Magazine (Int. Cl. 16).
First use on or about July 20, 1964.

SN 298,368. The Trustees of Columbia University in the City of New York, New York, N.Y. Filed May 16, 1968.

JOURNAL OF INTERNATIONAL AFFAIRS

For Scholarly Journal Issued by the School of International Affairs of Columbia University (Int. Cl. 16).
First use Jan. 25, 1952.

SN 299,244. Marvel Products, Incorporated, Bridgeport, Conn. Filed May 28, 1968.

FANTAS-STICKS

For Decalcomanias and the Like, Decorative Labels and Appliques (Int. Cl. 16).
First use February 1964.
Subj. to Intf. with SN 296,010.

SN 304,363. Logetronics, Inc., Springfield, Va. Filed Aug. 5, 1968.

LOGECOLOR

Owner of Reg. Nos. 761,948, 804,234, and others.
For Photographic Color Prints (Int. Cl. 16).
First use Apr. 18, 1968.

SN 307,070. Random House, Inc., New York, N.Y. Filed Sept. 11, 1968.



For Books (Int. Cl. 16).
First use at least as early as 1949.

SN 310,423. Random House, Inc., New York, N.Y. Filed Oct. 24, 1968.



For Books (Int. Cl. 16).
First use at least as early as 1942.

Class 39—Clothing

SN 262,590. The Jo-An Shoe Mfg. Co., Inc., Paterson, N.J. Filed Jan. 16, 1967.



For Shoes and Moccasins for Ordinary Every Day Use (Int. Cl. 25).
First use in 1960.

SN 276,485. Stockton Manufacturing Co., Inc., Dallas, Tex. Filed July 20, 1967.

TINA CHAPMAN

"Tina Chapman" is the minor daughter of Wayne L. Chapman and his consent to have her name registered is of record.
For Dresses, Pants, Blouses, Shorts, and Play-Wear (Int. Cl. 25).
First use March 1960.

SN 281,447. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.
For Jackets, T-Shirts, Hats, Caps, Handkerchiefs, Head Scarves, and Belts (Int. Cl. 25).
First use Aug. 30, 1966.

SN 286,320. Bruxton Shirt Co., Inc., New York, N.Y. Filed Dec. 6, 1967.

STRAWTOP

For Men's and Boys' Sport Shirts, Dress Shirts, Sweaters, Swim Wear, Vests, and Coordinated Combinations Thereof (Int. Cl. 25).
First use Aug. 14, 1967.

SN 286,779. Storktowne Products, Inc., Chicago, Ill. Filed Dec. 12, 1967.

DREAM GIRL

For Bathrobes, Dusters, Sleeping Wear, and Pajamas (Int. Cl. 25).
First use Nov. 1, 1957.
Subj. to Intf. with SN 288,203.

SN 288,203. Ely & Walker, Inc., Wilmington, Del. Filed Jan. 5, 1968.

DREAM GIRL

For Hosiery (Int. Cl. 25).
First use Feb. 1, 1926.
Subj. to Intf. with SN 286,779.

SN 291,827. Barringer Knitting Mills Incorporated, Philadelphia, Pa. Filed Feb. 26, 1968.

Jane Marshall

The name "Jane Marshall" is fanciful and does not refer to any living individual.
For Ladies' and Women's Sweaters (Int. Cl. 25).
First use June 3, 1959.

SN 294,776. R. Fox Trouser Manufacturing Company, Philadelphia, Pa. Filed Apr. 3, 1968.

FOX HILL

For Men's and Boys' Pants (Int. Cl. 25).
First use at least as early as February 1964.

SN 295,534. Kickaway Corporation, New York, N.Y. Filed Apr. 12, 1968.

KICKAWAY

Owner of Reg. No. 181,556.
For Children's Clothing—Namely, Slips, Half-Slips, Petticoats, Sleepwear, Panties, Mini-Pants, Stretch Pants, Garter Pants, Dusters, and Robes; and Ladies' Clothing—Namely, Panties, Shifts, Robes, and Dusters (Int. Cl. 25).
First use Mar. 1, 1923.

SN 297,165. Brae-Burn Hat Co. Inc., New York, N.Y. Filed May 2, 1968.

huggles

The pictorial representation of the goods is disclaimed apart from the mark as shown.
For Cuff for Removable Association With a Boot (Int. Cl. 25).
First use Mar. 28, 1968.

SN 297,304. Miss Pat, Los Angeles, Calif. Filed May 3, 1968.

patsi

Owner of Reg. Nos. 606,464, 721,643, and 749,159.
For Women's, Juniors', and Misses' Wearing Apparel—Namely, Dresses, Blouses, Skirts, Pants, Swim Wear, and Jackets (Int. Cl. 25).
First use on or about Dec. 1, 1967.

SN 297,407. Hillstrom Enterprises, Inc., Chicago, Ill. Filed May 6, 1968.

RED GARTER

For Hats, Vests, and Neckties (Int. Cl. 25).
First use May 1, 1968.

SN 302,478. Adidas-Sportschuhfabriken Adi Dassler K.G., Herzogenaurach, near Nuremberg, Germany. Filed July 11, 1968.



The mark consists of three parallel bands extending along the length of each sleeve of the training suit and along the length of each leg of the trousers, the bands on the sleeves being of contrasting color to that of the remainder of the sleeve and the bands on the legs of the trousers being of contrasting color to that of the remainder of the trouser legs. Owner of U.S. Reg. Nos. 631,812, 738,673, and others.

For Athletic Training Suits (Int. Cl. 25).

First use February 1967; in commerce Aug. 3, 1967.

SN 303,423. Lonn Industries Ltd., Montreal, Quebec, Canada. Filed July 23, 1968.

SKEE JEES

For Slacks and Jeans for Men, Women, and Children (Int. Cl. 25).

First use Dec. 18, 1967; in commerce June 20, 1968.

SN 307,532. Gazette Casuals Inc., New York, N.Y. Filed Sept. 17, 1968.

Gazette Casuals

The term "Casuals" is disclaimed apart from the mark as shown.

For Ladies' and Children's Skirts, Slacks, Shirts, Blouses, Jackets, Shorts, Shifts, Dresses, and Combinations Thereof (Int. Cl. 25).

First use Aug. 23, 1968.

Class 41—Canes, Parasols, and Umbrellas

SN 281,449. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.

For Parasols, Umbrellas, and Canes (Int. Cl. 18).

First use Aug. 30, 1966.

SN 302,140. Telesco Brophey Limited, Montreal, Quebec, Canada. Filed July 5, 1968.

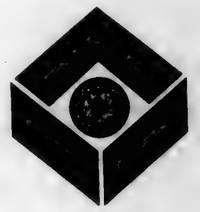
RAINAWAY

Owner of Canadian Reg. No. 145,385, dated May 20, 1966.

For Umbrellas (Int. Cl. 18).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 281,450. California Exposition and Fair Corporation, Sacramento, Calif. Filed Sept. 29, 1967.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Owner of Reg. No. 843,038.

For Placemats, Doilies, Furniture Scarves, and Textile Ribbons (Int. Cl. 24).

First use Aug. 30, 1966.

SN 288,119. Santee Sales Corp., Los Angeles, Calif. Filed Jan. 4, 1968.



No claim is made to the word "Sales," separate and apart from the mark as shown.

For Drapery and Upholstery Fabrics (Int. Cl. 24).

First use Oct. 1, 1966.

SN 288,120. Santee Sales Corp., Los Angeles, Calif. Filed Jan. 4, 1968.

SANTEE ORIGINAL

No claim is made to the word "Original," separate and apart from the mark as shown.

For Drapery and Upholstery Fabrics (Int. Cl. 24).

First use June 15, 1965.

SN 288,137. Santee Sales Corp., Los Angeles, Calif., assignee of R. Stein & Company, Inc., Los Angeles, Calif. Filed Jan. 4, 1968.



Owner of Reg. No. 661,950.

For Drapery and Upholstery Fabrics (Int. Cl. 24).

First use Oct. 1, 1966.

SN 291,800. West Point-Pepperell, Inc., West Point, Ga. Filed Feb. 23, 1968.

CARLIN

Owner of Reg. No. 534,944.

For Bath Rugs, Bedspreads, Blankets, Blanket Covers, Blanket Throws, Chaise Set Covers, Comforters, Coverlets, Crib Comforters, Fabrics for Making the Goods Listed Herein and for Drapery and Uphlostery Purposes, Petticoats (Dust Ruffles), Pillowcases, Sheets, Shower Curtains, and Towels (Int. Cls. 24 and 27).

First use on or about Feb. 1, 1925, on blankets and comforters.

SN 294,927. Feldmühle Aktiengesellschaft, Dusseldorf-Oberkassel, Germany. Filed Apr. 4, 1968.



Owner of U.S. Reg. No. 806,164.

For Blankets (Int. Cl. 24).

First use July 1964; in commerce October 1965.

SN 295,197. Trend Mills, Inc., Rome, Ga. Filed Apr. 8, 1968.

TM Trend Mills

The word "Mills" is disclaimed apart from the mark as shown. Owner of Reg. No. 799,938.

For Rugs and Carpets (Int. Cl. 27).

First use August 1959.

SN 302,538. Turkeltaub & Schiffer, Inc., Maspeth, N.Y. Filed July 11, 1968.

GALAXY

For Floor Carpeting (Int. Cl. 27).

First use February 1968.

SN 302,749. Munsingwear, Inc., Minneapolis, Minn. Filed July 15, 1968.

TC-28

For Fabric for T-Shirts and the Like (Int. Cl. 24).

First use Jan. 1, 1968.

SN 310,275. Cone Mills Inc., New York, N.Y. Filed Oct. 23, 1968.

ELEPHANTE PIED

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof (Int. Cl. 24).

First use Oct. 8, 1968.

Class 44—Dental, Medical, and Surgical Appliances

SN 281,454. Conrac Corporation, New York, N.Y. Filed Sept. 29, 1967.

DUALAX

For Fluid Injection Machines for Embalming (Int. Cl. 10).

First use 1953.

SN 281,455. Conrac Corporation, New York, N.Y. Filed Sept. 29, 1967.

PORTI-BOY

For Fluid Injection Machines for Embalming (Int. Cl. 10).

First use 1937.

SN 285,281. William H. Weller and Inez B. Weller (joint owners), d.b.a. Weller Products, Santa Clara, Calif. Filed Nov. 20, 1967.

SAN-PAN™

For Specimen Collector, and Particularly a Collector Adapted To Fit the Porcelain Bowl of Standard Water Closets for Collecting Specimens of Urine, Stool and Retrieving Foreign Objects Therein as Well as Providing a Sitz Bath Water Holder (Int. Cl. 10).

First use Mar. 11, 1965.

SN 285,925. Hoffmann-La Roche Inc., Nutley, N.J. Filed Nov. 30, 1967.

ARTERIOSONDE

For Blood Pressure Monitoring Device (Int. Cl. 10).

First use Sept. 19, 1967.

SN 288,041. Vita Zahnfabrik H. Rauter K.G., Sackingen, Germany. Filed Jan. 3, 1968.

VITADUR

Owner of U.S. Reg. No. 259,601.

For Artificial Teeth and Dental Ceramic Substances—Namely, Profiles, Core Powder, Dentine Powder, Gum Powder, Enamel Powder, Transparent Powder, and Porcelain (Int. Cls. 5 and 10).

First use on or about Feb. 15, 1967; in commerce on or about July 18, 1967.

SN 290,780. Unitek Corporation, Monrovia, Calif. Filed Feb. 9, 1968.

UNISONIC

For Ultrasonic Dental Scaling Instruments (Int. Cl. 10).

First use at least as early as Dec. 28, 1967.

SN 298,887. Charles Merrill Vaughn, d.b.a. Vulcan Probe Co., Covina, Calif. Filed May 22, 1968.

OSTOguards

For Ostomy Appliances for Body Secretions Issuing From Surgically Produced Openings (Int. Cl. 5).

First use Mar. 22, 1968.

SN 299,813. Monterey Mills, Inc., Janesville, Wis. Filed June 6, 1968.

FEATHER SOFT

For Bed Pads, Mattress Pads, Heel Pads, and Elbow Pads for Use in the Prevention and Healing of Decubitis Ulcers (Int. Cl. 5).

First use July 5, 1966.

SN 300,718. Major-Prodotti Dentari-Societa in Nome Collettivo di Renaldo Giovanni & Figli, Turin, Italy. Filed June 18, 1968.

MAJOR DENT

For Artificial Teeth (Int. Cl. 10).
First use July 4, 1960; in commerce July 3, 1962.

SN 302,585. Bristoline, Inc., New York, N.Y. Filed July 12, 1968.

BRISTOLINE

For Hypodermic Syringes, Hypodermic Needles, Sphygmomanometers, Stethoscopes; and Surgical Instruments, Such as Scissors, Forceps, and Hemostats (Int. Cl. 10).
First use Aug. 17, 1961.

SN 303,015. Becton, Dickinson and Company, East Rutherford, N.J. Filed July 18, 1968.

INFALARM

For Pediatric Monitoring Apparatuses Used To Monitor Infant Bodily Functions (Int. Cl. 10).
First use Nov. 16, 1967.

SN 305,786. Eagle Druggists Supply Co., Inc., New York, N.Y. Filed Aug. 23, 1968.

SIT-N-NURSE

For Combination Straw and Valve for Nursing Bottles (Int. Cl. 10).
First use July 9, 1968.

SN 306,656. Everest & Jennings, Inc., Los Angeles, Calif. Filed Sept. 5, 1968.

STARLINER

For Medical Appliances—Namely, Invalid Wheel Chairs, Invalid Walkers, Commode Chairs, and Cane Gliders (Int. Cls. 10 and 12).
First use Dec. 31, 1964.

SN 306,657. Everest & Jennings, Inc., Los Angeles, Calif. Filed Sept. 5, 1968.

PREMIER

For Medical Appliances—Namely, Invalid Wheel Chairs, Invalid Walkers, Commode Chairs, and Cane Gliders (Int. Cls. 10 and 12).
First use Dec. 31, 1964.

SN 307,596. Stat Corporation, Needham, Mass. Filed Sept. 17, 1968.

TEMPO-STAT

For Electrical Thermometers for Medical and Hospital Use (Int. Cl. 9).
First use on or about Jan. 1, 1961.

SN 308,599. Casco Products Corporation, Bridgeport, Conn. Filed Oct. 1, 1968.

ORTHO-DENT

For Water Pulsed Instrument for Treating Teeth and Gums (Int. Cl. 10).
First use July 14, 1968.

SN 309,215. Air Reduction Company, Incorporated, New York, N.Y. Filed Oct. 9, 1968.

MICRO

For Resuscitation and Inhalation Apparatus and Accessories (Int. Cl. 10).
First use Jan. 8, 1959.

SN 309,355. C. R. Bard, Inc., Murray Hill, N.J. Filed Oct. 10, 1968.



The mark consists of a stylized design of catheter with needle within a circle. Applicant disclaims the representation of the catheter end, apart from the mark as shown.
For Intravenous Catheterization Sets (Int. Cl. 10).
First use Sept. 19, 1968.

SN 310,991. Theradyne Corporation, Jordan, Minn. Filed Oct. 31, 1968.

WEDGE-MATIC

For Wheel Chair Devices, Specifically for Foot Rests for Wheel Chairs (Int. Cl. 12).
First use in or about September 1964.

SN 310,992. Theradyne Corporation, Jordan, Minn. Filed Oct. 31, 1968.

TOGGLE-MATIC

For Wheel Chair Devices, Specifically Brakes for Wheel Chairs (Int. Cl. 12).
First use in or about September 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 280,121. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 11, 1967.

20 GRAND

For Artificially Sweetened Powders for Making Dietary Soft Drinks (Int. Cl. 32).
First use Mar. 30, 1965.

SN 283,372. Vernor-Wagner Corporation, Golf Manor, Ohio. Filed Oct. 25, 1967.

LUVYA

For Soft Drinks (Int. Cl. 32).
First use Sept. 20, 1966.

SN 292,366. Faultless Starch Company, Kansas City, Mo. Filed Mar. 4, 1968.

FROM DOWN BELOW THE ROUBIDOUX

For Drinking Water (Int. Cl. 32).
First use on or about Feb. 21, 1968.

SN 292,367. Faultless Starch Company, Kansas, City, Mo. Filed Mar. 4, 1968.

Deep, DEEP Well

The word "Well" is disclaimed apart from the mark as shown.
For Drinking Water (Int. Cl. 32).
First use on or about Feb. 21, 1968.

SN 292,368. Faultless Starch Company, Kansas City, Mo. Filed Mar. 4, 1968.

1812 WELL

The word "Well" is disclaimed apart from the mark as shown.
For Drinking Water (Int. Cl. 32).
First use on or about Feb. 21, 1968.

SN 295,048. Merlite Industries, Inc., New York, N.Y. Filed Apr. 5, 1968.

CUTE FRUIT

Applicant disclaims the word "Fruit" apart from the mark as shown.
For Artificially Sweetened Soft Drink Mix (Int. Cl. 32).
First use Mar. 13, 1968.

SN 295,939. The National Sugar Refining Company, New York, N.Y. Filed Apr. 18, 1968.

THIRST BEATERS

For Orange Drink, Fruit Punch and Lemonade, All of Which Contain Water, and Concentrates for Making the Orange Drink and Fruit Punch (Int. Cl. 32).
First use Apr. 28, 1967, on orange concentrate.

Class 46—Foods and Ingredients of Foods

SN 252,912. Toshimasa Mizugaki, Nagata-ku, Kobe, Japan. Filed Aug. 22, 1966.

MCC

Owner of Japanese Reg. No. 492,632, dated Dec. 5, 1956.
For Canned Beef Sukiyaki, Canned Curry Sauce With Beef, and Prepared Frozen Sukiyaki (Int. Cl. 29).

SN 260,652. Conservas Alva, Limitada, Matosinhos, Portugal. Filed Dec. 13, 1966.

MINERVA

Owner of Portuguese Reg. No. 114,767, dated Feb. 25, 1963.
For Canned Fish, Preserved Fruits, and Canned Vegetables (Int. Cl. 29).
First use Apr. 7, 1948; in commerce Jan. 4, 1955.
Subj. to Intf. with SN 251,269.

SN 260,653. Conservas Alva, Limitada, Matosinhos, Portugal. Filed Dec. 13, 1966.



Owner of Portuguese Reg. No. 114,770, dated Feb. 25, 1963.
For Canned Fish, Preserved Fruits and Canned Vegetables (Int. Cl. 29).
First use Apr. 7, 1948; in commerce Jan. 4, 1955.
Subj. to Intf. with SN 251,269.

SN 293,400. Ragú Packing Company, Inc., Rochester, N.Y. Filed Mar. 15, 1968.

RAGÚ

For Packaged Sauce Products—Namely, Spaghetti Sauce With Mushrooms, Spaghetti Sauce, Spaghetti Sauce Flavored With Meat, Pizza Sauce, and Marinara Sauce; and Frozen Food Products—Namely, Frozen Lasagna, Frozen Ravioli, and Frozen Manicotti (Int. Cl. 30).
First use March 1937 on spaghetti sauce with mushrooms.

SN 295,455. New York Snacktime, Inc., New York, N.Y. Filed Apr. 11, 1968.



The representation of the frankfurter is disclaimed apart from the mark as shown. Owner of Reg. No. 837,998.
For Frankfurters, Salami, Pastrami, Hamburger Sandwiches, French Fried Potatoes, Jumbo Fantail Shrimp, Soft Shell Crabs, Frogs Legs, Shrimp Eggroll, Clam Chowder, and Corn on the Cob (Int. Cl. 29).
First use July 9, 1963.

SN 302,973. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 17, 1968.

COR-NIP-SHUNS

For Corn Chips (Int. Cl. 30).
First use May 24, 1968.

SN 304,302. Brownsville Canning Company, Brownsville, Wis. Filed Aug. 5, 1968.

NABORHOOD

For Canned Vegetables (Int. Cl. 29).
First use before July 21, 1923.

SN 304,601. Goya Foods Inc., Brooklyn, N.Y. Filed Aug. 7, 1968.

POKO

For Peas, Prepared, and Sold in Cans (Int. Cl. 29).
First use Mar. 1, 1968.

SN 308,952. Fairmont Foods Company, Omaha, Nebr. Filed Oct. 7, 1968.

OP CORN

Applicant disclaims the word "Corn" apart from its usage in the mark as shown.
For Snack Item—Namely, an Expanded Homogenized Corn Meal Product (Int. Cl. 30).
First use at least as early as Sept. 23, 1968.

SN 309,200. Beecham Inc., Clifton, N.J. Filed Oct. 9, 1968.

CARB-O-LECT

For High Carbohydrate Beverage (Int. Cl. 32).
First use Sept. 20, 1968.

SN 311,444. General Mills, Inc., Minneapolis, Minn. Filed Nov. 6, 1968.

BURST-O-DEW

For Dehydrated Onions (Int. Cl. 29).
First use on or prior to Oct. 4, 1967.

Class 47 — Wines

SN 281,776. De La Salle Institute, Rheem Valley, Calif. Filed Oct. 4, 1967.



Owner of Reg. Nos. 562,913, 693,977, and others.
For Wines (Int. Cl. 33).
First use June 5, 1967.

SN 281,777. De La Salle Institute, Rheem Valley, Calif. Filed Oct. 4, 1967.



Owner of Reg. Nos. 562,913, 693,977, and others.
For Wines (Int. Cl. 33).
First use June 28, 1967.

SN 298,743. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. Filed May 21, 1968.

PRAETORIAN

For Wines (Int. Cl. 33).
First use Apr. 24, 1968.

SN 298,744. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. Filed May 21, 1968.

SAMOCA

For Wines (Int. Cl. 33).
First use Apr. 24, 1968.

Class 48 — Malt Beverages and Liquors

SN 290,240. Arthur Guinness Son & Company Limited, London, England. Filed Feb. 5, 1968.



No exclusive claim is made to the representation of the mug and the contents apart from the mark as shown. Owner of U.S. Reg. Nos. 63,040, 628,822, and others.
For Stout (Int. Cl. 32).
First use May 1963; in commerce May 1963; Jan. 1, 1764, as to Guinness"; Mar. 29, 1862, as to the harp design.

SN 305,187. Jos. Schlitz Brewing Company, Milwaukee, Wis. Filed Aug. 15, 1968.

HERITAGE

For Beer (Int. Cl. 32).
First use Mar. 29, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 309,717. Black Prince Distillery, Inc., d.b.a. Georgi Distilling Co., Nutley, N.J. Filed Oct. 16, 1968.

GEORGI

For Vodka (Int. Cl. 33).
First use Sept. 3, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 289,197. Quincrafts Corporation, Quincy, Mass. Filed Jan. 19, 1968.

MAKIT & BAKIT

For Plastic Craft Material—Namely, Plastic Crystals Used in Making Decorative Items Such as Mobiles, Coasters, Christmas Tree Ornaments, etc. (Int. Cl. 20).
First use Oct. 19, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 281,194. Richard Hudnut, Morris Plains, N.J. Filed Sept. 26, 1967.

INTERPLAY

Owner of Reg. No. 436,937.
For Fluid Make-Up (Int. Cl. 3).
First use Sept. 20, 1967.

SN 290,328. Ravel Perfume Corporation, d.b.a. Van Pell, New York, N.Y. Filed Feb. 5, 1968.

XMAS D'OR

The English translation of the mark is "Christmas of gold."
For Perfumes, Colognes, and Toilet Waters (Int. Cl. 3).
First use Oct. 15, 1967.

SN 295,831. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed Apr. 17, 1968.

PATHMARK

Owner of Reg. Nos. 854,358, 854,884, and 856,671.
For Mouth Wash and Hair Tonic (Int. Cl. 3).
First use Feb. 2, 1968.

SN 296,033. The Mennen Company, Morristown, N.J. Filed Apr. 19, 1968.

WINTRY SPICE

Applicant disclaims the word "Spice" apart from the mark as shown.
For After-Shave Lotion (Int. Cl. 3).
First use Apr. 5, 1968.

SN 300,193. Indal Oy, Helsinki, Finland. Filed June 11, 1968.

SAUNA

Owner of U.S. Reg. No. 830,328.
For Hair Conditioner (Int. Cl. 3).
First use on or about Mar. 4, 1968; in commerce on or about Mar. 4, 1968.
Subj. to Intf. with SN 299,485 and SN 299,490.

SN 300,446. Hask Toiletries, Inc., Great Neck, N.Y. Filed June 14, 1968.

GRAY-EX

For Hair Coloring Preparation for Men (Int. Cl. 3).
First use June 11, 1968.

SN 300,688. James H. Cole, Charlotte, N.C. Filed June 18, 1968.

JACO

For Hair Tonic (Int. Cl. 3).
First use Dec. 15, 1958.

SN 300,719. The Mennen Company, Morristown, N.J. Filed June 18, 1968.

WAIT & SEE

For Hand Cream (Int. Cl. 3).
First use May 27, 1968.

SN 301,711. Clairol Incorporated, New York, N.Y. Filed July 1, 1968.

CLEARSPUN

For Lipcolor and Compact Powder (Int. Cl. 3).
First use June 14, 1968.

SN 301,905. Amos R. Beamon, d.b.a. Penegen Products Co., Glendale, Calif. Filed July 3, 1968.

AMPHROGEN

For Cosmetic Face Cream (Int. Cl. 3).
First use on or about May 5, 1964.

SN 302,905. Tiago International Ltd., Woodbury, N.Y. Filed July 17, 1968.

TIAGO

For Perfume and Cologne (Int. Cl. 3).
First use June 11, 1968.

SN 303,061. Ben Nye Inc., West Hollywood, Calif. Filed July 18, 1968.

COVERETTE

For Blemish Cover in Foundation and Powder Form (Int. Cl. 3).
First use July 2, 1968.

SN 308,075. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Sept. 24, 1968.

VERVESSE

Owner of Reg. No. 779,613.
For Cologne (Int. Cl. 3).
First use June 28, 1968.

Class 52 — Detergents and Soaps

SN 270,881. Birma Products Corporation, Sayreville, N.J. Filed May 8, 1967.

CINDY

For Chemical Compositions Used in Industry To Remove Oxidation and/or Rust and Other Like Contaminants From Metallic Surfaces and Concrete Aggregates (Int. Cl. 1).
First use Mar. 1, 1967.

SN 284,712. National Chemical Laboratories of Pa., Inc., Philadelphia, Pa. Filed Nov. 13, 1967.

PINK PANTHER

For All-Purpose Concentrate Cleaner (Int. Cl. 3).
First use July 5, 1967.

SN 295,932. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed Apr. 18, 1968.

PATHMARK

Owner of Reg. Nos. 854,358, 854,884, and 856,671.
For Controlled Suds Laundry Detergent, and Dishwashing Liquid (Int. Cl. 3).
First use Jan. 8, 1968.

SN 296,544. Kelite Chemicals Corporation, Los Angeles, Calif. Filed Apr. 25, 1968.

NIL PHOS

For Detergents and Cleaning Compositions for Industrial and Household Use (Int. Cl. 3).
First use Mar. 5, 1968.

SN 299,207. Bristol-Myers Company, New York, N.Y. Filed May 28, 1968.

OBSIDIAN

For Toilet Bowl Cleaner (Int. Cl. 3).
First use Apr. 1, 1968.

SN 300,166. American Home Products Corporation, New York, N.Y. Filed June 11, 1968.

ROAR

For Shampoo for the Hair and Scalp (Int. Cl. 3).
First use May 24, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 294,692. Taco Tico, Inc., Wichita, Kans. Filed Apr. 1, 1968.



For Restaurant Services (Int. Cl. 42).
First use on or about Jan. 1, 1962.

SN 296,336. Michael C. Matsos, d.b.a. Michael's Enterprises, Birmingham, Ala. Filed Apr. 23, 1968.

Michael's

For Restaurant Services (Int. Cl. 42).
First use Aug. 10, 1954.

SN 299,205. Henry P. Boos Dental Laboratories, Inc., Minneapolis, Minn. Filed May 28, 1968.

BOOS RED BOX SERVICE

For Complete Dental Laboratory Services (Int. Cl. 42).
First use Oct. 19, 1967.

Class 101 — Advertising and Business

SN 272,003. Automation Technology, Inc., Wheaton, Md. Filed May 22, 1967.

AUTOTECH

For Planning and Developing Computer Program for Others (Int. Cl. 35).
First use June 13, 1966.

SN 273,098. Performance Incentives Corporation, South Hackensack, N.J. Filed June 5, 1967.

PIC-A-TRIP

Owner of Reg. Nos. 744,987 and 744,988.
For Planning and Promoting Incentive Programs for Business Organizations, Including the Use of Travel Awards to Their Employees, and Travel Arrangement Services in Connection With Such Awards (Int. Cl. 35).
First use about July 1961; April 1961 as to the mark "PIC."

SN 273,546. Texas Angora Goat Raisers' Association, Uvalde, Tex. Filed June 7, 1967.



Applicant disclaims the word "Mohair."
For Advertising and Promoting the Use and Sale of Mohair Products by Means of Affixing Tags or Labels to All Mohair Products Sold in the United States; by Use of Television Advertising; and by the Use of the Mark on Jewelry (Int. Cl. 35).
First use December 1966.

SN 273,595. Bill's, Inc., Huntsville, Ala. Filed June 12, 1967.



Applicant disclaims the words "Quality Men's Wear" apart from the mark as shown.
For Retail Store Services in the Field of Men's Clothing (Int. Cl. 35).
First use Dec. 1, 1966.

SN 276,198. Walker Manufacturing Company, Racine, Wis. Filed July 17, 1967.

PLAYCATION

For Incentive Award Services for Others and the Awarding of Expense Paid Trips to the Winners of Associated Conducted Contests (Int. Cl. 35).
First use Oct. 13, 1966.

SN 278,565. B. K. Anderson & Company, Augusta, Ga. Filed Aug. 18, 1967.

B. K. ANDERSON AND COMPANY

For Accounting Services and Preparation of Income Tax Returns for Others (Int. Cl. 35).
First use Jan. 2, 1966.

SN 283,705. Pill and Puff, Inc., Milwaukee, Wis. Filed Oct. 30, 1967.

Pill - Puff

For Retail Store Services Specializing in Drugs, Cosmetics, Sundries, and Novelties (Int. Cl. 35).
First use June 1, 1965.

SN 284,201. Howze and Associates, Incorporated, Tampa, Fla. Filed Nov. 6, 1967.

HOWZE-A-MATIC

For Property Appraisal, Assessment, Tax Record Maintenance, Tax Accounting Service and Providing Data Processing Performed in Rendering Such Services (Int. Cl. 35).
First use Sept. 22, 1961.

SN 289,780. Civic Promotions, Inc., Kansas City, Mo. Filed Jan. 29, 1968.

"NIGHT ON THE TOWN!"

For Promoting the Sale of Goods and Services of Others Through the Sale of Redeemable Coupons (Int. Cl. 35).
First use Nov. 8, 1967.

SN 295,611. Cambridge Research Institute, Incorporated, Cambridge, Mass. Filed Apr. 15, 1968.



The mark consists of the stylized letters "CRI."
For Management Consulting Services (Int. Cl. 35).
First use May 5, 1967.

SN 298,612. Peter J. Mastandrea, d.b.a. Mastandrea Studio, New York, N.Y. Filed May 20, 1968.



For Designing Advertisements and Advertising Literature of All Types, Including Reproduction Services (Int. Cl. 35).
First use January 1961.

SN 300,654. Marley Hodgson, Ltd., Chicago, Ill. Filed June 18, 1968.

THE CAPTAIN'S WALK

For Retail Store and Mail Order Services in the Field of Clothing, Furnishings, and Accessories Therefor, and Chandlery (Int. Cl. 35).
First use in or about July 1967.

Class 102 — Insurance and Financial

SN 294,044. Georgia International Life Insurance Company, Atlanta, Ga. Filed Apr. 12, 1968.

MEDI-KEY

Owner of Reg. No. 844,756.
For Underwriting Insurance (Int. Cl. 36).
First use Mar. 30, 1968.

SN 306,861. Rosenthal & Rosenthal, Inc., New York, N.Y. Filed Sept. 9, 1968.

BANCFACTOR

For Financial Services—Namely, Financing and/or Purchase of Accounts Receivable and/or Inventory in Conjunction With Banks and Other Lending Institutions Through Participations, Joint Ventures, or Otherwise (Int. Cl. 36).
First use at least as early as Mar. 21, 1968.

Class 105 — Transportation and Storage

SN 281,550. Cartan Travel Bureau, Inc., Chicago, Ill. Filed Oct. 2, 1967.

PACKAGED FOR PLEASURE

Owner of Reg. No. 520,922.
For Arranging and Conducting Domestic and Foreign Travel Tours and Cruises (Int. Cl. 39).
First use May 1, 1946.

SN 299,476. Open Road International, Inc., St. Louis, Mo. Filed May 31, 1968.

FREEWHEELER

For Arranging, Planning and Organizing of Travel Tours, Including Transportation, Accommodations, and the Like (Int. Cl. 39).
First use October 1967.

SN 299,477. Open Road International, Inc., St. Louis, Mo. Filed May 31, 1968.

ROYAL ROAD

For Arranging, Planning and Organizing of Travel Tours, Including Transportation, Accommodations, and the Like (Int. Cl. 39).
First use October 1967.

Class 106 — Material Treatment

SN 284,029. Paris Processing Corp., New York, N.Y. Filed Nov. 2, 1967.

JADARA

For Embossing of Pile Fabrics of Others (Int. Cl. 40).
First use on or about Oct. 16, 1967.

Class 107 — Education and Entertainment

SN 283,763. Breakout Management Corp., New York, N.Y. Filed Oct. 31, 1967.

VANILLA FUDGE

For Entertainment Services—Namely, the Rendition of Instrumental and Vocal Music by Personal Appearance and Recordings (Int. Cl. 41).
First use Aug. 15, 1962.

SN 286,231. English in Action, Inc., New York, N.Y. Filed Oct. 24, 1967.



For Educational Services Rendered Through Practice in English Conversation (Int. Cl. 41).
First use May 1967.

SN 287,450. The National Science Network, Inc., New York, N.Y. Filed Dec. 22, 1967.

BRITISH CLINICAL PANORAMA

Applicant disclaims the word "British" apart from the mark as shown.
For Educational Services Rendered Through the Medium of a Radio Program Series Concerning Recent Developments in British Medicine (Int. Cl. 41).
First use Nov. 3, 1967.

SN 287,453. The National Science Network, Inc., New York, N.Y. Filed Dec. 22, 1967.

MEDICAL WEEK

For Informing Physicians by Means of Radio of Current Professional Meetings (Int. Cl. 41).
First use Apr. 7, 1967.

SN 298,355. Ringling Bros.-Barnum & Bailey Combined Shows, Inc., Washington, D.C. Filed May 16, 1968.

RINGLING BROS AND BARNUM & BAILEY

For Entertainment Services in the Form of a Circus (Int. Cl. 41).
First use Mar. 29, 1919.

SN 299,633. Madison Square Garden Corporation, New York, N.Y. Filed June 4, 1968.



Applicant disclaims exclusive rights to the representation of a basketball, apart from the mark as shown.
For Professional Basketball Contests (Int. Cl. 41).
First use not later than 1965, 1946 as to "Knicks."

SN 302,671. Columbia Broadcasting System, Inc., New York, N.Y. Filed July 15, 1968.



Applicant disclaims the word "Films" apart from the mark as shown.
For Entertainment Services Consisting of Production of Motion Pictures and Furnishing of Motion Pictures for Exhibition (Int. Cl. 41).
First use on or about May 1, 1968.

SN 310,975. Pittsburgh Steelers Sports, Inc., Pittsburgh, Pa. Filed Oct. 31, 1968.

PITTSBURGH STEELERS

Applicant disclaims the word "Pittsburgh" apart from the mark as shown.
For Entertainment Services—Namely, Football Exhibitions Rendered Live in Stadia and Through the Media of Radio and Television Broadcasts (Int. Cl. 41).
First use 1940.

SN 310,977. Pittsburgh Steelers Sports, Inc., Pittsburgh, Pa. Filed Oct. 31, 1968.



The mark is lined to indicate the color yellow.
For Entertainment Services—Namely, Football Exhibitions Rendered Live in Stadia and Through the Media of Radio and Television Broadcasts (Int. Cl. 41).
First use 1953.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 298,305. American Medical Technologists, Park Ridge, Ill. Filed May 16, 1968.

MT

For Indicating Membership in Applicant.
First use January 1940.

SN 298,484. U.S. Aces, Dallas, Tex. Filed May 17, 1968.

U.S. ACES

For Indicating Membership in Applicant.
First use Feb. 1, 1968.

SN 298,529. American Society of Podiatric Assistants, Carlsbad, N. Mex. Filed May 20, 1968.

AMERICAN SOCIETY OF PODIATRIC ASSISTANTS

For Indicating Membership in Applicant.
First use November 1967.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

865,971. HOSTAFLON. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. SN 269,983. Pub. 12–24–68. Filed 4–25–67.

865,972. RED SUNSET. John Frank Schmidt, Jr. SN 271,532. Pub. 12–24–68. Filed 5–15–67.

865,973. SAFFHI 165. Pacific Vegetable Oil Corporation. SN 271,755. Pub. 12–24–68. Filed 5–18–67.

865,974. SAFFHI 161. Pacific Vegetable Oil Corporation. SN 271,826. Pub. 12–24–68. Filed 5–18–67.

865,975. XYLON. Rexall Drug and Chemical Company, d.b.a. Fiberfil. SN 273,561. Pub. 12–24–68. Filed 6–12–67.

865,976. EBONY MIST. Coggins Granite Industries, Inc. MULTIPLE CLASS (Classes 1, 12, and 50). SN 278,668. Pub. 12–24–68. Filed 8–21–67.

865,977. TC (DESIGN). Taylor Corporation. SN 280,649. Pub. 12–24–68. Filed 9–18–67.

865,978. OCTA. Compagnie Industrielle de Textiles Artificiels et Synthetiques. MULTIPLE CLASS (Classes 1, 39, and 42). SN 280,767. Pub. 12–24–68. Filed 9–20–67.

865,979. O-CTA AND DESIGN. Compagnie Industrielle de Textiles Artificiels et Synthetiques. MULTIPLE CLASS (Classes 1, 39, and 42). SN 280,768. Pub. 12–24–68. Filed 9–20–67.

865,980. BIDIM. Societe Rhodiaceta. SN 281,228. Pub. 12–24–68. Filed 9–26–67.

865,981. "SAFOM." The Firestone Tire & Rubber Company. SN 285,408. Pub. 12–24–68. Filed 11–22–67.

865,982. MACCO. SCM Corporation. SN 285,582. Pub. 12–24–68. Filed 11–24–67.

865,983. CO-RO-GRO GROWN AND DESIGN. Co-Operative Rose Growers, Inc. SN 290,077. Pub. 12–24–68. Filed 2–1–68.

865,984. DYLOY. Sinclair-Koppers Company. SN 290,412. Pub. 12–24–68. Filed 2–6–68.

865,985. BP BUNNELL AND DESIGN. Bunnell Plastics, Inc. MULTIPLE CLASS (Classes 1 and 23). SN 290,556. Pub. 12–24–68. Filed 2–8–68.

865,986. WONDA PUFF. Carlee Corporation. SN 290,822. Pub. 12–24–68. Filed 2–12–68.

865,987. SX (DESIGN). Serex Inc. SN 291,644. Pub. 12–24–68. Filed 2–21–68.

865,988. ZEFRITE. Dow Badische Company. SN 303,098. Pub. 12–24–68. Filed 7–19–68.

865,989. ZEFHUE. Dow Badische Company. SN 303,099. Pub. 12–24–68. Filed 7–19–68.

865,990. ZEFTEST. Dow Badische Company. SN 303,100. Pub. 12–24–68. Filed 7–19–68.

865,991. ZEFSPUN. Dow Badische Company. SN 303,101. Pub. 12–24–68. Filed 7–19–68.

865,992. ZEFMATE. Dow Badische Company. SN 303,103. Pub. 12–24–68. Filed 7–19–68.

865,993. ZEFCROWN. Dow Badische Company. SN 303,107. Pub. 12–24–68. Filed 7–19–68.

865,994. ASHLAND. Ashland Oil & Refining Company. MULTIPLE CLASS (Classes 1 and 6). SN 304,174. Pub. 12–24–68. Filed 8–2–68.

865,995. ASHLAND AND DESIGN. Ashland Oil & Refining Company. SN 304,175. Pub. 12–24–68. Filed 8–2–68.

Class 2 — Receptacles

865,996. MOTOR CITY ROUND CONTAINERS AND DESIGN. Motor City Paper Tube Company. SN 240,108. Pub. 12–24–68. Filed 3–3–66.

865,997. PFAUDLER. Ritter Pfaudler Corporation. SN 248,254. Pub. 12–24–68. Filed 6–16–66.

865,998. LIT-NING AND DESIGN. Lit-Ning Products Company. MULTIPLE CLASS (Classes 2, 25, and 32). SN 256,568. Pub. 12–24–68. Filed 10–17–66.

865,999. RICHARDS PAK AND DESIGN. A. A. Richards & Co., Inc. SN 258,151. Pub. 12–24–68. Filed 11–7–66.

866,000. MONKEES AND DESIGN. Screen Gems, Inc. MULTIPLE CLASS (Classes 2, 22, 26, and 39). SN 276,380. Pub. 12–24–68. Filed 7–20–67.

866,001. SATIN SERVER. Aluminum Company of America. SN 281,263. Pub. 12–24–68. Filed 9–27–67.

866,002. MIPRO. Mipro Metal Products Company. MULTIPLE CLASS (Classes 2 and 39). SN 286,023. Pub. 12–24–68. Filed 12–1–67.

866,003. MR. FRESH AND DESIGN. International Paper Company. SN 295,033. Pub. 12–24–68. Filed 4–5–68.

866,004. RINGSIDE. American Can Company. SN 297,748. Pub. 12–24–68. Filed 5–9–68.

866,005. SANI-SIPPER. The Bomar Company, Inc. SN 299,321. Pub. 12–24–68. Filed 5–29–68.

866,006. SPOZ-PAC. Spoz-Pac, Inc. SN 300,631. Pub. 12–24–68. Filed 4–25–68.

866,007. CRYSTAL SEAL. Brown Company. SN 301,189. Pub. 12–24–68. Filed 6–24–68.

866,008. ARM. The Goodyear Tire & Rubber Company. SN 304,339. Pub. 12–24–68. Filed 8–5–68.

866,009. CLINGMASTER. Comet Packaging Corporation. MULTIPLE CLASS (Classes 2, 37, and 39). SN 306,102. Pub. 12–24–68. Filed 8–28–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

866,010. CAROL EVANS. J. C. Penney Company. SN 243,013. Pub. 12–24–68. Filed 4–8–66.

866,011. BERGDORF GOODMAN. Bergdorf & Goodman Company. MULTIPLE CLASS (Classes 3, 27, 28, 32, 39, 41, 51, and 52). SN. 269,376. Pub. 12–24–68. Filed 4–18–67.

866,012. MISCELLANEOUS DESIGN. Bergdorf & Goodman Company. MULTIPLE CLASS (Classes 3, 27, 28, 32, 39, 41, 51, and 52). SN 272,135. Pub. 12–24–68. Filed 5–23–67.

866,013. KAY–9 KUMFORT. Vernon C. Johnson. SN 272,931. Pub. 12–24–68. Filed 6–2–67.

866,014. BIDIM. Societe Rhodiaceta. SN 281,229. Pub. 12–24–68. Filed 9–26–67.

866,015. CHARVET. Dominique France, Inc. MULTIPLE CLASS (Classes 3, 28, 39, and 41). SN 284,172. Pub. 12–24–68. Filed 11–6–67.

866,016. PL AND DESIGN. Platt Luggage, Inc. SN 292,417. Pub. 12–24–68. Filed 3–4–68.

866,017. THE VILLAGER. The Villager, Inc. MULTIPLE CLASS (Classes 3 and 39). SN 297,332. Pub. 12–24–68. Filed 5–6–68.

866,018. GO LIGHTLY. Bercy Industries, Inc. MULTIPLE CLASS (Classes 3 and 32). SN 300,774. Pub. 12–24–68. Filed 6–19–68.

866,019. "DOUBLE OH!" Prospect Leather Goods Co., Inc. SN 301,087. Pub. 12–24–68. Filed 6–21–68.

Class 4 — Abrasives and Polishing Materials

866,020. DCW DESIGN. The Fuller Brush Company. SN 283,121. Pub. 12–24–68. Filed 10–23–67.

866,021. DCW. The Fuller Brush Company. SN 283,122. Pub. 12–24–68. Filed 10–23–67.

866,022. PLEXORIZE. Plexorise, Inc. SN 283,925. Pub. 12–24–68. Filed 11–1–67.

Class 5 — Adhesives

866,023. R DESIGN. Radiant Color Company. SN 288,563. Pub. 12–24–68. Filed 10–27–67.

866,0024. F AND DESIGN. Floral Chemetics Company. SN 288,207. Pub. 12–24–68. Filed 1–5–68.

866,025. MISTABOND. MR Plastics and Coatings, Inc. SN 299,467. Pub. 12–24–68. Filed 5–31–68.

Class 6 — Chemicals and Chemical Compositions

865,994. (See Class 1 for this trademark.)

865,995. (See Class 1 for this trademark.)

866,0026. PC. Petrochemicals Company, Inc. SN 273,411. Pub. 12–24–68. Filed 6–8–67.

866,027. MISCELLANEOUS DESIGN. Dennison Manufacturing Company. MULTIPLE CLASS (Classes 6 and 37). SN 273,875. Pub. 12–24–68. Filed 6–14–67.

866,028. TARGET AND DESIGN. Releasall Limited. SN 276,762. Pub. 12–24–68. Filed 7–25–67.

866,029. MC–7. Apollo Chemical Corp. SN 286,241. Pub. 12–24–68. Filed 12–5–67.

866,030. VIKOL. Vikon Chemical Company, Inc. SN 286,860. Pub. 12–24–68. Filed 12–13–67.

866,031. IGP TOTAL ETCH. Inchem Graphic Products, Inc. SN 287,070. Pub. 12–24–68. Filed 12–18–67.

866,032. USP–245. Argus Chemical Corporation. SN 287,510. Pub. 12–24–68. Filed 12–26–67.

866,033. BZQ. Argus Chemical Corporation. SN 287,511. Pub. 12–24–68. Filed 12–26–67.

866,034. PHILLIPS 66 AND SHIELD DESIGN. Phillips Petroleum Company. SN 287,576. Pub. 12–24–68. Filed 12–26–67.

866,035. PEDI-PAK. Imperial Adhesives and Chemicals, Inc., by change of name from Imperial Adhesives Inc. SN 293,435. Pub. 12–24–68. Filed 3–18–68.

866,036. NOVOVIOL. Fritzsche Brothers, Inc. SN 293,777. Pub. 12–24–68. Filed 3–21–68.

866,037. BLUE ARROW. Astor Products Inc. SN 295,095. Pub. 12–24–68. Filed 4–8–68.

866,038. EMERALD SEA. The Wun Drop Company. SN 296,477. Pub. 12–24–68. Filed 4–24–68.

866,039. CATO-BOND. National Starch and Chemical Corporation. SN 296,562. Pub. 12–24–68. Filed 4–25–68.

866,040. CATO-SIZE. National Starch and Chemical Corporation. SN 296,563. Pub. 12–24–68. Filed 4–25–68.

866,041. GREENBACK GIRL. Armour-Dial, Inc. MULTIPLE CLASS (Classes 6 and 51). SN 304,850. Pub. 12–24–68. Filed 8–12–68.

866,042. CONOX. Chemclean Corporation. SN 306,728. Pub. 12–24–68. Filed 9–6–68.

Class 7 — Cordage

866,043. ZENITH. Zenith Radio Corporation. SN 269,595. Pub. 12–24–68. Filed 4–19–67.

866,044. NORSEMAN AND DESIGN. Norseman (Cables & Extrusions) Limited, by change of name from Norseman Ropes Limited MULTIPLE CLASS (Classes 7 and 13). SN 284,495. Pub. 12–24–68. Filed 11–9–67.

Class 8 — Smokers' Articles, Not Including Tobacco Products

866,045. WIN AND DESIGN. Astra Trading Corp. SN 296,789. Pub. 12–24–68. Filed 4–29–68.

866,046. STOP CIGARETTE FALLOUT. McDonald Products Corporation. SN 304,367. Pub. 12–24–68. Filed 8–5–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

866,047. PENGUIN AND DESIGN. Penguin Industries, Inc., by change of name from Penguin Associates, Inc. MULTIPLE CLASS (Classes 9, 22, 26, and 44). SN 291,660. Pub. 12–17–68. Filed 2–23–68.

Class 10 — Fertilizers

866,048. Z & R AND DESIGN. Zook and Ranck, Inc. SN 301,114. Pub. 12–24–68. Filed 6–21–68.

866,049. PETROMULCH. Atlantic Richfield Company. SN 301,506. Pub. 12–24–68. Filed 6–27–68.

866,050. ULTRA. The O. M. Scott & Sons Company. SN 301,810. Pub. 12–24–68. Filed 7–2–68.

866,051. JAYGRO. Standard Oil Company. SN 307,895. Pub. 12–24–68. Filed 9–16–68.

Class 12 — Construction Materials

865,976. (See Class 1 for this trademark.)

866,052. PLATANO. U.S. Plywood-Champion Papers Inc., by merger and change of name from United States Plywood Corporation. SN 256,395. Pub. 12–24–68. Filed 10–12–66.

866,053. JOINT GUARD AND DESIGN. Harsco Corporation. SN 264,319. Pub. 12–24–68. Filed 2–9–67.

866,054. MINRO-SIL. Allied Mineral Products, Inc. SN 270,537. Pub. 12–24–68. Filed 5–3–67.

866,055. CERTA-SEAL. Certain-Teed Products Corporation. SN 272,165. Pub. 12–24–68. Filed 5–23–67.

866,056. SOLBIT. USM Corporation, by change of name from United Shoe Machinery Corporation. SN 277,945. Pub. 12–24–68. Filed 8–9–67.

866,057. DURAGARD. U.S. Plywood-Champion Papers Inc. SN 285,098. Pub. 12–24–68. Filed 11–17–67.

866,058. PECKY TSUGA AND DESIGN. Roseburg Lumber Co. SN 287,833. Pub. 12–24–68. Filed 12–29–67.

866,059. SIERRA. American Swimming Pool Research Organization, Inc. SN 288,989. COLLECTIVE MARK. Pub. 12–24–68. Filed 1–17–68.

866,060. LADLE (DESIGN). Avnet, Inc. SN 290,554. Pub. 12–24–68. Filed 1–26–68.

866,061. TEPTAPE. Julian A. Lipman, d.b.a. Chemiquip Company. SN 292,942. Pub. 12–24–68. Filed 3–11–68.

866,062. OXY-TITE. Lake Chemical Co. SN 299,238. Pub. 12–24–68. Filed 5–28–68.

866,063. COMPOLAM. Hanger & Ames. SN 299,984. Pub. 12–24–68. Filed 6–7–68.

866,064. DESOGLAS. De Soto, Inc. SN 300,342. Pub. 12–24–68. Filed 6–13–68.

866,065. DEK-JYST. Van Rensselaer P. Saxe. SN 300,623. Pub. 12–24–68. Filed 6–17–68.

866,066. SHEDUA. Penberthy Lumber Company. SN 304,284. Pub. 12–24–68. Filed 8–5–68.

866,067. NOVODECK. U.S. Plywood-Champion Papers Inc. SN 304,562. Pub. 12–24–68. Filed 8–7–68.

866,068. CPC. Construction Products Corporation. SN 304,857. Pub. 12–24–68. Filed 8–12–68.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

866,044. (See Class 7 for this trademark.)

866,069. BEA. Joh. Friedrich Behrens. MULTIPLE CLASS (Classes 13 and 23). SN 269,410. Pub. 12–24–68. Filed 4–18–67.

866,070. T & B ENGINEERED THOMAS & BETTS AND DESIGN. The Thomas & Betts Co. MULTIPLE CLASS (Classes 13, 15, 21, 23, and 35). SN 273,808. Pub. 12–24–68. Filed 6–13–67.

866,071. T & B ENGINEERED AND DESIGN. The Thomas & Betts Co. MULTIPLE CLASS (Classes 13, 15, 21, 23, and 35). SN 273,809. Pub. 12–24–68. Filed 6–13–67.

866,072. T & B ENGINEERED AND DESIGN. The Thomas & Betts Co. MULTIPLE CLASS (Classes 13, 15, 21, 23, and 35). SN 273,810. Pub. 12–24–68. Filed 6–13–67.

866,073. T & B. The Thomas & Betts Co. MULTIPLE CLASS (Classes 13, 15, 21, 23, and 35). SN 273,811. Pub. 12–24–68. Filed 6–13–67.

866,074. THERMO FUSED AND DESIGN. The Enterprise Aluminum Company. SN 274,599. Pub. 12–24–68. Filed 6–23–67.

866,075. POSI-HOLD. Dresser Industries, Inc. SN 274,721. Pub. 12–24–68. Filed 6–26–67.

866,076. SHEPPARD. Cotesworth, Curtis, Rathbone, Sheppard, Ltd. SN 275,241. Pub. 12–24–68. Filed 7–3–67.

866,077. T & B AND DESIGN. The Thomas & Betts Co. MULTIPLE CLASS (Classes 13, 15, 21, 23, and 35). SN 278,044. Pub. 12–24–68. Filed 8–10–67.

866,078. KITCO AND DESIGN. Kitco Engineering and Manufacturing Co., Inc. SN 279,200. Pub. 12–24–68. Filed 8–28–67.

866,079. CORLGLAS. Corl International Corporation. MULTIPLE CLASS (Classes 13 and 19). SN 279,719. Pub. 12–24–68. Filed 9–6–67.

866,080. T & B. The Thomas & Betts Co. MULTIPLE CLASS (Classes 13, 15, 21, 23, and 35). SN 281,238. Pub. 12–24–68. Filed 9–26–67.

866,081. FLIPVAL. Automatic Switch Company. SN 283,420. Pub. 12–24–68. Filed 10–26–67.

866,082. MELODY 5 WAY PLEAT MAKER AND DESIGN. Nicholas G. Murgolo, d.b.a. Novel Pleat Co. SN 285,445. Pub. 12–24–68. Filed 11–22–67.

866,083. ARMDOR. Clark Paper Converting Corp. MULTIPLE CLASS (Classes 13 and 37). SN 286,503. Pub. 12–24–68. Filed 12–8–67.

866,084. PELDOR. Clark Paper Converting Corp. MULTIPLE CLASS (Classes 13 and 37). SN 286,504. Pub. 12–24–68. Filed 12–8–67.

866,085. SPRING WING. The Paine Company. SN 288,714. Pub. 12–24–68. Filed 1–12–68.

866,086. THE EDUCATED NUT. Engine Accessories Mfg. Co. SN 289,288. Pub. 12–24–68. Filed 1–22–68.

866,087. 5 and C DESIGN. Contromatics Corporation. SN 289,783. Pub. 12–24–68. Filed 1–29–68.

866,088. POLY THREAD. A. O. Smith Corporation. SN 290,904. Pub. 12–24–68. Filed 2–12–68.

866,089. LADY CHURCH. American Standard Inc. SN 292,064. Pub. 12–24–68. Filed 2–28–68.

866,090. CLOG-BUSTER. Lafayette Brass Company, Inc. SN 292,278. Pub. 12–24–68. Filed 3–1–68.

866,091. FIN-SET. Fastener Products, Inc. SN 292,774. Pub. 12–24–68. Filed 3–8–68.

866,092. JEL-N-SERVE. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 293,303. Pub. 12–24–68. Filed 3–14–68.

866,093. Z-TORK. Zimmer Manufacturing Industries, Inc., by change of name from Zimmer-Lightbody Ind., Inc. SN 293,767. Pub. 12–24–68. Filed 3–20–68.

866,094. POLO PLAYER (DESIGN). Beneke Corporation. SN 293,898. Pub. 12–24–68. Filed 3–22–68.

866,095. LITTLE EAVE. Redema Corporation. SN 294,313. Pub. 12–24–68. Filed 3–27–68.

866,096. BACO. Universal Marion Corporation. SN 294,329. Pub. 12–24–68. Filed 3–27–68.

866,097. POLYDOR. John L. Dore Co. SN 294,602. Pub. 12–24–68. Filed 4–1–68.

866,098. RIEKE. Rieke Corporation. MULTIPLE CLASS (Classes 13 and 50). SN 294,783. Pub. 12–24–68. Filed 4–3–68.

866,099. CONCEAL. Yoshida Kogyo K.K. SN 295,870. Pub. 12–24–68. Filed 3–28–68.

866,100. REX. Rex Chainbelt Inc. SN 296,870. Pub. 12–24–68. Filed 4–29–68.

866,101. H-W. George G. Hutchison, d.b.a. Hutchison-Western. SN 297,259. Pub. 12–24–68. Filed 5–3–68.

866,102. SATIN-GARD. Republic Steel Corporation. SN 298,965. Pub. 12–24–68. Filed 5–23–68.

866,103. MINI-FLEX. I-T-E Imperial Corporation. SN 305,516. Pub. 12–24–68. Filed 8–20–68.

866,104. IMPERIAL. Kenney Manufacturing Company. SN 305,518. Pub. 12–24–68. Filed 8–20–68.

Class 14—Metals and Metal Castings and Forgings

866,105. DUA AND DESIGN. Dua Corporation. SN 273,270. Pub. 12–24–68. Filed 6–7–67.

866,106. PIPIN' HOT AND DESIGN. Louis Dejonge and Company. SN 304,187. Pub. 12–24–68. Filed 8–2–68.

Class 15—Oils and Greases

866,070. (See Class 13 for this trademark.)

866,071. (See Class 13 for this trademark.)

866,072. (See Class 13 for this trademark.)

866,073. (See Class 13 for this trademark.)

866,077. (See Class 13 for this trademark.)

866,080. (See Class 13 for this trademark.)

866,107. LEVAFORM. Farbenfabriken Bayer Aktiengesellschaft. SN 286,334. Pub. 12–24–68. Filed 12–6–67.

866,108. IRONSIDES SHIELD PRODUCTS ETC. AND DESIGN. The Ironsides Company. SN 288,019. Pub. 12–24–68. Filed 1–3–68.

866,109. POSCARE. Edward Foley. SN 289,887. Pub. 12–24–68. Filed 1–30–68.

866,110. LIDOK. Standard Oil Company. SN 290,763. Pub. 12–24–68. Filed 2–9–68.

866,111. NOX. Industrial Lubricants, Inc. SN 292,382. Pub. 12–24–68. Filed 3–4–68.

866,112. PIER 66. Phillips Petroleum Company. SN 292,811. Pub. 12–24–68. Filed 3–8–68.

866,113. BIO-HD. Bayou State Oil Corporation. SN 298,998. Pub. 12–24–68. Filed 5–24–68.

866,114. CREST. Pioneer Products, Inc. SN 302,757. Pub. 12–24–68. Filed 7–15–68.

Class 16—Protective and Decorative Coatings

866,115. PROTEXON. Allied Compositions Co., Inc. SN 271,327. Pub. 12–24–68. Filed 5–12–67.

866,116. ELECTROCURE. Ford Motor Company. SN 278,682. Pub. 12–24–68. Filed 8–21–67.

866,117. R (DESIGN). Radiant Color Company. SN 283,566. Pub. 12–24–68. Filed 10–27–67.

866,118. STAR-FLAKE AND DESIGN. Limbacher Paint & Color Works, Inc. SN 294,513. Pub. 12–24–68. Filed 3–29–68.

866,119. THERMO-SPAR. International Paint Company, Inc. SN 295,433. Pub. 12–24–68. Filed 4–11–68.

866,120. FLEXLIFE. CAH Industries Incorporated. MULTIPLE CLASS (Classes 16 and 52). SN 301,805. Pub. 12–24–68. Filed 7–2–68.

Class 17—Tobacco Products

866,121. VADA. Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V. SN 278,423. Pub. 12–24–68. Filed 8–16–67.

866,122. MIDAS. House of Windsor, Inc. SN 289,898. Pub. 12–24–68. Filed 1–30–68.

866,123. DOUBLE EAGLE. House of Windsor, Inc. SN 289,899. Pub. 12–24–68. Filed 1–30–68.

866,124. MIDDLETON'S CHERRY BLEND AND DESIGN. John Middleton, Inc. SN 297,575. Pub. 12–24–68. Filed 5–7–68.

866,125. PORTLAND. Rothmans of Pall Mall Limited. SN 302,643. Pub. 12–24–68. Filed 7–12–68.

Class 18—Medicines and Pharmaceutical Preparations

866,126. LUUF. Friedrich Boehm. SN 261,797. Pub. 12–24–68. Filed 1–3–67.

866,127. CITRA COLA. Creative Concepts, Inc., assignee of L. Chase Grover, d.b.a. The Citra Cola Company. SN 268,727. Pub. 12–24–68. Filed 4–10–67.

866,128. VITA-BOOST. Eastern Shore Laboratories, Inc. SN 273,621. Pub. 12–24–68. Filed 6–12–67.

866,129. BIO-CEUTIC. Philips Roxane, Inc. SN 276,577. Pub. 12–24–68. Filed 7–21–67.

866,130. BIO-CEUTIC AND DESIGN. Philips Roxane, Inc. SN 276,578. Pub. 12–24–68. Filed 7–21–67.

866,131. CUPRATE. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,515. Pub. 12–24–68. Filed 8–4–67.

866,132. CALCIPET. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,517. Pub. 12–24–68. Filed 8–4–67.

866,133. BVMO. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,529. Pub. 12–24–68. Filed 8–4–67.

866,134. MICROPURE. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals. SN 277,532. Pub. 12–24–68. Filed 8–4–67.

866,135. ALBUMAID. Powell & Scholefield Ltd. SN 282,477. Pub. 12–24–68. Filed 10–13–67.

866,136. MIXER-AID. Moorman Manufacturing Company of California, Inc. SN 283,537. Pub. 12–24–68. Filed 10–27–67.

866,137. TITEN-ZEM. Zirin Laboratories International, Inc. SN 283,744. Pub. 12–24–68. Filed 10–30–67.

866,138. HEMOQUEL. American Cyanamid Company. SN 284,288. Pub. 12–24–68. Filed 11–7–67.

866,139. COLLOSCAN. Abbott Laboratories. SN 284,560. Pub. 12–24–68. Filed 11–13–67.

866,140. LOMOMYCIN. G. D. Searle & Co. SN 284,743. Pub. 12–24–68. Filed 11–13–67.

866,141. STATYL. Imperial Chemical Industries Limited. SN 285,330. Pub. 12–24–68. Filed 11–21–67.

866,142. RIMACTANE. Ciba Limited. SN 285,722. Pub. 12–24–68. Filed 11–28–67.

866,143. REGACILIUM. Hudson Vitamin Products, d.b.a. Hudson National, Inc. SN 285,740. Pub. 12–24–68. Filed 11–28–67.

866,144. PAMLAB AND DESIGN. Pan American Laboratories, Inc. SN 285,755. Pub. 12–24–68. Filed 11–28–67.

866,145. TAST-E-LAX. Henrietta Rancho Products Co. SN 287,015. Pub. 12–24–68. Filed 12–15–67.

866,146. TRISOHIST. Broemmel Pharmaceuticals. SN 288,082. Pub. 12–24–68. Filed 1–4–68.

866,147. UDDOSIL. Drugs for Veterinary Medicine, Inc. SN 288,290. Pub. 12–24–68. Filed 1–8–68.

866,148. TRI-VET. American Cyanamid Company. SN 288,665. Pub. 12–24–68. Filed 1–12–68.

866,149. POVICIDAL. The Purdue Frederick Company. SN 289,529. Pub. 12–24–68. Filed 1–24–68.

866,150. POVICIDE. The Purdue Frederick Company. SN 289,530. Pub. 12–24–68. Filed 1–24–68.

866,151. POVICIDIL. The Purdue Frederick Company. SN 289,531. Pub. 12–24–68. Filed 1–24–68.

866,152. SEDUSAL. Sedames Laboratories, Inc. SN 290,697. Pub. 12–24–68. Filed 2–12–68.

866,153. PRELUDAX. Boehringer Ingelheim G.m.b.H. SN 291,022. Pub. 12–24–68. Filed 2–14–68.

866,154. SENO-VET. Drugs For Veterinary Medicine, Inc. SN 291,368. Pub. 12–24–68. Filed 2–19–68.

866,155. ASCAVET. Drugs For Veterinary Medicine, Inc. SN 291,369. Pub. 12–24–68. Filed 2–19–68.

866,156. FEDAHIST. Dooner Laboratories, Inc. SN 293,242. Pub. 12–24–68. Filed 3–14–68.

866,157. TANDACYL. Geigy Chemical Corporation. SN 293,498. Pub. 12–24–68. Filed 3–18–68.

866,158. REGROPRES. Geigy Chemical Corporation. SN 293,503. Pub. 12–24–68. Filed 3–18–68.

866,159. RENAFUR. The Norwich Pharmacal Company. SN 294,235. Pub. 12–24–68. Filed 3–27–68.

866,160. DEW DABS. Colgate-Palmolive Company. SN 297,245. Pub. 12–24–68. Filed 5–3–68.

866,161. MR. FIZZ. Bristol-Myers Company. SN 298,690. Pub. 12–24–68. Filed 5–21–68.

866,162. TIS. Chas. Pfizer & Co., Inc. SN 301,134. Pub. 12–24–68. Filed 6–24–68.

866,163. FOOT-GUARD. Chas. Pfizer & Co., Inc. SN 301,891. Pub. 12–24–68. Filed 7–3–68.

866,164. CLINICARE. Chas. Pfizer & Co., Inc. SN 302,285. Pub. 12–24–68. Filed 7–9–68.

866,165. ANABOLIN. Warner-Lambert Pharmaceutical Company. SN 303,123. Pub. 12–24–68. Filed 7–19–68.

866,166. LIGHTS OUT. Chas. Pfizer & Co., Inc. SN 303,749. Pub. 12–24–68. Filed 7–29–68.

866,167. UDDERWISE. Roesbery Laboratories, Inc. SN 305,284. Pub. 12–24–68. Filed 8–16–68.

866,168. HALOTEX. Mead Johnson & Company. SN 306,305. Pub. 12–24–68. Filed 8–30–68.

866,169. TRICLORICIN. Mead Johnson & Company. SN 306,306. Pub. 12–24–68. Filed 8–30–68.

866,170. CLOR-I-STAT. Mead Johnson & Company. SN 306,309. Pub. 12–24–68. Filed 8–30–68.

866,171. HALOSTAT. Mead Johnson & Company. SN 306,862. Pub. 12–24–68. Filed 8–30–68.

Class 19—Vehicles

866,079. (See Class 13 for this trademark.)

866,172. KOZY-KUSHION. Reynolds Research & Manufacturing Corp., assignee of RGV Industries. SN 232,733. Pub. 10–4–66. Filed 11–15–65.

866,173. WISP. Raleigh Industries Limited. SN 270,528. Pub. 12-24-68. Filed 5-3-67.

866,174. "LIL TUFFY." Tuffy Manufacturing Company, Inc. SN 276,369. Pub. 12-24-68. Filed 7-19-67.

866,175. WATERLAND. S. Joosten N.V. SN 279,836. Pub. 12-24-68. Filed 9-7-67.

866,176. "LIL TUFFY" AND DESIGN. Tuffy Manufacturing Company, Inc. SN 280,652. Pub. 12-24-68. Filed 9-18-67.

866,177. PARKDALE. Parkdale Manufacturing, Inc. SN 288,639. Pub. 12-24-68. Filed 1-11-68.

866,178. TIDE CRAFT AND DESIGN. Bayou Industrial Corporation. SN 292,171. Pub. 12-24-68. Filed 2-29-68.

Class 20 — Linoleum and Oiled Cloth

866,179. KINGWOOD. Congoleum Industries, Inc., assignee of Congoleum-Nairn Inc. SN 293,909. Pub. 12-24-68. Filed 3-22-68.

866,180. FOAMCRAFT. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 296,140. Pub. 12-24-68. Filed 4-22-68.

866,181. HYDRITE. Kentile Floors Inc. SN 296,968. Pub. 12-24-68. Filed 4-30-68.

866,182. PERMA-STRIP. J. Ford & Co. Limited. SN 297,183. Pub. 12-24-68. Filed 5-2-68.

Class 21 — Electrical Apparatus, Machines, and Supplies

866,071. (See Class 13 for this trademark.)

866,072. (See Class 13 for this trademark.)

866,070. (See Class 13 for this trademark.)

866,073. (See Class 13 for this trademark.)

866,077. (See Class 13 for this trademark.)

866,080. (See Class 13 for this trademark.)

866,183. DCL. Signetics Corporation. SN 280,978. Pub. 7-9-68. Filed 9-22-67.

866,184. LUMISTICK. Societe des Accumulateurs Fixes et de Traction. SN 257,520. Pub. 12-24-68. Filed 10-28-66.

866,185. WATKINS-JOHNSON. Watkins-Johnson Company. MULTIPLE CLASS (Classes 21, 26, and 34). SN 259,870. Pub. 12-24-68. Filed 12-2-66.

866,186. WJ WATKINS-JOHNSON AND DESIGN. Watkins-Johnson Company. MULTIPLE CLASS (Classes 21, 26, and 34). SN 259,871. Pub. 12-24-68. Filed 12-2-66.

866,187. WEATHER MEASURE. Weathermeasure Corporation, assignee of Aerojet-General Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 266,124. Pub. 12-24-68. Filed 3-7-67.

866,188. BAUER. Eberhard Bauer Elektromotorenfabrik Gesellschaft mit beschränkter Haftung. SN 267,324. Pub. 12-24-68. Filed 3-22-67.

866,189. OPTIMELT. Demag-Elektrometallurgie G.m.b.H. SN 272,260. Pub. 12-24-68. Filed 5-24-67.

866,190. OMNI. Aluminum Extrusions, Inc. SN 275,902. Pub. 12-24-68. Filed 7-13-67.

866,191. QUOTEVUE. Scantlin Electronics, Inc. SN 279,683. Pub. 12-24-68. Filed 9-5-67.

866,192. BETTER AND DESIGN. Better Home Products of Texas Corp. SN 286,898. Pub. 12-24-68. Filed 12-14-67.

866,193. CY-CO-LATOR. Adam B. Kronk, d.b.a. Kronk Co. SN 288,624. Pub. 12-24-68. Filed 1-11-68.

866,194. RBM. Essex Wire Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 293,070. Pub. 12-24-68. Filed 3-13-68.

866,195. TYMSHARE. Tymshare, Inc. SN 293,871. Pub. 12-24-68. Filed 3-21-68.

866,196. CATHELCO SYSTEMS AND DESIGN. Electrolytic Marine Corrosion Services Limited. SN 294,229. Pub. 12-24-68. Filed 3-27-68.

866,197. GI AND DESIGN. Giffen Industries, Inc. MULTIPLE CLASS (Classes 21 and 40). SN 303,465. Pub. 12-24-68. Filed 7-24-68.

Class 22 — Games, Toys, and Sporting Goods

866,000. (See Class 2 for this trademark.)

866,047. (See Class 9 for this trademark.)

866,198. TOPSTAR. S. Vereinigte Baubeschlagfabriken Gretsch & Co. GmbH. SN 254,343. Pub. 12-24-68. Filed 9-12-66.

866,199. B & G. Bergdorf & Goodman Company. SN 269,379. Pub. 12-24-68. Filed 4-18-67.

866,200. MODELS OF YESTERYEAR. Lesney Products & Co. Limited. SN 270,793. Pub. 12-24-68. Filed 5-5-67.

866,201. ROMPER STOMPERS. Romper Room, Inc. SN 275,077. Pub. 12-24-68. Filed 6-29-67.

866,202. BABY FACE. Effanbee Doll Corporation. SN 275,246. Pub. 12-24-68. Filed 7-3-67.

866,203. DINO SORES AND DESIGN. B. L. Humphries, d.b.a. Art Artifices. SN 277,173. Pub. 12-24-68. Filed 7-31-67.

866,204. A CHAMPIONSHIP GAME CG BY TOD LANSING. Championship Games, Inc. SN 279,137. Pub. 12-24-68. Filed 8-28-67.

866,205. DYNA-MAX. Campbell Manufacturing Company Limited. SN 286,901. Pub. 12-24-68. Filed 12-14-67.

866,206. BLOCKO AND DESIGN. Beulah Harris Stolpen, d.b.a. The Rolling Reader Publishing Co. SN 287,840. Pub. 12-24-68. Filed 12-29-67.

866,207. DESIGN ALL. Louis Marx & Co., Inc. SN 288,703. Pub. 12-24-68. Filed 1-12-68.

866,208. BALL-ARIS. Triangle Leather Goods Company. SN 289,433. Pub. 12-24-68. Filed 1-23-68.

866,209. GEE-MIN-EE. Steve A. Jures. SN 289,509. Pub. 12-24-68. Filed 1-24-68.

866,210. MINI-LINDY. Lindberg Products, Incorporated. SN 289,595. Pub. 12-24-68. Filed 1-25-68.

866,211. SILVER TIGER. Best Tackle Manufacturing Company. SN 291,829. Pub. 12-24-68. Filed 2-26-68.

866,212. TAPERSCOPIC. Brandell Products Corporation. SN 292,544. Pub. 12-24-68. Filed 3-6-68.

866,213. STORYBOOK KIDDLES BY MATTEL AND DESIGN. Mattel, Inc. SN 292,859. Pub. 12-24-68. Filed 3-11-68.

866,214. WHO YOU? Schaper Manufacturing Company, Inc. SN 292,969. Pub. 12-24-68. Filed 3-11-68.

866,215. PULL THE RUG OUT. Schaper Manufacturing Company, Inc. SN 292,970. Pub. 12-24-68. Filed 3-11-68.

866,216. HUFF'N PUFF. Schaper Manufacturing Company, Inc. SN 292,971. Pub. 12-24-68. Filed 3-11-68.

866,217. SCOOTIES. Cragstan Industries, Inc. SN 294,167. Pub. 12-24-68. Filed 3-26-68.

866,218. LIDO. Regent Sports Co. SN 294,410. Pub. 12-24-68. Filed 3-28-68.

866,219. PROPAGANDA. Layman E. Allen, d.b.a. Wff'n Proof. SN 296,934. Pub. 12-24-68. Filed 9-4-68.

866,220. DEVIL SPINNER. Atlantic Lures, Inc. SN 297,750. Pub. 12-24-68. Filed 5-9-68.

866,221. WHEEL-A-MATIC. T. J. Thomas Co., Inc. SN 298,267. Pub. 12-24-68. Filed 5-15-68.

866,222. GLACIER BAY. The Donner Mountain Corporation. SN 299,954. Pub. 12-24-68. Filed 6-7-68.

866,223. WESTCHESTER. Northwestern Golf Company. SN 299,997. Pub. 12-24-68. Filed 6-7-68.

866,224. GOODIE. Gudebrod Bros. Silk Co., Inc. SN 300,872. Pub. 12-24-68. Filed 6-20-68.

866,225. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 301,878. Pub. 11-19-68. Filed 7-3-68.

866,226. LUVVY DUVVY KIDDLE. Mattel, Inc. SN 303,110. Pub. 12-24-68. Filed 7-19-68.

866,227. KIDDLE-KONES. Mattel, Inc. SN 303,748. Pub. 12-24-68. Filed 7-29-68.

866,228. BRUTE. Buddy L Corporation. SN 304,735. Pub. 12-24-68. Filed 8-9-68.

866,229. NIPPY. Mattel, Inc. SN 304,739. Pub. 12-24-68. Filed 8-9-68.

866,230. WILD-LAND. Mattel, Inc. SN 305,894. Pub. 12-24-68. Filed 8-26-68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

865,985. (See Class 1 for this trademark.)

866,069. (See Class 13 for this trademark.)

866,070. (See Class 13 for this trademark.)

866,071. (See Class 13 for this trademark.)

866,072. (See Class 13 for this trademark.)

866,073. (See Class 13 for this trademark.)

866,077. (See Class 13 for this trademark.)

866,080. (See Class 13 for this trademark.)

866,231. HM AND WING DESIGN. Honda Giken Kogyo Kabushiki Kaisha. SN 216,507. Pub. 12-24-68. Filed 4-14-65.

866,232. SACHS. Fichtel & Sachs Aktiengesellschaft. SN 229,706. Pub. 12-24-68. Filed 10-11-65.

866,233. HEWITT-ROBINS. Hewitt-Robins Incorporated. SN 245,923. Pub. 12-24-68. Filed 5-18-66.

866,234. ELECTRIC ROD MASTER. O'Brien Manufacturing Company, Inc. SN 259,459. Pub. 12-24-68. Filed 11-25-66.

866,235. MISCELLANEOUS DESIGN. Lear Siegler, Inc., assignee of National Broach and Machine Co. MULTIPLE CLASS (Classes 23 and 26). SN 264,632. Pub. 12-24-68. Filed 2-14-67.

866,236. C-D. The Babcock & Wilcox Company. SN 268,015. Pub. 10-1-68. Filed 3-31-67.

866,237. LIBRADRIVE. General Precision Systems Inc., by change of name from General Precision, Inc. SN 270,241. Pub. 12-24-68. Filed 4-28-67.

866,238. VIHYMATIC. Pedershaab Maskinfabrik A/S. SN 272,851. Pub. 12-24-68. Filed 6-1-67.

866,239. VIHY. Pedershaab Maskinfabrik A/S. SN 272,852. Pub. 12-24-68. Filed 6-1-67.

866,240. FAT-CAT. Bruce N. Fleming. SN 273,629. Pub. 12-24-68. Filed 6-12-67.

866,241. ROSS AND DESIGN. Ross Porta-Plant, Inc. SN 275,960. Pub. 12-24-68. Filed 7-13-67.

866,242. DART-LOADER AND DESIGN. Pacific Car and Foundry Company. SN 276,166. Pub. 12-24-68. Filed 7-17-67.

866,243. CHATTER. M. W. Hartmann Manufacturing Company, Inc. SN 277,044. Pub. 12-24-68. Filed 7-28-67.

866,244. MERCAPFINER. Howe-Baker Engineers, Inc. SN 278,104. Pub. 12-24-68. Filed 8-11-67.

866,245. FLEXIBLE. Rockwell Manufacturing Company. SN 278,532. Pub. 12-24-68. Filed 8-17-67.

866,246. ORFIT. Wencor, Inc. SN 281,835. Pub. 12-24-68. Filed 9-27-67.

866,247. FIRLOK. Firth Sterling Corporation, assignee of Firth Sterling Inc. SN 281,568. Pub. 10-22-68. Filed 10-2-67.

866,248. LAWN CHAMP. Sunbeam Corporation. SN 281,930. Pub. 12-24-68. Filed 10-5-67.

866,249. KETT. The Kett Tool Company. SN 282,904. Pub. 12-24-68. Filed 10-19-67.

866,250. UNILIGN. Union Pump Company, d.b.a. Union Pump Co. SN 288,246. Pub. 12-24-68. Filed 1-5-68.

866,251. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,376. Pub. 12-24-68. Filed 1-8-68.

866,252. CON-TAK AND DESIGN. Tak, Inc. SN 288,885. Pub. 12-24-68. Filed 1-15-68.

866,253. JOBBER. Royal Zenith Corporation. SN 290,022. Pub. 12-24-68. Filed 1-31-68.

866,254. WASTROL. Standard Dayton Corporation. SN 290,662. Pub. 12-24-68. Filed 2-8-68.

866,255. TRIM-A-LAWN. General Appliance Manufacturing Co. SN 291,380. Pub. 10-8-68. Filed 2-19-68.

866,256. PBI. Popell Brothers, Inc. SN 292,056. Pub. 12-24-68. Filed 2-28-68.

866,257. HOBNOB. Glassips Inc. SN 292,094. Pub. 12-24-68. Filed 2-28-68.

866,258. SCRENCH. McCulloch Corporation. SN 295,661. Pub. 12-24-68. Filed 4-15-68.

Class 24 — Laundry Appliances and Machines

866,259. UDICO. Udico Corporation. SN 298,370. Pub. 12-24-68. Filed 5-16-68.

866,260. VARI FLEX. Sears, Roebuck and Co. SN 305,984. Pub. 12-24-68. Filed 8-26-68.

Class 25 — Locks and Safes

865,998. (See Class 2 for this trademark.)

866,261. PACEMAKER. Diebold, Incorporated. SN 298,207. Pub. 12-24-68. Filed 5-15-68.

Class 26 — Measuring and Scientific Appliances

866,000. (See Class 2 for this trademark.)

866,047. (See Class 9 for this trademark.)

866,185. (See Class 21 for this trademark.)

866,186. (See Class 21 for this trademark.)

866,194. (See Class 21 for this trademark.)

866,187. (See Class 21 for this trademark.)

866,235. (See Class 23 for this trademark.)

866,262. CHEMAP AND DESIGN. Chemap AG. MULTIPLE CLASS (Classes 26 and 31). SN 260,697. Pub. 12-24-68. Filed 12-14-66.

866,263. SELECTROSLIDE. Spindler & Sauppe. SN 264,983. Pub. 12-24-68. Filed 2-17-67.

866,264. DRILL-OM-ETERS. Motomco, Inc. SN 272,513. Pub. 12-24-68. Filed 5-26-67.

866,265. GRAPHMATIC-F. Loenco, Inc. SN 274,807. Pub. 12-24-68. Filed 6-26-67.

866,266. DATADIGIT. Consolidated Electrodynamics Corporation. SN 277,543. Pub. 12-24-68. Filed 8-4-67.

866,267. KEYMASK. McGraw Colorgraph Company. SN 277,682. Pub. 12-24-68. Filed 8-7-67.

866,268. PROX. Rowe Electronics, Inc. SN 278,129. Pub. 12-24-68. Filed 8-11-67.

866,269. EPOCH MONITOR. Aerospace Research, Inc. SN 278,563. Pub. 12-24-68. Filed 8-18-67.

866,270. VIRTRONICS. The Virtis Company, Inc. SN 280,734. Pub. 12-24-68. Filed 9-19-67.

866,271. MINI-MOUNT. NTT Enterprises, Inc. SN 281,479. Pub. 12-24-68. Filed 9-29-67.

866,272. SIR BRUSHALOT AND DESIGN. Kimco of Minneapolis, Incorporated. SN 281,585. Pub. 12-24-68. Filed 10-2-67.

866,273. TURAM. Svenska Diamantbergborrnings Aktiebolaget. SN 282,145. Pub. 12-24-68. Filed 10-9-67.

866,274. ROUNDABOUT. Argus Incorporated. SN 283,849. Pub. 12-24-68. Filed 11-1-67.

866,275. SOLUVISOR. Electronic Switchgear (London) Limited. SN 286,418. Pub. 12–24–68. Filed 12–7–67.

866,276. RECORDALARM. Lundell Controls, Inc. SN 286,435. Pub. 12–24–68. Filed 12–7–67.

866,277. P-BOX. Tandy Corporation, d.b.a. Radio Shack. SN 287,048. Pub. 12–24–68. Filed 12–15–67.

866,278. PIXIE. Endevco Corporation. SN 287,532. Pub. 12–24–68. Filed 12–26–67.

866,279. P WITH CONCENTRIC CIRCLES. The Porter-Spear Company. SN 288,113. Pub. 12–24–68. Filed 1–4–68.

866,280. DIDS–400. Raytheon Company. SN 288,263. Pub. 12–24–68. Filed 1–8–68.

866,281. REPRO-JECTOR. Shandon Scientific Company Limited. SN 290,196. Pub. 12–24–68. Filed 2–2–68.

866,282. TEAM. Technical Education and Manufacturing, Inc. SN 291,789. Pub. 12–24–68. Filed 2–23–68.

866,283. KEYCOMP. Photon, Inc. SN 293,569. Pub. 12–24–68. Filed 3–18–68.

866,284. TRAVEL-TROL. Essex Wire Corporation. SN 293,707. Pub. 12–24–68. Filed 3–20–68.

866,285. ANSCOGRAPH. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 294,731. Pub. 12–24–68. Filed 4–2–68.

866,286. MODIFLEX. Berkey Photo, Inc. SN 295,301. Pub. 12–24–68. Filed 4–10–68.

866,287. CUSTOMERIZER. Spiratone, Inc. SN 296,047. Pub. 12–24–68. Filed 4–19–68.

866,288. MIRROTACH. Spiratone, Inc. SN 296,048. Pub. 12–24–68. Filed 4–19–68.

866,289. COLOR-BROME. Spiratone, Inc. SN 296,050. Pub. 12–24–68. Filed 4–19–68.

866,290. ZEPHYR. Pelouse Manufacturing Co. SN 296,191. Pub. 12–24–68. Filed 4–22–68.

866,291. HDDR. Leach Corporation. SN 297,628. Pub. 12–24–68. Filed 5–8–68.

866,292. BEX-OMETER. Hexol, Inc., d.b.a. The BEX Company. SN 298,174. Pub. 12–24–68. Filed 5–15–68.

866,293. SKYSCOPE. Trippensee Planetarium Co., Inc. SN 299,503. Pub. 12–24–68. Filed 5–31–68.

866,294. PAPPAGALLO. Pappagallo, Inc. SN 300,407. Pub. 12–24–68. Filed 6–14–68.

866,295. AMERACE. Amerace Corporation. SN 301,300. Pub. 12–24–68. Filed 6–25–68.

866,296. HEAD HUGGER. Cole National Corporation. SN 302,596. Pub. 12–24–68. Filed 7–12–68.

Class 27 — Horological Instruments

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,297. ORIENT. Orient Watch Co., Ltd. SN 268,984. Pub. 12–24–68. Filed 4–12–67.

866,298. MARC MASSON. Morris B. Mass, d.b.a. Mass Sales Co. SN 281,601. Pub. 12–24–68. Filed 10–2–67.

866,299. MILUNA. Montre de Sport Genève S.A. SN 285,671. Pub. 12–24–68. Filed 11–27–67.

866,300. SWISSONIC. Centre Electronique Horloger S.A. SN 286,323. Pub. 12–24–68. Filed 12–6–67.

866,301. JEAUVAL. Joval Ring Co., Inc. SN 286,942. Pub. 12–24–68. Filed 12–14–67.

866,302. GOLD MEDAL G.M. AND DESIGN. Gold Medal Jewelry Inc. SN 287,012. Pub. 12–24–68. Filed 12–15–67.

866,303. RAJAR. R. J. Raphael, Inc. SN 291,686. Pub. 12–24–68. Filed 2–23–68.

866,304. LYNDAMAR. Lyndamar Enterprises, Inc. SN 293,156. Pub. 12–24–68. Filed 3–13–68.

866,305. TWISTON. Textron Inc. MULTIPLE CLASS (Classes 27 and 28). SN 293,771. Pub. 12–24–68. Filed 3–21–68.

866,306. JEANRICHARD. Aquastar SA. ci-devant Jean Richard. SN 297,497. Pub. 12–24–68. Filed 5–7–68.

866,307. VERSACLOCK. Martin R. Dunetz, d.b.a. Chronometrics. SN 300,074. Pub. 12–24–68. Filed 6–10–68.

866,308. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 301,879. Pub. 11–5–68. Filed 7–3–68.

Class 28 — Jewelry and Precious-Metal Ware

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,015. (See Class 3 for this trademark.)

866,305. (See Class 27 for this trademark.)

866,309. FLORAL GLEN. Oneida Ltd. SN 280,882. Pub. 12–24–68. Filed 9–21–67.

866,310. "LE SOLEIL D'OR." Patrick J. Leonard. SN 286,830. Pub. 12–24–68. Filed 12–13–67.

866,311. POMELLATO. S.p.A. Signori & Bondioli. SN 288,717. Pub. 12–24–68. Filed 1–12–68.

866,312. HEAD OF A HORSE (DESIGN). S.p.A. Signori & Bondioli. SN 289,616. Pub. 12–24–68. Filed 1–25–68.

866,313. KREISLER / STELUX AND DESIGN. Jacques Kreisler Manufacturing Corporation. SN 290,299. Pub. 12–24–68. Filed 2–5–68.

866,314. BRISTOL. Poole Silver Co., Inc. SN 290,324. Pub. 12–24–68. Filed 2–5–68.

866,315. BARR'S. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers. SN 292,167. Pub. 12–24–68. Filed 2–29–68.

866,316. JUBILEE AND DESIGN. Baumgold Bros., Inc. SN 293,685. Pub. 12–24–68. Filed 3–20–68.

866,317. OLD FRENCH. Textron Inc. SN 294,539. Pub. 12–24–68. Filed 3–29–68.

866,318. ENGLISH GADROON. Textron Inc. SN 294,541. Pub. 12–24–68. Filed 3–29–68.

866,319. OLD ENGLISH TIPT. Textron Inc. SN 294,542. Pub. 12–24–68. Filed 3–29–68.

866,320. M AND DESIGN. Mida Mfg. Inc. SN 299,469. Pub. 12–24–68. Filed 5–31–68.

Class 29 — Brooms, Brushes, and Dusters

866,321. NPI. Nutrilite Products, Inc. SN 287,088. Pub. 12–24–68. Filed 12–18–67.

Class 30 — Crockery, Earthenware, and Porcelain

866,322. CP AND DESIGN. Chatham Potters, Inc. SN 293,904. Pub. 12–24–68. Filed 3–22–68.

866,323. CATHEDRAL. The Vollrath Co. SN 299,708. Pub. 12–24–68. Filed 6–4–68.

866,324. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 301,877. Pub. 11–12–68. Filed 7–3–68.

Class 31 — Filters and Refrigerators

866,262. (See Class 26 for this trademark.)

866,325. FIBR-MAZE. North American Rockwell Corporation. SN 285,936. Pub. 12–24–68. Filed 11–30–67.

866,326. QUADRATOR. Multiplex Company. SN 286,359. Pub. 12–24–68. Filed 12–6–67.

866,327. MARINA. Flint & Walling Manufacturing Co., Inc. SN 289,090. Pub. 12–24–68. Filed 1–18–68.

866,328. DIAFLO. Amicon Corporation. SN 289,257. Pub. 12–24–68. Filed 1–22–68.

866,329. SIDE-CARB. Cambridge Filter Corporation. SN 289,476. Pub. 12–24–68. Filed 1–24–68.

866,330. ENVIRA-AIR. Becton, Dickinson and Company. SN 299,623. Pub. 12–24–68. Filed 6–4–68.

Class 32 — Furniture and Upholstery

865,998. (See Class 2 for this trademark.)

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,018. (See Class 3 for this trademark.)

866,331. DREXOTHANE. Drexel Enterprises, Inc., assignee of Drexel Enterprises, Inc. SN 287,285. Pub. 12–24–68. Filed 12–20–67.

866,332. DESIGN OF ARROWS. Palmer-Shile Company. SN 294,651. Pub. 12–24–68. Filed 4–1–68.

866,333. LITE-FANTASTIK. Faces West, Incorporated. SN 297,998. Pub. 12–24–68. Filed 5–13–68.

866,334. POSTURE SPRINGING. Eclipse Sleep Products, Inc. SN 298,214. Pub. 12–24–68. Filed 5–15–68.

866,335. CONTRACT SEVEN. U.S. Plywood-Champion Papers Inc. SN 298,779. Pub. 12–24–68. Filed 5–22–68.

866,336. VENETTE. Alcan Aluminum Corporation. SN 299,417. Pub. 12–14–68. Filed 5–31–68.

866,337. FLEXALUM VENETTE. Alcan Aluminum Corporation. SN 299,418. Pub. 12–24–68. Filed 5–31–68.

866,338. FLEXALUM CONTINENTAL. Alcan Aluminum Corporation. SN 299,419. Pub. 12–24–68. Filed 5–31–68.

866,339. CADET. Krueger Metal Products, Inc. SN 299,679. Pub. 12–24–68. Filed 6–4–68.

Class 33 — Glassware

866,340. UNI-DOSE. Wheaton Glass Company, Inc. SN 282,503. Pub. 12–24–68. Filed 10–13–67.

866,341. CRISTAL L'ALBRET ETC. AND DESIGN. Cristalleries et Verreries de Vianne, S.a.r.l. SN 283,232. Pub. 12–24–68. Filed 10–24–67.

866,342. LUSTRONIC. American Saint Gobain Corporation. SN 294,153. Pub. 12–24–68. Filed 3–26–68.

866,343. CANDLE GLOW. Anchor Hocking Glass Corporation. SN 299,091. Pub. 12–24–68. Filed 5–27–68.

866,344. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 301,880. Pub. 11–5–68. Filed 7–3–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

866,185. (See Class 21 for this trademark.)

866,186. (See Class 21 for this trademark.)

866,345. KAOPAK. Neoweld Electric Inc. SN 248,630. Pub. 12–24–68. Filed 6–21–66.

866,346. COLEMAN COMBO. The Coleman Company, Inc. SN 268,580. Pub. 12–24–68. Filed 4–7–67.

866,347. VACU-DRAW. Pacific Scientific Company. SN 268,987. Pub. 12–24–68. Filed 4–12–67.

866,348. VARAFLAME. Ronson Corporation. SN 269,457. Pub. 12–24–68. Filed 4–18–67.

866,349. DYNAWELD AND DESIGN. Liquid Carbonic Corporation. SN 272,284. Pub. 12–24–68. Filed 5–24–67.

866,350. DYNATUBE AND DESIGN. Liquid Carbonic Corporation. SN 272,285. Pub. 12–24–68. Filed 5–24–67.

866,351. HOT SHOT. Fedtro, Inc. SN 277,452. Pub. 8–20–68. Filed 8–3–67.

866,352. ALEX. Kobe Steel, Ltd. SN 282,279. Pub. 12–24–68. Filed 10–11–67.

866,353. LEAK PRUF. Alpha Metals, Inc. SN 286,985. Pub. 12–24–68. Filed 12–15–67.

866,354. CALIFORNIAN. Raypak Company, Inc. SN 287,318. Pub. 12–24–68. Filed 12–20–67.

866,355. MELTMOR. Blackwell Burner Company. SN 288,185. Pub. 12–24–68. Filed 1–5–68.

866,356. SURGI-WASTE. Research Products Manufacturing Company. SN 289,120. Pub. 12–24–68. Filed 1–18–68.

866,357. LUMATIC. Plascon AG. SN 295,368. Pub. 12–24–68. Filed 4–10–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

866,070. (See Class 13 for this trademark.)

866,071. (See Class 13 for this trademark.)

866,072. (See Class 13 for this trademark.)

866,073. (See Class 13 for this trademark.)

866,077. (See Class 13 for this trademark.)

866,080. (See Class 13 for this trademark.)

866,358. WHITE DOT. Westinghouse Air Brake Company. SN 289,936. Pub. 12–24–68. Filed 1–30–68.

866,359. SCOT WIDE SPORT. McCreary Tire & Rubber Company. SN 290,510. Pub. 12–24–68. Filed 2–7–68.

866,360. TECH. Technical Rubber Company, Inc. SN 298,975. Pub. 12–24–68. Filed 5–23–68.

866,361. WENCOR. Wencor, Inc. SN 303,880. Pub. 12–24–68. Filed 7–30–68.

Class 36 — Musical Instruments and Supplies

866,362. GEAR-MATIC. Emenee Industries, Inc. SN 278,675. Pub. 12–24–68. Filed 8–21–67.

866,363. DYNAPAK AND DESIGN. Troy National Bank, assignee of Stereodyne, Inc. SN 280,106. Pub. 12–24–68. Filed 9–11–67.

866,364. DICK PALADINO AND DESIGN OF D. Dick Paladino. SN 286,444. Pub. 12–24–68. Filed 12–7–67.

866,365. SOULVILLE AND DESIGN. Soulville Records. SN 289,217. Pub. 12–24–68. Filed 1–19–68.

866,366. ATLAS RECORD AND DESIGN. Deutsche Grammophon Gesellschaft m.b.H. SN 290,379. Pub. 12–24–68. Filed 2–6–68.

866,367. CONTRAST AND DESIGN. Edward A. Kotlar, d.b.a. Kotlar Enterprises. SN 291,877. Pub. 12–24–68. Filed 2–26–68.

866,368. HIP-POCKET. Philco-Ford Corporation. SN 293,568. Pub. 12–24–68. Filed 3–18–68.

866,369. CHICO AND DESIGN. Chico Recording Company. SN 293,905. Pub. 12–24–68. Filed 3–22–68.

866,370. THINK THIN INTERNATIONAL AND DESIGN. Think Thin International. SN 294,423. Pub. 12–24–68. Filed 3–28–68.

866,371. VIVANT AND DESIGN. Harris-Teller Inc. SN 299,019. Pub. 12–24–68. Filed 5–24–68.

866,372. TELEPAC. Telepro Industries, Incorporated. SN 299,172. Pub. 12–24–68. Filed 5–27–68.

866,373. STEREX. Atlas Films, Inc. SN 299,422. Pub. 12–24–68. Filed 5–31–68.

866,374. RCA. Radio Corporation of America. SN 301,312. Pub. 12–24–68. Filed 6–25–68.

866,375. RCA. Radio Corporation of America. SN 301,594. Pub. 12–24–68. Filed 6–28–68.

Class 37—Paper and Stationery

866,009. (See Class 2 for this trademark.)

866,027. (See Class 6 for this trademark.)

866,083. (See Class 13 for this trademark.)

866,084. (See Class 13 for this trademark.)

866,376. DEX-A-PHONE. Lyle H. Van Dyke. SN 266,953. Pub. 9–24–68. Filed 3–16–67.

866,377. MARVEL. Kee Lox Manufacturing Company. SN 275,446. Pub. 12–24–68. Filed 7–6–67.

866,378. QUIK CHEK. Quik Check Systems, Inc. SN 275,872. Pub. 12–24–68. Filed 7–12–67.

866,379. PEARLTONE. Ludlow Corporation, by merger from The Marvellum Company. SN 276,151. Pub. 12–24–68. Filed 7–17–67.

866,380. PLASTIFOIL. Highland Supply Corporation, d.b.a. Arrow Brands. SN 278,490. Pub. 12–24–68. Filed 8–17–67.

866,381. PERMA-MOIST. Eberhard Faber Inc. SN 280,311. Pub. 12–24–68. Filed 9–14–67.

866,382. BIDIM. Societe Rhodiaceta. SN 281,231. Pub. 12–24–68. Filed 9–26–67.

866,383. HOPPER SMOOTHOPAQUE. Georgia-Pacific Corporation. SN 283,246. Pub. 12–24–68. Filed 10–24–67.

866,384. R (DESIGN). Radiant Color Company. SN 283,567. Pub. 12–24–68. Filed 10–27–67.

866,385. DESKETTE. Textron Inc. SN 287,468. Pub. 12–24–68. Filed 12–22–67.

866,386. HARRISON PREMIUM AND DESIGN. Vornado, Inc. SN 291,793. Pub. 9–24–68. Filed 2–23–68.

866,387. FLORENTINE. Marcal Paper Mills, Inc. SN 296,334. Pub. 12–24–68. Filed 4–23–68.

866,388. PATAFLEX. Paterson Parchment Paper Company. SN 296,342. Pub. 12–24–68. Filed 4–23–68.

866,389. RRR. Sperry Rand Corporation. SN 296,356. Pub. 12–24–68. Filed 4–23–68.

866,390. MAXIM-AD. Penn Corporation, assignee of Ritepoint Corporation. SN 296,454. Pub. 12–24–68. Filed 4–24–68.

866,391. CLASSIFILE. Sperry Rand Corporation. SN 296,588. Pub. 12–24–68. Filed 4–25–68.

866,392. SWEET NOTES. The C. M. Paula Company. SN 296,866. Pub. 12–24–68. Filed 4–29–68.

866,393. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 301,883. Pub. 10–29–68. Filed 7–3–68.

866,394. REMTAG. Sperry Rand Corporation. SN 302,138. Pub. 12–24–68. Filed 7–5–68.

866,395. BIG SHOW-OFF. Tru-Foto, Inc. SN 305,580. Pub. 12–24–68. Filed 8–20–68.

Class 38—Prints and Publications

866,396. AIR PIX. Marjorie T. Thomas, d.b.a. Air Pix. SN 271859. Pub. 12–24–68. Filed 5–18–67.

866,397. THE NEW BOOK OF KNOWLEDGE. Grolier Incorporated. SN 273,395. Pub. 12–24–68. Filed 6–8–67.

866,398. TELEDEX. Gamco Industries, Inc. SN 276,659. Pub. 12–24–68. Filed 7–24–67.

866,399. NORMATYPE. Mecanorma S.A. SN 278,514. Pub. 12–24–68. Filed 8–17–67.

866,400. CONFIDENTIAL CHAT. Globe Newspaper Company. SN 281,573. Pub. 12–24–68. Filed 10–2–67.

866,401. THE BROWNIE READER. Girl Scouts of the United States of America. SN 282,570. Pub. 12–24–68. Filed 10–16–67.

866,402. TROOPER ROMAN ITALIC. Visual Graphics Corporation. SN 283,947. Pub. 12–24–68. Filed 11–1–67.

866,403. TROOPER ROMAN LIGHT. Visual Graphics Corporation. SN 283,948. Pub. 12–24–68. Filed 11–1–67.

866,404. TROOPER ROMAN LT. ITALIC. Visual Graphics Corporation. SN 283,949. Pub. 12–24–68. Filed 11–1–67.

866,405. RIDGID. Ridge Tool Company. SN 284,505. Pub. 12–24–68. Filed 11–9–67.

866,406. "THE GOLD SHEET." F-D-C Reports, Inc. SN 285,318. Pub. 12–24–68. Filed 11–21–67.

866,407. QC AND DESIGN. F-D-C Reports, Inc. SN 285,319. Pub. 12–24–68. Filed 11–21–67.

866,408. THE KANSAS STOCKMAN. The Kansas Livestock Association. SN 286,152. Pub. 12–24–68. Filed 12–4–67.

866,409. STOP KILLING YOURSELF. Peter J. Steincrohn, M.D. SN 288,725. Pub. 12–24–68. Filed 1–12–68.

866,410. DIAL-A-PLAY. Ernest N. Oeland, Jr., d.b.a. Dial-A-Play. SN 290,317. Pub. 12–24–68. Filed 2–5–68.

866,411. DIMENSIONAL MAILERS. Christopher S. Crowell, d.b.a. Chris Crowell & Co. SN 291,140. Pub. 12–24–68. Filed 2–15–68.

866,412. MERIT MYSTERY AND DESIGN. Follett Publishing Company. SN 291,727. Pub. 12–24–68. Filed 2–23–68.

866,413. GOLDEN WEST PURCHASOR. Purchasing Management Association-Los Angeles, assignee of Purchasing Agents Association of Los Angeles. SN 292,613. Pub. 12–24–68. Filed 3–6–68.

866,414. FIND E-Z. Po-Li-Glot Publications, Inc. SN 292,709. Pub. 12–24–68. Filed 3–7–68.

866,415. SEEDS FROM THE SOWER. Guido Evangelistic Association, Inc. SN 293,033. Pub. 12–24–68. Filed 3–12–68.

866,416. MATERIALS TODAY. American Society for Metals. SN 293,215. Pub. 12–24–68. Filed 3–14–68.

866,417. THE BUILDING OFFICIAL. The Building Officials Conference of America, Inc. SN 293,223. Pub. 12–24–68. Filed 3–14–68.

866,418. THE KIPLINGER CALIFORNIA LETTER AND DESIGN. The Kiplinger Washington Editors, Inc. SN 293,280. Pub. 12–24–68. Filed 3–14–68.

866,419. TIMESAVER CHEK A LETR AND DESIGN. E. W. Blair. SN 293,468. Pub. 12–24–68. Filed 3–18–68.

866,420. EXPLORATIONS. James Emerson Elliott, d.b.a. Explorations Publishing Co. SN 293,706. Pub. 12–24–68. Filed 3–20–68.

866,421. EXCERPTA MEDICA. Excerpta Medica Foundation. SN 293,708. Pub. 12–24–68. Filed 3–20–68.

866,422. MIND YOUR MONEY. Chek Ads. SN 293,768. Pub. 12–24–68. Filed 3–20–68.

866,423. IM. Advertising Publications, Inc. SN 293,891. Pub. 12–24–68. Filed 3–22–68.

866,424. REAL E FACS AND DESIGN. J. A. Moore, d.b.a. Delaware County Realty. SN 293,942. Pub. 12–24–68. Filed 3–22–68.

866,425. STATUE (DESIGN). Cathedral Films, Inc. SN 294,466. Pub. 12–24–68. Filed 3–29–68.

866,426. Q AND DESIGN. Cathedral Films, Inc. SN 294,467. Pub. 12–24–68. Filed 3–29–68.

866,427. QED AND DESIGN. Cathedral Films, Inc. SN 294,468. Pub. 12–24–68. Filed 3–29–68.

866,428. RESPONSE. The Case-Hoyt Corporation. SN 296,645. Pub. 12–24–68. Filed 4–26–68.

866,429. SHOW OFFS. Fleer Corp. SN 297,829. Pub. 12–24–68. Filed 5–10–68.

866,430. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 301,882. Pub. 10–29–68. Filed 7–3–68.

866,431. GLEAMING GREETINGS AND DESIGN. Gibson Greeting Cards, Inc. SN 302,070. Pub. 12–24–68. Filed 7–5–68.

866,432. MERGERS & ACQUISITIONS. Mergers & Acquisitions, Inc. SN 303,692. Pub. 12–24–68. Filed 7–26–68.

866,433. FAMILY CAMPING LEADER. American Camping Association, Inc. SN 306,986. Pub. 12–24–68. Filed 9–10–68.

866,434. MOTIVACCION. Success Motivation Institute, Inc. SN 307,396. Pub. 12–24–68. Filed 9–16–68.

866,435. USE-VELOPE. United States Envelope Company. SN 307,398. Pub. 12–24–68. Filed 9–16–68.

866,436. ELECTROPROCUREMENT. Mactier Publishing Corporation. SN 307,934. Pub. 12–24–68. Filed 9–23–68.

Class 39—Clothing

865,978. (See Class 1 for this trademark.)

865,979. (See Class 1 for this trademark.)

866,000. (See Class 2 for this trademark.)

866,002. (See Class 2 for this trademark.)

866,009. (See Class 2 for this trademark.)

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,015. (See Class 3 for this trademark.)

866,017. (See Class 3 for this trademark.)

866,437. SHOW PANTS. Her Majesty Underwear Company. SN 271,365. Pub. 12–24–68. Filed 5–12–67.

866,438. COZY-KNIT. Farah Manufacturing Company, Inc., d.b.a. Farah Industries. SN 276,116. Pub. 12–24–68. Filed 7–17–67.

866,439. S SANRIVAL AND DESIGN. Sanrival S.r.l. SN 280,336. Pub. 12–24–68. Filed 9–14–67.

866,440. LINCOLN. Goodyear Rubber Company. SN 282,076. Pub. 12–24–68. Filed 10–9–67.

866,441. CRACK PROOF. Goodyear Rubber Company. SN 282,077. Pub. 12–24–68. Filed 10–9–67.

866,442. DOMINIQUE FRANCE. Dominique France, Inc. SN 284,174. Pub. 10–1–68. Filed 11–6–67.

866,443. MISS MINK AND DESIGN. Mayer & Cie Pelzfabrik. SN 286,355. Pub. 12–24–68. Filed 12–6–67.

866,444. PETER PAN HOSIERY. Peter Pan International, Inc. SN 287,755. Pub. 12–24–68. Filed 12–28–67.

866,445. WEATHER GAITERS. Gilbert Shoe Stores, Inc. SN 289,188. Pub. 12–24–68. Filed 1–19–68.

866,446. DESIGN OF DOOR. David Ferguson Ltd. SN 291,602. Pub. 12–24–68. Filed 2–21–68.

866,447. BECK COLORVISION. A. S. Beck Shoe Corporation. SN 292,173. Pub. 12–24–68. Filed 2–29–68.

866,448. ALUMINAR. J. P. Conroy, Inc. SN 295,807. Pub. 12–24–68. Filed 4–17–68.

866,449. CANDLESTICK CHAMBRAY. Kayser-Roth Corporation. SN 299,677. Pub. 12–24–68. Filed 6–4–68.

866,450. OLIVER TWIST. Rob Roy Company, Inc. SN 299,792. Pub. 12–24–68. Filed 6–5–68.

866,451. CENTAUR AND DESIGN. Genesco Inc. SN 299,842. Pub. 12–24–68. Filed 6–6–68.

866,452. MARY WEAR. Mary Wear, Inc. SN 301,236. Pub. 12–24–68. Filed 6–24–68.

866,453. SUPERFLEX. The Fibre-Metal Products Company. SN 301,334. Pub. 12–24–68. Filed 6–25–68.

866,454. VILLAGE AND DESIGN. The Villager, Inc. SN 302,024. Pub. 12–24–68. Filed 7–5–68.

866,455. BALI SAAB COLLECTION AND DESIGN. The Bali Company, Inc. SN 303,391. Pub. 12–24–68. Filed 7–23–68.

866,456. BALI FISCHER COLLECTION AND DESIGN. The Bali Company, Inc. SN 303,392. Pub. 12–24–68. Filed 7–23–68.

866,457. FOX'S LAIR. Brookside Industries, Inc. SN 303,764. Pub. 12–24–68. Filed 7–29–68.

866,458. ROYAL LYNNE. Reid & Reid, Inc. SN 306,315. Pub. 12–24–68. Filed 8–30–68.

Class 40—Fancy Goods, Furnishings, and Notions

866,197. (See Class 21 for this trademark.)

866,459. THE GIZMO. Fashion Trees, Inc. SN 306,432. Pub. 12–24–68. Filed 9–3–68.

Class 41—Canes, Parasols, and Umbrellas

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,015. (See Class 3 for this trademark.)

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

865,978. (See Class 1 for this trademark.)

865,979. (See Class 1 for this trademark.)

866,460. CAPITOL CARPETS AND DESIGN. G. W. Onthank Company. SN 292,951. Pub. 12–24–68. Filed 3–11–68.

866,461. SHOP-RITE. Wakefern Food Corporation. SN 297,467. Pub. 12–24–68. Filed 5–6–68.

866,462. PERSET. Stevcoknit Textile Co. SN 297,612. Pub. 12–24–68. Filed 5–7–68.

866,463. KITTEN STEP. Olin Mathieson Chemical Corporation. SN 299,186. Pub. 12–24–68. Filed 5–28–68.

866,464. JET SET. Shapiro and Son Bedspread Corp. SN 302,202. Pub. 12–24–68. Filed 7–8–68.

Class 43—Thread and Yarn

866,465. TRICELON. British Celanese Limited. SN 280,012. Pub. 6–25–68. Filed 9–11–67.

866,466. GOLDEN T. T. G. & Y. Stores Company. SN 292,828. Pub. 12–24–68. Filed 3–8–68.

Class 44—Dental, Medical, and Surgical Appliances

866,047. (See Class 9 for this trademark.)

866,467. SWEDEN AND DESIGN. Sweden Freezer Manufacturing Co. SN 287,623. Pub. 12–24–68. Filed 1–28–66.

866,468. UROGATE. Abbott Laboratories. SN 265,027. Pub. 11–7–67. Filed 2–20–67.

866,469. CARESSE. Gebeco, Inc. SN 270,124. Pub. 12–24–68. Filed 4–27–67.

866,470. AIR-CENTRIC. Modern Denture Research Co. SN 275,066. Pub. 12–24–68. Filed 6–29–67.

866,471. JET-STREAM AND DESIGN. Vistron Corporation. SN 277,394. Pub. 12–24–68. Filed 8–2–67.

866,472. JET-STREAM. Vistron Corporation. SN 277,395. Pub. 12–24–68. Filed 8–2–67.

866,473. URIDOM. Aktiebolaget Stille-Werner. SN 286,615. Pub. 12–24–68. Filed 12–11–67.

866,474. ULTRA-CENTRIC. Ritter Pfaudler Corporation. SN 287,673. Pub. 12–24–68. Filed 12–27–67.

866,475. XLATOR. Edward Fitz, d.b.a. El-Fax. SN 287,992. Pub. 12–24–68. Filed 1–2–68.

866,476. SEAMLESS SURGICAL SCRUBBER. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 291,528. Pub. 12–24–68. Filed 2–20–68.

866,477. LABYRINTH PACKAGE AND DESIGN. Ethicon, Inc. SN 295,991. Pub. 12–24–68. Filed 4–19–68.

866,478. TENDERSKIN. The Kendall Company. SN 298,010. Pub. 12–24–68. Filed 5–13–68.

866,479. SINUSTEAM. Prak-T-Kal Vapodynamics Corp. SN 298,473. Pub. 12–24–68. Filed 5–17–68.

866,480. RECEPTAL. Le Voy's Inc., d.b.a. Sorenson Research Corporation. SN 300,830. Pub. 12–24–68. Filed 6–19–68.

Class 45 — Soft Drinks and Carbonated Waters

866,481. APPLE JACK. Rocket Citrus Products, Inc. SN 253,246. Pub. 12–24–68. Filed 8–26–66.

Class 46 — Foods and Ingredients of Foods

866,482. UNCLE SUZY AND DESIGN. William M. Lathrop, d.b.a. Uncle Suzy Confections. SN 255,447. Pub. 12–24–68. Filed 9–29–66.

866,483. DYNA. Dyna S.A. SN 261,646. Pub. 12–24–68. Filed 12–29–66.

866,484. BRAZIER AND DESIGN. American Dairy Queen Corporation. SN 262,108. Pub. 12–24–68. Filed 1–9–67.

866,485. HORN & HARDART. The Horn & Hardart Company. SN 263,574. Pub. 12–24–68. Filed 1–30–67.

866,486. TARTARE. J. Bongrain & Cie (Societe Anonyme). SN 275,507. Pub. 12–24–68. Filed 7–7–67.

866,487. BARBIER DAUPHIN LE FIN DU FIN. Barbier & Dauphin, Societe Anonyme. SN 275,612. Pub. 12–24–68. Filed 7–10–67.

866,488. STEWART. Stewart In-Fra-Red, Inc. SN 279,225. Pub. 12–24–68. Filed 8–28–67.

866,489. STEPS. Gerber Products Company. SN 279,941. Pub. 12–24–68. Filed 9–8–67.

866,490. INTERSTATE UNITED. Interstate United Corporation. SN 280,513. Pub. 12–24–68. Filed 9–18–67.

866,491. MEDALLION (DESIGN). Interstate United Corporation. SN 280,514. Pub. 12–24–68. Filed 9–18–67.

866,492. APROTEN. Carlo Erba S.p.A. SN 280,666. Pub. 12–24–68. Filed 9–19–67.

866,493. INDIAN RED. William A. Shade Co., Inc. SN 281,226. Pub. 12–24–68. Filed 9–26–67.

866,494. PRY FERM HB. Dawe's Laboratories, Inc. SN 281,557. Pub. 12–24–68. Filed 10–2–67.

866,495. FUNZIES. Lewis J. Ort. SN 281,740. Pub. 12–24–68. Filed 9–20–67.

866,496. CARNATION. Carnation Company. SN 281,961. Pub. 12–24–68. Filed 10–6–67.

866,497. PIZZANO AND DESIGN. Doskocil Sausage, Inc. SN 282,444. Pub. 12–24–68. Filed 10–13–67.

866,498. RUMFORD. Hulman & Company. SN 282,586. Pub. 12–24–68. Filed 10–16–67.

866,499. PENZYME. Corn Products Company, by merger from S. B. Penick & Company. SN 283,146. Pub. 12–24–68. Filed 10–23–67.

866,500. Juan Valdez. National Federation of Coffee Growers of Colombia. SN 283,539. Pub. 12–24–68. Filed 10–27–67.

866,501. MISCELLANEOUS DESIGN. National Federation of Coffee Growers of Colombia. SN 283,542. Pub. 12–24–68. Filed 10–27–67.

866,502. MISCELLANEOUS DESIGN. National Federation of Coffee Growers of Colombia. SN 283,544. Pub. 12–24–68. Filed 10–27–67.

866,503. SHAKE STIX. Topps Chewing Gum, Incorporated. SN 283,942. Pub. 12–24–68. Filed 11–1–67.

866,504. METRECAL FOR-LUNCH-BUNCH. Mead Johnson & Company (Delaware corporation), assignee of Mead Johnson & Company (Indiana corporation). SN 284,546. Pub. 12–24–68. Filed 11–13–67.

866,505. TEEZ. National Dairy Products Corporation. SN 284,713. Pub. 12–24–68. Filed 11–13–67.

866,506. PIONEER. C. H. Guenther & Son, Inc., d.b.a. Pioneer Flour Mills. SN 286,135. Pub. 12–24–68. Filed 12–4–67.

866,507. DESIGN OF MAN WITH WHIP. Kellogg Company. SN 286,969. Pub. 12–24–68. Filed 12–15–67.

866,508. NUTTY DUTTY. Barton's Candy Corporation. SN 287,268. Pub. 12–24–68. Filed 12–20–67.

866,509. LITTLE JUAN AND DESIGN. Peter A. Uraine. SN 287,391. Pub. 12–24–68. Filed 12–21–67.

866,510. MUNCHEN. C. F. Mueller Company. SN 287,665. Pub. 12–24–68. Filed 12–27–67.

866,511. NUTRITION SQUARE AND DESIGN. Nutrition Square, Inc. SN 289,328. Pub. 12–24–68. Filed 1–22–68.

866,512. THE BOBO HUT. Grayco Enterprises Ltd. MULTIPLE CLASS (Classes 46 and 100). SN 289,937. Pub. 12–24–68. Filed 1–31–68.

866,513. MHC. General Foods Corporation. SN 290,093. Pub. 12–24–68. Filed 2–1–68.

866,514. OKIE SMOKIE. Dallas City Packing, Inc. SN 291,845. Pub. 12–24–68. Filed 2–26–68.

866,515. 4C CRUM 'N BAKE. Brooklyn Cheese Company, Inc. SN 291,960. Pub. 12–24–68. Filed 2–27–68.

866,516. DESIGN OF A GROTESQUE BIRD. Plantation Foods Corporation. SN 292,008. Pub. 12–24–68. Filed 2–27–68.

866,517. FANDANGOS. Frito-Lay, Inc. SN 292,267. Pub. 12–24–68. Filed 3–1–68.

866,518. BRIGHT EYE AND DESIGN. W. R. Grace & Co. SN 292,269. Pub. 12–24–68. Filed 3–1–68.

866,519. TUTSI ROLS. Tootsie Roll Industries, Inc. SN 292,515. Pub. 12–24–68. Filed 3–5–68.

866,520. TUTSI. Tootsie Roll Industries, Inc. SN 292,516. Pub. 12–24–68. Filed 3–5–68.

866,521. CARICATURE DESIGN. Standard Milling Company. SN 292,625. Pub. 12–24–68. Filed 3–6–68.

866,522. HAVA JAVA. Philip Morris Incorporated, d.b.a. Flavor Tree Foods Co. SN 295,409. Pub. 12–24–68. Filed 4–11–68.

866,523. KOFFEE-KLOTCH. Midwest Biscuit Company. SN 295,450. Pub. 12–24–68. Filed 4–11–68.

866,524. QUALITY KITCHEN. Quality Kitchen Foods Inc. SN 295,556. Pub. 12–24–68. Filed 4–12–68.

866,525. VEG-ALL. The Larsen Company. SN 296,027. Pub. 12–24–68. Filed 4–19–68.

866,526. ENCEL. Standard Oil Company. SN 296,051. Pub. 12–24–68. Filed 4–19–68.

866,527. CHICK-FIL-A. Chick-Fil-A, Inc. SN 296,117. Pub. 12–24–68. Filed 4–22–68.

866,528. WAFER BUNCH. Federal Sweets & Biscuit Co. SN 296,951. Pub. 12–24–68. Filed 4–30–68.

866,529. "EL TORO" AND DESIGN. Hijos de Ybarra S.A. SN 297,675. Pub. 12–24–68. Filed 5–8–68.

866,530. REDDI WIP. Reddi-Wip, Inc. SN 298,041. Pub. 12–24–68. Filed 5–13–68.

866,531. CHOC-O-BREAD. Golden Grain Macaroni Co., d.b.a. Ghirardelli Chocolate Co. SN 300,227. Pub. 12–24–68. Filed 6–12–68.

866,532. SUCROVERT. Sucrest Corporation. SN 304,287. Pub. 12–24–68. Filed 8–5–68.

866,533. FEMALE HEAD (DESIGN). The Quaker Oats Company. SN 304,437. Pub. 12–24–68. Filed 8–6–68.

866,534. AUNT JEMIMA AND DESIGN. The Quaker Oats Company. SN 304,438. Pub. 12–24–68. Filed 8–6–68.

866,535. F FELCO AND DESIGN. Farmers Regional Cooperative. SN 305,275. Pub. 12–24–68. Filed 8–16–68.

866,536. LUCCA. Golden Gate Salami Co. SN 306,440. Pub. 12–24–68. Filed 9–3–68.

866,537. VERDI AND DESIGN. Golden Gate Salami Co. SN 306,442. Pub. 12–24–68. Filed 9–3–68.

866,538. IROQUOIS. Iroquois Popcorn Co., Inc. SN 306,988. Pub. 12–24–68. Filed 9–10–68.

866,539. CLANCY'S AND DESIGN. Hamilton Hamburgers, Inc. MULTIPLE CLASS (Classes 46 and 100). SN 307,607. Pub. 12–24–68. Filed 9–18–68.

Class 48 — Malt Beverages and Liquors

866,540. SCHLITZ. Jos. Schlitz Brewing Company. SN 304,869. Pub. 12–24–68. Filed 8–12–68.

Class 49 — Distilled Alcoholic Liquors

866,541. THIENELT'S SCHUTTBODEN AND DESIGN. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere." SN 259,556. Pub. 12–24–68. Filed 11–28–66.

866,542. MYERS'S RUM, ETC. AND DESIGN. Myers Rum Company Limited. SN 284,139. Pub. 12–24–68. Filed 11–6–67.

866,543. CONFEDERATE FLAG. Marita Spirits Limited, assignee of William P. Cashman, d.b.a. Marita and Marita Spirits & Wine Company. SN 294,012. Pub. 12–24–68. Filed 3–25–68.

Class 50 — Merchandise Not Otherwise Classified

865,976. (See Class 1 for this trademark.)

866,098. (See Class 13 for this trademark.)

866,544. THOMAS AND DESIGN. Carroll E. Thomas. SN 272,115. Pub. 12–24–68. Filed S.R. 5–22–67; Am. P.R. 10–15–68.

866,545. TRAVALET. Clarence P. Ward, d.b.a. Travalet Products. SN 275,092. Pub. 12–24–68. Filed 6–29–67.

866,546. WARM CHIK AND DESIGN. Hall-Neal Furnace Company. SN 278,208. Pub. 12–24–68. Filed 8–14–67.

866,547. LOC-LENS. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 289,889. Pub. 12–24–68. Filed 1–30–68.

866,548. DATAVOTE. Diamond National Corporation. SN 295,884. Pub. 12–24–68. Filed 4–18–68.

866,549. PRONTO. Adler Silhouette Letter Co. SN 299,740. Pub. 12–24–68. Filed 6–5–68.

866,550. DURACRAFT. Duracraft, Inc. SN 299,956. Pub. 12–24–68. Filed 6–7–68.

866,563. DOLLY NAILS. Yardley of London, Inc. SN 285,609. Pub. 12–24–68. Filed 11–24–67.

866,564. ULTRA LIME. Watkins Products, Inc. SN 286,456. Pub. 12–24–68. Filed 12–6–67.

866,565. INNER NATURE. Helene Curtis Industries, Inc. SN 286,932. Pub. 12–24–68. Filed 12–14–67.

866,566. SUNMATE. Sea & Ski Corporation. SN 287,381. Pub. 12–24–68. Filed 12–21–67.

866,567. TICKER TAPE. Hoffritz for Cutlery, Inc., d.b.a. Hoffritz. SN 287,651. Pub. 12–24–68. Filed 12–27–67.

866,568. EST EST EST. Luzier Incorporated. SN 288,104. Pub. 12–24–68. Filed 1–4–68.

866,569. MARDI GRAS. Helene Curtis Industries, Inc., d.b.a. Sue Cory. SN 289,022. Pub. 12–24–68. Filed 1–17–68.

866,570. KIX KINKS. Dorosy, Incorporated. SN 289,788. Pub. 12–24–68. Filed 1–29–68.

866,571. COSMETIC SPARKLE AND DESIGN. Greer Enterprises, Inc., d.b.a. Hairstyling Research Co. SN 291,068. Pub. 12–24–68. Filed 2–14–68.

866,572. CHAMPAGNE SET. Samuel Bonat & Bro., Inc. SN 291,130. Pub. 12–24–68. Filed 2–15–68.

866,573. OLGA. Olga Company. SN 291,178. Pub. 12–24–68. Filed 2–15–68.

866,574. IMPROVE. Gabel's Cosmetics, Inc. SN 292,091. Pub. 12–24–68. Filed 2–28–68.

866,575. ROXY RED. Estee Lauder Incorporated. SN 293,370. Pub. 12–24–68. Filed 3–15–68.

866,576. PROFIT. Avon Products, Inc. SN 295,299. Pub. 12–24–68. Filed 4–10–68.

866,577. RED PENNANT (DESIGN). The Procter & Gamble Company. SN 303,383. Pub. 12–24–68. Filed 7–23–68.

866,578. HIGH TIME. The Gillette Company. SN 303,747. Pub. 12–24–68. Filed 7–29–68.

866,579. COUNTRY TREATS. Yardley of London, Inc. SN 304,442. Pub. 12–24–68. Filed 8–6–68.

886,580. TOPCO. Topco Associates, Inc. SN 306,960. Pub. 12–24–68. Filed 9–9–68.

Class 51 — Cosmetics and Toilet Preparations

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,041. (See Class 6 for this trademark.)

866,551. DEVONSHIRE CREAM. Yardley of London, Inc. SN 252,440. Pub. 12–24–68. Filed 8–15–66.

866,552. REPRESENTATION OF VIKING. Valhalla Inc. SN 270,169. Pub. 12–24–68. Filed 4–27–67.

866,553. VIKING AND DESIGN. Valhalla Inc. SN 270,170. Pub. 12–24–68. Filed 4–27–67.

866,554. VIKING. Valhalla Inc. SN 270,172. Pub. 12–24–68. Filed 4–27–67.

866,555. HOLD EVERYTHING. Borden, Inc., by change of name from The Borden Company. SN 272,571. Pub. 12–24–68. Filed 5–29–67.

866,556. TURNING POINT. Sears, Roebuck and Co., d.b.a. Lyric Distributors. SN 274,994. Pub. 12–24–68. Filed 6–28–67.

866,557. FRENCH OF LONDON. French & Scott Limited. MULTIPLE CLASS (Classes 51 and 52). SN 275,252. Pub. 12–24–68. Filed 7–3–67.

866,558. TRIANON. Leonard L. Roberts, d.b.a. Roberts Laboratories. SN 276,584. Pub. 12–24–68. Filed 7–21–67.

866,559. SKIN BEAUTY AND DESIGN. W. K. M. Hassenstein, d.b.a. Hassenstein. SN 277,458. Pub. 12–24–68. Filed 8–3–67.

866,560. BABY DOLL. E. R. Holloway Limited. SN 280,358. Pub. 12–24–68. Filed 8–28–67.

866,561. PROMANI. Mowatt & Moore Limited. SN 281,306. Pub. 12–24–68. Filed 9–27–67.

866,562. MANDATE! Exquisite Form Industries, Inc. SN 281,691. Pub. 12–24–68. Filed 10–3–67.

Class 52 — Detergents and Soaps

866,011. (See Class 3 for this trademark.)

866,012. (See Class 3 for this trademark.)

866,120. (See Class 16 for this trademark.)

866,557. (See Class 51 for this trademark.)

866,581. DU FOOAM. S. Sampino & Waverly Beauty Products, Inc., d.b.a. Waverly Beauty Products. SN 269,353. Pub. 12–24–68. Filed 4–17–67.

866,582. DETERGENT "3·2·4." Foresight Corporation, d.b.a. Water Soluble Products. SN 275,887. Pub. 12–24–68. Filed 7–12–67.

866,583. BY*PAS. Shur-Dol Chemical Company. SN 279,107. Pub. 12–24–68. Filed 8–25–67.

866,584. DEEPSOL. Wyandotte Chemicals Corporation. SN 279,767. Pub. 12–24–68. Filed 9–6–67.

866,585. WEST AND W DESIGN. West Chemical Products, Inc. SN 280,279. Pub. 12–24–68. Filed 9–13–67.

866,586. RC-1. Pennsalt Chemicals Corporation. SN 281,739. Pub. 12–24–68. Filed 9–19–67.

866,587. TENDER FOAM. Stanley Home Products, Inc. SN 282,636. Pub. 12–24–68. Filed 10–16–67.

866,588. ESWA. Eswa, Gloor, Meier & Co., Chem.-Techn. Produkte, Waschere-Bedarfsartikel, Stansstad, SN 284,000. Pub. 12–24–68. Filed 11–2–67.

866,589. MAKES YOUR HAIR DO WHAT YOU WANT IT TO! Alberto-Culver Company. SN 286,875. Pub. 12–24–68. Filed 12–14–67.

866,590. ECONOPAK. A. L. Wilson Chemical Company. SN 290,040. Pub. 12–24–68. Filed 1–31–68.

866,591. MISCELLANEOUS DESIGN. Recoton Corporation. SN 292,132. Pub. 12–24–68. Filed 2–28–68.

866,592. PROFIT. Avon Products, Inc. SN 295,300. Pub. 12–24–68. Filed 4–10–68.

866,593. BRILLO. Purex Corporation, Ltd. SN 300,881. Pub. 12–24–68. Filed 6–20–68.

866,594. AMERACE. Amerace Corporation. SN 301,304. Pub. 12–24–68. Filed 6–25–68.

Service Marks

Class 100 — Miscellaneous

866,512. (See Class 46 for this trademark.)

866,539. (See Class 46 for this trademark.)

866,595. NATHAN'S FAMOUS INC. AND DESIGN. Nathan's Famous, Inc. SN 261,154. Pub. 12–24–68. Filed S.R. 12–20–66; Am. P.R. 10–5–67.

866,596. A.I.D. WORLD WIDE AND DESIGN. Arizona Horizons, Inc. SN 265,963. Pub. 12–24–68. Filed 3–6–67.

866,597. CONNOISSEUR. Air Canada. SN 275,596. Pub. 12–24–68. Filed 7–10–67.

866,598. STATLER HILTON AND DESIGN. Hilton Hotels Corporation. SN 278,798. Pub. 12–24–68. Filed 8–22–67.

866,599. DENNY'S. Denny's Restaurants, Inc. SN 281,046. Pub. 12–24–68. Filed 9–25–67.

866,600. MAJODA AND DESIGN. Majoda Tool & Mfg. Corp. SN 286,020. Pub. 12–24–68. Filed 12–1–67.

866,601. VITRO. Vitro Corporation of America. SN 288,655. Pub. 12–24–68. Filed 1–11–68.

866,602. EQUALITY SIGN (DESIGN). The National Urban League, Inc. SN 288,711. Pub. 12–24–68. Filed 1–12–68.

866,603. COM-DATE. Educational Data Corporation, d.b.a. Ed-Data Corp. SN 289,176. Pub. 12–24–68. Filed 1–19–68.

866,604. MICROLABORATORIES. Health Facilities, Inc. SN 291,985. Pub. 12–24–68. Filed 2–27–68.

866,605. DENTACENTERS. Dentacenters, Inc. SN 294,435. Pub. 12–24–68. Filed 3–29–68.

866,606. DRUMMER BOY. Drummer Boy, Inc. SN 295,814. Pub. 12–24–68. Filed 4–17–68.

866,607. DRUMMER BOY (DESIGN). Drummer Boy, Inc. SN 295,815. Pub. 12–24–68. Filed 4–17–68.

866,608. THE NUGGET. Gordon R. Eliassen, d.b.a. The Nugget. SN 295,816. Pub. 12–24–68. Filed 4–17–68.

866,609. DEERWOOD. The Deerwood Club, Inc. SN 295,880. Pub. 12–24–68. Filed 4–18–68.

866,610. DEERWOOD AND CREST DESIGN. The Deerwood Club, Inc. SN 295,882. Pub. 12–24–68. Filed 4–18–68.

866,611. TIN LIZZY. Tin Lizzy, Inc. SN 304,289. Pub. 12–24–68. Filed 8–5–68.

866,612. THE LIBRARY. Breckenridge Hotels Corp. SN 304,430. Pub. 12–24–68. Filed 8–6–68.

866,613. THE MUSIC ROOM. Breckenridge Hotels Corp. SN 304,431. Pub. 12–24–68. Filed 8–6–68.

866,614. MR. BUN AND DESIGN. Mr. Bun, Inc. SN 304,553. Pub. 12–24–68. Filed 8–7–68.

866,615. H/P. H/P Consultants Ltd. SN 307,065. Pub. 12–24–68. Filed 9–11–68.

866,616. MISCELLANEOUS DESIGN. Westminster Little Banquet, Inc. SN 307,072. Pub. 12–24–68. Filed 9–11–68.

866,617. THE BROWN BOTTLE. Jos. Schlitz Brewing Company. SN 307,176. Pub. 12–24–68. Filed 9–12–68.

Class 101 — Advertising and Business

866,618. M METRO-GRAPHICS, INC. Metro-Graphics, Inc. SN 252,400. Pub. 12–24–68. Filed 8–15–66.

866,619. MINUTE MAN. Minute Man Dairy Stores, Inc. SN 254,612. Pub. 12–24–68. Filed 9–16–66.

866,620. U AND DESIGN. Unishops, Inc. SN 266,815. Pub. 12–24–68. Filed 3–15–67.

866,621. KEY-WRITE. Key-Write Corporation. SN 278,767. Pub. 12–24–68. Filed 8–22–67.

866,622. DESIGN OF RUNNING MAN. Bradshaw-Welles Company, Inc. SN 285,391. Pub. 12–24–68. Filed 11–22–67.

866,623. STAFF. Staff Supermarket Associates, Inc. SN 289,631. Pub. 12–24–68. Filed 1–25–68.

866,624. NMMS. A. C. Nielsen Company. SN 290,404. Pub. 12–24–68. Filed 2–6–68.

866,625. NMMI. A. C. Nielsen Company. SN 290,405. Pub. 12–24–68. Filed 2–6–68.

866,626. SCHEDULED UNIT CONTROL BMC AND DESIGN. Ballinger-Meserole Company. SN 295,594. Pub. 12–24–68. Filed 4–15–68.

866,627. PLAN AND DESIGN. Castle & Cooke, Inc., d.b.a. Plan. SN 297,243. Pub. 12–24–68. Filed 5–3–68.

866,628. WORLD OF SLEEP. The World of Sleep, Inc. SN 299,076. Pub. 12–24–68. Filed 5–27–68.

866,629. RENTRONIX. Inmark, Inc. SN 301,887. Pub. 12–24–68. Filed 7–3–68.

866,630. DIAL-A-SCORE. Dial-A-Score, Inc. SN 304,319. Pub. 12–24–68. Filed 8–5–68.

866,631. I-R-I-S. Esquire, Inc. SN 305,183. Pub. 12–24–68. Filed 8–15–68.

Class 102 — Insurance and Financial

866,632. CIRCULAR DESIGN. Midwest Bank Card System, Inc., assignee of Continental Illinois National Bank and Trust Company of Chicago. SN 258,285. Pub. 12–24–68. Filed 11–9–66.

866,633. CIRCULAR (DESIGN). Midwest Bank Card System, Inc., assignee of Continental Illinois National Bank and Trust Company of Chicago. SN 258,287. Pub. 12–24–68. Filed 11–9–66.

866,634. PIP. Union Mutual Life Insurance Company. SN 269,363. Pub. 12–24–68. Filed 4–17–67.

866,635. GRAMATAN AND DESIGN. The Gramatan Company Incorporated of Bronxville, New York. SN 277,457. Pub. 12–24–68. Filed 8–3–67.

866,636. CHEQUE 99. Charlesbank Trust Company. SN 283,096. Pub. 12–24–68. Filed 10–23–67.

866,637. VALUMATICS. American Bankers Insurance Company of Florida. SN 285,809. Pub. 12–24–68. Filed 11–29–67.

866,638. GOLD CROWN PLAN. Bankers Commercial Life Insurance Company. SN 287,135. Pub. 12–24–68. Filed 12–18–67.

866,639. MISCELLANEOUS DESIGN. Financial Programs, Inc. SN 289,238. Pub. 12–24–68. Filed 1–22–68.

866,640. W TODAY PROTECT TOMORROW (DESIGN). Albert S. Weston. SN 290,204. Pub. 12–24–68. Filed 1–24–68.

Class 103 — Construction and Repair

866,641. ROBO-WASH AND DESIGN. Robo-Wash, Inc. SN 207,080. Pub. 9–27–66. Filed 11–27–64.

866,642. JAK. James Knox, d.b.a. JAK Enterprises. SN 272,615. Pub. 12–24–68. Filed 5–29–67.

866,643. DESIGN OF RABBIT CHASING TURTLE. Wallace Oscar Byrd, d.b.a. A & B Muffler Shop. SN 277,434. Pub. 12–24–68. Filed 8–3–67.

866,644. TELE-QUICK AND DESIGN. Tele-Quick Corporation. SN 278,748. Pub. 12–24–68. Filed 8–21–67.

866,645. SMOKEMASTER. Susan Louise Long, d.b.a. Smokemaster Cleaning Service. SN 280,076. Pub. 12–24–68. Filed 9–11–67.

866,646. AGRI-CONTRACTOR. Butler Manufacturing Company. SN 288,083. Pub. 12–24–68. Filed 1–4–68.

866,647. DUST-TEX. American Uniform Company, d.b.a. Dust-Tex Company. SN 288,584. Pub. 12–24–68. Filed 1–11–68.

866,648. BIG BARNEY. Lanning Equipment Corp. SN 294,059. Pub. 12–24–68. Filed 3–25–68.

Class 104 — Communication

866,649. STAR BROADCASTING GROUP AND DESIGN. Star Broadcasting Corp. SN 289,136. Pub. 12–24–68. Filed 1–18–68.

Class 105 — Transportation and Storage

866,650. ATLANTIC AUTOMOBILE ADVENTURE CLUB, INC. AND DESIGN. Atlantic Richfield Company. SN 253,615. Pub. 12–24–68. Filed 9–1–66.

866,651. YELLOW AIRCRAFT MARKING (DESIGN). Northeast Airlines, Inc. SN 269,202. Pub. 12–24–68. Filed 4–14–67.

866,652. COLPITTS. Colpitts Tourist Co., Inc., d.b.a. Colpitts Travel Center. SN 273,089. Pub. 12–24–68. Filed 6–5–67.

866,653. TROJAN AND DESIGN. Trojan Incorporated. SN 303,009. Pub. 12–24–68. Filed 7–11–68.

866,654. LAND-BRIDGE. United Cargo Corp. SN 304,290. Pub. 12–24–68. Filed 8–5–68.

Class 107 — Education and Entertainment

866,655. WAYNE'S LUV. Thomas F. Curtis. SN 275,837. Pub. 12–24–68. Filed 7–12–67.

866,656. MISCELLANEOUS DESIGN. The Philadelphia Hockey Club, Inc. SN 284,835. Pub. 12–24–68. Filed 11–14–67.

866,657. WHITE BARON. Coral Television Corporation. SN 285,204. Pub. 12–24–68. Filed 11–20–67.

866,658. VIDICAM. Vidicam Television Limited. SN 285,602. Pub. 12–24–68. Filed 11–24–67.

866,659. VOICE OF UNITY. Unity School of Christianity. SN 286,565. Pub. 12–24–68. Filed 12–8–67.

866,660. RANGERS. Madison Square Garden Corporation. SN 299,631. Pub. 12–24–68. Filed 6–4–68.

866,661. KNICKERBOCKERS. Madison Square Garden Corporation. SN 299,636. Pub. 12–24–68. Filed 6–4–68.

866,662. MINI CINEMA AND DESIGN. Modular Cinemas of America, Inc. SN 301,591. Pub. 12–24–68. Filed 6–28–68.

866,663. LION (DESIGN). Foreign Language League Schools, d.b.a. The Foreign Study League. SN 304,435. Pub. 12–24–68. Filed 8–6–68.

866,664. COMPASS. Compass, Inc. SN 304,542. Pub. 12–24–68. Filed 8–7–68.

866,665. MORE TISHANS. The More Tishans. SN 305,097. Pub. 12–24–68. Filed 8–14–68.

866,666. HANDS-ON. Advanced Communication Techniques Seminars, Incorporated. SN 306,422. Pub. 12–24–68. Filed 9–3–68.

Collective Membership Marks

Class 200

866,667. NAW ETC. AND DESIGN. The National Association of Wholesalers. SN 271,064. Pub. 12–24–68. Filed 5–9–67.

866,668. INTERTEL AND DESIGN. Intertel, Incorporated. SN 281,291. Pub. 12–24–68. Filed 9–27–67.

866,669. ALPHA TAU OMEGA FRATERNITY. Alpha Tau Omega Fraternity, Inc. SN 287,622. Pub. 12–24–68. Filed 12–27–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

866,670. The American Automobile Association (Incorporated), Washington, D.C. SN 268,128. Filed P.R. 4–3–67; Am. S.R. 11–20–68.

MAP-PAK

For Pocketed Portfolio-Type Folder for Containing a Plurality of Folded Maps, Such as State or Other Regional Highway Maps (Int. Cl. 18).
First use Nov. 15, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

866,671. Henco Enterprises, Inc., Niles, Mich. SN 275,943. Filed P.R. 7–13–67; Am. S.R. 9–23–68.

PATTERN PERFECT

For Shot Gun Shells and Shot Pellets Used Therein (Int. Cl. 13).
First use June 30, 1967.

Class 15 — Oils and Greases

866,672. Felt Products Mfg. Co., Skokie, Ill. SN 279,059. Filed P.R. 8–25–67; Am. S.R. 11–8–68.

NO-BIND

For Anti-Seize Lubricants (Int. Cl. 4).
First use on or about Aug. 16, 1967.

Class 17 — Tobacco Products

866,673. The American Tobacco Company, New York, N.Y. SN 264,140. Filed P.R. 2–7–67; Am. S.R. 11–18–68.

AMERICAN CIGAR CORPORATION

Applicant makes no claim of exclusive right to use the word "Cigar" apart from the mark as shown.
For Cigars (Int. Cl. 34).
First use Jan. 30, 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

866,674. Hunt Electronics Company, Dallas, Tex. SN 260,433. Filed P.R. 12-9-66; Am. S.R. 11-26-68.

FULLBRITE TO CANDLELITE

For Incandescent and Fluorescent Light Dimming Controls (Int. Cl. 11).
First use at least as early as September 1966.

Class 22 — Games, Toys, and Sporting Goods

866,675. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. SN 283,795. Filed P.R. 10-31-67; Am. S.R. 11-4-68.

FUNNY-BUTTONS

For Toy Kit for Making Badges To Be Worn on the Person (Int. Cl. 28).
First use on or about Sept. 21, 1967.

866,676. Hasbro Industries, Inc., Pawtucket, R.I., by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. SN 283,798. Filed P.R. 10-31-67; Am. S.R. 11-4-68.

SHOW BIZ BABIES

For Toy Kit Comprising a Doll and a Record Relating to the Doll (Int. Cl. 28).
First use on or about Sept. 21, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

866,677. Clarence V. Goodall, Sidell, Ill. SN 292,907. Filed P.R. 3-11-68; Am. S.R. 11-14-68.

C-THRU

For Bin Extension for Harvester Combine (Int. Cl. 7).
First use January 1965.

Class 44 — Dental, Medical, and Surgical Appliances

866,678. The Dentists' Supply Company of New York, York, Pa. SN 285,725. Filed P.R. 11-28-67; Am. S.R. 12-9-68.

SILENCER

For Turbine Cartridge for Dental Handpiece (Int. Cl. 10).
First use Nov. 10, 1967.

Class 51 — Cosmetics and Toilet Preparations

866,679. Estee Lauder, Inc., New York, N.Y. SN 272,507. Filed P.R. 5-26-67; Am. S.R. 11-29-68.

HONEY GLOW

For Face Powder (Int. Cl. 3).
First use January 1946.

866,680. Richard Hudnut, Morris Plains, N.J. SN 281,893. Filed P.R. 10-5-67; Am. S.R. 12-2-68.

LIP LILLIES

For Lipstick (Int. Cl. 3).
First use Sept. 29, 1967.

866,681. Richard Hudnut, Morris Plains, N.J. SN 281,894. Filed P.R. 10-5-67; Am. S.R. 12-2-68.

PRETTY FLICKS

For Lipstick (Int. Cl. 3).
First use Sept. 29, 1967.

TRADEMARK REGISTRATIONS RENEWED

73,183. "TAYLOR'S" AND DESIGN. Cl. 46 (Int. Cl. 29). 3-23-09.
73,356. "B" ENCLOSED BY CIRCULAR DESIGN. Cl. 13 (Int. Cl. 6). 4-13-09.
244,751. "TOPCO" AND DESIGN. Cl. 5 (Int. Cl. 1). 7-24-28.
248,086. "CAMEL-TEX" ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 10-16-28.
249,000. "I. MILLER." Cl. 39 (Int. Cl. 25). 11-6-28.
250,561. "DR. CARTER'S K. & B. TEA." AND DESIGN. Cl. 18 (Int. Cl. 30). 12-11-28.
251,317. "DIANA" ETC. AND ANGEL DESIGN. Cl. 39 (Int. Cl. 25). 1-1-29.
251,404. JOLLY BOAT. Cl. 17 (Int. Cl. 34). 1-8-29.
251,466. MECHANICS. Cl. 23 (Int. Cl. 12). 1-8-29.
251,668. WM. PENN. Cl. 15 (Int. Cl. 4). 1-8-29.
251,669. "WM. PENN" AND DESIGN. Cl. 15 (Int. Cl. 4). 1-8-29.
251,756. RECORDAK. Cl. 26 (Int. Cls. 1 and 9). 1-15-29.
252,105. "A.P.W." AND BACKGROUND DESIGN. Cl. 37 (Int. Cl. 16). 1-22-29.
252,108. VELVET. Cl. 52 (Int. Cl. 3). 1-22-29.
252,293. BABY BEAR. Cl. 39 (Int. Cl. 25). 1-29-29.
252,550. DARK CLIPPER. Cl. 15 (Int. Cl. 4). 2-12-29.
253,180. AMBER. Cl. 52 (Int. Cl. 3). 2-19-29.
253,474. LOCKHEED. Cl. 19 (Int. Cl. 12). 2-26-29.
253,701. WINGS. Cl. 39 (Int. Cl. 25). 3-5-29.
254,768. CANYON. Cl. 46 (Int. Cl. 31). 4-2-29.
255,548. "DANDUX" AND DESIGN OF DUCK. Cl. 50 (Int. Cls. 19, 22, and 24). 4-23-29.
256,198. OTIS. Cl. 4 (Int. Cl. 3). 5-7-29.
256,411. OLD HOME. Cl. 46 (Int. Cl. 29). 5-14-29.
256,575. "DINNER-TEX" AND DESIGN. Cl. 42 (Int. Cl. 24. 5-21-29.
256,576. "SUMMER-TEX" AND DESIGN. Cl. 42 (Int. Cl. 24). 5-21-29.
257,260. TRUFLEX. Cl. 23 (Int. Cl. 8). 6-4-29.
439,932. GOLDEN CHALICE HYBRIDS. Cl. 1 (Int. Cl. 31). 7-27-48.
440,946. SPO IN A CIRCLE. Cl. 23 (Int. Cl. 7). 10-12-48.
441,466. MAGIC SNELL. Cl. 22 (Int. Cl. 28). 11-30-48.
441,603. ERIE SHORE. Cl. 46 (Int. Cl. 29). 12-14-48.
441,742. DRONSFIELDS. Cl. 23 (Int. Cl. 7). 1-4-49.
441,797. UNDERSEAL. Cl. 16 (Int. Cl. 2). 1-4-49.

441,915. DUNE. Cl. 46 (Int. Cl. 31). 1-25-49.
442,024. KINLITH. Cl. 6 (Int. Cl. 1). 2-8-49.
442,091. RED ROSE. Cl. 46 (Int. Cl. 30). 2-22-49.
442,505. AP ALLIED DISPLAY. Cl. 32 (Int. Cl. 20). 4-19-49.
442,717. RUGGED RAMBLERS AND DESIGN. Cl. 39 (Int. Cl. 3). 5-24-49.
442,752. BRACE AND DESIGN. Cl. 51 (Int. Cl. 3). 5-31-49.
442,757. AEROFUSE. Cl. 13 (Int. Cl. 9). 5-31-49.
442 832. TRIANGLE DESIGN. Cl. 30 (Int. Cl. 21). 6-7-49.
501,131. CONGO. Cl. 6 (Int. Cl. 5). 7-27-48.
502,174. DG (DESIGN). Cl. 51 (Int. Cl. 3). 9-14-48.
502,788. TRADER VIC'S. Cl. 46 (Int. Cls. 29 and 30). 10-12-48.
502,822. PERFECT STRIKE AND DESIGN. Cl. 46 (Int. Cl. 29). 10-12-48.
504,583. SHIPMATE. Cl. 17 (Int. Cl. 34). 12-7-48.
504,893. RANDAK AND DESIGN. Cl. 1 (Int. Cl. 18). 12-21-48.
504,941. METALOID. Cl. 37 (Int. Cl. 16). 12-21-48.
504,957. SUPREMO. Cl. 6 (Int. Cl. 1). 12-21-48.
504,958. LUNA. Cl. 6 (Int. Cl. 1). 12-21-48.
504,959. JET-OIL. Cl. 4 (Int. Cl. 3). 12-21-48.
504,991. DESTINY. Cl. 37 (Int. Cl. 16). 12-21-48.
505,010. RENEW-POINT. Cl. 37 (Int. Cl. 16). 12-21-48.
505,020. BURMA-SHAVE. Cl. 51 (Int. Cl. 3). 12-21-48.
505,073. CHORE KNOB. Cl. 4 (Int. Cl. 21). 12-21-48.
505,288. SPIRALOK. Cl. 9 (Int. Cl. 13). 12-28-48.
505,296. PANAFLEX. Cl. 6 (Int. Cl. 1). 12-28-48.
505,310. ANTAROX. Cl. 52 (Int. Cl. 3). 12-28-48.
505,340. CROSS X KNIT. Cl. 39 (Int. Cl. 25). 1-4-49.
505,454. HELSPOT. Cl. 12 (Int. Cl. 19). 1-4-49.
505,625. MODERNESQUE. Cl. 32 (Int. Cl. 20). 1-11-49.
505,702. CP AN DESIGN. Cl. 23 (Int. Cl. 7). 1-18-49.
505,710. MC CRAY. Cl. 31 (Int. Cl. 11). 1-18-49.
505,790. JAY BEE. Cl. 12 (Int. Cl. 19). 1-18-49.
505,820. GLEEM. Cl. 51 (Int. Cl. 3). 1-18-49.
505,982. RED TOP. Cl. 13 (Int. Cl. 6). 1-25-49.
506,021. R. Cl. 38 (Int. Cl. 16). 1-25-49.
506,022. R AND DESIGN. Cl. 38 (Int. Cl. 16). 1-25-49.
506,057. WUTCHUMNA. Cl. 46 (Int. Cl. 31). 1-25-49.
506,073. DELTACRAFT. Cl. 38 (Int. Cl. 16). 1-25-49.
506,095. PRINTERS' INK. Cl. 38 (Int. Cl. 16). 1-25-49.
506,247. RED HAWK AND DESIGN. Cl. 39 (Int. Cl. 25). 2-1-49.
506,321. THE CHIEF. Cl. 3 (Int. Cl. 18). 2-1-49.
506,748. JERGUSON. Cl. 26 (Int. Cl. 9). 2-15-49.
506,843. BEMIS A. Cl. 2 (Int. Cl. 22). 2-22-49.
506,853. FLUFFO. Cl. 46 (Int. Cl. 29). 2-22-49.
506,862. HOWARD. Cl. 37 (Int. Cl. 16). 2-22-49.
507,100. GRIP-SHUR. Cl. 6 (Int. Cl. 4). 2-22-49.
507,139. TENDER LEAF. Cl. 46 (Int. Cl. 30). 3-1-49.
507,148. HOM-ART. Cl. 46 (Int. Cl. 30). 3-1-49.
507,155. MAXWELL. Cl. 37 (Int. Cl. 16). 3-1-49.
507,917. BOVIE. Cl. 44 (Int. Cl. 10). 3-22-49.
507,983. PERCODAN. Cl. 18 (Int. Cl. 5). 3-22-49.
508,453. WOOD AD MAT. Cl. 50 (Int. Cl. 16). 4-12-49.
508,456. WOOD BLUE STREAK STANDARD. Cl. 50 (Int. Cl. 16). 4-12-49.
508,457. FORMOBOARD. Cl. 50 (Int. Cl. 16). 4-12-49.
508,706. MAINSTAY. Cl. 7 (Int. Cl. 22). 4-19-49.
508,709. MEL-O-POP. Cl. 46 (Int. Cl. 29). 4-19-49.
508,905. BEMIS. Cl. 50 (Int. Cl. 22). 4-26-49.
509,123. NUFORM. Cl. 44 (Int. Cl. 10). 4-26-49.
509,569. MATARA. Cl. 1 (Int. Cl. 18). 5-10-49.
509,745. BHB AND DESIGN. Cl. 51 (Int. Cls. 3 and 5). 5-10-49.
510,027. IMPORIGINALS. Cl. 39 (Int. Cl. 25). 5-24-49.
510,192. SCREWBALLS. Cl. 23 (Int. Cl. 7). 5-31-49.
510,233. SIGHT FEED. Cl. 34 (Int. Cl. 11). 5-31-49.
510,271. MUNSINGWEAR. Cl. 39 (Int. Cl. 25). 5-31-49.
510,447. AAF. Cl. 6 (Int. Cl. 1). 5-31-49.
510,450. DOWEX. Cl. 31 (Int. Cl. 1). 5-31-49.
510,522. ANCHOR BRAND. Cl. 15 (Int. Cl. 4). 6-7-49.
510,655. THERMOSCENT. Cl. 6 (Int. Cl. 9). 6-7-49.
510,802. FOGLESS ALBRIGHT. Cl. 52 (Int. Cl. 3). 6-7-49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Jan. 22, 1963

743,923. SILHOUETTE REPRESENTATION OF HERCULES. Cl. 1.
743,924. POLY-SOLE. Cl. 1.
743,926. DARASTAY. Cl. 1.
743,930. SPI-CEE-CRESS. Cl. 1.
743,932. OSCO AREA 40-45. Cl. 1.
743,933. PLOW-DOWN. Cl. 1.
743,980. HI-DRY. Cl. 6.
743,984. COPYROL. Cl. 6
743,985. D-TUR. Cl. 6
743,988. SATINA. Cl. 6.
743,992. POSY LANE. Cl. 10.
743,996. THRIFT COURT. Cl. 12.
743,998. PATIO-MASTER. Cl. 12.
743,999. ADMIRATION HOMES. Cl. 12.
744,004. MARK-TROL. Cl. 16.
744,005. THE 600 GROUP OF COMPANIES AND DESIGN. Cl. 16.
744,006. 600 AND DESIGN. Cl. 16.
744,007. 600. Cl. 16.
744,010. SHADE-O-MATIC. Cl. 16.
744,011. MOBILON. Cl. 16.
744,013. RE-LI-ON. Cl. 16.
744,017. ALKAGEL. Cl. 18.
744,021. CYTERGON. Cl. 18.
744,022. LIPOGERON. Cl. 18.
744,023. ESSAHEPAN. Cl. 18.
744,024. ESSENTIALE 303 NATTERMANN. Cl. 18.
744,026. 'LAXOTON.' Cl. 18.
744,027. DEPOVERNIL. Cl. 18.
744,029. MAZUR-A. Cl. 18.
744,031. PRE-ANGEL. Cl. 18.
743,934. RECNYL. Cl. 1.
743,935. PACKAGED FRICTION. Cl. 1.
743,936. PASCHIA. Cl. 1.
743,939. PRO-FAX. Cl. 1.
743,940. BLUE STAR. Cl. 1.
743,941. VEINAWAY. Cl. 1.
743,943. HAVEG-WARE AND DESIGN. Cl. 2.
743,946. THE HAWG TRAWF. Cl. 2.
743,947. EXTENSOLIN. Cl. 2.
743,951. TIDY TOP. Cl. 2.
743,952. KALICO. Cl. 2.
743,953. SNACKEROO. Cl. 2.
743,954. FLAVOR-RE-LOK. Cl. 2.
743,961. AIRVITALYZER. Cl. 6.
743,963. UOP 216. Cl. 6.
743,967. ALKAM. Cl. 6.
743,969. BILGELIFE. Cl. 6.
743,976. GRANDMA GREEN'S. Cl. 6.
743,978. KARA SEAL. Cl. 6.
744,034. CANITONE. Cl. 18.
744,035. RE-HOBO. Cl. 18.
744,036. ULCEREX. Cl. 18.
744,037. AEROMOUSSE. Cl. 19.
744,040. PRO-FAX. Cl. 21.
744,041. SPECTRO SPELL. Cl. 22.
744,046. PRO-TRAINER. Cl. 22.
744,050. SHINPOCKOLO. Cl. 22.
744,053. MR. MERCURY. Cl. 22.
744,056. BELLE TELLE. Cl. 22.
744,057. PEPPERMINT TWIST. Cl. 22.
744,058. MAG-POWR AND DESIGN. Cl. 22.
744,060. BIG JIM. Cl. 22.
744,065. SHADE-O-MATIC. Cl. 23.
744,066. WHITE CLOUD AND DESIGN. Cl. 24.
744,080. VIDA. Cl. 36.
744,085. SKOOKUM. Cl. 37.
744,088. SPACE-CRAFT AND DESIGN. Cl. 37.
744,089. KEMTAK. Cl. 37.
744,090. PETALOVE. Cl. 37.
744,091. PEPPERMINT TWIST PEN. Cl. 37.
744,094. TAPELER. Cl. 37.
744,097. PRO-FAX. Cl. 37.
744,100. BOWLMASTER. Cl. 38.

744,106. TAXWISE TIPS. Cl. 38.
744,108. THE STANTON SUN. Cl. 38.
744,109. FOUNTAIN VALLEY TRIBUNE. Cl. 38.
744,110. KIT KARTER. Cl. 38.
744,117. G AND DESIGN. Cl. 39.
744,123. TURF HOPPERS AND DESIGN. Cl. 39.
744,126. KOK-L-BUR. Cl. 40.
744,134. K IN DOUBLE HEXAGON. Cl. 46.
744,143. MR. AND MRS. DIET AND DESIGN. Cl. 46.
744,147. TARKIO. Cl. 46.
744,155. ANGEL DELIGHT. Cl. 46.
744,156. FRUIT DIVINITY. Cl. 46.
744,157. FRANKLIN AND DESIGN. Cl. 46.
744,164. ALLSAF. Cl. 46.
744,165. TACOMALE. Cl. 46.
744,170. AUTOMAT. Cl. 46.
744,179. TRAVELTINI. Cl. 49.
744,181. BIG CHIEF AND DESIGN. Cl. 50.
744,185. UPSIDAZY. Cl. 50.
744,186. WUD-SANI-MAT. Cl. 50.
744,187. THRIFT-PAK. Cl. 51.
744,198. CAMFERINE. Cl. 51.
744,208. SOILCHASER. Cl. 52.
744,209. DEAR JOHN. Cl. 52.
744,210. SEVER SOIL. Cl. 52.
744,213. HEALTH IS WEALTH AND DESIGN. Cl. 100.
744,214. REAP AND DESIGN. Cl. 100.
744,216. APS AND DIAMOND DESIGN. Cl. 101.
744,217. TWELVE+1. Cl. 101.
744,220. SL AND DESIGN. Cl. 101.
744,226. NATIONWIDE. Cl. 103.
744,232. OIA AND DESIGN. Cl. 107.
744,235. DELTA NU ALPHA AND DESIGN. Cl. 200.
744,246. SHIRTSAVER. Cl. 2.
744,249. ELECTROLOK. Cl. 21.
744,251. AUTO-WELD. Cl. 21.
744,252. BOW-ING AND DESIGN. Cl. 22.
744,253. IMPAK. Cl. 23.
744,258. SIMPLIFIED. Cl. 38.
744,262. 2 IN 1. Cl. 39.
744,265. FILET-BOUCLE. Cl. 42.
744,271. ULTRA PINK. Cl. 47.
744,275. FRENCH TOAST. Cl. 51.

Section 18

754,587. NATIONAL AND DESIGN. Cl. 24. 8–13–63.
794,430. NATIONAL N AND DESIGN. Cl. 24. 8–17–65.
805,367. KASTALLOY. Cl. 14. 3–8–66.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

505,431. TOM THUMB. Cl. 16. 1–4–49. Chicago Paints, Inc. Armstrong Paint & Varnish Works, Inc., Chicago, Ill. Amended to appear:

TOM THUMB

737,516. STEVENS TELEMARK. Cl. 26. 9–11–62. Leupold & Stevens Instruments, Inc., Portland, Oreg. Corrected: In the statement, column 2, line 9, "1955" should be deleted and *1935* should be inserted.

755,719. INDUSTRIAL CRYOGENICS. Cl. 38. 8–27–63. Putman Publishing Company, Chicago, Ill. Corrected: In the statement, column 2, line 1, before "magazine" *a section in a* should be inserted.

802,692. Y YEMA. Cl. 27. 1–25–66. Y.E.M.A., S.A., Besancon, France. Corrected: In the statement, column 1, line 1, "Montres Yema S.A., Fabrique d'Horlogerie" should be deleted and *Y.E.M.A., S.A.* should be inserted.

831,654. DISPOSAGOWN. Cl. 39. 7–4–67. Theodore Bradley, Monterrey, Calif. Amended to appear:

DISPOS-A-GOWN

849,169. SPARKLE. Cl. 103. 5–14–68. Sparkle Cleansers & Launderers, Inc., doing business as Sparkle Cleansers, Inc., Brookline, Mass. Corrected: In the statement, column 1, before line 1, *Sparkle Cleansers & Launderers, Inc., doing business as* should be inserted.

859,637. SLAZENGER. Cls. 22 and 39. 11–5–68. Slazengers Limited, doing business as Challenge House, Croydon, Surrey, England. Corrected: In the statement, column 2, line 2, "screen" should be deleted and *scrum* should be inserted.

860,488. UNISEAMER. Cl. 23. 11–19–68. Asten-Hill Mfg. Company, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Astem" should be deleted and *Asten* should be inserted.

861,835. SEA-STILL. Cl. 31. 12–10–68. J. H. Westerbeke Corp., Boston, Mass. Corrected: In the statement, column 1, line 1, after "Westerbeke" *Corp.* should be inserted.

INDEX OF REGISTRANTS

MARCH 11, 1969

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A & B Muffler Shop: *See*—
Byrd, Wallace O.
A & M Supply Co.: *See*—
Maltz, Marvin N.
Abbott Laboratories, North Chicago, Ill. 866,139, pub. 12–24–68. Cl. 18.
Abbott Laboratories, North Chicago, Ill. 866,468, pub. 11–7–67. Cl. 44.
Abercrombie & Fitch Co., New York, N.Y. 504,583, ren. 3–11–69. Cl. 17.
Adikes, J. & L., Inc. Jamaica, N.Y. 743,985, canc. Cl. 6.
Adler Silhouette Letter Co., Los Angeles, Calif. 866,549, pub. 12–24–68. Cl. 50.
Advanced Communication Techniques Seminars, Inc., Westport, Conn. 866,666, pub. 12–24–68. Cl. 107.
Advertising Publications, Inc., Chicago, Ill. 866,423, pub. 12–24–68. Cl. 38.
Aerojet-General Corp.: *See*—
Weathermeasure Corp.
Aerospace Research, Inc., Boston, Mass. 866,269, pub. 12–24–68. Cl. 26.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 743,984, canc. Cl. 6.
Air Canada, Montreal, Quebec, Canada. 866,597, pub. 12–24–68. Cl. 100.
Air Pix: *See*—
Thomas, Marjorie T.
Aktiebolaget Stille-Werner, Stockholm, Sweden. 866,473, pub. 12–24–68. Cl. 44.
Albany Perforated Wrapping Paper Co., Albany, to Concel Inc., New York, N.Y. 252,105, ren. 3–11–69. Cl. 37.
Alberto-Culver Co., Melrose Park, Ill. 866,589, pub. 12–24–68. Cl. 52.
Alcan Aluminum Corp., Cleveland, Ohio. 866,336–8, pub. 12–24–68. Cl. 32.
Allen, Layman E., d.b.a. Wff 'N Proof, Ann Arbor, Mich. 866,219, pub. 12–24–68. Cl. 22.
Allied Compositions Co., Inc., Maspeth, N.Y. 866,115, pub. 12–24–68. Cl. 16.
Allied Display Materials, Inc., New York, N.Y. 442,505, ren. 3–11–69. Cl. 32.
Allied Mineral Products, Inc., Columbus, Ohio. 866,054, pub. 12–24–68. Cl. 12.
Alpha Metals, Inc., Jersey City, N.J. 866,353, pub. 12–24–68. Cl. 34.
Alpha Tau Omega Fraternity, Inc., Champaign, Ill. 866,669, pub. 12–24–68. Cl. 200.
Aluminum Co. of America, Pittsburgh, Pa. 866,001, pub. 12–24–68. Cl. 2.
Aluminum Extrusions, Inc., Charlotte, Mich. 866,190, pub. 12–24–68. Cl. 21.
Amerace Corp., New York, N.Y. 866,295, pub. 12–24–68. Cl. 26.
Amerace Corp., New York, N.Y. 866,594, pub. 12–24–68. Cl. 52.
American Air Filter Co., Inc., Louisville, Ky. 510,447, ren. 3–11–69. Cl. 6.
American Automobile Association (Inc.), The, Washington, D.C. 866,670. Cl. 3.
American Bankers Insurance Co. of Florida, Miami, Fla. 866,637, pub. 12–24–68. Cl. 102.
American Camping Association, Inc., Martinville, Ind. 866,433, pub. 12–24–68. Cl. 38.
American Can Co. New York, N.Y. 866,004, pub. 12–24–68. Cl. 2.
American Chocolate & Cocoa Co., Inc., d.b.a. American Chocolate Co., St. Louis, Mo. 744,155–6, canc. Cl. 46.
American Chocolate Co.: *See*—
American Chocolate & Cocoa Co., Inc.
American Cyanamid Co., Wayne, N.J. 866,138, pub. 12–24–68. Cl. 18.
American Cyanamid Co., Wayne, N.J. 866,148, pub. 12–24–68. Cl. 18.
American Dairy Queen Corp., Minneapolis, Minn. 866,484, pub. 12–24–68. Cl. 46.
American Home Products Corp., New York, N.Y. 744,157, canc. Cl. 46.
American Premium System, Inc., Dallas, Tex. 744,216, canc. Cl. 101.
American Saint Gobain Corp., Kingsport, Tenn. 866,342, pub. 12–24–68. Cl. 33.
American Society for Metals, Metals Park, Ohio. 866,416, pub. 12–24–68. Cl. 38.
American Standard Inc., New York, N.Y. 866,089, pub. 12–24–68. Cl. 13.
American Swimming Pool Research Organization, Inc., New York, N.Y. 866,059, pub. 12–24–68. Cl. 12.
American Tobacco Co., The, New York, N.Y. 866,673. Cl. 17.
American Uniform Co., d.b.a. Dust-Tex Co., Cleveland, Tenn. 866,647, pub. 12–24–68. Cl. 103.
Amicon Corp., Lexington, Mass. 866,328, pub. 12–24–68. Cl. 31.
Anchor Hocking Glass Corp., Lancaster, Ohio. 866,343, pub. 12–24–68. Cl. 33.
Apollo Chemical Corp., Clifton, N.J. 866,029, pub. 12–24–68. Cl. 6.
Aquastar SA. Ci-Devant Jean Richard Chantepoulet, Geneva, Switzerland. 866,306, pub. 12–24–68. Cl. 27.
Argus Chemical Corp., Brooklyn, N.Y. 866,032–33, pub. 12–24–68. Cl. 6.
Argus Inc., Chicago, Ill. 866,274, pub. 12–24–68. Cl. 26.
Arizona Horizons, Inc., Phoenix, Ariz. 866,596, pub. 12–24–68. Cl. 100.
Armour-Dial, Inc., Chicago, Ill. 866,041, pub. 12–24–68. Multiple Class (Classes 6 and 51).
Arrow Brands: *See*—
Highland Supply Corp.
Art Artifices: *See*—
Humphries, B. L.
Ashland Oil & Refining Co., Ashland, Ky. 865,994–5, pub. 12–24–68. Multiple Class (Classes 1 and 6).
Associated Barr Stores, Inc., d.b.a. Barr's and Barr's Jewelers, Philadelphia, Pa. 866,315, pub. 12–24–68. Cl. 28.
Astem-Hill Mfg. Co., Philadelphia, Pa. 860,488, cor. Cl. 23.
Astor Products Inc., Jacksonville, Fla. 866,037, pub. 12–24–68. Cl. 6.
Astra Trading Corp., New York, N.Y. 866,045, pub. 12–24–68. Cl. 8.
Atlantic Lures, Inc., Providence, R.I. 866,220, pub. 12–24–68. Cl. 22.
Atlantic Richfield Co., Los Angeles, Calif. 866,049, pub. 12–24–68. Cl. 10.
Atlantic Richfield Co., Philadelphia, Pa. 866,650, pub. 12–24–68. Cl. 105.
Atlas Films, Inc., New York, N.Y. 866,373, pub. 12–24–68. Cl. 36.
Auto Weld, Inc., Brooklyn, N.Y. 744,251, canc. Cl. 21.
Automatic Switch Co., Florham Park, N.J. 866,081, pub. 12–24–68. Cl. 13.
Avnet, Inc., Plainview, N.Y. 866,060, pub. 12–24–68. Cl. 12.
Avon Products, Inc., New York, N.Y. 866,592, pub. 12–24–68. Cl. 52.
Avon Products, Inc., New York, N.Y. 866,576, pub. 12–24–68. Cl. 51.
B.J. Products: *See*—
Christiansen, James S.
Babcock & Wilcox Co., The, New York, N.Y. 866,236, pub. 10–1–68. Cl. 23.
Bailey, Lunda, New Castle, Ind. 744,035, canc. Cl. 18.
Ball Co., Inc., The, New York, N.Y. 866,455–6 pub. 12–24–68. Cl. 39.
Ballinger-Meserole Co., Philadelphia, Pa. 866,626, pub. 12–24–68. Cl. 101.
Bamco, Inc., Alexandria, La. 743,946, canc. Cl. 2.
Bankers Commercial Life Insurance Co., Dallas, Tex. 866,638, pub. 12–24–68. Cl. 102.
Barbier & Dauphin, Societe Anonyme, Aix-En-Provence, France. 866,487, pub. 12–24–68. Cl. 46.
Barkey International Corp.: *See*—
International Products Corp.
Barr's: *See*—
Associated Barr Stores, Inc.
Barr's Jewelers: *See*—
Associated Barr Stores, Inc.
Barton's Candy Corp., Brooklyn, N.Y. 866,508, pub. 12–24–68. Cl. 46.
Baumgold Bros., Inc., New York, N.Y. 866,316, pub. 12–24–68. Cl. 28.
Bayou Industrial Corp., Minden, La. 866,178, pub. 12–24–68. Cl. 19.
Bayou State Oil Corp., Shreveport, La. 866,113, pub. 12–24–68. Cl. 15.
Bear Brand Hosiery Co., Chicago, Ill. 252,293, ren. 3–11–69. Cl. 39.
Beautymasters of Beverly Hills, Inc., Milwaukee, Wis., to Beautymasters, Inc., Detroit, Mich. 509,745, ren. 3–11–69. Cl. 51.
Beautymasters, Inc.: *See*—
Beautymasters of Beverly Hills, Inc.
Beck, A. S., Shoe Corp., New York, N.Y. 866,447, pub. 12–24–68. Cl. 39.
Becton, Dickinson & Co., East Rutherford, N.J. 866,330, pub. 12–24–68. Cl. 31.
Bedford Products, Inc., Dunkirk, N.Y., to National Dairy Products Corp., Chicago, Ill. 441,603, ren. 3–11–69. Cl. 46.
Behrens, Joh. F., Bogenstrasse, Germany. 866,069, pub. 12–24–68. Multiple Class (Classes 13 and 23).
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 506,843, ren. 3–11–69. Cl. 2.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 508,700, ren. 3–11–69. Cl. 7.
Bemis Brofl Bag Co., to Bemis Co., Inc., Minneapolis, Minn. 508,905, ren. 3–11–69. Cl. 50.
Bemis Co., Inc.: *See*—
Bemis Bro. Bag Co.
Beneke Corp., Columbus, Miss. 866,094, pub. 12–24–68. Cl. 13.
Bercy Industries, Inc., Venice, Calif. 866,018, pub. 12–24–68. Multiple Class (Classes 3 and 32).
Berd Products, Inc., Kearney, Nebr. 743,976, canc. Cl. 6.
Bergdorf & Goodman Co., New York, N.Y. 866,011–12, pub. 12–24–68. Multiple Class (Classes 3, 27, 28, 32, 39, 41, 51, and 52).

Bergdorf & Goodman Co., New York, N.Y. 866,199, pub. 12–24–68. Cl. 22.
Bergeron, Victor J., d.b.a. Trader Vic's, San Francisco, Calif. 502,788, ren. 3–11–69. Cl. 46.
Berkey Photo, Inc., New York, N.Y. 866,286, pub. 12–24–68. Cl. 26.
Best Foods, Inc., The, New York, N.Y., to Corn Products Co., Englewood Cliffs, N.J. 504,959, ren. 3–11–69. Cl. 4.
Best Tackle Mfg. Co., Sebewaing, Mich. 866,211, pub. 12–24–68. Cl. 22.
Better Home Products of Texas Corp., Houston, Tex. 866,192, pub. 12–24–68. Cl. 21.
Bex Co., The: *See*—
Hexol, Inc.
Blackwell Burner Co., San Antonio, Tex. 866,355, pub. 12–24–68. Cl. 34.
Blair, E. W., Republic, Mo. 866,419, pub. 12–24–68. Cl. 38.
Boehm, Friedrich, Graz, Austria. 866,126, pub. 12–24–68. Cl. 18.
Boehringer Ingelheim, G.m.b.H., Ingelheim, Germany. 866,153, pub. 12–24–68. Cl. 18.
Bomar Co., Inc., The, Squantum, Mass. 866,005, pub. 12–24–68. Cl. 2.
Bonat, Samuel, & Bro., Inc., Paterson, N.J. 866,572, pub. 12–24–68. Cl. 51.
Bongrain, J., & Cie (Societe Anonyme), Haute-Marne, France. 866,486, pub. 12–24–68. Cl. 46.
Borden Co., The: *See*—
Borden, Inc.
Borden, Inc., from The Borden Co., New York, N.Y. 866,555, pub. 12–24–68. Cl. 51.
Borg-Warner Corp.: *See*—
Mechanics Machine Co.
Mechanics Universal Joint Co.
Bowen Mfg. Co., Inc., Pasadena, Calif. 744,123, canc. Cl. 39.
Bradley, Theodore, Monterrey, Calif. 831,654. Am. 7(d). Cl. 39.
Bradshaw-Welles Co., Inc., Los Angeles, Calif. 866,622, pub. 12–24–68. Cl. 101.
Brandell Products Corp., Rosemont, Ill. 866,212, pub. 12–24–68. Cl. 22.
Breckenridge Hotels Corp., Brentwood, Mo. 866,612–13, pub. 12–24–68. Cl. 100.
Bristol-Myers Co., New York, N.Y. 866,161, pub. 12–24–68. Cl. 18.
British Celanese Ltd., London, England. 866,465, pub. 6–25–68. Cl. 43.
Broemmel Pharmaceuticals, San Francisco, Calif. 866,146, pub. 12–24–68. Cl. 18.
Brooke Bond Foods, Inc.: *See*—
Estabrooks, T. H., Co., Ltd.
Brooklyn Cheese Co., Inc., Brooklyn, N.Y. 866,515, pub. 12–24–68. Cl. 46.
Brookside Industries, Inc., New York, N.Y. 866,457, pub. 12–24–68. Cl. 39.
Brown Co., New York, N.Y. 866,007, pub. 12–24–68. Cl. 2.
Brown Mfg. Co.: *See*—
Well, S. C., & Co.
Buddy L Corp., East Moline, Ill. 866,228, pub. 12–24–68. Cl. 22.
Buffalo Bolt Co., North Tonawanda, to Houdaille Industries, Inc., Buffalo, N.Y. 73,356, ren. 3–11–69. Cl. 13.
Building Officials Conference of America, Inc., The, Chicago, Ill. 866,417, pub. 12–24–68. Cl. 38.
Bundesen Foundation, The, Chicago, Ill. 744,213, canc. Cl. 100.
Bunnell Plastics, Inc., Camden, N.J. 865,985, pub. 12–24–68. Multiple Class (Classes 1 and 23).
Burma-Vita Co., Minneapolis, Minn., to Philip Morris Inc., New York, N.Y. 505,020, ren. 3–11–69. Cl. 51.
Burns Pharmaceuticals: *See*—
Burns Pharmaceuticals, Inc.
Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. 866,131–4, pub. 12–24–68. Cl. 18.
Butler Mfg. Co., Kansas City, Mo. 866,646, pub. 12–24–68. Cl. 103.
Byrd, Wallace O., d.b.a. A & B Muffler Shop, Fort Worth, Tex. 866,643, pub. 12–24–68. Cl. 103.
CAH Industries Inc., Franklin Park, Ill. 866,120, pub. 12–24–68. Multiple Class (Classes 16 and 52).
Cambridge Filter Corp., Syracuse, N.Y. 866,329, pub. 12–24–68. Cl. 31.
Campbell Mfg. Co. Ltd., Willowdale, Ontario, Canada. 866,205, pub. 12–24–68. Cl. 22.
Canfield Oil Co., The, to Fleet-Wing Corp., Cleveland, Ohio. 251,668–9, ren. 3–11–69. Cl. 15.
Cannon Shoe Co., Baltimore, Md. 442,717, ren. 3–11–69. Cl. 39.
Carlee Corp., Northvale, N.J. 865,986, pub. 12–24–68. Cl. 1.
Carnation Co., Los Angeles, Calif. 866,496, pub. 12–24–68. Cl. 46.
Carter, R. J. S., to William R. Carter, d.b.a. R. J. S. Carter Co., Minneapolis, Minn. 510,192, ren. 3–11–69. Cl. 23.
Carter, R. J. S., Co.: *See*—
Carter, R. J. S.
Carter, William R.: *See*—
Carter, R. J. S.
Case-Hoyt Corp., The, Rochester, N.Y. 866,428, pub. 12–24–68. Cl. 38.
Cash Creations: *See*—
Thomas, Edd.
Cashman, William P.: *See*—
Marita Spirits Ltd.
Castetter, Roy E.: *See*—
Mr. & Mrs. Diet, Inc.
Castle & Cooke, Inc., d.b.a. Plan, Honolulu, Hawaii. 866,627, pub. 12–24–68. Cl. 101.
Cathedral Films, Inc., Burbank, Calif. 866,425–7, pub. 12–24–68. Cl. 38.
Centre Electronique Horloger S.A., Neuchatel, Switzerland. 866,300, pub. 12–24–68. Cl. 27.
Certain-Teed Products Corp., Ardmore, Pa. 866,055, pub. 12–24–68. Cl. 12.
Championship Games, Inc., Southport, Conn. 866,204, pub. 12–24–68. Cl. 22.
Charlesbank Trust Co., Cambridge, Mass. 866,636, pub. 12–24–68. Cl. 102.
Charleston Rubber Co., Charleston, S.C. 744,126, canc. Cl. 40.
Chatham Potters, Inc., Chatham, N.J. 866,322, pub. 12–24–68. Cl. 30.
Chek Ads, Chicago, Ill. 866,422, pub. 12–24–68. Cl. 38.
Chemap AG, Zurich, Switzerland. 866,262, pub. 12–24–68. Multiple Class (Classes 26 and 31).
Chemclean Corp., College Point, N.Y. 866,042, pub. 12–24–68. Cl. 6.
Chemiquip Co.: *See*—
Lipman, Julian A.
Chemische Fabrik Von Heyden Aktiengesellschaft, Munich, Germany. 744,027, canc. Cl. 18.
Chicago Paints, Inc., to Armstrong Paint & Varnish Works, Inc., Chicago, Ill. 505,431. Am. 7(d). Cl. 16.
Chicago Pharmacal Co., Chicago, Ill. 744,034, canc. Cl. 18.
Chick-Fil-A, Inc., Hapeville, Ga. 866,527, pub. 12–24–68. Cl. 46.
Chico Recording Co., San Benito, Tex. 866,369, pub. 12–24–68. Cl. 36.
Chicopee Mfg. Corp., d.b.a. Refined Products Co., New Brunswick, N.J. 743,978, canc. Cl. 6.
Christiansen, James S., d.b.a. B. J. Products, Long Beach, Calif. 744,060, canc. Cl. 22.
Chronometrics: *See*—
Dunetz, Martin R.
Ciba Ltd., Basle, Switzerland. 866,142, pub. 12–24–68. Cl. 18.
Citra Cola Co., The: *See*—
Creative Concepts, Inc.
Clark, Cleo, Selma, Ala. 510,802, ren. 3–11–69. Cl. 52.
Clark Paper Converting Corp., South El Monte, Calif. 866,083–4, pub. 12–24–68. Multiple Class (Classes 13 and 37).
Cloud, Robert A., Co., The, Cincinnati, Ohio. 744,066, canc. Cl. 24.
Coachella Valley Publishing Co., Indio, Calif. 744,108–9, canc. Cl. 38.
Coggins Granite Industries, Inc., Elberton, Ga. 865,976, pub. 12–24–68. Multiple Class (Classes 1, 12, and 50).
Cohen, George, Sons & Co. Ltd., London, England. 744,005–7, canc. Cl. 16.
Cohen, Goldman & Co. Inc., New York, N.Y., to House of Worsted-Tex, Inc., Philadelphia, Pa. 256,575–6, ren. 3–11–69. Cl. 42.
Cohen, Goldman & Co. Inc., New York, N.Y., to House of Worsted-Tex, Inc., Philadelphia, Pa. 248, 086, ren. 3–11–69. Cl. 39.
Cole National Corp., Cleveland, Ohio. 866,296, pub. 12–24–68. Cl. 26.
Coleman Co., Inc., The, Wichita, Kans. 866,346, pub. 12–24–68. Cl. 34.
Colgate-Palmolive Co., New York, N.Y. 866,160, pub. 12–24–68. Cl. 18.
Colpitts Tourist Co., Inc., d.b.a. Colpitts Travel Center, Boston, Mass. 866,652, pub. 12–24–68. Cl. 105.
Colpitts Travel Center: *See*—
Colpitts Tourist Co., Inc.
Comet Packaging Corp., Bronx, N.Y. 866,009, pub. 12–24–68. Multiple Class (Classes 2, 37, and 39).
Compagnie Industrielle de Textiles Artificiels et Synthetiques, Paris, France. 865,978–9, pub. 12–24–68. Multiple Class (Classes 1, 39, and 42).
Compass, Inc., Alexandria, Va. 866,664, pub. 12–24–68. Cl. 107.
Concel Inc.: *See*—
Albany Perforated Wrapping Paper Co.
Congoleum Industries, Inc., from Congoleum-Nairn Inc., Kearny, N.J. 866,179, pub. 12–24–68. Cl. 20.
Congoleum-Nairn Inc.: *See*—
Congoleum Industries, Inc.
Conroy, J. P., Inc., Johnstown, N.Y. 866,448, pub. 12–24–68. Cl. 39.
Consolidated Electrodynamics Corp., Pasadena, Calif. 866,266, pub. 12–24–68. Cl. 26.
Consolidated Millinery Co., Chicago, Ill. 251,317, ren. 3–11–69. Cl. 39.
Construction Products Corp., Indianapolis, Ind. 866,068, pub. 12–24–68. Cl. 12.
Continental Illinois National Bank & Trust Co. of Chicago: *See*—
Midwest Bank Card System, Inc.
Contromatics Corp., Rockville, Conn. 866,087, pub. 12–24–68. Cl. 13.
Co-Operative Rose Growers, Inc., Tyler, Tex. 865,983, pub. 12–24–68. Cl. 1.
Coral Television Corp., Miami, Fla. 866,657, pub. 12–24–68. Cl. 107.
Corl International Corp., Bremen, Ind. 866,079, pub. 12–24–68. Multiple Class (Classes 13 and 19).
Corn Products Co.: *See*—
Best Foods, Inc., The.
Corn Products Co., Englewood Cliffs, N.J., from S. B. Penick & Co., New York, N.Y. 866,499, pub. 12–24–68. Cl. 46.
Cory, Sue: *See*—
Curtis, Helene, Industries, Inc.
Cotesworth, Curtis, Rathbone, Sheppard, Ltd., North Bergen, N.J. 866,076, pub. 12–24–68. Cl. 13.

Cragstan Industries, Inc., New York, N.Y. 866,217, pub. 12–24–68. Cl. 22.
Creamery Package Mfg. Co., The, Chicago, Ill., to St. Regis Pulp & Paper Corp., New York, N.Y. 505,702, ren. 3–11–69. Cl. 23.
Creative Concepts, Inc., from L. C. Grover, d.b.a. The Citra Cola Co., San Francisco, Calif. 866,127, pub. 12–24–68. Cl. 18.
Cristalleries et Verreries de Vianne, S.a.r.l., Paris, France. 866,341, pub. 12–24–68. Cl. 33.
Crowell, Chris, & Co.: *See*—
Crowell, Christopher S.
Crowell, Christopher S., d.b.a. Chris Crowell & Co., Darien, Conn. 866,411, pub. 12–24–68. Cl. 38.
Crown Zellerbach Corp., San Francisco, Calif. 743,951, canc. Cl. 2.
Cudahy Packing Co., The, Omaha, Nebr. 744,164, canc. Cl. 46.
Curtis, Helene, Industries, Inc., Chicago, Ill. 866,565, pub. 12–24–68. Cl. 51.
Curtis, Helene, Industries, Inc., d.b.a. Sue Cory, Chicago, Ill. 866,569, pub. 12–24–68. Cl. 51.
Curtis, Thomas F., Washington, D.C. 866,655, pub. 12–24–68. Cl. 107.
Dallas City Packing, Inc., Dallas, Tex. 866,514, pub. 12–24–69. Cl. 46.
Daniels, C. R., Inc., Daniels, Md. 255,548, ren. 3–11–69. Cl. 50.
Dawe's Laboratories, Inc., Chicago, Ill. 866,494, pub. 12–24–68. Cl. 46.
Decker Communications, Inc.: *See*—
Printer's Ink Publishing Co. Inc.
Deerwood Club, Inc., The, Jacksonville, Fla. 866,609–10, pub. 12–24–68. Cl. 100.
Delaware County Realty: *See*—
Moore, J. A.
Dell Publishing Co., Inc., New York, N.Y. 744,110, canc. Cl. 38.
Delta Nu Alpha Transportation Fraternity, Inc., Wilmington, Del. 744,235, canc. Cl. 200.
Dejonge, Louis, & Co., Staten Island, N.Y. 866,106, pub. 12–24–68. Cl. 14.
Demag-Elektrometallurgie G.m.b.H., Duisburg, Germany. 866,189, pub. 12–24–68. Cl. 21.
Dennison Mfg. Co., Framingham, Mass. 866,027, pub. 12–24–68. Multiple Class (Classes 6 and 37).
Denny's Restaurants, Inc., La Mirada, Calif. 866,599, pub. 12–24–68. Cl. 100.
Dentacenters, Inc., Indianapolis, Ind. 866,605, pub. 12–24–68. Cl. 100.
Dentists' Supply Co. of New York, The, York, Pa. 866,678. Cl. 44.
Deschner Co., Los Angeles, Calif. 744,253, canc. Cl. 23.
De Soto, Inc., Des Plaines, Ill. 866,064, pub. 12–24–68. Cl. 12.
Deutsche Arzneimittel Gesellschaft Steiner & Co., Berlin-Lankwitz, Germany. 744,029, canc. Cl. 18.
Deutsche Grammophon Gesellschaft, m.b.H., Hamburg, Germany. 866,366, pub. 12–24–68. Cl. 36.
Dial-A-Play: *See*—
Oeland, Ernest N., Jr.
Dial-A-Score, Inc., Houston, Tex. 866,630, pub. 12–24–68. Cl. 101.
Diamond National Corp., New York, N.Y. 866,548, pub. 12–24–68. Cl. 50.
Diebold, Inc., Canton, Ohio. 866,261, pub. 12–24–68. Cl. 25.
Diva Records, Inc., New York, N.Y. 744,080, canc. Cl. 36.
Dominique France, Inc., New York, N.Y. 866,015, pub. 12–24–68. Multiple Class (Classes 3, 28, 39, and 41).
Dominique France, Inc., New York, N.Y. 866,442, pub. 10–1–68. Cl. 39.
Donner Mountain Corp., The, Berkeley, Calif. 866,222, pub. 12–24–68. Cl. 22.
Dooner Laboratories, Inc., Haverhill, Mass. 866,156, pub. 12–24–68. Cl. 18.
Dore, John L., Co., Houston, Tex. 866,097, pub. 12–24–68. Cl. 13.
Dorosy, Inc., Chicago, Ill. 866,570, pub. 12–24–68. Cl. 51.
Doskocil Sausage, Inc., South Hutchinson, Kans. 866,497, pub. 12–24–68. Cl. 46.
Dow Badische Co., Williamsburg, Va. 865,988–93, pub. 12–24–68. Cl. 1.
Dow Chemical Co., The, Midland, Mich. 510,450, ren. 3–11–69. Cl. 31.
Dresser Industries, Inc., Dallas, Tex. 866,075, pub. 12–24–68. Cl. 13.
Drexel Enterprises, Inc., from Drexel Enterprises, Inc., Drexel, N.C. 866,331, pub. 12–24–68. Cl. 32.
Dronsfield Brothers Ltd., Oldham, England. 441,742, ren. 3–11–69. Cl. 23.
Droutman Mfg. Co., Inc.: *See*—
Oshkosh Trunks & Luggage.
Drugs For Veterinary Medicine, Inc., Yonkers, N.Y. 866,147, pub. 12–24–68. Cl. 18.
Drugs For Veterinary Medicine, Inc., Yonkers, N.Y. 866,154–5, pub. 12–24–68. Cl. 18.
Drummer Boys, Inc., Topeka, Kans. 866,606–7, pub. 12–24–68. Cl. 100.
Dua Corp., Houston, Tex. 866,105, pub. 12–24–68. Cl. 14.
Dunetz, Martin R., d.b.a. Chronometrics, Coral Gables, Fla. 866,307, pub. 12–24–68. Cl. 27.
Duracraft, Inc., Griggsville, Ill. 866,550, pub. 12–24–68. Cl. 50.
Dust-Tex Co.: *See*—
American Uniform Co.
Dyna S.A., Fribourg, Switzerland. 866,483, pub. 12–24–68. Cl. 46.
Eastern Shore Laboratories, Inc., Laurel, Del. 866,128, pub. 12–24–68. Cl. 18.
Eastern Stainless Steel Corp., Baltimore, Md. 805,367, canc. Cl. 14.
Eastman Kodak Co.: *See*—
Recordak Corp.
Eberhard Bauer Elektromotorenfabrik Gesellschaft mit Beschrankter Haftung, Esslingen-Neckar, Germany. 866,188, pub. 12–24–68. Cl. 21.
Eberhard Faber Inc., Wilkes-Barre, Pa. 866,381, pub. 12–24–68. Cl. 37.
Eclipse Sleep Products, Inc., Brooklyn, N.Y. 866,334, pub. 12–24–68. Cl. 32.
Ed-Data Corp.: *See*—
Educational Data Corp.
Educational Data Corp., d.b.a. Ed-Data Corp., Fort Lauderdale, Fla. 866,603, pub. 12–24–68. Cl. 100.
Effanbee Doll Corp., New York, N.Y. 744,056, canc. Cl. 22.
Effanbee Doll Corp., Brooklyn, N.Y. 866,202, pub. 12–24–68. Cl. 22.
Electrolytic Marine Corrosion Services Ltd., Victoria, British Columbia, Canada. 866,196, pub. 12–24–68. Cl. 21.
Electronic Switchgear (London) Ltd., Westminster, London, England. 866,275. pub. 12–24–68. Cl. 26.
El-Fax: *See*—
Fitz, Edward.
Eliassen, Gordon R., d.b.a. The Nugget, Allen Park, Mich. 866,608, pub. 12–24–68. Cl. 100.
Elliott, James E., d.b.a. Explorations Publishing Co., Berkeley, Calif. 866,420, pub. 12–24–68. Cl. 38.
Emenee Industries, Inc., New York, N.Y. 866,362, pub. 12–24–68. Cl. 36.
Endevco Corp., Pasadena, Calif. 866,278, pub. 12–24–68. Cl. 26.
Endo Laboratories, Inc.: *See*—
Endo Products Inc.
Endo Products Inc. to Endo Laboratories, Inc., Garden City, N.Y. 507,983, ren. 3–11–69. Cl. 18.
Engine Accessories Mfg. Co., Los Angeles, Calif. 866,086, pub. 12–24–68. Cl. 13.
Enterprise Aluminum Co., The, Massillon, Ohio. 866,074, pub. 12–24–68. Cl. 13.
Erba, Carlo, S.p.A., Milan, Italy. 866,492, pub. 12–24–68. Cl. 46.
Esquire, Inc., New York, N.Y. 866,631, pub. 12–24–68. Cl. 101.
Essex Wire Corp., Fort Wayne, Ind. 866,194, pub. 12–24–68. Multiple Class (Classes 21 and 26).
Essex Wire Corp., Fort Wayne, Ind. 866,284, pub. 12–24–68. Cl. 26.
Estabrooks, T. H., Co., Ltd., St. John, New Brunswick, Canada, to Brooke Bond Foods, Inc., Lake Success, N.Y. 442,091, ren. 3–11–69. Cl. 46.
Estee Lauder Inc., New York, N.Y. 866,575, pub. 12–24–68. Cl. 51.
Estee Lauder, Inc., New York, N.Y. 866,679. Cl. 51.
Esterbrook Pen Co., The, Camden, N.J., to Venus Esterbrook Corp., New York, N.Y. 505,010, ren. 3–11–69. Cl. 37.
Eswa, Gloor, Meier & Co., Chem.-Techn. Produkte, Wascherei-Bedarfsartikel, Stansstad, Nidwalden, Switzerland. 866,588, pub. 12–24–68. Cl. 52.
Ethicon, Inc., Somerville, N.J. 866,477, pub. 12–24–68. Cl. 44.
Excerpta Medica Foundation, Amsterdam, Netherlands. 866,421, pub. 12–24–68. Cl. 38.
Explorations Publishing Co.: *See*—
Elliott, James E.
Exquisite Form Industries, Inc., New York, N.Y. 866,562, pub. 12–24–68. Cl. 51.
F-D-C Reports, Inc., Washington, D.C. 866,406–7, pub. 12–24–68. Cl. 38.
Faces West, Inc., Santa Monica, Calif. 866,333, pub. 12–24–68. Cl. 32.
Faellesforeningen for Danmarks Brugsforeninger, Copenhagen, Denmark. 744,198, canc. Cl. 51.
Farah Industries: *See*—
Farah Mfg. Co., Inc.
Farah Mfg. Co., Inc., d.b.a. Farah Industries, El Paso, Tex. 866,438, pub. 12–24–68. Cl. 39.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. 866,107, pub. 12–24–68. Cl. 15.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt, am Main, Germany. 865,971, pub. 12–24–68. Cl. 1.
Farmers Regional Cooperative, Fort Dodge, Iowa. 866,535, pub. 12–24–68. Cl. 46.
Fashion Tress, Inc., Hialeah, Fla. 866,459, pub. 12–24–68. Cl. 40.
Fastener Products, Inc., Southport, Conn. 866,091, pub. 12–24–68. Cl. 13.
Federal Sweets & Biscuit Co., Clifton, N.J. 866,528, pub. 12–24–68. Cl. 46.
Fedtro, Inc., Rockville Centre, N.Y. 866,351, pub. 8–20–68. Cl. 34.
Felt Products Mfg. Co., Skokie, Ill. 866,672. Cl. 15.
Ferguson, David, Ltd., New York, N.Y. 866,446, pub. 12–24–68. Cl. 39.
Fiberfil: *See*—
Rexall Drug & Chemical Co.
Fibre-Metal Products Co., The, Chester, Pa. 866,453, pub. 12–24–68. Cl. 39.
Fichtel & Sachs Aktiengesellschaft, Schweinfurt-am-Main, Germany. 866,232, pub. 12–24–68. Cl. 23.
Field, Henry, Seed & Nursery Co., Shenandoah, Iowa. 743,992, canc. Cl. 10.
Financial Programs, Inc., Denver, Colo. 866,639, pub. 12–24–68. Cl. 102.
Firestone Tire & Rubber Co., The, Akron, Ohio. 865,981, pub. 12–24–68. Cl. 1.

Firth Sterling Corp., McKeesport, from Firth Sterling Inc., Pittsburgh, Pa. 866,247, pub. 10–22–68. Cl. 23.
Firth Sterling Inc.: *See*—
Firth Sterling Corp.
Fitz, Edward, d.b.a. El-Fax, Ardmore, Pa. 866,475, pub. 12–24–68. Cl. 44.
Flavor Tree Foods Co.: *See*—
Morris, Philip, Inc.
Fleer Corp., Philadelphia, Pa. 866,429, pub. 12–24–68. Cl. 38.
Fleet-Wing Corp.: *See*—
Canfield Oil Co., The.
Fleming, Bruce N., Ottawa, Kans. 866,240, pub. 12–24–68. Cl. 23.
Flex-O-Lite Division: *See*—
General Steel Industries, Inc.
Flint & Walling Mfg. Co., Inc., Kendallville, Ind. 866,327, pub. 12–24–68. Cl. 31.
Floral Chemetics Co., Weatherford, Tex. 866,024, pub. 12–24–68. Cl. 5.
Foley, Edward, Scranton, Pa. 866,109, pub. 12–24–68. Cl. 15.
Follett Publishing Co., Chicago, Ill. 866,412, pub. 12–24–68. Cl. 38.
Food City: *See*—
Thomas, Edd.
Ford, J., & Co. Ltd., Portneuf, Quebec, Canada. 866,182, pub. 12–24–68. Cl. 20.
Ford Motor Co., Dearborn, Mich. 866,116, pub. 12–24–68. Cl. 16.
Foreign Language League Schools, d.b.a. The Foreign Study League, Salt Lake City, Utah. 866,663, pub. 12–24–68. Cl. 107.
Foreign Study League, The: *See*—
Foreign Language League Schools.
Foremost-McKesson, Inc.: *See*—
McKesson & Robbins, Inc.
Foresight Corp., d.b.a. Water Soluble Products, Chicago, Ill. 866,582, pub. 12–24–68. Cl. 52.
Fouke Co., The: *See*—
Fouke Fur Co.
Fouke Fur Co., St. Louis, Mo., to The Fouke Co., Greenville, S.C. 509,569, ren. 3–11–69. Cl. 1.
Frederick, Purdue, Co., The, Yonkers, N.Y. 866,151, pub. 12–24–68. Cl. 18.
French & Scott Ltd., London, England. 866,557, pub. 12–24–68. Multiple Class (Classes 51 and 52).
Frito-Lay, Inc., Dallas, Tex. 866,517, pub. 12–24–68. Cl. 46.
Fritzsche Bros., Inc., New York, N.Y. 510,655, ren. 3–11–69. Cl. 6.
Fritzsche Bros., Inc., New York, N.Y. 866,036, pub. 12–24–68. Cl. 6.
Fuller Brush Co., The, East Hartford, Conn. 866,020–1, pub. 12–24–68. Cl. 4.
GAF Corp.: *See*—
General Aniline & Film Corp.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 866,180, pub. 12–24–68. Cl. 20.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 866,285, pub. 12–24–68. Cl. 26.
Gabel's Cosmetics, Inc., Los Angeles, Calif. 866,574, pub. 12–24–68. Cl. 51.
Gamco Industries, Inc., Big Spring, Tex. 866,398, pub. 12–24–68. Cl. 38.
Gebeco, Inc., Buffalo, N.Y. 866,469, pub. 12–24–68. Cl. 44.
Geigy Chemical Corp., Ardsley, N.Y. 866,157–8, pub. 12–24–68. Cl. 18.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 505,310, ren. 3–11–69. Cl. 52.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Appliance Mfg. Co., Omaha, Nebr. 866,255, pub. 10–8–68. Cl. 23.
General Cable Corp.: *See*—
Metal Textile Corp.
General Dynamics Corp., Chicago, Ill. 743,980, canc. Cl. 6.
General Foods Corp., White Plains, N.Y. 743,988, canc. Cl. 6.
General Foods Corp., White Plains, N.Y. 866,513, pub. 12–24–68. Cl. 46.
General Precision, Inc.: *See*—
General Precision Systems Inc.
General Precision Systems Inc., from General Precision, Inc., Glendale, Calif. 866,237, pub. 12–24–68. Cl. 23.
General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. 866,547, pub. 12–24–68. Cl. 50.
General Techniques, Inc., West Trenton, N.J. 743,935, canc. Cl. 1.
Genesco Inc.: *See*—
Miller, I., & Sons, Inc.
Genesco Inc., Nashville, Tenn. 866,451, pub. 12–24–68. Cl. 39.
Georgia-Pacific Corp., Portland, Oreg. 866,383, pub. 12–24–68. Cl. 37.
Gerber Products Co., Fremont, Mich. 866,489, pub. 12–24–68. Cl. 46.
Germain's, Inc., Los Angeles, Calif. 743,930, canc. Cl. 1.
Ghirardelli Chocolate Co.: *See*—
Golden Grain Macaroni Co.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 866,431, pub. 12–24–68. Cl. 38.
Giffen Industries, Inc., Miami, Fla. 866,197, pub. 12–24–68. Multiple Class (Classes 21 and 40).
Gilbert Shoe Stores, Inc., Columbus, Ohio. 866,445, pub. 12–24–68. Cl. 39.
Gillette Co., The: *See*—
Probak Corp.
Gillette Co., The, Boston, Mass. 866,578, pub. 12–24–68. Cl. 51.
Girl Scouts of the United States of America, New York, N.Y. 866,401, pub. 12–24–68. Cl. 38.
Glaser Bros., Inc., St. Louis, Mo. 744,117, canc. Cl. 39.
Glassips Inc., Towson, Md. 866,257, pub. 12–24–68. Cl. 23.
Globe Newspaper Co., Boston, Mass. 866,400, pub. 12–24–68. Cl. 38.
Gold Medal Jewelry Inc., New York, N.Y. 866,302, pub. 12–24–68. Cl. 27.
Golden Gate Salami Co., San Francisco, Calif. 866,536–7, pub. 12–24–68. Cl. 46.
Golden Grain Macaroni Co., d.b.a. Ghirardelli Chocolate Co., San Leandro, Calif. 866,531, pub. 12–24–68. Cl. 46.
Goodall, Clarence V., Sidell, Ill. 866,677. Cl. 23.
Goodyear Rubber Co., Middletown, Conn. 866,440–1, pub. 12–24–68. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 866,008, pub. 12–24–68. Cl. 2.
Gordo's Mexican Food Products, Los Angeles, Calif. 744,165, canc. Cl. 46.
Grace, W. R., & Co., Cambridge, Mass. 743,926, canc. Cl. 1.
Grace, W. R., & Co., New York, N.Y. 866,518, pub. 12–24–68. Cl. 46.
Gramatan Co. Inc. of Bronxville, N.Y., The, Bronxville, N.Y. 866,635, pub. 12–24–68. Cl. 102.
Gray, Dorothy, Ltd.: *See*—
Lehn & Fink Products Corp.
Grayco Enterprises Ltd., Montreal, Quebec, Canada. 866,512, pub. 12–24–68. Multiple Class (Classes 46 and 100).
Greer Enterprises, Inc., d.b.a. Hairstyling Research Co., Quincy, Mich. 866,571, pub. 12–24–68. Cl. 51.
Grolier Inc., New York, N.Y. 866,397, pub. 12–24–68. Cl. 38.
Grover, L. Chase: *See*—
Creative Concepts, Inc.
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 866,224, pub. 12–24–68. Cl. 22.
Guenther, C. H., & Son, Inc., d.b.a. Pioneer Flour Mills, San Antonio, Tex. 866,506, pub. 12–24–68. Cl. 46.
Guido Evangelistic Association, Inc., Metter, Ga. 866,415, pub. 12–24–68. Cl. 38.
Guier Products Mfg. Co.: *See*—
Guier, William.
Guier, William, d.b.a. Guier Products Mfg. Co., Tulsa, Okla. 744,046, canc. Cl. 22.
H/P Consultants Ltd., Chicago, Ill. 866,615, pub. 12–24–68. Cl. 100.
Hairstyling Research Co.: *See*—
Greer Enterprises, Inc.
Hallcrest Products, Inc., New York, N.Y. 744,091, canc. Cl. 37.
Hall-Neal Furnace Co., Indianapolis, Ind. 866,546, pub. 12–24–68. Cl. 50.
Hamilton Hamburgers, Inc., Noblesville, Ind. 866,539, pub. 12–24–68. Multiple Class (Classes 46 and 100).
Hampton Modern, Inc., to Hampton Shops, Paterson, N.J. 505,625, ren. 3–11–69. Cl. 32.
Hampton Shops: *See*—
Hampton Modern, Inc.
Hanger & Ames, Dallas, Tex. 866,063, pub. 12–24–68. Cl. 12.
Harris-Teller Inc., Chicago, Ill. 866,371, pub. 12–24–68. Cl. 36.
Harsco Corp., Wormleysburg, Pa. 866,053, pub. 12–24–68. Cl. 12.
Hart Industries, Inc., from Hart Mobile Homes Corp., Elkhart, Ind. 743,996, canc. Cl. 12.
Hart Mobile Homes Corp.: *See*—
Hart Industries, Inc.
Hartmann, M. W., Mfg. Co., Inc., Hutchinson, Kans. 866,243, pub. 12–24–68. Cl. 23.
Hasbro Industries, Inc., from Hassenfeld Bros. Inc., Pawtucket, R.I. 866,675–6. Cl. 22.
Hassenfeld Bros. Inc.: *See*—
Hasbro Industries, Inc.
Hassenstein: *See*—
Hassenstein, W. K. M.
Hassenstein, W. K. M., d.b.a. Hassenstein, Hollywood, Calif. 866,559, pub. 12–24–68. Cl. 51.
Haveg Industries, Inc., Wilmington, Del. 743,943, canc. Cl. 2.
Hawk & Buck Co., The, to Williamson-Dickie Mfg. Co., Fort Worth, Tex. 506,247, ren. 3–11–69. Cl. 39.
Health Facilities, Inc., Beaverton, Oreg. 866,604, pub. 12–24–68. Cl. 100.
Heidenberg Textile Fabrics Co., Closter, N.J. 744,265, canc. Cl. 42.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 866,225, pub. 11–19–68. Cl. 22.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 866,308, pub. 11–5–68. Cl. 27.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 866,324, pub. 11–12–68. Cl. 30.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 866,344, pub. 11–5–68. Cl. 33.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 866,393, pub. 10–29–68. Cl. 37.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 866,430, pub. 10–29–68. Cl. 38.
Henco Enterprises, Inc., Niles, Mich. 866,671. Cl. 9.
Her Majesty Underwear Co., Mauldin, S.C. 866,437, pub. 12–24–68. Cl. 39.
Hercules Inc.: *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 505,288, ren. 3–11–69. Cl. 9.
Hercules Powder Co., Wilmington, Del. 743,923, canc. Cl. 1.
Hercules Powder Co., Wilmington, Del. 743,939, canc. Cl. 1.
Hercules Powder Co., Wilmington, Del. 744,040, canc. Cl. 21.
Hercules Powder Co., Wilmington, Del. 744,097, canc. Cl. 37.
Hewitt-Robins Inc., Stamford, Conn. 866,233, pub. 12–24–68. Cl. 23.

Hexol, Inc., d.b.a. The Bex Co., San Francisco, Calif. 866,292, pub. 12–24–68. Cl. 26.
Highland Supply Corp., d.b.a. Arrow Brands, Highland, Ill. 866,380, pub. 12–24–68. Cl. 37.
Hijos de Ybarra S.A., Seville, Spain. 866,529, pub. 12–24–68. Cl. 46.
Hilton Hotels Corp., Chicago, Ill. 866,598, pub. 12–24–68. Cl. 100.
Hoffritz: *See*—
Hoffritz for Cutlery, Inc.
Hoffritz for Cutlery, Inc., d.b.a. Hoffritz, New York, N.Y. 866,567, pub. 12–24–68. Cl. 51.
Holloway, E. R., Ltd., Lavenham, Suffolk, England. 866,560, pub. 12–24–68. Cl. 51.
Holtkamp, Hermann, Isselburg, Niederrhein, Germany. 743,936, canc. Cl. 1.
Homart Foods Corp.: *See*—
Homart Foods, Inc.
Homart Foods, Inc., to Homart Foods Corp., Chicago, Ill. 507,148, ren. 3–11–69. Cl. 46.
Honda Giken Kogyo Kabushiki Kaisha, Tokyo, Japan. 866,231, pub. 12–28–68. Cl. 23.
Horn & Hardart Baking Co., Philadelphia, Pa. 744,170, canc. Cl. 46.
Horn & Hardart Co., The, New York, N.Y. 866,485, pub. 12–24–68. Cl. 46.
Houdaille Industries, Inc.: *See*—
Buffalo Bolt Co.
House of Windsor, Inc., Windsor, Pa. 866,122–3, pub. 12–24–68. Cl. 17.
House of Worsted-Tex, Inc.: *See*—
Cohen, Goldman & Co. Inc.
Howard Paper Mills, Inc., Dayton, Ohio, to St. Regis Paper Co., New York, N.Y. 506,862, ren. 3–11–69. Cl. 37.
Howard Paper Mills, Inc., Dayton, Ohio, to St. Regis Paper Co., New York, N.Y. 507,155, ren. 3–11–69. Cl. 37.
Howe-Baker Engineers, Inc., Tyler, Tex. 866,244, pub. 12–24–68. Cl. 23.
Hudnut, Richard, Morris Plains, N.J. 866,680–1. Cl. 51.
Hudson National, Inc.: *See*—
Hudson Vitamin Products.
Hudson Vitamin Products, d.b.a. Hudson National, Inc., New York, N.Y. 866,143, pub. 12–24–68. Cl. 18.
Hulman & Co., Terre Haute, Ind. 866,498, pub. 12–24–68. Cl. 46.
Humko Co., The, Memphis, Tenn., to National Dairy Products Corp., New York, N.Y. 508,709, ren. 3–11–69. Cl. 46.
Humphries, B. L., d.b.a. Art Artifices, Wichita Falls, Tex. 866,203, pub. 12–24–68. Cl. 22.
Hunt Electronics Co., Dallas, Tex. 866,674. Cl. 21.
Hutchison, George G., d.b.a. Hutchison-Western, Denver, Colo. 866,101, pub. 12–24–68. Cl. 13.
Hutchison-Western: *See*—
Hutchison, George G.
Hydraulic Brake Co., Los Angeles, Calif., and Detroit, Mich., to Wagner Electric Corp., Newark, N.J. 253,474, ren. 3–11–69. Cl. 19.
I-T-E Imperial Corp., Philadelphia, Pa. 866,103, pub. 12–24–68. Cl. 13.
Imperial Adhesives & Chemicals, Inc., from Imperial Adhesives Inc., Cincinnati, Ohio. 866,035, pub. 12–24–68. Cl. 6.
Imperial Adhesives Inc.: *See*—
Imperial Adhesives & Chemicals, Inc.
Imperial Chemical Industries Ltd., Millbank, London, England. 866,141, pub. 12–24–68. Cl. 18.
Imporiginals, Inc., New Rochelle, N.Y. 510,027, ren. 3–11–69. Cl. 39.
Inchem Graphic Products, Inc., Glendale, N.Y. 866,031, pub. 12–24–68. Cl. 6.
Industrial Lubricants, Inc., Omaha, Nebr. 866,111, pub. 12–24–68. Cl. 15.
Inland Steel Co., Chicago, Ill. 505,982, ren. 3–11–69. Cl. 13.
Inmark, Inc., Kensington, Md. 866,629, pub. 12–24–68. Cl. 101.
Integral Packaging Corp. Chicago Heights, Ill. 743,954, canc. Cl. 2.
International Minerals & Chemical Corp., Skokie, Ill. 743,941, canc. Cl. 1.
International Paint Co., Inc., New York, N.Y. 866,119, pub. 12–24–68. Cl. 16.
International Paper Co., New York, N.Y. 866,003, pub. 12–24–68. Cl. 2.
International Products Corp., New York, N.Y., to Barkey International Corp., Washington, D.C. 504,957–8 ren. 3–11–69. Cl. 6.
International Telephone & Telegraph Corp., Chicago, Ill. 744,249, canc. Cl. 21.
Interstate United Corp., Lincolnwood, Ill. 866,490–1, pub. 12–24–68. Cl. 46.
Intertel, Inc., Fort Wayne, Ind. 866,668, pub. 12–24–68. Cl. 200.
Ironsides Co., The, Columbus, Ohio. 866,108, pub. 12–24–68. Cl. 15.
Iroquois Popcorn Co., Inc., Chicago, Ill. 866,538, pub. 12–24–68. Cl. 46.
Jak Enterprises: *See*—
Knox, James.
Jenkin-Guerin, Inc., St. Louis, Mo. 510,522, ren. 3–11–69. Cl. 15.
Jerguson Gage & Valve Co., Somerville, Mass., to White Consolidated Industries, Inc., Cleveland, Ohio. 506,748, ren. 3–11–69. Cl. 26.
Johnson, Vernon C., Tulsa, Okla. 866,013, pub. 12–24–68. Cl. 3.
Jones, S. M., New Bern, N.C. 441,915, ren. 3–11–69. Cl. 46.
Joosten, S., N.V., Amsterdam, Netherlands. 866,175, pub. 12–24–68. Cl. 19.
Joval Ring Co., Inc., New York, N.Y. 866,301, pub. 12–24–68. Cl. 27.
Jures, Steve A., Lansing, Ill. 866,209, pub. 12–24–68. Cl. 22.
KVP Sutherland Paper Co., Kalamazoo, Mich. 743,953, canc. Cl. 2.
Kaiser Aluminum & Chemical Corp.: *See*—
Mexico Refractories Co.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 743,952, canc. Cl. 2.
Kansas Livestock Association, The, Topeka, Kans. 866,408, pub. 12–24–68. Cl. 38.
Kar-Trol Signal Co., Inc., Houston, Tex. 744,004, canc. Cl. 16.
Kayser-Roth Corp., New York, N.Y. 866,449, pub. 12–24–68. Cl. 39.
Kee Lox Mfg. Co., Rochester, N.Y. 866,377, pub. 12–24–68. Cl. 37.
Kellogg Co., Battle Creek, Mich. 866,507, pub. 12–24–68. Cl. 46.
Kendall Co., The, Walpole, Mass. 866,478, pub. 12–24–68. Cl. 44.
Kenney Mfg. Co., Warwick, R.I. 866,104, pub. 12–24–68. Cl. 13.
Kentile Floors Inc., Brooklyn, N.Y. 866,181, pub. 12–24–68. Cl. 20.
Kett Tool Co., The, Cincinnati, Ohio. 866,249, pub. 12–24–68. Cl. 23.
Key-Write Corp., Chicago, Ill. 866,621, pub. 12–24–68. Cl. 101.
Kimco of Minneapolis, Inc., Minneapolis, Minn. 866,272, pub. 12–24–68. Cl. 26.
Kiplinger Washington Editors, Inc., The, Washington, D.C. 866,418, pub. 12–24–68. Cl. 38.
Kitco Engineering & Mfg. Co., Inc., Buffton, Ind. 866,078, pub. 12–24–68. Cl. 13.
Knox, James, d.b.a. Jak Enterprises, Denver, Colo. 866,642, pub. 12–24–68. Cl. 103.
Kobe Steel, Ltd., Fukiai-ku, Kobe, Japan. 866,352, pub. 12–24–68. Cl. 34.
Kohnstamm, R. & A. (London), Inc., Newark, N.J. 504,893, ren. 3–11–69. Cl. 1.
Kotlar Edward A., d.b.a. Kotlar Enterprises, Grosse Pointe Woods, Mich 866,367, pub. 12–24–68. Cl. 36.
Kotlar Enterprises: *See*—
Kotlar, Edward A.
Kreisler, Jacques, Mfg. Corp., North Bergen, N.J. 866,313, pub. 12–24–68. Cl. 28.
Kronk, Adam B., d.b.a. Kronk Co., Detroit, Mich. 866,193, pub. 12–24–68. Cl. 21.
Kronk Co.: *See*—
Kronk, Adam B.
Krueger Metal Products, Inc., Green Bay, Wis. 866,339, pub. 12–24–68. Cl. 32.
Lafayette Brass Co., Inc., New York, N.Y. 866,090, pub. 12–24–68. Cl. 13.
Lake Chemical Co., Chicago, Ill. 866,062, pub. 12–24–68. Cl. 12.
Lander Co., Inc., New York, N.Y. 744,090, canc. Cl. 37.
Lanning Equipment Corp., Akron, Ohio. 866,648, pub. 12–24–68. Cl. 103.
Laquar Pharmaceuticals, Inc., Nutley, N.J. 744,031, canc. Cl. 18.
Larsen Co., The, Green Bay, Wis. 866,525, pub. 12–24–68. Cl. 46.
Lathrop, William M., d.b.a. Uncle Suzy Confections, Lakewood, Colo. 866,482, pub. 12–24–68. Cl. 46.
Leach Corp., South Pasadena, Calif. 866,291, pub. 12–24–68. Cl. 26.
Lear Siegler, Inc., Santa Monica, Calif., from National Broach & Machine Co., Detroit, Mich. 866,235, pub. 12–24–68. Multiple Class (Classes 23 and 26).
Lehn & Fink Products Corp., Bloomfield, N.J., to Dorothy Gray, Ltd., New York, N.Y. 502,174, ren. 3–11–69. Cl. 51.
Lemon Cove Association, Lemon Cove, to Lemon Cove Association Inc., Woodlake, Calif. 506,057, ren. 3–11–69. Cl. 46.
Lemon Cove Association Inc.: *See*—
Lemon Cove Association.
Leonard, Patrick J., Dallas, Tex. 866,310, ren. 12–24–68. Cl. 28.
Lesney Products & Co. Ltd., London, England. 866,200, pub. 12–24–68. Cl. 22.
Leupold & Stevens Instruments, Inc., Portland, Oreg. 737,516, cor. Cl. 26.
Levoy's Inc., d.b.a. Sorenson Research Corp., Salt Lake City, Utah. 866,480, pub. 12–24–68. Cl. 44.
Liebel-Flarsheim Co., The, Cincinnati, Ohio, to Sybron Corp., Rochester, N.Y. 507,917, ren. 3–11–69. Cl. 44.
Limbacher Paint & Color Works, Inc., Mount Vernon, N.Y. 866,118, pub. 12–24–68. Cl. 16.
Lindberg Products, Inc., Skokie, Ill. 866,210, pub. 12–24–68. Cl. 22.
Lipman, Julian A., d.b.a. Chemiquip Co., New York, N.Y. 866,061, pub. 12–24–68. Cl. 12.
Liquid Carbonic Corp., Chicago, Ill. 866,349–50, pub. 12–24–68. Cl. 34.
Lit-Ning Products Co., Beverly Hills, Calif. 865,998, pub. 12–24–68. Multiple Class (Classes 2, 25, and 32).
Livingston, Edw., & Sons, Inc., Kansas City, Mo. 744,208, canc. Cl. 52.
Loenco, Inc., Altadena, Calif. 866,265, pub. 12–24–68. Cl. 26.
Long, Susan L., d.b.a. Smokemaster Cleaning Service, Tucker, Ga. 866,645, pub. 12–24–68. Cl. 103.
Loseff Laboratory: *See*—
Loseff, Samuel S.
Loseff, Samuel S., d.b.a. Loseff Laboratory, Chicago, Ill. 744,017, canc. Cl. 18.

Ludlow Corp., Needham, from The Marvellum Co., Holyoke, Mass. 866,379, pub. 12–24–68. Cl. 37.
Lundell Controls, Inc., Chicago, Ill. 866,276, pub. 12–24–68. Cl. 26.
Luzier Inc., Kansas City, Mo. 866,568, pub. 12–24–68. Cl. 51.
Lyndamar Enterprises, Inc., New York, N.Y. 866,304, pub. 12–24–68. Cl. 27.
Lyric Distributors: *See*— Sears, Roebuck & Co.
MR Plastics & Coatings, Inc., Maryland Heights, Mo. 866,025, pub. 12–24–68. Cl. 5.
Macmillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 744,210, canc. Cl. 52.
Mactier Publishing Corp., New York, N.Y. 866,430, pub. 12–24–68. Cl. 38.
Madison Square Garden Corp., New York, N.Y. 866,660–1, pub. 12–24–68. Cl. 107.
Magic Snell Tackle Co., Inc.: *See*— Smeja, Eugene A.
Magic Snell Tackle Co., The: *See*— Smeja, Eugene A.
Mag-Powr Games, Inc., Sausalito, Calif. 744,058, canc. Cl. 22.
Majoda Tool & Mfg. Corp., Hoboken, N.J. 866,600, pub. 12–24–68. Cl. 100.
Maltz, Marvin N., d.b.a. A & M Supply Co., Los Angeles, Calif. 744,209, canc. Cl. 52.
Marcal Paper Mills, Inc., East Paterson, N.J. 866,387, pub. 12–24–68. Cl. 37.
Marita: *See*— Marita Spirits Ltd.
Marita Spirits Ltd., from W. P. Cashman, d.b.a. Marita & Marita Spirits & Wine Co., Cleveland, Ohio. 866,543, pub. 12–24–68. Cl. 49.
Marita Spirits & Wine Co.: *See*— Marita Spirits Ltd.
Marvellum Co., The: *See*— Ludlow Corp.
Marvin, Walter, d.b.a. Templar Oil Products Co., Brooklyn, N.Y., to Templar, Inc., South River, N.J. 244,751, ren. 3–11–69. Cl. 5.
Marx, Louis, & Co., Inc., New York, N.Y. 744,053, canc. Cl. 22.
Marx, Louis, & Co., Inc., New York, N.Y. 866,207, pub. 12–24–68. Cl. 22.
Mary Wear, Inc., Portland, Oreg. 866,452, pub. 12–24–68. Cl. 39.
Marymill Mfg. Corp., Scottsdale, Ariz. 744,185, canc. Cl. 50.
Mason Envelope Co. Inc., New York, N.Y. 744,246, canc. Cl. 2.
Mass, Morris B., d.b.a. Mass Sales Co., St. Louis, Mo. 866,298, pub. 12–24–68. Cl. 27.
Mass Sales Co.: *See*— Mass, Morris B.
Matsushita Electric Industrial Co., Ltd., Osaka, Japan. 754,587, canc. Cl. 24.
Matsushita Electric Industrial Co., Ltd., Osaka, Japan. 794,430, canc. Cl. 24.
Mattel, Inc., Hawthorne, Calif. 866,213, pub. 12–24–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 866,226–7, pub. 12–24–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 866,229–30, pub. 12–24–68. Cl. 22.
Mayer & Cie Pelzfabrik, Zurich, Switzerland. 866,443, pub. 12–24–68. Cl. 39.
McCray Refrigerator Co., Kendallville, Ind., to Streater Industries, Inc., Albert Lea, Minn. 505,710, ren. 3–11–69. Cl. 31.
McCreary Tire & Rubber Co., Indiana, Pa. 866,359, pub. 12–24–68. Cl. 35.
McCulloch Corp., Los Angeles, Calif. 866,258, pub. 12–24–68. Cl. 23.
McDonald Products Corp., Buffalo, N.Y. 866,046, pub. 12–24–68. Cl. 8.
McGraw Colorgraph Co., Burbank, Calif. 866,267, pub. 12–24–68. Cl. 26.
McKesson & Robbins, Inc., to Foremost-McKesson, Inc., New York, N.Y. 442,752, ren. 3–11–69. Cl. 51.
McKinley Litho Supply Co. Inc., Cincinnati, Ohio. 442,024, ren. 3–11–69. Cl. 6.
Mead Johnson & Co., Evansville, Ind. 866,168–71, pub. 12–24–68. Cl. 18.
Mead Johnson & Co., from Mead Johnson & Co., Evansville, Ind. 866,504, pub. 12–24–68. Cl. 46.
Mecanorma S.A., Paris, France. 866,399, pub. 12–24–68. Cl. 38.
Mechanics Machine Co., to Mechanics Universal Joint Co. of Rockford, Ill., Rockford, to Borg-Warner Corp., Chicago, Ill. 251,466, ren. 3–11–69. Cl. 23.
Mego Corp., New York, N.Y. 744,057, canc. Cl. 22.
Melridge, Inc.: *See*— Oregon Bulb Farms.
Mergers & Acquisitions, Inc., Washington, D.C. 866,432, pub. 12–24–68. Cl. 38.
Mesa Citrus Growers: *See*— Sierra Madre-Lamanda Citrus Assn.
Metal Textile Corp., West Orange, N.J., to General Cable Corp., New York, N.Y. 505,073, ren. 3–11–69. Cl. 4.
Metro-Graphics, Inc., Washington, D.C. 866,618, pub. 12–24–68. Cl. 101.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 505,454, ren. 3–11–69. Cl. 12.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 505,790, ren. 3–11–69. Cl. 12.
Mida Mfg. Inc., Philadelphia, Pa. 866,320, pub. 12–24–68. Cl. 28.
Middleton, John, Inc., King of Prussia, Pa. 866,124, pub. 12–24–68. Cl. 17.
Midwest Bank Card System, Inc., from Continental Illinois National Bank & Trust Co. of Chicago, Chicago, Ill. 866,632–3, pub. 12–24–68. Cl. 102.
Midwest Biscuit Co., Burlington, Iowa. 866,523, pub. 12–24–68. Cl. 46.
Miller, I., & Sons, Inc., Long Island City, N.Y., to Genesco Inc., Nashville, Tenn. 249,000, ren. 3–11–69. Cl. 39.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 441,797, ren. 3–11–69. Cl. 16.
Minute Man Dairy Stores, Inc., Atlantic City, N.J. 866,619, pub. 12–24–68. Cl. 101.
Mipro Metal Products Co., South San Francisco, Calif. 866,002, pub. 12–24–68. Multiple Class (Classes 2 and 39).
Mr. Bun, Inc., North Palm Beach, Fla. 866,614, pub. 12–24–68. Cl. 100.
Mr. & Mrs. Diet Co.: *See*— Mr. & Mrs. Diet, Inc.
Mr. & Mrs. Diet, Inc., from Roy E. Castetter, d.b.a. Mr. & Mrs. Diet Co., Cincinnati, Ohio. 744,143, canc. Cl. 46.
Modern Denture Research Co., Los Angeles, Calif. 866,470, pub. 12–24–68. Cl. 44.
Modular Cinemas of America, Inc., Atlanta, Ga. 866,662, pub. 12–24–68. Cl. 107.
Montre de Sport Geneve S.A., Geneva, Switzerland. 866,299, pub. 12–24–68. Cl. 27.
Moore, J. A., d.b.a. Delaware County Realty, Delaware, Ohio. 866,424, pub. 12–24–68. Cl. 38.
Moorman Mfg. Co. of California, Inc., San Gabriel, Calif. 866,136, pub. 12–24–68. Cl. 18.
More Tishans, The, Stillwater, Minn. 866,665, pub. 12–24–68. Cl. 107.
Moritz Thienelt, Likorfabrik "Echte Kroatsbeere," Holzbuettgen, Germany. 866,541, pub. 12–24–68. Cl. 49.
Morris, Philip, Inc.: *See*— Burma-Vita Co.
Morris, Philip, Inc., d.b.a. Flavor Tree Foods Co., New York, N.Y. 866,522, pub. 12–24–68. Cl. 46.
Motomco, Inc., Clark, N.J. 866,264, pub. 12–24–68. Cl. 26.
Motor City Paper Tube Co., Detroit, Mich. 865,996, pub. 12–24–68. Cl. 2.
Mount Airy Knitting Co., The, to Spencer's Inc., Mount Airy, N.C. 505,340, ren. 3–11–69. Cl. 39.
Mowatt & Moore Ltd., Pointe Claire, Quebec, Canada. 866,561, pub. 12–24–68. Cl. 51.
Mueller, C. F., Co., Jersey City, N.J. 866,510, pub. 12–24–68. Cl. 46.
Multiplex Co., St. Louis, Mo. 866,326, pub. 12–24–68. Cl. 31.
Munsingwear, Inc., Minneapolis, Minn. 510,271, ren. 3–11–69. Cl. 39.
Murgolo, Nicholas G., d.b.a. Novel Pleat Co., Derby, Conn. 866,082, pub. 12–24–68. Cl. 13.
Myers Rum Co. Ltd., Nassau, Bahamas. 866,542, pub. 12–24–68. Cl. 49.
NTT Enterprises, Inc., Hollywood, Calif. 866,271, pub. 12–24–68. Cl. 26.
Nakat Packing Corp., The, New York, N.Y. 502,822, ren. 3–11–69. Cl. 46.
Nathan's Famous, Inc., Coney Island, N.Y. 866,595, pub. 12–24–68. Cl. 100.
National Association of Wholesalers, The, Washington, D.C. 866,667, pub. 12–24–68. Cl. 200.
National Broach & Machine Co.: *See*— Siegler, Lear, Inc.
National Dairy Products Corp.: *See*— Bedford Products, Inc. Humko Co., The.
National Dairy Products Corp., Chicago, Ill. 744,134, canc. Cl. 46.
National Dairy Products Corp., Chicago, Ill. 866,505, pub. 12–24–68. Cl. 46.
National Federation of Coffee Growers of Colombia, New York, N.Y. 866,500–2, pub. 12–24–68. Cl. 46.
National Starch & Chemical Corp., New York, N.Y. 866,039–40, pub. 12–24–68. Cl. 6.
National Urban League, Inc., The, New York, N.Y. 866,602, pub. 12–24–68. Cl. 100.
Nationwide Homes Corp., Atlanta, Ga. 744,226, canc. Cl. 103.
Nattermann, A., & Cie, Cologne-Braunsfeld, Germany. 774,021–4, canc. Cl. 18.
Nekoosa-Edwards Paper Co., Port Edwards, Wis. 504,991, ren. 3–11–69. Cl. 37.
Neoweld Electric Inc., Cornwall Bridge, Conn. 866,345, pub. 12–24–68. Cl. 34.
Nicholas International Ltd., Toronto, Ontario, Canada. 744,026, canc. Cl. 18.
Nielsen, A. C., Co., Chicago, Ill. 866,624–5, pub. 12–24–68. Cl. 101.
Norseman (Cables & Extrusions) Ltd., from Norseman Ropes Ltd., Manningtree, Essex, England. 866,044, pub. 12–24–68. Multiple Class (Classes 7 and 13).
Norseman Ropes Ltd.: *See*— Norseman (Cables & Extrusions) Ltd.
North American Rockwell Corp., Pittsburgh, Pa. 866,325, pub. 12–24–68. Cl. 31.
Northeast Airlines, Inc., Boston, Mass. 866,651, pub. 12–24–68. Cl. 105.
Northern Laboratories, to Northern Laboratories, Manitowoc, Wis. 501,131, ren. 3–11–69. Cl. 6.
Northwestern Golf Co., Chicago, Ill. 866,223, pub. 12–24–68. Cl. 22.
Norwich Pharmacal Co., The, Norwich, N.Y. 866,159, pub. 12–24–68. Cl. 18.
Novel Pleat Co.: *See*— Murgolo, Nicholas G.
Nugget, The: *See*— Eliassen, Gordon R.

Nutrilite Products, Inc., Buena Park, Calif. 866,321, pub. 12–24–68. Cl. 29.
Nutrition Square, Inc., Pittsburgh, Pa. 866,511, pub. 12–24–68. Cl. 46.
Nu-Vita Products, Inc., Pittsburgh, Pa. 743,961, canc. Cl. 6.
O'Brien Mfg. Co., Inc., Chicago, Ill. 866,234, pub. 12–24–68. Cl. 23.
Oeland, Ernest N., Jr., d.b.a. Dial-A-Play, West Covina, Calif. 866,410, pub. 12–24–68. Cl. 38.
Old Home Creameries, Inc., Minneapolis, to Old Home Foods, Inc., St. Paul, Minn. 256,411, ren. 3–11–69. Cl. 46.
Old Home Foods, Inc.: *See*— Old Home Creameries, Inc.
Olga Co., Van Nuys, Calif. 866,573, pub. 12–24–68. Cl. 51.
Olin Mathieson Chemical Corp., East Alton, Ill. 743,947, canc. Cl. 2.
Olin Mathieson Chemical Corp., New York, N.Y. 866,463, pub. 12–24–68. Cl. 42.
Oneida Ltd., Oneida, N.Y. 866,309, pub. 12–24–68. Cl. 28.
Onthank, G. W., Co., Des Moines, Iowa. 866,460, pub. 12–24–68. Cl. 42.
Oregon Bulb Farms, Sandym, to Milridge, Inc., Gresham, Oreg. 439,932, ren. 3–11–69. Cl. 1.
Orient Watch Co., Ltd., Tokyo, Japan. 866,297, pub. 12–24–68. Cl. 27.
Ort, Lewis J., La Vale, Md. 866,495, pub. 12–24–68. Cl. 46.
Oshkosh Trunks & Luggage, Oshkosh, Wis., to Droutman Mfg. Co., Inc., New York, N.Y. 506,321, ren. 3–11–69. Cl. 3.
Otis Elevator Co., New York, N.Y. 256,198, ren. 3–11–69. Cl. 4.
Ouren Seed Co., Council Bluffs, Iowa. 743,932–3, canc. Cl. 1.
Outboard Boating Club of America, d.b.a. Outboard Industry Assn., Chicago, Ill. 744,232, canc. Cl. 107.
Outboard Industry Assn.: *See*— Outboard Boating Club of America.
Pacific Car & Foundry Co., Renton, Wash. 866,242, pub. 12–24–68. Cl. 23.
Pacific Scientific Co., City of Commerce, Calif. 866,347, pub. 12–24–68. Cl. 34.
Pacific Vegetable Oil Corp., San Francisco, Calif. 865,973–4, pub. 12–24–68. Cl. 1.
Paine Co., The, Addison, Ill. 866,085, pub. 12–24–68. Cl. 13.
Paladino, Dick, Las Vegas, Nev. 866,364, pub. 12–24–68. Cl. 36.
Palmer-Shile Co., Detroit, Mich. 866,332, pub. 12–24–68. Cl. 32.
Pan American Laboratories, Inc., New Orleans, La. 866,144, pub. 12–24–68. Cl. 18.
Pan American Petroleum Corp.: *See*— Pan American Refining Corp.
Pan American Refining Corp., New York, N.Y., to Pan American Petroleum Corp., Tulsa, Okla. 505,296, ren. 3–11–69. Cl. 6.
Pappagallo, Inc., New York, N.Y. 866,294, pub. 12–24–68. Cl. 26.
Parkdale Mfg., Inc., Westminster, Calif. 866,177, pub. 12–24–68. Cl. 19.
Paterson Parchment Paper Co., Bristol, Pa. 866,388, pub. 12–24–68. Cl. 37.
Patrick, Burton E., Kokomo, Ind. 744,050, canc. Cl. 22.
Paula, C. M., Co., The, Cincinnati, Ohio. 866,392, pub. 12–24–68. Cl. 37.
Pedershaab Maskinfabrik A/S, Brondersiev, Denmark. 866,238–9, pub. 12–24–68. Cl. 23.
Pelouze Mfg. Co., Evanston, Ill. 866,290, pub. 12–24–68. Cl. 26.
Penberthy Lumber Co., Los Angeles, Calif. 866,066, pub. 12–24–68. Cl. 12.
Penguin Associates, Inc.: *See*— Penguin Industries, Inc.
Penguin Industries, Inc., from Penguin Associates, Inc., Parkesburg, Pa. 866,047, pub. 12–17–68. Multiple Class (Classes 9, 22, 26, and 44).
Penick, S. B., & Co.: *See*— Corn Products Co.
Penn Corp., Princeton, N.J., from Ritepoint Corp., St. Louis, Mo. 866,390, pub. 12–24–68. Cl. 37.
Penney, J. C., Co., New York, N.Y. 866,010, pub. 12–24–68. Cl. 3.
Pennsalt Chemicals Corp., Philadelphia, Pa. 866,586, pub. 12–24–68. Cl. 52.
Peter Pan, International, Inc., New York, N.Y. 866,444, pub. 12–24–68. Cl. 39.
Petrochemicals Co., Inc., Fort Worth, Tex. 866,026, pub. 12–24–68. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 866,162–4, pub. 12–24–68. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 866,166, pub. 12–24–68. Cl. 18.
Philadelphia Hockey Club, Inc., The, Philadelphia, Pa. 866,656, pub. 12–24–68. Cl. 107.
Philco-Ford Corp., Philadelphia, Pa. 866,368, pub. 12–24–68. Cl. 36.
Phillips Petroleum Co., Bartlesville, Okla. 866,034, pub. 12–24–68. Cl. 6.
Phillips Petroleum Co., Bartlesville, Okla. 866,112, pub. 12–24–68. Cl. 15.
Photon, Inc., Wilmington, Mass. 866,283, pub. 12–24–68. Cl. 26.
Piedmont Shirt Co.: *See*— Wing's Knitting Mills, Inc.
Pinol Mfg. Co., Inc., Philadelphia, Pa. 744,013, canc. Cl. 16.
Pioneer Flour Mills: *See*— Guenther, C. H., & Son, Inc.
Pioneer Products, Inc., Ocala, Fla. 866,114, pub. 12–24–68. Cl. 15.
Plan: *See*— Castle & Cooke, Inc.
Plantation Foods Corp., Miami, Fla. 866,516, pub. 12–24–68. Cl. 46.
Plascon AG, Munchenstein, Switzerland. 866,357, pub. 12–24–68. Cl. 34.
Plastic Coating Corp., The, South Hadley, Mass. 504,941, ren. 3–11–69. Cl. 37.
Platt Luggage, Inc., Chicago, Ill. 866,016, pub. 12–24–68. Cl. 3.
Plexorize, Inc., Long Island City, N.Y. 866,022, pub. 12–24–68. Cl. 4.
Po-Li-Glot Publications, Inc., New York, N.Y. 866,414, pub. 12–24–68. Cl. 38.
Poole Silver Co., Inc., Taunton, Mass. 866,314, pub. 12–24–68. Cl. 28.
Popell Bros., Inc., Chicago, Ill. 866,256, pub. 12–24–68. Cl. 23.
Porter-Spear Co., The, Hagerstown, Md. 866,279, pub. 12–24–68. Cl. 26.
Potlatch Forests, Inc., Pomona, Calif. 744,085, canc. Cl. 37.
Powell & Scholefield Ltd., Liverpool, England. 866,135, pub. 12–24–68. Cl. 18.
Prak-T-Kal Vapodynamics Corp., Elizabeth, N.J. 866,479, pub. 12–24–68. Cl. 44.
Printer's Ink Publishing Co. Inc., to Decker Communications, Inc., New York, N.Y. 506,095, ren. 3–11–69. Cl. 38.
Probak Corp., Jersey City, N.J., and New York, N.Y., to The Gillette Co., Boston, Mass. 257,260, ren. 3–11–69. Cl. 23.
Procter & Gamble Co., The, Cincinnati, Ohio. 252,108, ren. 3–11–69. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 253,180, ren. 3–11–69. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 505,820, ren. 3–11–69. Cl. 51.
Procter & Gamble Co., The, Cincinnati, Ohio. 506,853, ren. 3–11–69. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 866,577, pub. 12–24–68. Cl. 51.
Prospect Leather Goods Co., Inc., New York, N.Y. 866,019, pub. 12–24–68. Cl. 3.
Protection Products Mfg. Co., Kalamazoo, Mich. 743,969, canc. Cl. 6.
Purchasing Agents Association of Los Angeles: *See*— Purchasing Management Association-Los Angeles.
Purchasing Management Association-Los Angeles, from Purchasing Agents Association of Los Angeles, Los Angeles, Calif. 866,413, pub. 12–24–68. Cl. 38.
Purdue Frederick Co., The, Yonkers, N.Y. 866,149–50, pub. 12–24–68. Cl. 18.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 252,550, ren. 3–11–69. Cl. 15.
Purex Corp., Ltd., Lakewood, Calif. 866,593, pub. 12–24–68. Cl. 52.
Putman Publishing Co., Chicago, Ill. 755,719, cor. Cl. 38.
Quaker Oats Co., The, Chicago, Ill. 866,533–4, pub. 12–24–68. Cl. 46.
Quality Kitchen Foods Inc., Danbury, Conn. 866,524, pub. 12–24–68. Cl. 46.
Quik Chek Systems, Inc., Detroit, Mich. 866,378, pub. 12–24–68. Cl. 37.
RGV Industries: *See*— Reynolds Research & Mfg. Corp.
Radiant Color Co., Oakland, Calif. 744,089, canc. Cl. 37.
Radiant Color Co., Richmond, Calif. 866,023, pub. 12–24–68. Cl. 5.
Radiant Color Co., Richmond, Calif. 866,117, pub. 12–24–68. Cl. 16.
Radiant Color Co., Richmond, Calif. 866,384, pub. 12–24–68. Cl. 37.
Radio Corp. of America, New York, N.Y. 866,374–5, pub. 12–24–68. Cl. 36.
Radio Shack: *See*— Tandy Corp.
Raleigh Industries Ltd., Nottingham, England. 866,173, pub. 12–24–68. Cl. 19.
Rancho, Henrietta, Products Co., Fresno, Calif. 866,145, pub. 12–24–68. Cl. 18.
Raphael, R. J., Inc., Miami, Fla. 866,303, pub. 12–24–68. Cl. 27.
Raypak Co., Inc., South El Monte, Calif. 866,354, pub. 12–24–68. Cl. 34.
Raytheon Co., Lexington, Mass. 866,280, pub. 12–24–68. Cl. 26.
Recordak Corp., to Eastman Kodak Co., Rochester, N.Y. 251,756, ren. 3–11–69. Cl. 26.
Recoton Corp., Long Island City, N.Y. 866,591, pub. 12–24–68. Cl. 52.
Reddi-Wip, Inc., Los Angeles, Calif. 866,530, pub. 12–24–68. Cl. 46.
Redema Corp., Livonia, Mich. 866,095, pub. 12–24–68. Cl. 13.
Ree Ceel Corp., Norfolk, Va. 744,094, canc. Cl. 37.
Refined Products Co.: *See*— Chicopee Mfg. Corp.
Regent Sports Co., Hauppauge, N.Y. 866,218, pub. 12–24–68. Cl. 22.
Regie Nationale des Usines Renault, Billancourt, France. 744,037, canc. Cl. 19.
Reid & Reid, Inc., Long Island City, N.Y. 866,458, pub. 12–24–68. Cl. 39.
Releasall Ltd., Montreal, Quebec, Canada. 866,028, pub. 12–24–68. Cl. 6.
Republic Steel Corp., Cleveland, Ohio. 866,102, pub. 12–24–68. Cl. 13.
Research Products Mfg. Co., Dallas, Tex. 866,356, pub. 12–24–68. Cl. 34.
Revlon, Inc., New York, N.Y. 744,275, canc. Cl. 51.

Rex Chainbelt Inc., Milwaukee, Wis. 866,100, pub. 12–24–68. Cl. 13.
Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 866,092, pub. 12–24–68. Cl. 13.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 866,476, pub. 12–24–68. Cl. 44.
Rexall Drug & Chemical Co., d.b.a. Fiberfil, Los Angeles, Calif. 865,975, pub. 12–24–68. Cl. 1.
Rexarc, Inc.: *See*—
Sight Feed Generator Co., The.
Reynolds Research & Mfg. Corp., from RGV Industries, McAllen, Tex. 866,172, pub. 10–4–66. Cl. 19.
Richards, A. A., & Co., Inc., Mobile Ala. 865,999, pub. 12–24–68. Cl. 2.
Ridge Tool Co., Elyria, Ohio. 866,405, pub. 12–24–68. Cl. 38.
Rieke Corp., Auburn, Ind. 866,098, pub. 12–24–68. Cl. 13.
Ritepoint Corp.: *See*—
Penn Corp.
Ritter Pfaudler Corp., Rochester, N.Y. 865,997, pub. 12–24–68. Cl. 2.
Ritter Pfaudler Corp., Rochester, N.Y. 866,474, pub. 12–24–68. Cl. 44.
Rob Roy Co., Inc., New York, N.Y. 866,450, pub. 12–24–68. Cl. 39.
Roberts Laboratories: *See*—
Roberts, Leonard L.
Roberts, Leonard L., d.b.a. Roberts Laboratories, Denver, Colo. 866,558, pub. 12–24–68. Cl. 51.
Robins, A. H., Co., Inc., Richmond, Va. 744,036, canc. Cl. 18.
Robo-Wash, Inc., Kansas City, Mo. 866,641, pub. 9–27–66. Cl. 103.
Rocket Citrus Products, Inc., St. Louis, Mo. 866,481, pub. 12–24–68. Cl. 45.
Rockwell Mfg. Co., Pittsburgh, Pa. 506,021–2, ren. 3–11–69. Cl. 38.
Rockwell Mfg. Co., Pittsburgh, Pa. 506,073, ren. 3–11–69. Cl. 38.
Rockwell Mfg. Co., Pittsburgh, Pa. 866,245, pub. 12–24–68. Cl. 23.
Roesbery Laboratories, Inc., Melba, Idaho. 866,167, pub. 12–24–68. Cl. 18.
Rolling Reader Publishing Co., The: *See*—
Stolpen, Beulah H.
Romper Room, Inc., Baltimore, Md. 866,201, pub. 12–24–68. Cl. 22.
Ronson Corp., Woodbridge, N.J. 866,348, pub. 12–24–68. Cl. 34.
Roseburg Lumber Co., Roseburg, Oreg. 866,058, pub. 12–24–68. Cl. 12.
Ross Porta-Plant, Inc., Brownwood, Tex. 866,241, pub. 12–24–68. Cl. 23.
Rothmans of Pall Mall Ltd., Zurich, Switzerland. 866,125, pub. 12–24–68. Cl. 17.
Rowe Electronics, Inc., Summit, N.J. 866,268, pub. 12–24–68. Cl. 26.
Roxane, Philips, Inc., New York, N.Y. 866,129–30, pub. 12–24–68. Cl. 18.
Royal Zenith Corp., New York, N.Y. 866,253, pub. 12–24–68. Cl. 23.
SCM Corp., Cleveland, Ohio. 865,982, pub. 12–24–68. Cl. 1.
S.p.A. Signori & Bondioli, Milan, Italy. 866,311–12, pub. 12–24–68. Cl. 28.
St. Regis Paper Co.: *See*—
Howard Paper Mills, Inc.
St. Regis Pulp & Paper Corp.: *See*—
Creamery Package Mfg. Co., The.
Sampino, S., & Waverly Beauty Products, Inc., d.b.a. Waverly Beauty Products, Brooklyn, N.Y. 866,581, pub. 12–24–68. Cl. 52.
Sanrival, S.r.l., Milan, Italy. 866,439, pub. 12–24–68. Cl. 39.
Saunders Archery Target Co., Columbus, Nebr. 744,252, canc. Cl. 22.
Saxe, Van Rensselaer P., Baltimore, Md. 866,065, pub. 12–24–68. Cl. 12.
Scantlin Electronics, Inc., Los Angeles, Calif. 866,191, pub. 12–24–68. Cl. 21.
Schaper Mfg. Co., Inc., Minneapolis, Minn. 866,214–16, pub. 12–24–68. Cl. 22.
Schenley Industries, Inc., d.b.a. Weston Winery, New York, N.Y. 744,271, canc. Cl. 47.
Schimmelpenninck Sigarenfabrieken V/H Geurts & Van Schuppen N.V., Wageningen, Netherlands. 866,121, pub. 12–24–68. Cl. 17.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 866,540, pub. 12–24–68. Cl. 48.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 866,617, pub. 12–24–68. Cl. 100.
Schmidt, John F., Jr., Troutdale, Oreg. 865,972, pub. 12–24–68. Cl. 1.
Scott, O. M., & Sons Co., The, Marysville, Ohio. 866,050, pub. 12–24–68. Cl. 10.
Screen Gems, Inc., New York, N.Y. 866,000, pub. 12–24–68. Multiple Class (Classes 2, 22, 26, and 39).
Sea & Ski Corp., San Francisco, Calif. 866,566, pub. 12–24–68. Cl. 51.
Seamless Rubber Co., The: *See*—
Rexall Drug & Chemical Co.
Searle, G. D., & Co., Skokie, Ill. 866,140, pub. 12–24–68. Cl. 18.
Sears, Roebuck & Co., Chicago, Ill. 744,010, canc. Cl. 16.
Sears, Roebuck & Co., Chicago, Ill. 744,065, canc. Cl. 23.
Sears, Roebuck & Co., Chicago, Ill. 866,260, pub. 12–24–68. Cl. 24.
Sears, Roebuck & Co., d.b.a. Lyric Distributors, Chicago, Ill. 866,556, pub. 12–24–68. Cl. 51.
Sedames Laboratories, Inc., Boston, Mass. 866,152, pub. 12–24–68. Cl. 18.
Serex Inc., Twinsburg, Ohio. 865,987, pub. 12–24–68. Cl. 1.
Shade, William A., Co., Inc., Belmont, Calif. 866,493, pub. 12–24–68. Cl. 40.
Shandon Scientific Co. Ltd., London, England. 866,281, pub. 12–24–68. Cl. 26.
Shapiro & Son Bedspread Corp., New York, N.Y. 866,464, pub. 12–24–68. Cl. 42.
Sherwin-Williams Co., The, Cleveland, Ohio. 744,011, canc. Cl. 16.
Shur-Dol Chemical Co., Holland, Mich. 866,583, pub. 12–24–68. Cl. 52.
Sierra Madre-Lamanda Citrus Assn., Lamanda Park, Calif., to Mesa Citrus Growers, Mesa, Ariz. 254,768, ren. 3–11–69. Cl. 46.
Sight Feed Generator Co., The, to Rexarc, Inc., West Alexandria, Ohio. 510,233, ren. 3–11–69. Cl. 34.
Signetics Corp., Sunnyvale, Calif. 866,183, pub. 7–9–68. Cl. 21.
Sinclair, John, Ltd., Basildon, England. 251,404, ren. 3–11–69. Cl. 17.
Sinclair-Koppers Co., Pittsburgh, Pa. 865,984, pub. 12–24–68. Cl. 1.
Slazengers Ltd., d.b.a. Challenge House, Croydon, Surrey, England. 859,037, cor. Multiple Class (Classes 22 and 39).
Smeja, Eugene A., d.b.a. The Magic Snell Tackle Co., Rochester, to Magic Snell Tackle Co., Inc., Canandaigua, N.Y. 441,466, ren. 3–11–69. Cl. 22.
Smith, A. O., Corp., Milwaukee, Wis. 866,088, pub. 12–24–68. Cl. 13.
Smokemaster Cleaning Service: *See*—
Long, Susan L.
Societe des Accumulateurs Fixes et de Traction, Romainville, France. 866,184, pub. 12–24–68. Cl. 21.
Societe Rhodiaceta, Paris, France. 743,934, canc. Cl. 1.
Societe Rhodiaceta, Paris, France. 865,980, pub. 12–24–68. Cl. 1.
Societe Rhodiaceta, Paris, France. 866,014, pub. 12–24–68. Cl. 3.
Societe Rhodiaceta, Paris, France. 866,382, pub. 12–24–68. Cl. 37.
Sorenson Research Corp.: *See*—
Levoy's Inc.
Soulville Records, Harrisburg, Pa. 866,365, pub. 12–24–68. Cl. 36.
Space Craft Covers, Huntington, W. Va. 744,088, canc. Cl. 37.
Sparkle Cleansers & Launderers, Inc., d.b.a. Sparkle Cleansers, Inc., Brookline, Mass. 849,169, cor. Cl. 103.
Spaulding & Co., Chicago, Ill. 442,832, ren. 3–11–69. Cl. 30.
Spectrochemical Laboratories, Inc., Pittsburgh, Pa. 744,220, canc. Cl. 101.
Spencer's Inc.: *See*—
Mount Airy Knitting Co., The.
Sperry Rand Corp., New York, N.Y. 866,389, pub. 12–24–68. Cl. 37.
Sperry Rand Corp., New York, N.Y. 866,391, pub. 12–24–68. Cl. 37.
Sperry Rand Corp., New York, N.Y. 866,394, pub. 12–24–68. Cl. 37.
Spindler & Sauppe, Glendale, Calif. 866,263, pub. 12–24–68. Cl. 26.
Spiratone, Inc., Flushing, N.Y. 866,287–9, pub. 12–24–68. Cl. 26.
Spo, Inc., Cleveland, Ohio. 440,946, ren. 3–11–69. Cl. 23.
Sportsmaster Corp., The, Detroit, Mich. 744,100, canc. Cl. 38.
Spoz-Pac, Inc., Nutley, N.J. 866,006, pub. 12–24–68. Cl. 2.
Spra-White Chemical Co., Inc., Cedar Rapids, Iowa. 744,181, canc. Cl. 50.
Staff Supermarket Associates, Inc., Jericho, N.Y. 866,623, pub. 12–24–68. Cl. 101.
Standard Brands Inc., New York, N.Y. 507,139, ren. 3–11–69. Cl. 46.
Standard Dayton Corp., Dayton, Ohio. 866,254, pub. 12–24–68. Cl. 23.
Standard Milling Co., Kansas City, Mo. 866,521, pub. 12–24–68. Cl. 46.
Standard Oil Co., Flemington, N.J. 866,051, pub. 12–24–68. Cl. 10.
Standard Oil Co., Flemington, N.J. 866,110, pub. 12–24–68. Cl. 15.
Standard Oil Co., Flemington, N.J. 866,526, pub. 12–24–68. Cl. 46.
Standard Packaging Corp., Stamford, Conn. 866,251, pub. 12–24–68. Cl. 23.
Stanley Home Products, Inc., Westfield, Mass. 866,587, pub. 12–24–68. Cl. 52.
Star Broadcasting Corp., Hartadale, N.Y. 866,649, pub. 12–24–68. Cl. 104.
Steinerohn, Peter J., M.D., Coral Gables, Fla. 866,409, pub. 12–24–68. Cl. 38.
Stereodyne, Inc.: *See*—
Troy National Bank.
Stern's Nurseries, Inc., Geneva, N.Y. 743,940, canc. Cl. 1.
Stevcoknit Textile Co., New York, N.Y. 866,462, pub. 12–24–68. Cl. 42.
Stewart In-Fra-Red, Inc., Harvard, Ill. 866,488, pub. 12–24–68. Cl. 46.
Stolpen, Beulah H., d.b.a. The Rolling Reader Publishing Co., Westport, Conn. 866,206, pub. 12–24–68. Cl. 22.
Streater Industries, Inc.: *See*—
McCray Refrigerator Co.
Success Motivation Institute, Inc., Waco, Tex. 866,434, pub. 12–24–68. Cl. 38.
Sucrest Corp., New York, N.Y. 866,532, pub. 12–24–68. Cl. 46.

Sunbeam Corp., Chicago, Ill. 866,248, pub. 12–24–68. Cl. 23.
Svenska Diamantbergborrnings Aktiebolaget, Sundbyberg, Sweden. 866,273, pub. 12–24–68. Cl. 26.
Sweden Freezer Mfg. Co., Seattle, Wash. 866,467, pub. 12–24–68. Cl. 44.
Sybron Corp.: *See*—
Liebel-Flarsheim Co., The.
T. G. & Y. Stores Co., Oklahoma City, Okla. 866,466, pub. 12–24–68. Cl. 43.
Tak, Inc., Minneapolis, Minn. 866,252, pub. 12–24–68. Cl. 23.
Tandy Corp., d.b.a. Radio Shack, Boston, Mass. 866,277, pub. 12–24–68. Cl. 26.
Tarkio Molasses Feed Co., Kansas City, Mo. 744,147, canc. Cl. 46.
Taylor Corp., Valley Forge, Pa. 865,977, pub. 12–24–68. Cl. 1.
Taylor Provisions Co., The, Trenton, N.J. 73,183, ren. 3–11–69. Cl. 46.
Technical Education & Mfg., Inc., Ferndale, Mich. 866,282, pub. 12–24–68. Cl. 26.
Technical Rubber Co., Inc., Johnstown, Ohio. 866,360, pub. 12–24–68. Cl. 35.
Telepro Industries, Inc., Cherry Hill, N.J. 866,372, pub. 12–24–68. Cl. 36.
Tele-Quick Corp., New Haven, Ind. 866,644, pub. 12–24–68. Cl. 103.
Templar, Inc.: *See*—
Marvin, Walter.
Templar Oil Products Co.: *See*—
Marvin, Walter.
Textron Inc., Providence, R.I. 866,317–19, pub. 12–24–68. Cl. 28.
Textron Inc., Providence, R.I. 866,305, pub. 12–24–68. Multiple Class (Classes 27 and 28).
Textron Inc., Providence, R.I. 866,385, pub. 12–24–68. Cl. 37.
Think Thin International, Long Beach, Calif. 866,370, pub. 12–24–68. Cl. 36.
Thomas & Betts Co., The, Elizabeth, N.J. 866,070–3, pub. 12–24–68. Multiple Class (Classes 13, 15, 21, 23, and 35).
Thomas & Betts Co., The, Elizabeth, N.J. 866,077, pub. 12–24–68. Multiple Class (Classes 13, 15, 21, 23, and 35).
Thomas & Betts Co., The, Elizabeth, N.J. 866,080, pub. 12–24–68. Multiple Class (Classes 13, 15, 21, 23, and 35).
Thomas, Carroll E., San Francisco, Calif. 866,544, pub. 12–24–68. Cl. 50.
Thomas, Edd, d.b.a. Cash Creations, from Food City, Longview, Tex. 744,041, canc. Cl. 22.
Thomas, Marjorie T., d.b.a. Air Pix, Melville, N.Y. 866,396, pub. 12–24–68. Cl. 38.
Thomas, T. J., Co., Inc., Brooklyn, N.Y. 866,221, pub. 12–24–68. Cl. 22.
Thompson, Arthur E., Flushing, Ohio. 743,999, canc. Cl. 12.
Tin Lizzy, Inc., Pomona, Calif. 866,611, pub. 12–24–68. Cl. 100.
Tootsie Roll Industries, Inc., Hoboken, N.J. 866,519–20, pub. 12–24–68. Cl. 46.
Topco Associates, Inc., Skokie, Ill. 866,580, pub. 12–24–68. Cl. 51.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 866,503, pub. 12–24–68. Cl. 46.
Trader Vic's: *See*—
Bergeron, Victor J.
Travalet Products: *See*—
Ward, Clarence P.
Triangle Leather Goods Co., Chicago, Ill. 866,208, pub. 12–24–68. Cl. 22.
Trippensee Planetarium Co., Inc., Saginaw, Mich. 866,293, pub. 12–24–68. Cl. 26.
Trojan Inc., Hyattsville, Md. 866,653, pub. 12–24–68. Cl. 105.
Troy National Bank, from Stereodyne, Inc., Troy, Mich. 866,363, pub. 12–24–68. Cl. 36.
Tru-Foto, Inc., Dayton, Ohio. 866,395, pub. 12–24–68. Cl. 37.
Tucker Aluminum Products, Inc., Hialeah, Fla. 743,998, canc. Cl. 12.
Tuffy Mfg. Co., Inc., Imperial, Mo. 866,174, pub. 12–24–68. Cl. 19.
Tuffy Mfg. Co., Inc., Imperial, Mo. 866,176, pub. 12–24–68. Cl. 19.
Tupperware: *See*—
Rexall Drug & Chemical Co.
Twelve+1 Inc., Indianapolis, Ind. 744,217, canc. Cl. 101.
"21" Brands, Inc., New York, N.Y. 744,179, canc. Cl. 49.
2 in 1 Shirt Co.: *See*—
Woodward, Hoke L.
Tymshare, Inc., Los Altos, Calif. 866,195, pub. 12–24–68. Cl. 21.
USM Corp., from United Shoe Machinery Corp., Boston, Mass. 866,056, pub. 12–24–68. Cl. 12.
Udico Corp., Los Angeles, Calif. 866,259, pub. 12–24–68. Cl. 24.
Uncle Suzy Confections: *See*—
Lathrop, William M.
Union Mutual Life Insurance Co., Portland, Maine. 866,634, pub. 12–24–68. Cl. 102.
Union Oil Co. of California: *See*—
Pure Oil Co., The.
Union Pump Co., d.b.a. Union Pump Co., Battle Creek, Mich. 866,250, pub. 12–24–68. Cl. 23.
Unishops, Inc., Jersey City, N.J. 866,620, pub. 12–24–68. Cl. 101.
United Aircraft Products, Inc., Dayton, Ohio. 442,757, ren. 3–11–69. Cl. 13.
United Cargo Corp., New York, N.Y. 866,654, pub. 12–24–68. Cl. 105.
United Shoe Machinery Corp.: *See*—
USM Corp.
U.S. Envelope Co., Springfield, Mass. 866,435, pub. 12–24–68. Cl. 38.
U.S. Plywood Corp.: *See*—
U.S. Plywood-Champion Papers Inc.
U.S. Plywood-Champion Papers Inc., from U.S. Plywood Corp., New York, N.Y. 866,052, pub. 12–24–68. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 866,057, pub. 12–24–68. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 866,067, pub. 12–24–68. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 866,335, pub. 12–24–68. Cl. 32.
Unity School of Christianity, Lee's Summit, Mo. 866,659, pub. 12–24–68. Cl. 107.
Universal Dental Co., Philadelphia, Pa. 509,123, ren. 3–11–69. Cl. 44.
Universal Marion Corp., Chester, Pa. 866,096, pub. 12–24–68. Cl. 13.
Universal Oil Products Co., Des Plaines, Ill. 743,963, canc. Cl. 6.
Universal Oil Products Co., Des Plaines, Ill. 743,967, canc. Cl. 6.
Uraine, Peter A., Whittier, Calif. 866,509, pub. 12–24–68. Cl. 46.
Valhalla Inc., Tuscaloosa, Ala. 866,552–4, pub. 12–24–68. Cl. 51.
Van Dyke, Lyle H., Portland, Oreg. 866,376, pub. 9–24–68. Cl. 37.
Vasquez, Joseph N., Houston, Tex. 744,186, canc. Cl. 50.
Venus Esterbrook Corp.: *See*—
Esterbrook Pen Co., The.
Vereinigte Baubeschlagfabriken Gretsch & Co. G.m.b.H., Leonberg, near Stuttgart, Germany. 866,198, pub. 12–24–68. Cl. 22.
Victor Balata & Textile Belting Co., Easton, Pa. 507,100, ren. 3–11–69. Cl. 6.
Vidicam Television Ltd., Toronto, Ontario, Canada. 866,658, pub. 12–24–68. Cl. 107.
Vikon Chemical Co., Inc., Elon College, N.C. 866,030, pub. 12–24–68. Cl. 6.
Villager, Inc., The, Philadelphia, Pa. 866,017, pub. 12–24–68. Multiple Class (Classes 3 and 39).
Villager, Inc., The, Philadelphia, Pa. 866,454, pub. 12–24–68. Cl. 39.
Virtis Co., Inc., The, Gardiner, N.Y. 866,270, pub. 12–24–68. Cl. 26.
Vistron Corp., Cleveland, Ohio. 866,471–2, pub. 12–24–68. Cl. 44.
Visual Graphics Corp., New York, N.Y. 866,402–4, pub. 12–24–68. Cl. 38.
Vitro Corp. of America, New York, N.Y. 866,601, pub. 12–24–68. Cl. 100.
Vollrath Co., The, Sheboygan, Wis. 866,323, pub. 12–24–68. Cl. 30.
Vornado, Inc., Garfield, N.J. 866,386, pub. 9–24–68. Cl. 37.
Wagner Electric Corp.: *See*—
Hydraulic Brake Co.
Wakefern Food Corp., Elizabeth, N.J. 866,461, pub. 12–24–68. Cl. 42.
Ward, Clarence P., d.b.a. Travalet Products, Klamath Falls, Oreg. 866,545, pub. 12–24–68. Cl. 50.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 744,187, canc. Cl. 51.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 866,165, pub. 12–24–68. Cl. 18.
Washington Publications, Inc., New York, N.Y. 744,106, canc. Cl. 38.
Water Soluble Products: *See*—
Foresight Corp.
Watkins Products, Inc., Winona, Minn. 866,564, pub. 12–24–68. Cl. 51.
Watkins-Johnson Co., Palo Alto, Calif. 866,185–6, pub. 12–24–68. Multiple Class (Classes 21, 26, and 34).
Waverly Beauty Products: *See*—
Sampino, S., & Waverly Beauty Products, Inc.
Weathermeasure Corp., Sramento, from Aerojet-General Corp., El Monte, Calif. 866,187, pub. 12–24–68. Multiple Class (Classes 21 and 26).
Wells Mfg. Corp., South San Francisco, Calif. 743,924, canc. Cl. 1.
Wells, S. C., & Co., to Brown Mfg. Co., Le Roy, N.Y. 250,561, ren. 3–11–69. Cl. 18.
Wencor, Inc., Miami Springs, Fla. 866,246, pub. 12–24–68. Cl. 23.
Wencor, Inc., Miami, Fla. 866,361, pub. 12–24–68. Cl. 35.
West Chemical Products, Inc., Long Island City, N.Y. 866,585, pub. 12–24–68. Cl. 52.
Westerbeke, J. H., Corp., Boston, Mass. 861,835, cor. Cl. 31.
Westinghouse Air Brake Co., Wilmerding, Pa. 866,358, pub. 12–24–68. Cl. 35.
Westminster Little Banquet, Inc., Westminster, Colo. 866,616, pub. 12–24–68. Cl. 100.
Weston, Albert S., New York, N.Y. 866,640, pub. 12–24–68. Cl. 102.
Weston Winery: *See*—
Schenley Industries, Inc.
Wff 'N Proof: *See*—
Allen, Layman E.
Wheaton Glass Co., Inc., Millville, N.J. 866,340, pub. 12–24–68. Cl. 33.
White Consolidated Industries, Inc.: *See*—
Jerguson Gage & Valve Co.
Williamson-Dickie Mfg. Co.: *See*—
Hawk & Buck Co., The.
Willmark Research Corp., New York, N.Y. 744,214, canc. Cl. 100.
Wilson, A. L., Chemical Co., Kearny, N.J. 866,590, pub. 12–24–68. Cl. 52.

Wing's Knitting Mills, Inc., to Piedmont Shirt Co., New York, N.Y. 253,701, ren. 3–11–69. Cl. 39.
Wood Flong Corp., to Wood Flong Corp., Hoosick Falls, N.Y. 508,453, ren. 3–11–69. Cl. 50.
Wood Flong Corp., to Wood Flong Corp., Hoosick Falls, N.Y. 508,456–7, ren. 3–11–69. Cl. 50.
Woodward, Hoke L., d.b.a. 2 in 1 Shirt Co., Gardena, Calif. 744,262, canc. Cl. 39.
World of Sleep, Inc., The, Denver, Colo. 866,628, pub. 12–24–68. Cl. 101.
Wun Drop Co., The, Littleton, Colo. 866,038, pub. 12–24–68. Cl. 6.
Wyandotte Chemicals Corp., Wyandotte, Mich. 866,584, pub. 12–24–68. Cl. 52.
Y.E.M.A., S.A., Beasancon, France. 802,692, cor. Cl. 27.
Yardley of London, Inc., Totowa, N.J. 866,551, pub 12–24–68. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 866,563, pub. 12–24–68. Cl. 51.
Yardley of London, Inc., New York, N.Y. 866,579, pub. 12–24–68. Cl. 51.
Yoshida Kogyo K. K., Tokyo, Japan. 866,099, pub. 12–24–68. Cl. 13.
Zenith Radio Corp., Chicago, Ill. 866,043, pub. 12–24–68. Cl. 7.
Zimmer Mfg. Industries, Inc., from Zimmer-Lightbody Industries, Inc., Detroit, Mich. 866,093, pub. 12–24–68. Cl. 13.
Zimmer-Lightbody Industries, Inc.: *See*—Zimmer Mfg. Industries, Inc.
Zirin Laboratories International, Inc., Hialeah, Fla. 866,137, pub. 12–24–68. Cl. 18.
Zondervan Publishing House, Grand Rapids, Mich. 744,258, canc. Cl. 38.
Zook & Ranck, Inc., Gap, Pa. 866,048, pub. 12–24–68. Cl. 10.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 18, 1969 Volume 860 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1969

Examiner affirmed	134
Examiner affirmed in part	17
Examiner reversed	37
Total	188

Disclaimers

3,350,692.—*William B. Cagle*, Colts Neck, and *Robert S. Menne*, Little Silver, N.J. FAST REGISTER CONTROL CIRCUIT. Patent dated Oct. 31, 1967. Disclaimer filed Oct. 21, 1968, by the assignee, *Bell Telephone Laboratories, Incorporated*.

Hereby enters this disclaimer to claims 1 through 4 and 15 of said patent.

3,353,408.—*Frank G. Daleo*, Armonk, N.Y. ALTIMETER FOR PRODUCING DATA REFERENCED TO A PREDETERMINED PRESSURE. Patent dated Nov. 21, 1967. Disclaimer filed Oct. 22, 1968, by the assignee, *Lear Siegler, Inc.*

Hereby enters this disclaimer to claims 7 and 9 of said patent.

Relocation of Attorney's Boxes

As of the beginning of business on March 24, 1969, Boxes 1 through 290, and all temporary boxes now located in the Department of Commerce Building, will be relocated in Building #2 at Crystal Plaza, Virginia. No change in box numbers will be made. The actual movement of the boxes will occur on March 22, 1969.

A drop-box specifically for coupons will be provided in the Commerce Building. The exact location of this box will be determined and announced before March 24, 1969. The present procedure for delivering amendments and other papers at the Commerce Building will continue.

W. R. ARMSTRONG,
Director, Office of Patent Services.

Feb. 28, 1969.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Increase of Miscellaneous Fees and Charges

On August 3, 1968, notice of proposed rule making regarding the revision of paragraphs (h) and (i) of § 1.21 (Patent Rule 21), Title 37, Code of Federal Regulations, was published in the Federal Register (33 F.R. 11092). On September 21, 1968, further notice extending the period for submission of comments was published in the Federal Register (33 F.R. 14327). Interested persons were given 105 days in which to submit written comments, suggestions, or objections regarding the proposed revisions.

Full consideration having been given to all comments that were received in response to the public notice, the revisions originally proposed are hereby adopted without change and are set forth below.

§ 1.21 *Patent and miscellaneous fees and charges.*

* * * * *

(h) For registration of an attorney, agent, or firm:	
For admission to examination for registration to practice, fee payable upon application	$35.00
On registration to practice	25.00
On application for registration of a firm	25.00
(i) For certificate of good standing as an attorney or agent	5.00

* * * * *

Effective date.—These revisions shall become effective upon publication in the Federal Register.

EDWARD J. BRENNER,
Commissioner.

Approved: Feb. 11, 1969.

ALLEN V. ASTIN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 69–1923; Filed, Feb. 13, 1969; 8:47 a.m.]

Published in 34 F.R. 2206, Feb. 14, 1969

Double Patenting and Terminal Disclaimer

The practice concerning double patenting and the effect of a terminal disclaimer on such a rejection is set out below. The notices of January 9, 1967, and February 14, 1968, relating to this subject are hereby superseded except with reference to the practice described involving different inventive entities.

Claims should be rejected on double patenting only in cases involving two or more applications and/or patents of the same inventive entity and not in situations involving commonly owned cases of different inventive entities. Commonly owned cases of different inventive entities are to be treated in the manner set out in MPEP 804.03.

If two or more cases are filed by a single inventive entity, and if the expiration dates of the patents, granted or to be granted, are the same, either because of a common issue date or by reason of the filing of one or more terminal disclaimers, two or more patents may properly be granted provided the claims of the different cases are not drawn to the same invention (*In re Knohl*, 155 USPQ 586; *In re Griswold*, 150 USPQ 804).

Claims that differ from each other (aside from minor differences in language, punctuation, etc.), whether or not the

New Applications Received During December 1968

Patents	8001
Designs	441
Plant Patents	5
Reissues	40
Total	8487

Issue—March 18, 1969

Patents	1300	No. 3,432,860 to No. 3,434,159, incl.
Designs	72	No. 213,539 to No. 213,610, incl.
Total	1372	

difference is obvious, are not considered to be drawn to the same invention. In cases where the difference is obvious, terminal disclaimers are effective to overcome rejections on double patenting. However, such terminal disclaimers should include a provision that the patent shall expire immediately if it ceases to be commonly owned with the other application or patent.

Where there is no such difference, the inventions are the same and a terminal disclaimer is ineffective.

EDWARD J. BRENNER,
Feb. 18, 1969. *Commissioner.*

Official Patent Office Mailing Address Remains Washington, D.C.

The official mailing address for all communications sent to the Patent Office remains:

Commissioner of Patents
Washington, D.C. 20231

Any telegrams sent to the Patent Office must also bear the above identical address.

The physical location of the Patent Office is 2021 Jefferson Davis Highway, Arlington, Virginia. This address must not be used when addressing mail to the Patent Office.

No reference to Crystal Plaza, Virginia, should be made in the address of *any* communication intended for delivery to the Patent Office by the Post Office Department or Western Union.

Compliance with this instruction will help prevent any unnecessary delay in the delivery of mail, telegrams, etc.

C. A. KALK,
Feb. 20, 1969. *Director of Administration.*

Certificates of Correction for the Week of Mar. 18, 1969

Re. 26,317	3,351,237	3,364,123
D. 210,007	3,353,077	3,364,364
3,169,942	3,353,383	3,364,667
3,273,689	3,355,575	3,364,838
3,287,482	3,356,900	3,364,870
3,306,908	3,356,927	3,364,932
3,322,746	3,356,959	3,365,036
3,324,137	3,357,223	3,365,067
3,325,115	3,357,662	3,365,302
3,329,699	3,358,358	3,365,629
3,332,529	3,358,510	3,365,922
3,333,051	3,358,908	3,365,949
3,338,876	3,358,911	3,366,101
3,339,057	3,359,150	3,366,142
3,341,411	3,359,689	3,366,234
3,341,469	3,360,742	3,366,294
3,346,182	3,362,029	3,366,306
3,346,635	3,362,624	3,366,424
3,347,690	3,363,107	3,366,919
3,349,120	3,363,973	3,369,300
3,350,469		3,371,901

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 24, 1969

PATENT EXAMINING GROUPS *Denotes oldest new application.	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	12-15-66
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*5-05-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	11-07-66
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4-03-67
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	2-09-67
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-10-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	11-08-66
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-10-67
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	5-16-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-23-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-07-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-02-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles, Supports; Cabinet Structures.	9-19-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-07-67

Total number of pending applications (excluding Designs)	180,870
Total number of Design applications pending	3,053

Expiration of patents: The patents within the range of numbers indicated below expire during March 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,567,576 to 2,590,832, inclusive
Plant Patents	Numbers 1,077 to 1,080, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE GEORGE R. HARRIS

No. 7990. Decided July 3, 1968

[55 CCPA —; 399 F.2d 245; 158 USPQ 338]

1. PATENTABILITY—CRITICALITY.

"Appellant's specification attaches no particular significance to the use of a partially sulfur-vulcanized vegetable oil as opposed to the use of Auer's product or a completely sulfur-vulcanized vegetable oil, other than its function of crosslinking with the rubber which is obvious from Auer, and he thus is not in a favorable position to argue its criticality here."

2. SAME—PARTICULAR SUBJECT MATTER—"SOFT RUBBER COMPOSITION."

The refusal of certain claims in an application entitled "Soft Rubber Composition," as unpatentable over the prior art, is affirmed.

AFFIRMED.

H. F. McNenny, *William T. Estabrook* (*McNenny, Farrington, Pearne & Gordon, Kemon, Palmer, Stewart & Estabrook*, of counsel) for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

Harris appeals from the decision of the Board of Appeals which affirmed the Examiner's rejections of claims 25–28 in his application [2] as "based upon an insufficient disclosure" and as "unpatentable over Soday [3] in view of Auer [4] under 35 U.S.C. 103."

The invention relates to a method of forming a soft rubber product by vulcanizing a composition comprising natural or synthetic rubber, a non-volatile plasticizer and a partially sulfur-vulcanized vegetable oil, as well as the product so produced. The specification points out that it is desirable to make a solid, dense rubber having the "softness" of sponge rubber but without the disadvantageous water absorption properties of that material. According to appellant:

> Previous efforts to develop a solid, dense rubber having a high degree of softness by adding the various plasticizers to the rubber mix have not been successful in producing a dense rubber having the same degree of softness as sponge rubber. The principal difficulty along these lines has been that the production of a soft rubber requires the addition of such a large amount of plasticizer and softener that the material cannot be handled through the usual methods of extruding, molding, or calendering. Also, rubber softened with large quantities of plasticizer could heretofore be vulcanized only in a rigid mold or the like which maintains the article in the desired shape during the vulcanizing process. ***Efforts to make extruded articles out of prior art soft rubber compositions have not been successful because if the article has internal passages or openings or thin wall sections, it is not possible to support these parts of the article during vulcanization and the heat will cause the rubber to become so soft as to lose its original shape and collapse or distort to such a degree that the article after vulcanization has lost its shape.*** [Emphasis supplied.]

The use of a partially vulcanized vegetable oil as a component of the soft rubber compositions is said to obviate those difficulties and permit

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 186,233, filed Apr. 9, 1962 and entitled "Soft Rubber Composition."
[3] U.S. Patent 2,436,457, issued Feb. 24, 1948.
[4] U.S. Patent 2,437,925, issued Mar. 16, 1948.

extrusion and vulcanization of an article without it losing its shape. Claims 25 and 26 are representative:

> 25. In the method of producing as a substitute for cellular sponge rubber a shaped, soft, non-cellular elastomeric body from a solid rubber containing a brown vulcanized vegetable oil and a plasticizer, the improvements of increasing the tolerance of the solid rubber to augmented amounts of the plasticizer and thereby providing a soft yet solid, vulcanizable elastomer while retaining sufficient stiffness to undergo a shaping operation prior to subsequent vulcanization, said improvements comprising:
>
> (*a*) providing a conjugated diene polymeric rubber having a relatively high degree of unsaturation and therefore readily susceptible to a cross-linking reaction;
>
> (*b*) forming an admixture consisting essentially in weight percent of about 24 percent to about 35 percent of said rubber, about 17 percent to about 25 percent of a non-volatile plasticizer, about 30 percent to about 50 percent of a partially sulfur-vulcanized brown vegetable oil, the percentage of said brown vulcanized vegetable oil being substantially at least as great as that of said rubber, and sufficient elemental sulfur to provide substantial vulcanization of the rubber and further vulcanization of the partially vulcanized brown vulcanized vegetable oil;
>
> (*c*) shaping said admixture to the form of said elastomeric body, said partially vulcanized vegetable oil being sufficiently vulcanized to impart stiffness to the shaped admixture in spite of the solubilizing effect of the plasticizer;
>
> (*d*) heating the admixture to a temperature within the range of about 280° F. to about 350° F. to effect vulcanization of the rubber and additional vulcanization of the brown vulcanized vegetable oil with simultaneous interreaction between the rubber and vulcanized vegetable oil; and
>
> (*e*) thereby producing a shaped, soft, non-cellular solid elastomer having a tensile strength from about 150 p.s.i. to about 700 p.s.i., and elongation from about 450 percent to about 800 percent, a Shore A durometer hardness of about 5 to about 25, and less than 0.5 percent water absorption.
>
> 26. A shaped, soft, non-cellular elastomeric body made by the process of claim 25.

The Examiner noted that Soday discloses natural or synthetic rubber compositions containing a blend of high boiling aromatic oils and sulfur-vulcanized brown vegetable oils. According to Soday, solid, rubber-like, sulfurized vegetable oils, known as "factice," had previously been "extensively employed in the rubber industry as softening agents" and greatly assist "in the milling, calendering, and/or extrusion" of rubber compositions. The amount of sulfur Soday utilizes to crosslink the vegetable oil depends on the "type of oil employed" and "the properties desired in the finished [oil] product." Smaller amounts of sulfur yield partially vulcanized viscous liquids and larger amounts yield solid, rubber-like products which are more completely crosslinked or vulcanized than the viscous liquids. As to the quantities of the particular aromatic oils and sulfurized vegetable oils which he employs in his rubber composition, Soday states:

> The proportion of such oils which may be incorporated in sulfurized oils may be varied over a very wide range depending, among other things, upon the properties of the sulfurized oil, and the properties desired in the resulting composition. In general, however, I prefer to employ compositions containing at least 10% of either component. Thus, compositions containing 10% sulfurized oil and 90% aromatic oils of the type described herein, as well as those containing 10% aromatic oils of the type described herein and 90% sulfurized oil, possess properties which render them particularly desirable for use in a number of commercial applications * * *.
>
> * * * * * * *
>
> The quantity of sulfurized oil-aromatic oil composition of the type described herein which may be incorporated in natural or synthetic rubbers, or elastomers, may be varied over very wide limits, depending upon the properties desired.

Thus, for example, quantities varying from a few percent, or less, to an amount equal to, or greater than, the quantity of rubber, or rubber mixture, employed in the composition, may be used.

The Examiner also observed Auer's discussion of the prior art:

* * * brief reference is here made to the prior practice in use of factice, sometimes also called "rubber substitutes."

Factice is commonly produced merely by vulcanizing a fatty oil with sulphur. The resulting vulcanized product was then employed in rubber mixes, during the compounding on the rubber mill. In general, the purposes for employing such factice are one or more of the following:

1. In the case of extrusion compounds, for instance for rubber tubing, *factice has been used to form a gel skeleton to prevent deformation of the tubing during vulcanization in open steam. The reason for this use is that factice does not appreciably change consistency at rubber vulcanization temperatures and, therefore, prevents deformation of the tubing during vulcanization.*
2. Factice has been used as a filler, for instance for the purpose of reducing the cost of the rubber compound whenever the factice price was cheaper than the rubber price.
3. Although factice has only a very minute plasticizing influence, it was sometimes used for this effect in rubber compounding.

In addition to the above, it may be mentioned that plasticizers, such for example as pine tar oil, mineral oils, etc., having a much more powerful plasticizing effect than factice, have been used in rubber mixes in order to reduce the stiffness of the mix on the mill and to act as a lubricant, thereby enabling incorporation of larger quantities of fillers than otherwise possible, or accelerating the milling operation, or both.

The quantity of factice and plasticizers which can be incorporated in the mix is, however, severely limited by the fact that they are not vulcanizable at the vulcanization temperature of rubber. Some plasticizers, in fact, are not vulcanizable at all. Therefore, *if these materials (factice and plasticizers) be added in large proportions, the original characteristics of the added material, especially the plasticizing characteristic, remains in the final product even after the final vulcanization thereof.* The desired physical properties of the rubber product are thereby considerably impaired. [Emphasis supplied.]

As his invention, Auer treated vegetable oil successively with sulfur dioxide, sodium hydroxide and sulfur to produce a material "which is both an extender and a plasticizer, having better plasticizing characteristics than factice." The sulfur treatment was carried out in such a manner as to yield only a *partially* vulcanized product. The latter "extender" composition was then added to rubber and the mixture subjected to further vulcanization with the result that:

* * * upon the final vulcanization of the product, since the extender is vulcanizable at the same temperatures as the rubber, the vulcanization of the extender progresses and the extender concurrently loses at least a major portion of its plasticizing characteristic. * * *

* * * * * * *

the improved extender may even form a copolymer vulcanization product with the rubber, during the final vulcanization of the product.

"It would be obvious to one of ordinary skill in the art," said the Examiner, "to use a large amount of softener in order to prepare a soft vulcanizate," regarding Auer's disclosure that soft vulcanizates are obtained from compositions containing large amounts of softener to support his position. It would also be obvious, he said, "to include factice, in whatever amount necessary, in the formulation to impart dimensional stability during vulcanization," in view of Auer. The Examiner further regarded the "additional vulcanization of the brown vulcanized vegetable oil" and the "simultaneous interreaction between the rubber and vulcanized vegetable oil" recited in the claims to be "inherent in the vulcanization of the composition of Soday."

The Board agreed, adding that Auer:

* * * clearly shows the use of a vulcanized vegetable oil which prior to its addition to the rubber mix has been sulfurized to a degree which is less than that desired in the finished rubber product and whereby the sulfurization of the oil is consummated at the time of the final vulcanization of the rubber product * * *.

As appellant's specification points out, difficulty was encountered by prior workers in the art in attempting to form dense, soft, extruded rubber articles from prior art soft rubber compositions containing large quantities of plasticizer since the extruded article lost its shape upon vulcanization. We agree with the Examiner and Board that the prior art of record demonstrates that one of ordinary skill in the art would reasonably expect to solve that problem by incorporating a sulfur-vulcanized vegetable oil into the plasticized rubber composition. Soday points out that sulfurized vegetable oils greatly assist in the milling, calendering and/or extrusion of such compositions and Auer points out that they form a "gel skeleton" which "prevents deformation" of the extruded article during vulcanization when used in combination with plasticizer.

Appellant's main argument is that neither Soday nor Auer expressly discloses the use, in combination with rubber and plasticizing oils, of *partially* sulfur-vulcanized vegetable *oils* which crosslink with the rubber during vulcanization. He regards the sulfur dioxide-, sodium hydroxide-, and sulfur-reacted vegetable oils of Auer referred to by the Board, though partially sulfur-vulcanized and capable of crosslinking with rubber, to be a *soap* not within the contemplation of the oils defined in his claims. In rejoinder, the Solicitor urges the latter issue was not raised below and should not be considered here. Also aligned against appellant's arguments are (1) the finding by the Board to the contrary and (2) the likewise contrary position taken by appellant's expert, one Finefrock, who stated in an affidavit of record:

I have studied and am familiar with Auer Patent No. 2,437,925 and find that the disclosure therein is directed almost entirely to a method of producing vulcanized vegetable *oils*. * * * [Emphasis supplied.]

But even were appellant technically correct on the point of what the composition of Auer's invention is, we do not see what it would avail him. Auer's "soap," assuming that is what it is, possessed rubber plasticizing properties to greater extent than the prior art "factice" then in use, thus not necessitating the use of additional plasticizing oils. When vulcanized in combination with rubber, the "soap" lost its plasticizing characteristics. It is evident that Auer desired a harder rubber than appellant, regarding the plasticized product of the prior art which contained "factice" and plasticizer undesirable for his purposes.

We share the view of the Examiner and Board that one of ordinary skill in the art would find it obvious to use a sulfur-vulcanized vegetable oil in combination with a plasticizer if he desired to retain the softer characteristic of rubber attributable to the plasticizer. [1] Appellant's specification attaches no particular significance to the use of a partially sulfur-vulcanized vegetable oil as opposed to the use of Auer's product or a completely sulfur-vulcanized vegetable oil, other

than its function of crosslinking with the rubber which is obvious from Auer, and he thus is not in a favorable position to argue its criticality here.

The view we take renders it unnecessary to consider the rejection under 35 U.S.C. 112.

[2] The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE MANUEL F. LEONOR

No. 7912. Decided June 6, 1968

[55 CCPA —; 395 F.2d 801; 158 USPQ 20]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"CARBONIZATION OF BAGASSE." The decision of the Board of Appeals, refusing certain claims in an application entitled "Carbonization of Bagasse" on the ground of unpatentablity over the prior art, is reversed.

REVERSED.

Michael Ebert for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The Patent Office Board of Appeals affirmed the Examiner's rejection of claims 15–18 in appellant's application [2] for "Carbonization of Bagasse" upon what appears to us to have been a hindsight reconstruction of the prior art. Since the Board's decision violates the intent and spirit of 35 U.S.C. 103, we reverse. Specifically, the affirmed rejection was that the claims were "unpatentable over Mathieu [3] and what is apparently conceded as old in the art in view of Thompson [4] and McIntosh [5] (35 U.S.C. 103)."

The problem to which the claimed process is directed arises from prior attempts in the art to convert bagasse or other woody fibrous material into charcoal on an economically feasible basis by heating or carbonizing it in a retort. According to appellant, the difficulty with such a process when applied to untreated, green bagasse is that such bagasse has a high moisture content and very low bulk density. Thus, storage or transportation of such bagasse to a carbonizing facility is commercially impractical, due to the large volume of material which must be stored, shipped and processed. Economically, the intrinsic value of the charcoal produced does not appear to have justified use of the prior art processes using green bagasse as the starting material.

As stated in appellant's specification:

> * * * One suggestion to obviate the bulk density problem, in the prior art, is to briquette the bagasse before subjecting it to carbonization. While this does provide a solution to the problem, yet the cost of briquetting is substantial.

Appellant, as distinguished from any teaching of the prior art, treats the green bagasse with sulfuric acid. The acid not only dehydrates the bagasse, i.e., removes water from the material, but also densifies it and partially carbonizes it. The acid-treated bagasse is

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 220,153, filed August 29, 1962.
[3] U.S. Patent No. 300,384, issued June 17, 1884.
[4] U.S. Patent No. 401,607, issued April 16, 1889. Like the Board, we regard this particular reference cumulative to McIntosh and will not further discuss it.
[5] U.S. Patent No. 1,482,939, issued February 5, 1924.

then subjected to full carbonization with heat in the absence of oxygen. Appealed claim 15 defines the process as follows:

> 15. The process of converting without briquetting a green bagasse having a residual sugar content into a carbonized bagasse of high bulk density, comprising the steps of
> (*a*) treating the green bagasse with an acid in a concentration bringing about hydrolysis and partial carbonization of the bagasse to an extent sufficient to increase its bulk density to about 30% to 50% higher than the bulk density of green bagasse based on drying both to the same moisture content,
> (*b*) separating the bagasse residue from the liquor produced by the acid treatment, and
> (*c*) heating the separated bagasse residue in the substantial absence of oxygen to produce a fully carbonized bagasse of high bulk density.

The specification further states that the weight reduction and increase in bulk density resulting from pretreatment of bagasse with acid prior to carbonization is of "considerable significance," since the:

> * * * green bagasse can be subjected to the digestion and then shipped to suitable points for further treatment, for example, carbonization. The weight modification makes such shipment feasible.

Claim 15 specifically requires the acid treatment of the green bagasse to be such that *hydrolysis and partial carbonization* of the green bagasse occurs to the extent necessary to increase the bulk density of the treated bagasse by 30% to 50% as compared to the bulk density of the green bagasse.

Appellant acknowledges that carbonization of bagasse by heating has been suggested in the art; this acknowledgment is evidenced by the Mathieu patent. The issue, then, is whether the teachings of the prior art *would*, *of themselves*, and *without the benefit of appellant's disclosure*, suggest a treatment of green bagasse before carbonizing which would make the invention set forth in the appealed claims obvious under the conditions stated in 35 U.S.C. 103.

The position of the Board with respect to the "partial carbonization" requirement and the resulting extent of the increase of the bulk density as required by the appealed claims, appears to have been:

> * * * However, there is no teaching here of the degree of "partial carbonization," or of what function it performs. It is clear from the disclosure that the real purpose of the acid treatment is to densify the bagasse to the extent of 30 to 50% * * * and that the significant carbonization is that performed in the subsequent step of carbonizing in the kiln. The carbonization due to the acid treatment would appear to be only that necessarily accompanying the lengthy treatment necessary to attain the desired degree of densification. * * * In any event, lacking any teaching of the purpose or extent of this partial carbonization, we are at a loss to see how any unobvious result can be attributed to it or how it can be argued that it is not also present in McIntosh.

Thus, the Examiner and the Board appear to have recognized that Mathieu does not disclose appellant's claimed acid pretreatment step. However, they found in the McIntosh teaching a process for the preparation of charcoal by subjecting "paper, wood pulp or other relatively pure form of cellulose" to "vulcanizing or parchmentizing chemicals" which are removed by washing prior to placing the material in a retort for complete carbonization.

Appellant admits, for purposes of analysis, that bagasse falls within the group of materials which may be encompassed by the McIntosh process. Moreover, it seems clear that McIntosh contemplates the use of concentrated sulfuric acid since, according to the authorities relied upon by the Board, such acid is used in the "parchmentizing" bath of McIntosh.

Appellant does not disagree that various dictionaries disclose the "parchmentizing" chemical referred to by McIntosh as being highly concentrated sulfuric acid. McIntosh states:

> * * * Owing to the fact that the dried vulcanized fibre prior to its introduction into the retort has been rendered *exceedingly dense* and tough *by the pressure* to which it was originally subjected *as well as by reason of the action of the parchmentizing chemicals and the subsequent drying*, the finished product of my process is a relatively dense, hard and structurally strong form of carbon. * * * [Emphasis added.]

The Board considered the disclosure of McIntosh that the density of various cellulosic materials can be at least partially increased, by treating them with sulfuric acid prior to heating to form charcoal, rendered it obvious to one of ordinary skill in the art to subject green bagasse, a cellulosic raw material known to be useful in the manufacture of charcoal, to a similar acid pretreatment to increase its density before full carbonization.

In the McIntosh process, however, the material is in the form of webs which, after "parchmentizing, are wound upon a *heated* roller while subjected to *heavy pressure*. The resulting "annular structure" is cut, moved from the roller, washed with water until the "parchmentizing" chemicals are removed, and then dried. The dried vulcanized fiber is heated in a suitable retort to such a temperature that all its volatile constituents are driven off. Thus, contrary to appellant's invention, it seems essential to the McIntosh process to use *heat* and *pressure* in addition to the acid treatment to form a dense structure before carbonization takes place.

Thus, in the absence of any teaching that densification of the bagasse could occur to the extent claimed by the appellant by the action of sulfuric acid without the temperature and pressure treatment as taught by McIntosh, the factual basis for the rejection is tenuous at best.

Aside from any question of whether the pertinent portions of McIntosh were selected in light of appellant's teachings, a fact issue underlying the 103 determination is raised by the Othmer[6] affidavit. There Dr. Othmer noted, after careful study of the application and the prior art:

> * * * But what applicant has discovered is that when using a relatively high concentration of sulphuric acid * * * the resultant structural changes in the bagasse give rise to a striking increase in bulk density as compared to that achieved simply by removing the same water content from the bagasse.
>
> * * * The explanation for this marked change in bulk density appears to be as follows: * * * The structure of the cellulosic molecules in bagasse, as distinguished from wood, has a sponge-like form, with very large amounts of free interstitial space within the fibrous mass.
>
> * * * * * * * *
>
> * * * Inasmuch as the bagasse, as indicated above, has a sponge or web-like structure, the chemical disintegration resulting from the action of the acid demolishes the physical strength of the bagasse fiber, causing the whole sponge-like structure of the bagasse to collapse and thereby produce a much denser material.

Thus, on the question of the extent of the increase in bulk density, the further comment of Dr. Othmer is persuasive. He added:

> * * * While hydrolyzing of cellulosic material is well known to chemists, as is evident from the prior art, what was not well known and what in my opinion is unobvious, is the concept of hydrolyzing green bagasse *as the first step* in a charcoal-production method *so as markedly to increase the bulk density of the bagasse without the use of heat or pressure*, and to partially carbonize it before subjecting the product to incomplete combustion. Finally, not a single patent of record makes any mention of bulk density, to say nothing of the problem of bulk density within the context of processing bagasse to produce charcoal. [Emphasis added.]

Thus, there is no disclosure of fact in the prior art which supports a legal conclusion that the claimed invention was obvious *at the time it was made*. Admittedly, the Othmer affidavit and appellant's specification provide a ready guide for selecting and combining parts of the prior art processes. If, however, the prior art is considered *without* the Othmer affidavit and *without* appellant's teachings, no fact basis is established in the present record from which to support the legal conclusion that the claimed invention would have been obvious to one of ordinary skill in the art under the conditions of 35 U.S.C. 103.

Indeed, this seems to be a clear case in which the Examiner and the Board were unable "to resist the temptation to read into the prior art the teachings of the invention in issue." *Graham* v. *John Deere Co.*, 383 U.S. 1, 36, 148 USPQ 459, 474 (1966).

[1] For the foregoing reasons, the decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, dissenting with whom KIRKPATRICK, *J.*, joins.

In view of the disclosure of McIntosh that the density of various cellulosic materials can be at least partially increased by treating them with sulfuric acid *alone* prior to heating to form charcoal, I agree with the Board that it would be obvious to one of ordinary skill in the art to subject bagasse, a cellulosic raw material known to be useful in the manufacture of charcoal, to a similar acid pretreatment to increase its density before full carbonization.

The majority seems to find that it is "essential to the McIntosh process to use *heat* and *pressure* in addition to the acid treatment to form a dense structure before carbonization takes place." The majority is in error. It is true that, in a preferred embodiment, McIntosh does apply heat and pressure to a web of cellulose by means of rollers prior to driving off "all its volatile constituents" in the full carbonization step. However, McIntosh clearly contemplates simply utilizing "scraps and otherwise waste pieces of parchmentized or vulcanized fiber" as a feed material for his carbonization retort, thus producing "relatively pure granular carbon" without apparent necessity of the scraps or waste being "wound upon a heated roller while subjected to heavy pressure." It is, of course, the disclosure of McIntosh as a whole

---

[6] Dr. Donald F. Othmer, a distinguished scientist whose technical credentials are stated in his affidavit as follows:

> * * * I hold the degrees of B. Sc., M.S., and Ph. D. (University of Michigan, 1927) * am a Fellow of the American Association for the Advancement of Science and the American Institute of Chemists (Director in 1950), as well as being a member of the American Institute of Chemical Engineers (Director, 1956–59). I am a recipient of the Tyler Award, A. I. Ch. E., and the Barber-Coleman Award, Am. Soc. Eng. Ed., and two honorary doctorates.
>
> * * * my professional experience includes that of consulting chemical engineer and licensor of process patents since 1931 to numerous companies and Governmental departments in the United States, Puerto Rico, Sweden and Germany, among others, in the fields of wood utilization and wood distillation, engineering equipment and sugar refining. I am a consultant to the United Nations and the Chemical Corps of the U.S. Army, and to other branches of the Government.
>
> * * * my present position is that of professor of chemical engineering, and head of this department of the Polytechnic Institute of Brooklyn, from 1937 to 1961.
>
> * * * I have written extensively in the fields of chemical engineering, physical chemistry, and chemical processes in American and foreign technical journals, my list of publications including:
>
> Editor, Fluidization (Reinhold, 1956).
> Co-Author, Fluidization and Fluid Particle Systems (Reinhold, 1960).
> Co-Editor, Encyclopaedia of Chemical Technology (Interscience, 1947–1960).
> Member, Advisory Board, Perry's Chemical Engineers' Handbook.

with which we are concerned, not just the specific examples or preferred embodiments. *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507; *In re Chapman*, 53 CCPA 978, 357 F.2d 418, 148 USPQ 711.

In any event, I do not see that appellant's *claims* necessarily exclude application of heat and pressure [7] to attain densification of the bagasse prior to the full carbonization step. It seems to me the majority is deliberately reading limitations into appellant's claims that plainly are not there. That it should not do. *In re Fields*, 50 CCPA 709, 304 F.2d 691, 134 USPQ 242; *In re Lundberg*, 44 CCPA 909, 244 F.2d 543, 113 USPQ 530; *In re Kebrich*, 40 CCPA 780, 201 F.2d 951, 96 USPQ 411.

Unlike the majority here, the Examiner and Board also properly found the Othmer affidavit to be entitled to little weight. Granted the qualifications of affiant, all that he states in the portions of his affidavit quoted by the majority is, *at best*, that treatment of bagasse with sulfuric acid prior to carbonization is new.[8] The affidavit, like appellant's brief, fails to controvert—indeed, ignores—the salient teaching of McIntosh, quoted by the majority, which was relied on below in determining the obviousness of appellant's process. In my view, the affidavit is only a statement of opinion not binding on this court, and provides no factual basis for concluding that the invention would be unobvious to one of ordinary skill in the art. *In re Carey*, 55 CCPA 1146, 392 F.2d 646, 157 USPQ 376; *In re Austin*, 55 CCPA 898, 390 F.2d 721, 156 USPQ 520; *In re Lindell*, 55 CCPA 707, 385 F.2d 453, 155 USPQ 521; *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495; *In re Umbricht*, 52 CCPA 1586, 347 F.2d 882, 146 USPQ 214; *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515.

I would affirm.

[7] As the Solicitor points out, the term "without briquetting" in appellant's claims does not suffice to exclude applying heat and/or pressure, as briquetting may occur *without* application of either heat or pressure. See Webster's Third New International Dictionary (1961) under "briquette."

[8] In that regard, for further informative historical background of the steps involved and materials used in the manufacture of activated charcoal from various cellulosic materials, including bagasse, see Kirk-Othmer, Encyclopedia of Chemical Technology, vol. 2, pp. 886–888 (1948).

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,780,426, R. J. Kutzler, AIRCRAFT CONTROL APPARATUS; **2,993,664,** Alderson and Carpenter, deceased, by Walter T. Fisher, executor, AUTOMATIC INSTRUMENT LANDING SYSTEMS FOR AIR-BORNE CRAFT; **3,031,158,** W. H. Gille, AIRCRAFT CONTROL APPARATUS, **filed** Oct. 23, 1968, D.C., M.D. Pa. (Scranton), Doc. C–68–431, *Honeywell Inc.* v. *Piper Aircraft Corporation and Mitchell Industries, Inc.*

2,846,756, R. E. Novkov, CUTOFF TOOL AND HOLDER THEREFOR; **2,964,833,** same, **filed** Aug. 9, 1962, D.C., E.D. Wis. (Milwaukee), Doc. 62–C–230 and 62–C–231, *Warner and Swasey Company* v. *Edwin Held, Jr., as executor of the estate of Edwin Held, Sr., deceased, and Edwin Held, Jr., doing business as Enco Tool Works;* and *Warner and Swasey Company* v. *Cutting Tools, Inc., Thomas A. Mowry et al.* Plaintiff is the owner of Patent Nos. 2,846,756 and 2,964,833 which are valid and not infringed, Sept. 24, 1968.

2,964,833. (See 2,846,756.)

2,985,298, R. J. Schreiner, APPARATUS FOR EVALUATING THE PRINTING OF MACHINE READABLE DOCUMENTS, **filed** July 22, 1968, D.C., District of Columbia (Washington), Doc. CA 1829–68, *Harold S. Hemstreet* v. *General Electric Company and Sperry-Rand Corp.*

2,990,616. (See Re. 25,033.)

2,993,664. (See 2,780,426.)

3,027,352, Walling, Brown and Bartz, COPOLYMERS, **filed** May 13, 1968, D.C. Del. (Wilmington), Doc. 3209, *Celanese Corporation of America* v. *Tenneco Chemicals, Inc.* Ordered that this action be dismissed, Sept. 17, 1968.

3,031,158. (See 2,780,426.)

3,050,480, W. M. Budde, PROTECTIVE FILM FORMING COMPOSITIONS AND RESULTANT FILMS; **3,218,274,** Boller and Graver, TWO-PACKAGE COATING SYSTEM COMPRISING A POLYESTER HAVING AN ACID NUMBER OF AT LEAST 50 IN ONE OF THE PACKAGES THEREOF, **filed** Jan. 14, 1966, D.C., S.D.N.Y., Doc. 66–C–138, *Archer-Daniels-Midland Co.* v. *Pittsburgh Plate Glass Co.* Stipulation and order of voluntary dismissal without prejudice, Oct. 15, 1968.

3,075,288. (See Re. 25,033.)

3,076,904. (See Re. 25,033.)

3,114,342, Sporck and Sassen, METAL WORKING; **3,143,377,** Bulgrin and MacKusick, WHEEL DISKS AND DISK WHEEL ASSEMBLIES, **filed** Dec. 11, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–822, *The Lodge and Shipley Company* v. *The Firestone Tire and Rubber Company.* Stipulation of counsel that amended and supplemental complaint of plaintiff and several causes of action are dismissed with prejudice; that counterclaim of defendant and several causes of action are dismissed with prejudice; this stipulation is result of settlement of all issues between parties but without adjudication of validity or invalidity of any of patents, Nov. 18, 1968.

3,143,377. (See 3,114,342.)

3,166,636, Rutland, Ambrosio and Turn, DATA COMPOSER, **filed** Sept. 12, 1966, D.C. Del. (Wilmington), Doc. 3255, *The Bunker-Ramo Corporation* v. *Sargent Industries, Inc. (formerly known as the Electrada Corporation).* Dismissed on stipulation with prejudice, Sept. 30, 1968.

3,210,767, D. E. Isbell, FREQUENCY INDEPENDENT UNIDIRECTIONAL ANTENNAS, **filed** Mar. 29, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c568, *The University of Illinois Foundation* v. *Channel Master Corporation and Electronic Distributors, Inc.* Enter final judgment dismissing defendant Channel Master Corp. from this suit, Oct. 17, 1966. Order cause stricken from the calendar without prejudice and with leave to reinstate on notice and motion of either party, Sept. 26, 1968.

3,212,628, Massey and Mueller, PORTABLE BELT TYPE CONVEYOR-ELEVATOR, **filed** June 9, 1967, D.C. Oreg. (Portland), Doc. C–67–324, *Speed King Manufacturing Company, Inc.* v. *Plaslastic, Inc. et al.* Notice of appeal dismissed Oct. 14, 1968.

3,213,537. (See Re. 25,033.)

3,215,101, G. H. Hoskinson, BURNING APPARATUS; **3,248,178,** same, WASTE PRODUCTS COMBUSTION APPARATUS; **3,355,254,** same, **filed** Oct. 4, 1968, D.C. Md. (Baltimore), Doc. 19957, *Cornell-Hoskinson Mfg. Corp. and Energy Dynamics, Inc.* v. *Smokatrol, Inc.* **Same, filed** Nov. 18, 1968, D.C. Md. (Baltimore), Doc. 20107–C, *Cornell-Hoskinson Mfg. Corp. and Energy Dynamics, Inc.* v. *Metropolitan Waste Combustion Co.* **Same, filed** Nov. 18, 1968, D.C. Md. (Baltimore), Doc. 20108–C, *Cornell-Hoskinson Mfg. Corp. and Energy Dynamics, Inc.* v. *James J. Mathews, Inc.*

3,218,274. (See 3,050,480.)

3,236,113. (See 3,276,314.)

3,248,178. (See 3,215,101.)

3,276,156. (See 3,276,314.)

3,276,314, H. T. Robinson, AUTOMATIC SLIDE PROJECTOR; **3,276,156,** same, SLIDE TRAY FOR A SLIDE PROJECTOR; **3,236,113,** Robinson and Di Pietro, SLIDE TRAY INDEXING MECHANISM AND CONTROL THEREFOR, **filed** Sept. 12, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1564, *Eastman Kodak Co.* v. *G-M Laboratories, Inc., Bernard C. Grafft, MGL, Incorporated, Sears, Roebuck and Co., United States Camera Corporation, and Universal Tool and Manufacturing Corporation.* Consent judgment, defendants G-M Laboratories, Inc., MGL Incorporated, Sears, Roebuck and Co., and Universal Tool and Manufacturing Company have each infringed said United States Letters Patent Nos. 3,236,113, 3,276,156 and 3,276,314, which are valid. Complaint, insofar as it charges infringement by defendants Bernard C. Grafft and United States Camera Corporation is dismissed without prejudice. Counterclaims dismissed with prejudice, Oct. 29, 1968.

3,355,254. (See 3,215,101.)

Re. 25,033, Balamuth and Kuris, VIBRATORY MACHINE TOOL AND VIBRATORY ABRASION METHOD; **2,990,616,** same, ULTRASONIC CUTTING TOOL; **3,075,288,** same, DENTAL INSTRUMENT; **3,076,904,** Kleesattel, Balamuth and Kuris, ACOUSTICALLY VIBRATED MATERIAL CUTTING AND REMOVING DEVICES; **3,213,537,** same, SUPPLY AND CONTROL APPARATUS FOR VIBRATORY CUTTING DEVICE, **filed** July 14, 1966, D.C., S.D.N.Y., Doc. 66–C–2125, *Cavitron Ultrasonics Inc.* v. *Ultrasonic Research Corporation.* Final judgment and consent, defendants enjoined and restrained from manufacturing, etc., Oct. 28, 1968.

DEFENSIVE PUBLICATIONS

PUBLISHED MARCH 18, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

603,791

CHEMICALLY MODIFIED CARBON BLACK AND RUBBERY COMPOSITIONS CONTAINING SAME

Albert M. Gessler, 448 Orchard St., Cranford, N.J. 07016, and John Rehner, Jr., 200 Linden Ave., Westfield, N.J. 07090

Continuation-in-part of application Ser. No. 359,454, Apr. 13, 1964, which is a continuation of application Ser. No. 20,842, Apr. 8, 1960, which is a continuation-in-part of application Ser. No. 684,643, Sept. 18, 1957. This application Dec. 22, 1966. Published Mar. 18, 1969

Class 260—41.5

No Drawing. 47 Pages Specification

Carbon blacks, whose surface areas have been increased at least 25% above normal values, when chemically modified through contact with a substance such as elemental halogen, sulfur-containing compounds, nitrogen-containing compounds, oxygen-containing compounds, halogen-containing compounds and mixtures thereof are highly desirable fillers for rubbery materials particularly synthetic rubbery materials such as butyl rubber. The preferred method of attrition is steel ball milling.

762,159

PROCESS FOR DRY SPINNING POLY(4-METHYL/-1-PENTENE)

Gerald A. McFarren, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 375,962, June 17, 1964. This application Sept. 24, 1968. Published Mar. 18, 1969.

Class 264—210

No Drawing. 11 Pages Specification

Fibers of high molecular weight poly(4-methyl-1-pentene) have long been desired because of the high melting point of the polymer (above 230° C.). However, both melt and solution spinning have resulted in severe polymer degradation and the fiber so produced had poor physical properties.

The process of this application enables the production of a fiber of poly(4-methyl-1-pentene) having a reduced specific viscosity (RSV) greater than 5 as measured on a 0.1% solution in decahydronaphthalene at 135° C. The following steps are carried out:

(1) formation of a gel containing 20–60% by weight of a poly(4-methyl-1-pentene), having an RSV greater than 5, from the dry polymer, or the solvent-wet filter cake from the polymerizer, by heating with a suitable diluent (hydrocarbon or chlorinated hydrocarbon having a boiling point of 175 to 300°C.) to 150–225° C. until dissolved and then cooling,
(2) charging said gel to an extruder heated to 160–285° C.,
(3) extruding a filament,
(4) passing the filament through solvent removal means, and
(5) orienting the filament by stretching from 250 to 1300%.

The oriented fiber exhibits excellent physical properties including high temperature strength retention and good abrasion resistance.

762,160

PROCESS FOR DRY SPINNING POLY(4-METHYL-1-PENTENE)

Howard A. Aiken, Kennett Square, and George C. Oppenlander, Embreeville, Pa., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 375,923, June 17, 1964. This application Sept. 24, 1968. Published Mar. 18, 1969

Class 264—210

No Drawing. 11 Pages Specification

Fibers of high molecular weight poly(4-methyl-1-pentene) have long been desired because of the high melting point of the polymer (above 230° C.). However, both melt and solution spinning have resulted in severe polymer degradation and the fiber so produced had poor physical properties.

The process of this application makes it possible to spin poly(4-methyl-1-pentene) into fibers having a reduced specific viscosity (RSV) greater than 5 as measured on a 0.1% solution in decahydronaphthalene at 135° C. The following steps are carried out:

(1) charging to an extruder a slurry containing 40–60% by weight of a poly(4-methyl-1-pentene), having an RSV greater than 5, in a liquid hydrocarbon diluent (preferably having a boiling point of 175 to 300° C.),
(2) heating said slurry in the extruder to 200–285° C.,
(3) extruding a filament,
(4) passing the filament through solvent removal means, and
(5) orienting the filament by stretching from 250 to 1300%.

The slurry that is charged can be the solvent wet filter cake obtained from the polymerizer, to which additional diluent is added if necessary to give at least 40% diluent, or it can be made from dry polymer flake by mixing it with 40–60% diluent. The oriented fiber exhibits excellent physical properties including high temperature strength retention and good abrasion resistance.

580,216

WIDE EXPOSURE LATITUDE PHOTOGRAPHIC ELEMENTS

James L. Graham, Kodak Park, Rochester, N.Y.

Filed Sept. 19, 1966. Published Mar. 18, 1969

Class 96—74

No Drawing. 20 Pages Specification

Extended latitude films are provided comprising a sup-

port which carries the following color-forming units, arranged inter se in the order given:

No.	Color-Forming Unit
1	Red-sensitive, cyan-producing color-forming unit.
2	Green-sensitive, magenta-producing color-forming unit.
3	Blue-sensitive, yellow-producing color-forming unit.
4	Red-sensitive, cyan-producing color-forming unit.
5	Green-sensitive, magenta-producing color-forming unit.
6	Blue-sensitive, yellow-producing color-forming unit.

A magenta filter is positioned between the two green-sensitive color-forming units and a cyan filter is positioned between the two red-sensitive color-forming units, so that the response of the two blue-sensitive, yellow-producing color-forming units is equal and matches the response of both the green-sensitive and both the red-sensitive color-forming units. Preferably, the cyan and magenta filter is positioned between units Nos. 3 and 4. Each color-forming unit can include fast and slow silver halide emulsion layers. No neutral density (or antihalation layer) is present between or in the several color-forming units. Exposed films can be processed by the negative color process described by Hanson et al., in the "Journal of the Society of Motion Picture and Television Engineers," vol. 61 (1953), pages 667–701.

604,120

PURIFICATION OF ORGANIC CHEMICALS BY SELECTIVE EXUDATION FROM SOLID SUPERSATURATED SOLUTION IN ANOTHER ORGANIC MATERIAL

John W. Tamblyn, P.O. Box 92, Jonas Ridge, N.C. 28641, and Gordon C. Newland, P.O. Box 511, Kingsport, Tenn. 37662

Filed Dec. 23, 1966. Published Mar. 18, 1969
Class 260—94.9
No Drawing. 19 Pages Specification

Crude organic materials may be purified by incorporating them into an organic matrix material in an amount in excess of normal compatibility under ambient conditions and thereafter causing the organic materials to exude from the organic matrix in purified form. Incorporation of the organic materials into the organic matrix materials is usually accomplished under elevated temperatures whereat both components are in a fluid state. Subsequent cooling of the blended materials results in the exudation of the purified organic material from the organic matrix. The method is particularly suitable for purifying various stabilizer compounds such as antioxidants, UV inhibitors, and the like, using polyolefins as the organic matrix material.

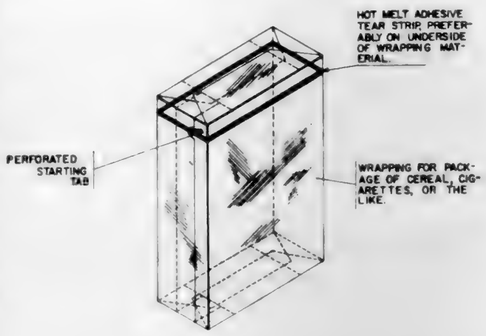
626,787

THERMOPLASTIC POLYMERIC TEAR STRIPS FOR PACKAGING MATERIALS

Marion O. Brunson and William D. McGillen, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Mar. 29, 1967. Published Mar. 18, 1969
Class 229—51
1 Sheet Drawing. 9 Pages Specification

The method for incorporating a tear strip onto the surface of packaging material such as paperboard, cellophane, or the like, comprising the step of applying a narrow strip of a molten thermoplastic polymer directly to the surface of the packaging material. Polyolefin copolymers are especially useful which have a viscosity of 20,000



to 50,000 cps. at 190° C., e.g., copolymer of 30–60% butene-1 and 40–70% propylene.

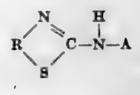
644,485

SAFETY INKS

Albert P. Romano, Pitman, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 8, 1967. Published Mar. 18, 1969
Class 106—22
No Drawing. 10 Pages Specification

A safety ink, which leaves a stain when treated with ink eradicator, comprising an organic dye, a dye solvent and 0.5 to 10% by weight an amino-aryl thiazole of the general formula:



wherein R is a divalent carbocyclic aryl group of from 6 to 10 carbon atoms which may be substituted by members selected from —H, —Cl, —Br, —NO_2, —COOH, —COOM, —OY, —Y, —SO_2NH_2 and —SO_3H, where M is an alkali metal and Y is selected from methyl and ethyl groups; the R group has adjacent carbon atoms which are attached to the nitrogen and sulfur atoms respectively; and A is selected from hydrogen, alkyl and aryl groups.

647,320

POLYMER PREPARED BY THE HYDROLYSIS OF AROMATIC POLYIMIDES AND CONVERSION OF THE RESULTING POLYAMIDE-ACID LINKAGES TO FORM AROYLOXYPROPANESULFONATE DYE SITES

Robert Samuel Irwin, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 20, 1967. Published Mar. 18, 1969
Class 8—55
No Drawing. 36 Pages Specification

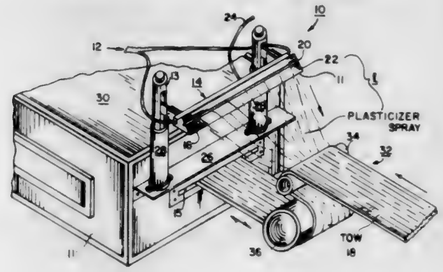
Processes for (1) hydrolysis of imide linkages of aromatic polyimides to corresponding polyamide-acid linkages by reaction with barium hydroxide or strontium hydroxide and (2) conversion of the resultant polyamide-acid linkages to form dyeable aroyloxypropanesulfonate dye sites; and polymers produced by said processes.

665,476

ELECTROSTATIC PROCESS AND APPARATUS FOR APPLYING MATERIALS TO TOBACCO SMOKE FILTER TOW

Kyle E. Morrison and William E. Morrell, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Sept. 5, 1967. Published Mar. 18, 1969
Class 117—17
1 Sheet Drawing. 16 Pages Specification



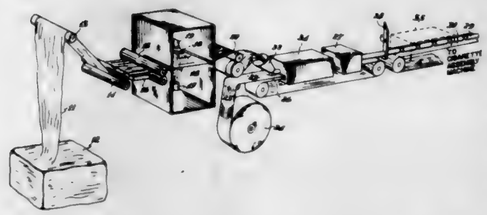
An electrostatic process and apparatus for applying materials to tobacco smoke filter tow wherein the material is introduced into an electrostatic field and is attached to the tow passing through the field. In order to attach a material such as liquids and/or solid particulate matter to the filter tow, the material is passed over the edge of a charged surface which is at a high electrical potential with respect to the closely adjacent tow carrying surface. The material is thus subsequently attracted toward, and deposited on the filter tow. Solid particulate matter can also be attached to the filter tow by introducing the matter into the electrostatic field created between a high potential grid and a grounded surface. The particulate matter is formed into a "cloud" and deposited upwardly onto the filter tow that is passing between the grid and grounded surface.

666,165

METHOD FOR FORMING CIGARETTE FILTER RODS

John R. Hatfield, Jr., and Charles E. Sandidge, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Sept. 7, 1967. Published Mar. 18, 1969
Class 156—166
2 Sheets Drawing. 15 Pages Specification



A method and apparatus for forming cigarette filter rods that includes the step of heating the filter rod fibers and/or plasticizer by microwave energy to cause rapid and even curing of the rods. The microwave energy may be applied to the filter rod fibers either immediately after the tow material is formed, simultaneously with the forming, or after the rod-like configuration of plasticizer containing tow material is wrapped with a wrapper.

738,777

FOOD PRODUCTS HAVING IMPROVED FLAVOR

Gordon F. Brunner, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 21, 1968. Published Mar. 18, 1969
Class 99—123
No Drawing. 10 Pages Specification

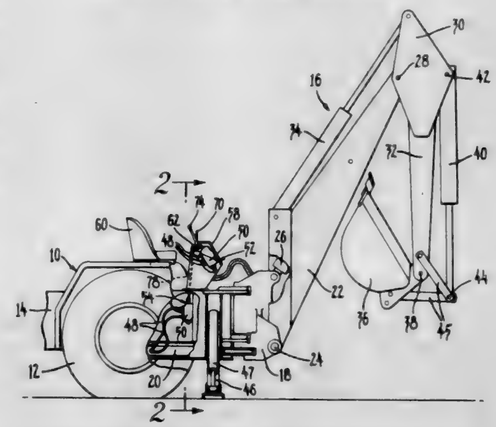
Octahydrocoumarin and certain of its lower alkyl substituted derivatives are flavoring agents for food products. These compounds impart butter-like flavor properties to oleaginous food products which are similar to the flavor characteristics of the naturally occurring lactones. 6-propyloctahydrocoumarin is a preferred compound.

742,600

BACKHOE CONTROL CONSOLE

George W. Bingley and Allyn C. Dowd, Stow, Ohio, assignors to Massey-Ferguson Inc., Des Moines, Iowa, a corporation of Maryland

Filed July 5, 1968. Published Mar. 18, 1969
Class 37—118
2 Sheets Drawing. 6 Pages Specification



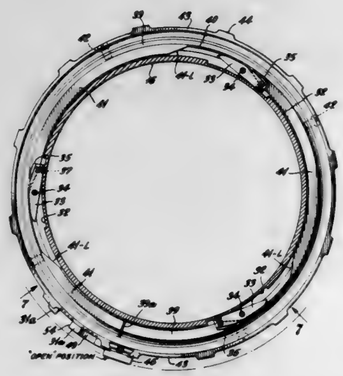
A tractor-mounted backhoe digging unit comprises conventional pivotally interconnected swing post, boom, dipperstick and bucket. Spaced stabilizers mounted at the rear of the tractor are extensible into ground engagement to stabilize the tractor during digging. Conventional hydraulic cylinders which are supplied by hydraulic pressure fluid from a tractor mounted source through a hydraulic circuit are provided for extending the stabilizers and for moving the swing post, boom, dipperstick and bucket. The hydraulic circuit includes control valves for operating the cylinders and which are each operated by a control lever. The boom, dipperstick and bucket valves are combined into a first valve unit which is located in a narrow compact control console mounted at the rear of the tractor adjacent the operator's seat. The swing and stabilizer valves are combined into a second valve unit located on the tractor beneath the control console and are connected to the valves by linkages. By both spacing the mounting of the valve units and mounting all control levers together on one shaft, the control console may be made sufficiently compact and narrow so that it may be straddled by the operator's legs, improve operator visibility and provide better access to the control levers.

PATENTS

GRANTED MARCH 18, 1969

GENERAL AND MECHANICAL

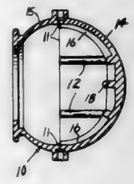
3,432,860
TUBULAR CONNECTORS FOR PRESSURE SUIT
George P. Durney, Dover, Del., assignor, by mesne assignments, to ILC Industries, Inc., Dover, Del., a corporation of Delaware
Filed May 14, 1964, Ser. No. 367,525
U.S. Cl. 2—2 12 Claims
Int. Cl. A41d *13/00*; F16l *37/18*



1. A connector for interconnecting a pair of hollow structures, said connector comprising an attachment ring adapted to be affixed to one of said hollow structures, an inter-base ring adapted to be affixed to the other of said hollow structures, an annular groove defined in an upward extending portion of said attachment ring a plurality of biased attaching pawls, means mounting said pawls on said inter-base ring, and movable means operatively associated with said pawls and movable to three positions on said inter-base ring, said movable means allowing inward and outward movement of said biased pawls in one position, preventing inward movement thereof in a second position and preventing outward movement thereof in a third position whereby when said attachment ring and said inter-base ring are placed in concentric and contiguous relationship, each of said pawls is biased to extend outwardly into the annular groove defined in said attachment ring thereby securing said attachment ring to said inter-base ring in said one position, each of said pawls is locked outwardly in the groove defined in said attachment ring in said second position and each of said pawls is retracted inwardly from the annular groove in said attachment ring thereby allowing said attachment ring to be separated from said inter-base ring in said third position.

3,432,861
EAR PROTECTOR
John E. Flagg, Worcester, Mass., assignor to David Clark Company Incorporated, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 9, 1966, Ser. No. 571,258
U.S. Cl. 2—209 1 Claim
Int. Cl. A42b *1/06*

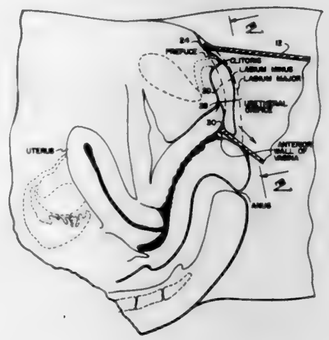
A sound attenuating ear protector in the form of a hollow shell which has a reticulate ridged network formed therein, the network of ridges extending across the protector in an area opposite an opening for the auricle of the ear.



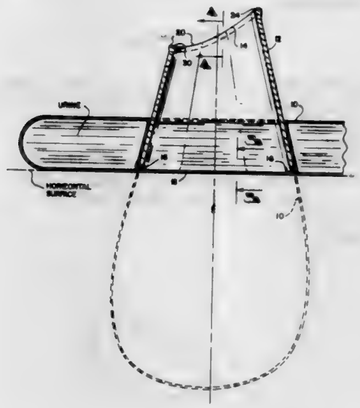
3,432,862
ADJUSTABLE SIZE GARMENT
Harry H. Weiler, Metuchen, N.J.
(5 Columbia Drive, 2A, Somerville, N.J. 08876)
No Drawing. Filed Mar. 4, 1966, Ser. No. 531,748
U.S. Cl. 2—243 6 Claims
Int. Cl. A41d *27/00*

This invention relates to an adjustable size garment that can be elongated or stretched to a larger size and then chemically stabilized in the larger size without the use of heat.

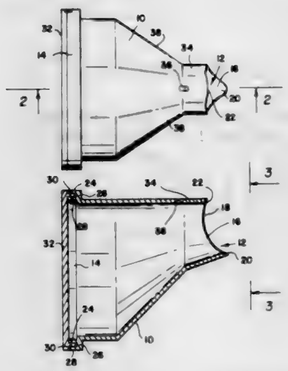
3,432,863
URINALS FOR USE BY HUMANS WHEN IN SUPINE POSITION
Theodore F. Schwartz, 11660 St. Andrews Way, Scottsdale, Ariz. 85251
Filed June 27, 1966, Ser. No. 560,426
U.S. Cl. 4—110 14 Claims
Int. Cl. E03d *13/00*; A47k *11/00*



1. In a urinal the combination of: a flexible urine-containing bag structure; and a relatively rigid hollow cylindrical neck structure for said bag structure, said neck structure having an open end and an opposite end connected to said bag structure; said neck structure shaped and adapted to stand upright with its open end upward and its opposite end resting on said bag structure, when said bag structure contains liquid and is disposed on a substantially horizontal surface and said bag structure being adapted and disposed to deflect horizontally on said surface so as to lay flat under said opposite end of said neck structure.



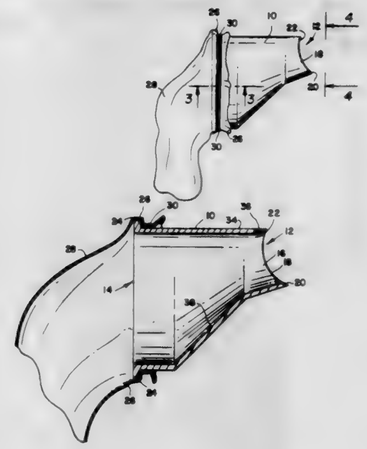
3,432,864
URINAL
Theodore F. Schwartz, 11660 St. Andrews Way, Scottsdale, Ariz. 85251
Filed Feb. 27, 1967, Ser. No. 619,535
U.S. Cl. 4—110 10 Claims
Int. Cl. E03d *13/00*; A47k *11/02*



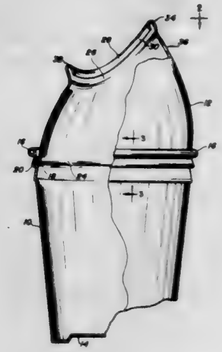
A disposable urinal for female patients in supine position, the urinal having an opening adapted to fit the genitalia of the patient from the anterior wall of the vagina to a position above the urethral orifice; the urinal also having a urine receiving container extending at an angle downwardly below the engagement of said opening with said anterior wall of said vagina.

3,432,865
URINAL
Theodore F. Schwartz, 11660 St. Andrews Way, Scottsdale, Ariz. 85251
Filed June 7, 1967, Ser. No. 644,386
U.S. Cl. 4—110 7 Claims
Int. Cl. E03d *11/02*; A47k *11/90*

A disposable urinal comprising a substantially cone-shaped, hollow body, having an attachable flexible bag bottom for sealingly enclosing one end of said body; and a genitals engaging open end rim of said body adapted to engage human female and male genitals for facilitating urination, when a human is in supine position; the invention comprising a modification, wherein said body is provided with an extending peripheral flange on its one end, and a flexible urine containing bag compressively engaged on said rim and sealingly coupled thereto.

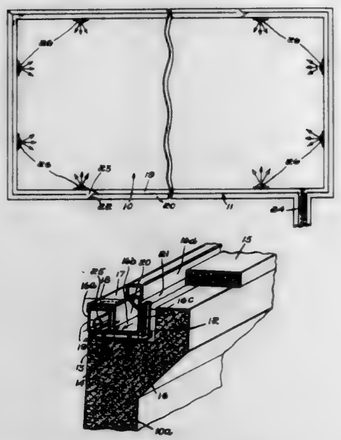


3,432,866
DISPOSABLE URINAL
Theodore F. Schwartz, 11660 St. Andrews Way, Scottsdale, Ariz. 85251
Filed Dec. 29, 1967, Ser. No. 694,637
U.S. Cl. 4—110 13 Claims
Int. Cl. A61g *9/00*; E03d *13/00*; A47k *11/12*



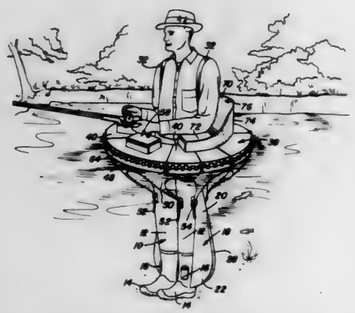
A disposable urinal having a generally cup-shaped hollow body provided with an enclosed end and an open end, and a hollow neck having opposite open ends, one of which is compressively and sealingly engaged with the open end of the body, and provided with a genitalia engaging opposite end having a rim adapted to conform with the female genitals for facilitating urination when a female is in supine position; the body and neck structure of the urinal of the present invention being made of reasonably thin polystyrene or equivalent material.

3,432,867
GUTTER AND WATER SUPPLY SYSTEM FOR SWIMMING POOLS
George R. Whitten, Jr., 1003 S. Main, Bellingham, Mass. 02019
Filed July 13, 1967, Ser. No. 653,072
U.S. Cl. 4—172 6 Claims
Int. Cl. E04h 3/16



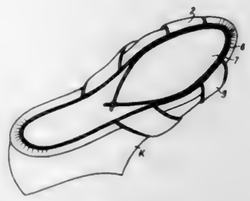
A gutter and water supply system for swimming pools of the recirculating type. The gutter has a removable cover enclosing part or all of the drainage area. The supply pipe for returning filtered water to the pool is housed under the cover and connected to supply nozzles passing through the inner wall of the gutter. The nozzles and piping are demountable for winter storage.

3,432,868
FLOAT-EQUIPPED WADING BOOTS WITH PROPELLING FINS
James I. Lowery, Houston, Miss., assignor of ten percent each to Ronald James Lowery, Deborah Joy Lowery, and Peggy Ann Lowery, all of Houston, Miss.
Filed June 7, 1967, Ser. No. 644,245
U.S. Cl. 9—343 7 Claims
Int. Cl. A41d 13/00; A63b 31/12



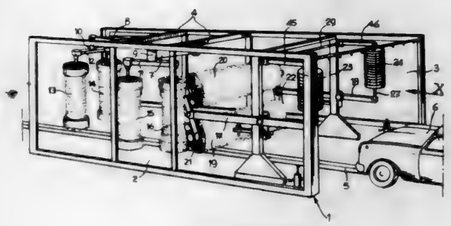
The wading boots shown are hip high, are attached to and depend when in use from a collapsible annular body-encircling float. This float permits a fisherman to wade safely in streams while remaining dry. When expanded the float provides a ledge-like platform for accessible tackle boxes and an optionally attachable collar providing armrests and a backrest. Shoulder straps serve as suspenders. Apron means below the float is equipped with holddown straps which are attachable to the legs of the boots. Special propelling fins on these legs enable the fisherman to "paddle" from place to place in the water which is being fished.

3,432,869
METHOD OF MAKING A SUMMER SHOE
Rudolf Juřík, Hvozdna, and Ludvík Dvořák, Gottwaldov, Czechoslovakia, assignors to SVIT narodni podnik, Gottwaldov, Czechoslovakia
Filed June 21, 1967, Ser. No. 647,695
Claims priority, application Czechoslovakia, June 22, 1966, 4,165/66
U.S. Cl. 12—145 3 Claims
Int. Cl. A41d 29/00



A summer shoe having open heel and toe portions is made by first securing the upper to the circumference of a pliable insole to which a string is also sewn by overedge stitching. The assembly is pulled over a last, and an intermediate sole is placed on the exposed face of the innersole whose circumference together with the attached portion of the upper is then wrapped over the edge of the intermediate sole by tightening the string, whereupon an outsole is attached.

3,432,870
WASHING PLANT FOR VEHICLES
Giovanni Emanuel and Carlo Zucca, Moncalieri, Turin, Italy, assignors to Soc. Acc. Emanuel di G. e R. Emanuel & C., Turin, Italy
Filed May 1, 1967, Ser. No. 635,116
Claims priority, application Italy, May 6, 1966, 10,676/66
U.S. Cl. 15—21 5 Claims
Int. Cl. B60s 3/00; A46b 13/02



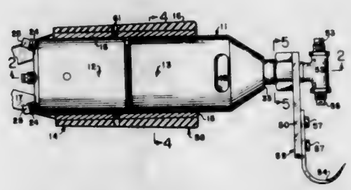
A car washing plant has both vertical and horizontal brushes with a particular resilient mounting for a pair of vertical brushes. The pair of vertical brushes are rotatably mounted on a horizontal beam, which beam is pivoted about a vertical axis and is resiliently urged towards the middle regions of the vehicle washing plant. More than one pair of brushes may be arranged in this particular manner with one pair disposed at one side of the vehicle and another pair at the other side of the vehicle.

3,432,871
SCRAPER
Daniel P. Caprioli, P.O. Box 792, Devon, Pa. 19333
Filed June 5, 1967, Ser. No. 643,604
U.S. Cl. 15—104.04 4 Claims
Int. Cl. F28g 1/08; B08b 9/02



A hand operated scraper for removing paint, rust, scale and similar material from the outer surface of an elongated workpiece having uniform cross-section. The scraper has a body with an aperture therein to circumscribe the workpiece and a scraping edge around the aperture to engage the workpiece surface in scraping relationship. The scraper acts as a lever upon the workpiece, and in operation as it is moved along the workpiece, part of the effort exerted by the operator to the scraper is used to create, through leverage action, the shearing force between the scraping edge and the workpiece to scrape the material away.

3,432,872
JET-PROPELLED HYDRAULIC PIPELINE CLEANER WITH A SKID, TANGENTIAL JET AND CLEANING HEAD
John A. Kirschke, Ammann Road, Boerne, Tex. 78006
Filed Oct. 30, 1967, Ser. No. 678,849
U.S. Cl. 15—104.12 5 Claims
Int. Cl. B08b 3/02, 9/04



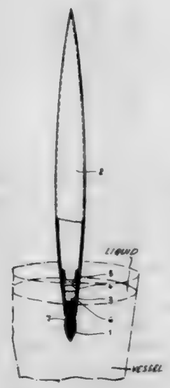
A high-torque, jet propelled pipeline cleaner incorporating a vaned rotor driving a cleaning head adapted to receive a root cutter and/or a T jet cleaning head, said jet functions as a jet cleaner and root positioner. The construction of the device incorporates a metering jet to the motor and a high-pressure conduit which by-passes the motor and supplies fluid to the T jet cleaning head. This conduit functions structurally in conjunction with thrust bearings and adjusting means to assure operation of the rotor under extremely high fluid pressure.

3,432,873
MOP CONSTRUCTION
Theron V. Moss, 3175 Falmouth, Shaker Heights, Ohio 44120
Filed Dec. 14, 1965, Ser. No. 513,770
U.S. Cl. 15—118 8 Claims
Int. Cl. A47l 13/00



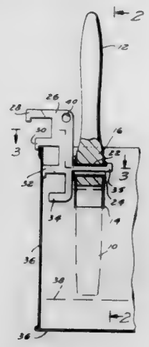
A mop swab including absorbent cords secured together substantially centrally of the length by flexible interconnecting means from which the cords flare outwardly into a fanned out relationship adjacent the ends thereof. The flexible interconnecting means are positioned on the flare of the swab and assist in maintaining the cords in the desired fanned relationship. A cleaning pad or assembly may also be secured to the mop, including an abrasive element to facilitate cleaning of floors and also to assist in maintaining the individual cords in the spread relationship.

3,432,874
IMPLEMENT FOR TRANSFERRING PIGMENTS
Karl-Heinz Stiel, Hannover, Germany, assignor to Gunther Wagner Pelikan-Werke, Hannover, Germany
Filed Sept. 28, 1966, Ser. No. 583,127
Claims priority, application Germany, Sept. 30, 1965, W 4,011/65
U.S. Cl. 15—145 2 Claims
Int. Cl. A46b 5/02, 11/00



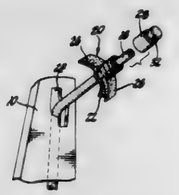
An artist's brush comprises an elongated buoyant handle. Bristles extend from one end of the handle. Weighting means defines in the region of this one end a center of gravity for the brush so selected that, when the brush is placed into a body of liquid, the bristles will submerge within the liquid and the handle will project above the liquid.

3,432,875
PAINT BRUSH AND HANGER THEREFOR
Stanley Edelson and George R. O'Brien, Amsterdam, N.Y., assignors to Amsterdam Brush Corp., a corporation of New York
Filed Nov. 16, 1966, Ser. No. 594,731
U.S. Cl. 15—246 1 Claim
Int. Cl. B44d *3/12*; A46b *17/02*



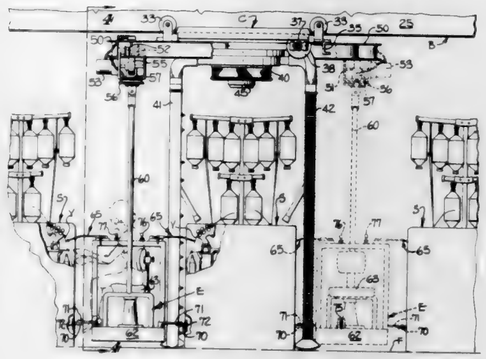
Paint brush has a hole extending through handle and ferrule, and a length of tubing extending through the hole, ends of tubing being bent outwardly against outer faces of ferrule. Hanger having at least one hook adapted to fit over upper edge of paint can has a finger adapted to be received within tube-lined hole.

3,432,876
WASHER NOZZLE ASSEMBLY
Andrew S. Edwards, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 4, 1966, Ser. No. 592,221
U.S. Cl. 15—250.04 6 Claims
Int. Cl. B60s *1/52, 1/32*



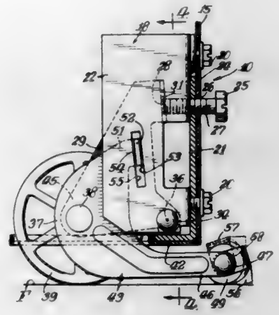
In a preferred form, this disclosure relates to a fluid delivery system for supplying washing fluid from a source onto a window of an automotive vehicle. The system comprises a wiper-washer arm, a flexible tube extending through the arm and having one end which is adapted to be connected with a source of washing fluid and a dispensing means connected to the arm and to the other end of the flexible tube for dispensing fluid when delivered thereto onto the window of the vehicle. The wiper-washer arm has a wall portion provided with a non-circular opening therein and the dispensing means includes a fastener means having spaced resilient flanges which frictionally grip opposite sides of the wall portion of the wiper-washer arm when connected thereto. One of the flanges of the fastener means is shaped complementary with the non-circular opening and is freely insertable therethrough. The fastener means is connected to the wall portion by inserting the one flange through the opening therein and then rotating the fastener means so that portions of the one flange and the other flange are disposed on and frictionally engage the opposite sides of the wall portion. The dispensing means also includes a nozzle means and the nozzle means and the fastening means are in sealing engagement with the other end of the flexible tube.

3,432,877
TEXTILE MACHINE TENDING AND CLEANING APPARATUS
Robert L. Black, Jr., and Charles D. Lee, Jr., Charlotte, N.C., assignors to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Jan. 18, 1966, Ser. No. 521,276
U.S. Cl. 15—312 8 Claims
Int. Cl. A47l *5/38*



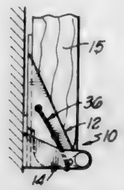
An apparatus for transporting a textile machine operator or tender alongside textile machines arranged in at least two rows in a predetermined path of travel and on a regular schedule.

3,432,878
ADJUSTABLE CASTER WITH ANTITIP DEVICE
Harold Matthew Hupfer, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,747
U.S. Cl. 16—32 12 Claims
Int. Cl. B60b *33/04*



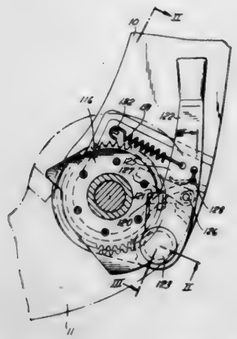
A caster for use with refrigerators and the like. The caster includes an antitip device for precluding forward tipping of the refrigerator cabinet as by the opening of a heavily loaded door. The caster further is provided with brake means, and adjustment means for vertically adjusting the caster to engage a subjacent surface.

3,432,879
LATCHING HINGE
Howard B. Gorton, West Covina, and Henry Arias, Jr., La Puente, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation
Filed Aug. 26, 1965, Ser. No. 482,671
U.S. Cl. 16—145 1 Claim
Int. Cl. E05d *11/10*



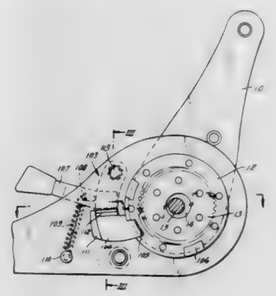
A latching hinge in which the hinge pin connects two leaves for hinged movement between open and closed position; one of said leaves having a strike element and the second leaf having a latching element including a leaf-type spring means.

3,432,880
ADJUSTABLE TWO PART HINGE FITTING, ESPECIALLY FOR SEATS OF A MOTOR VEHICLE
Peter Ulrich Putsch, Moltkestrasse 14, Remscheid-Hasten, Germany, and Paul Werner, Herder Strasse 16, and Gustav Adolf Reinmoller, Max-Strasse 29, both of Remscheid, Germany
Filed June 12, 1967, Ser. No. 645,280
Claims priority, application Germany, June 12, 1966, P 39,679
U.S. Cl. 16—146 10 Claims
Int. Cl. E05d *11/10*; B60m *1/02*



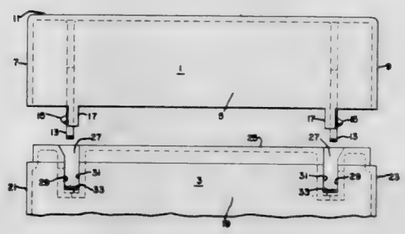
A two part hinge fitting especially for motor vehicle seats in which a fixed hinge member fixedly connected to the seat and a tiltable hinge member fixedly connected to the seat back are articulatedly connected to each other and which includes means for gradually adjusting the position of the hinge members relative to each other, and releasable locking means, which when released, will permit a quick tilting of the tiltable hinge member and the seat back connected thereto relative to the fixed hinge member connected to the actual seat portion.

3,432,881
HINGE FITTING FOR ADJUSTABLY CONNECTING A SEAT AND A BACKREST TO EACH OTHER, ESPECIALLY FOR MOTOR VEHICLES
Peter Ulrich Putsch, Moltkestrasse 14, Remscheid-Hasten, Germany, and Paul Werner, Herder Strasse 16, and Gustav Adolf Reinmoller, Max-Strasse 29, both of Remscheid, Germany
Filed June 12, 1967, Ser. No. 645,297
Claims priority, application Germany, June 11, 1966, P 39,680
U.S. Cl. 16—146 9 Claims
Int. Cl. E05d *11/10*; B60m *1/02*



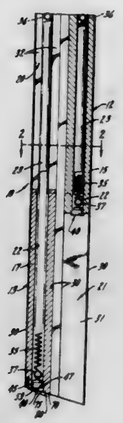
A hinge fitting for adjustably connecting a seat and a backrest, especially for motor vehicles, in which a pair of hinge members pivotally connected to each other are respectively fixedly connected to the seat and to the backrest, in which means cooperate with the hinge members for gradually adjusting the position of the hinge members and the elements fixed thereto relative to each other, and in which locking means movable between a locking and a releasing position cooperate with the aforementioned means to permit in the locking position of the locking means only gradual adjustment of the position of the link members relative to each other, and in the releasing position free tilting of the link member fixed to the backrest relative to the other link member.

3,432,882
HINGE STRUCTURE
Philip Farouche, Frankfort, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 1, 1966, Ser. No. 576,720
U.S. Cl. 16—171 2 Claims
Int. Cl. E05d *7/10*



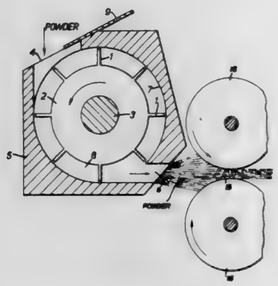
A hinge structure for a cabinet, the structure comprising a rigid positioning tab and a deflectable rib having a transversely extending pivot pin thereon, the tab and rib extending downwardly from a cover portion and being received by a chamber provided in the base portion with the pivot pin received by a slot in the chamber.

3,432,883
SASH PLUG
Richard K. Erck, 355 Banbury Road, Mundelein, Ill. 60060
Filed Apr. 14, 1967, Ser. No. 630,965
U.S. Cl. 16—197 6 Claims
Int. Cl. E05d *13/12*



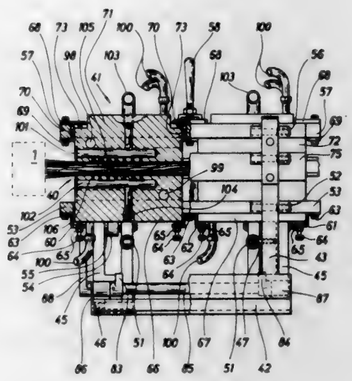
A device for connecting a window sash balance. The device comprises a tapered plastic plug having a flat on one side. The taper facilitates wedging into varying size sash grooves and the flat rides flush against the frame channel base. A boss on top of the plug seats the plug securely in the spring housing for shipment and centers the plug precisely for mounting the sash.

3,432,884
VANE-TYPE POWDER FEEDER
Edward Lysakowski, Calver, and John Kenny, Woodhouse, near Sheffield, England, assignors to The British Iron and Steel Research Association
Filed Nov. 26, 1965, Ser. No. 509,862
Claims priority, application Great Britain, Nov. 27, 1964, 48,334/64
U.S. Cl. 18—9 3 Claims
Int. Cl. B22f *3/18*; B65g *31/00*



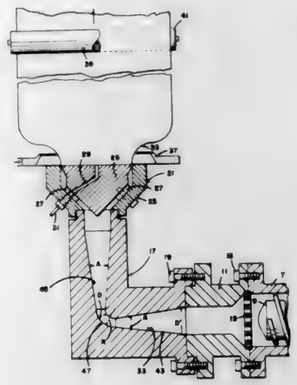
A rotary impeller in a housing receives powdered metal particles from an adjustable inlet port and accelerates the powder to a relatively high velocity and projects the powder from the housing through an outlet port which is arranged to direct the powder to the bight of a pair of compacting rolls.

3,432,885
DEVICE FOR THE PRODUCTION OF A CONTINUOUS ENVELOPE FOR RODS, BARS, PIPES AND THE LIKE
Luigi Zanini, Oderzo-Treviso, Italy
Continuation-in-part of application Ser. No. 397,368, Sept. 16, 1964. This application June 26, 1967, Ser. No. 648,708
Claims priority, application Germany, Jan. 24, 1964, Z 10,603
U.S. Cl. 18—13 10 Claims
Int. Cl. B29f *3/10*



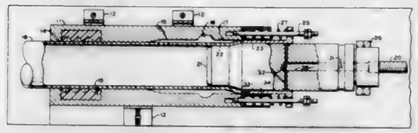
A continuous extrusion press for applying an irregularly shaped plastic jacket on a moving core includes a circular nozzle for extruding the jacket and a plurality of transversely adjustable molding jaws for forming the jacket.

3,432,886
TUBULAR FILM EXTRUSION APPARATUS
Harold A. Haley, Secane, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 2, 1967, Ser. No. 635,605
U.S. Cl. 18—14 8 Claims
Int. Cl. B29d *23/04*



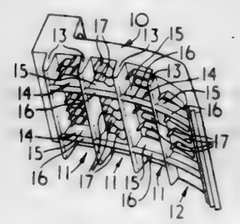
Apparatus for making tubular film which includes an elbow having a passage for conveying molten thermoplastic material from an extruder to a die, the elbow passage having frusto-conical inlet and outlet sections which are connected at their smaller ends by a 90° angular section.

3,432,887
MOLDING
Charles A. Poux and Peter R. Deutsch, Titusville, Pa., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,871
U.S. Cl. 18—19 6 Claims
Int. Cl. B29c *17/00*; B28b *21/42*



The end of a thermoplastic pipe is formed so as to provide for joining by blow molding a bulge in said pipe.

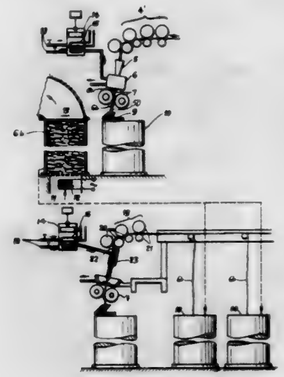
3,432,888
TIRE MOLD
Thomas Albert Brierley, Birmingham, England, assignor, by mesne assignments, to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York
Filed Nov. 1, 1966, Ser. No. 591,322
U.S. Cl. 18—44 12 Claims
Int. Cl. B29c *1/00*



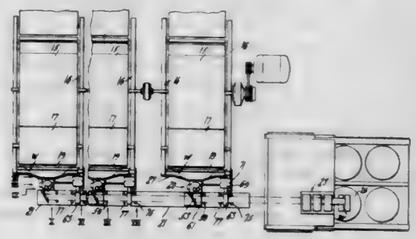
1. Apparatus for moulding at least the tread portion of a pneumatic tire comprising a generally annular tread moulding matrix having, on its radially inner surface, at least one generally circumferential groove formed therein for moulding a rib in the tread portion and a plurality of circumferentially spaced-apart moulding projections extending radially inwardly from the base of the groove, each projection comprising a radially outer stem portion for moulding an opening in the rib and a radially inner head portion of enlarged curved transverse cross-sectional form for moulding a channel, the head portion extending transversely across the groove.

3,432,889
PROCESS FOR THE MANUFACTURE OF A DRAFTABLE STAPLE FIBER BAND OF HIGH DENSITY AND BREAKING LENGTH
Werner Naegeli, Winterthur, Switzerland, assignor to Pavena A.G., Basel, Switzerland, a corporation of Switzerland
Filed Aug. 10, 1964, Ser. No. 388,430
Claims priority, application Switzerland, Aug. 16, 1965, 10,231/63
U.S. Cl. 19—66 20 Claims
Int. Cl. D01b *3/04*; D01d *5/00*; D01f *1/00*

A process for manufacturing a draftable staple fiber band or sliver of high density and strength. A fiber arrangement formed of a homogeneous, draftable staple fiber band is formed into a staple fiber layer. Then there is initially introduced a dissolved fixing agent into the staple fiber layer, the latter is then consolidated into a sliver of small specific volume and excess fixing agent is withdrawn. The sliver is bonded by the fixing agent by evaporating the solvent of the fixing agent by drying in a drying zone. Then there is formed a doubled fiber arrangement from a plurality of these slivers and subsequently the bond is ruptured by drafting in a drafting zone. The sliver leaving the aforesaid drafting zone is subjected to further soaking with a liquid which is the same as the initially introduced fixing agent or compatible with such fixing agent and capable of dissolving the latter. Then the fiber material of the sliver is consolidated, excess liquid is extracted, and the sliver dried.



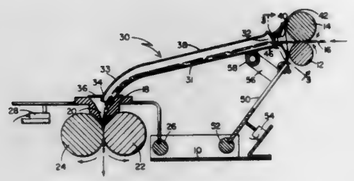
3,432,890
RIBBON FORMING AND HANDLING MECHANISM
Virgil Allan Burham, Saco, Maine, and Richard Warren Munroe, Clemson, S.C., assignors to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 379,244, June 30, 1964. This application June 6, 1966, Ser. No. 555,561
U.S. Cl. 19—150 14 Claims
Int. Cl. D01g *25/00, 27/00, 15/00*



Textile apparatus for blending a plurality of diverse staple fibers into a single unitary sliver comprising a plurality of independent diverse sliver supply means each providing a continuous ribbon sliver, ribbon sliver assembly means superposing said plurality of ribbon slivers upon one another aligned in their widthwise dimension providing a laminated ribbon sliver of said widthwise dimension having a plurality of laminations of diverse staple fibers and sliver drafting means. Each ribbon sliver has an essentially uniform rectangular cross section with a widthwise dimension several times greater than its thickness composed of generally longitudinally aligned staple

fibers. The drafting means includes a plurality of pairs of drafting rolls for simultaneously drafting at a draft of about five to ten all of said diverse slivers from said plurality of independent diverse sliver supply means advanced directly and continuously to said drafting means from said assembly means in the same direction of their advance through said sliver supply means to blend said diverse staple fibers into a single unitary sliver incapable of delaminating.

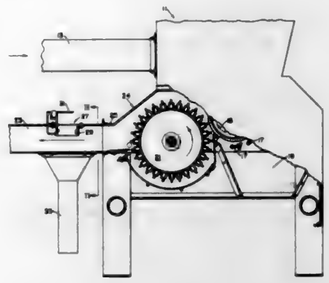
3,432,891
SLIVER GATHERER AND CONVEYOR
Paul Bemis West, Clemson, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 30, 1966, Ser. No. 597,903
U.S. Cl. 19—157 **5 Claims**
Int. Cl. D04h *11/00;* **D01h** *5/72*



This disclosure relates to a textile sliver gatherer and conveyor for gathering the untwisted sliver delivered in a generally horizontal path from the last pair of generally vertically arranged drafting rolls of a drawing frame and conveying it downwardly along a curved path to a trumpet condenser having its mouth opening positioned in a generally horizontal plane for receiving sliver moving in a generally vertical path and delivering it to a take-up package. The disclosed sliver gatherer and conveyor has, closely adjacent the drafting rolls, a collecting plate with a generally funnel-shaped aperture therein for confining the sliver and directing it into the open entrance end of a sliver conveying tube which extends somewhat in a downward direction but in a straight line for the major portion of its length and then smoothly curves downwardly for a minor portion of its length to direct sliver from its exit end into the trumpet condenser. For threading sliver through the conveying tube, a slot is provided through the upper wall of the tube except along its curved portion so that the rapidly moving sliver, in that region pressed outwardly against the wall of the tube by centrifugal force, will be confined within the tube. A depressor in the form of a sheet metal plate bent in the direction of sliver travel is positioned between the collecting plate and the entrance end of the sliver conveying tube, with its free end extending into the path of the moving sliver from above for a short distance of a small fraction of the smallest opening of the collecting plate aperture to deflect downwardly the upper side of the sliver for most efficient entry into the sliver conveying tube.

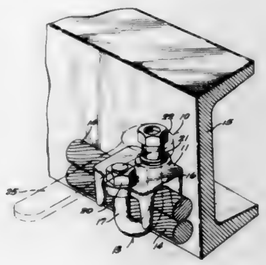
3,432,892
MEANS FOR CLEANING COTTON LINT
John H. Case, 25 Oakwood Drive, Oklahoma City, Okla. 73121
Continuation-in-part of application Ser. No. 387,665, Aug. 5, 1964. This application Oct. 7, 1964, Ser. No. 402,267
U.S. Cl. 19—203 **16 Claims**
Int. Cl. D01b *3/00;* **D02g** *7/00*

1. Means for cleaning ginned cotton lint before baling thereof, comprising lint cleaner means mechanically acting upon cotton lint to remove trash and detritus from said lint, means for delivering ginned cotton lint to said lint cleaner means including an intake flue leading to said lint cleaner means, mechanical means included in said lint cleaner means acting upon the cotton lint and accompanying trash and detritus introduced with said lint to said cleaner means and accomplishing removal of a substantial portion of said trash and detritus from said introduced lint, means for delivering cotton lint so acted



upon for discharge from said lint cleaner means including a discharge flue communicated with the interior of said lint cleaner means and leading therefrom, supersonic pulsation means extending into said flue into adjacency with the cotton lint discharged from said lint cleaner means for generating vibrations of supersonic frequency to effect separation of residual trash and detritus from said cotton lint.

3,432,893
U-BOLT CLAMP
Arthur J. Hensley, Milwaukee, Wis., assignor of two-thirds to R. L. Lochen, Milwaukee, Wis.
Filed Sept. 22, 1967, Ser. No. 669,889
U.S. Cl. 24—135 **3 Claims**
Int. Cl. F16g *11/04*

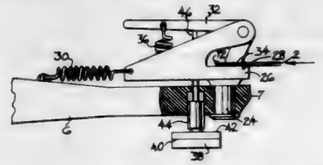


Disclosed herein is a U-bolt clamp having an anvil with holes through which legs of the U-bolt extend, a low nut on one of the bolt legs and a high nut on the other bolt leg to be accessible to a wrench extending over the low nut.

3,432,894
FABRIC STRETCHING DEVICE
Hans G. Sass, Krefeld, Germany, assignor to Joh Sons Kleinewerfers, Krefeld, Germany, a corporation of Germany
Filed Dec. 19, 1967, Ser. No. 691,805
U.S. Cl. 26—52 **2 Claims**
Int. Cl. D06c *3/06, 3/10*

A machine suitable for latitudinally stretching woven fabric webs including a pair of rotatable wheels which

engage the web at its edge and stretch the fabric web by rotation of the wheels. The clamps used to engage



the web automatically release the web at a predetermined point.

3,432,895
ADAPTER FOR CONNECTING A BELT BUCKLE WITH A BELT
Stanley A. Nyberg and Joe Yost, Fort Worth, Tex., assignors to Justin Belt Company, Fort Worth, Tex., a corporation of Texas
Filed May 15, 1967, Ser. No. 638,401
U.S. Cl. 24—265 **1 Claim**
Int. Cl. A44c *5/18*

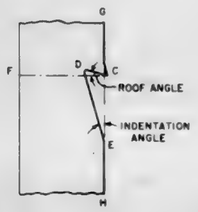


An adapter for connecting a belt buckle with a belt and comprised of a rectangular body plate and a hinge plate of substantially the same width, hinge means pivotally connecting corresponding ends of said plates in spaced relation at the sides thereof, inwardly projecting belt engaging teeth along the end of one of said plates adjacent said hinge means, at least one inwardly turned buckle engaging hook on one said plate at the end thereof opposite said hinge means, and an inwardly directed perpendicular spacer along the edge of the plate other than the one including said hook and positioned opposite the latter when both said plates are closed relative to each other.

ERRATUM

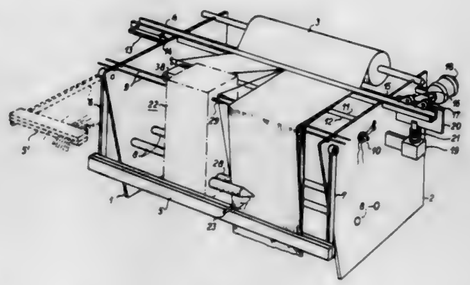
For Class 26—52 see:
Patent No. 3,432,894

3,432,896
FELTING NEEDLES
Robert Meagher, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,422
U.S. Cl. 28—4 **3 Claims**
Int. Cl. D04h *18/00*



1. A felting needle having a blade whose transverse cross-section defines a triangle with rounded corners, the blade bearing at least one barb, the barb having a kickup of no more than .0004 inch, a roof angle of from about 15° through about 40°, an indentation angle of from about 4° through about 10° and a throat length of from about .013 inch through about .033 inch, the edge of the blade bearing the barb having a corner dimension no greater than about .004 inch.

3,432,897
MACHINE FOR INSERTING LEASES IN WARPS
August Baumgartner, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland
Continuation-in-part of application Ser. No. 515,402, Dec. 21, 1965. This application Dec. 5, 1967, Ser. No. 699,279
Claims priority, application Switzerland, Jan. 29, 1965, 1,314/65
U.S. Cl. 28—40 **12 Claims**
Int. Cl. D02h *9/00;* **D03j** *1/14*



A machine for inserting leases in two-layer warps is disclosed as including means for stretching the warps and mounting at least one lease to extend transversely of the warps. The machine includes separators to separate the border threads of each layer, control mechanism connected to the separators to actuate the same, and gripping means for gripping each separated border thread and inserting it into a lease mounted on the frame.

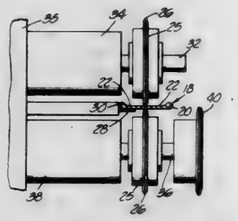
3,432,898
PROCESS OF STUFFER-CRIMPING LUBRICATED SYNTHETIC FIBERS
Robert K. Stanley, Media, and Hillary Robinette, Jr., Philadelphia, Pa., assignors to Techniservice Corporation, Kennett Square, Pa.
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,341
U.S. Cl. 28—72 **13 Claims**
Int. Cl. D04h *13/00*

Synthetic fibers are lubricated to be subjected to stuffer-crimping without decomposition of the lubricant, thereby forming a lubricated crimped synthetic fiber product. The lubricant which is used is an alkyl ester or alkoxyl ether of a saturated fatty acid of 16 to 22 carbon atoms, the alkyl or alkoxy group of 6 to 12 carbon atoms. The fibers are impregnated with an aqueous dispersion of the lubricant, and excess water is removed prior to crimping the fibers.

3,432,899
METHOD OF FABRICATING ALUMINUM HINGE LEAVES
Glenn B. Morton, 1492 E. Loma Alta Drive, Altadena, Calif. 91001
Filed Aug. 14, 1967, Ser. No. 660,355
U.S. Cl. 29—11 **11 Claims**
Int. Cl. B21d *53/40;* **B21k** *13/02*

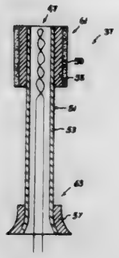
The invention relates to a method of fabricating aluminum hinge leaves each of which has a series of spaced tongues of enlarged cross section extending laterally from one longitudinal side of the leaf, the object of the invention being to reduce cost and also to prevent a strip of extruded aluminum hinge stock from bowing when

it is notched to form hinge tongues. A long strip of aluminum is extruded of the cross sectional configuration of two hinges positioned edge to edge, the two opposite longitudinal side edges of the strip being enlarged in thickness to provide material for the hinge tongues. The long strip is split longitudinally into two pieces by means



of a series of pairs of rotary blades which are adjusted for successively deeper penetration and which not only split the long strip but also pinch the edges of the resulting two split strips. The pinching action along a severed edge tends to lengthen the edge and thus serves to prevent bowing of a severed strip when the opposite enlarged edge is subsequently notched.

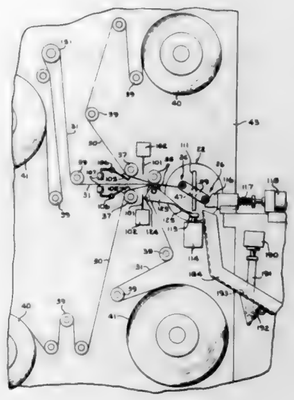
3,432,900
METHOD OF MAKING A PENCIL TYPE INDIRECTLY HEATED CATHODE
Donald R. Kerstetter, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Application Feb. 27, 1967, Ser. No. 619,073, which is a continuation of application Ser. No. 390,079, Aug. 17, 1964. Divided and this application Apr. 4, 1968, Ser. No. 718,889
U.S. Cl. 29—25.17 **5 Claims**
Int. Cl. H01j *9/00;* **C23f** *1/00*



A cathode support structure suitable for use in an indirectly heated electron discharge device is produced by bonding a first layer of nickel alloy metal to a seamless metal tube, then portions of said first layer are removed by masking and etching, and an emissive second layer is coated onto desired remaining areas of said first layer.

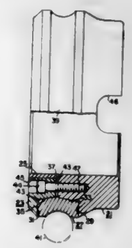
3,432,901
CAPACITOR WINDING APPARATUS
William J. Fanning, Melrose Park, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 517,007
U.S. Cl. 29—25.42 **11 Claims**
Int. Cl. H01g *13/00;* **B65b** *54/00*

An apparatus for automatically winding two conductive foils and two dielectric films into a capacitor and sealing the wound structure to prevent unwinding thereof. The capacitor is rapidly wound through a predetermined number of turns to equal approximately 80% of its final, predetermined capacitance. It is then connected to a capacitance sensing device and slowly wound until the



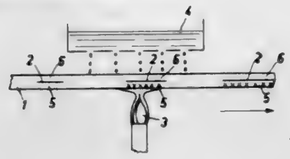
sensing device indicates that the capacitance has reached the predetermined value. If the sensing device fails to measure the predetermined capacitance within a predetermined time, it is assumed that the capacitor is unacceptable and the wound structure is sealed and directed to a reject bin.

3,432,902
ROLL ASSEMBLY FOR REDUCING WORK AND ROLL FOR SUCH ASSEMBLY
Selwyn R. Rackoff, Pittsburgh, and Martin J. Dempsey, Bethel Park, Pa., assignors to American Shear Knife Co., West Homestead, Pa., a corporation of Pennsylvania
Filed Mar. 24, 1967, Ser. No. 625,711
U.S. Cl. 29—125 **10 Claims**
Int. Cl. B21b *31/08*



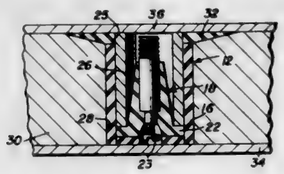
A roll assembly for reducing rod. A tungsten-carbide roll is held between clamping rings, one of which may be a mounting hub. The inner periphery of the roll is tapered and the tapered surfaces are engaged coextensively by abutting surfaces of the clamping rings. The rings are clamped by axial bolts which may pass through the roll. The clamping force has a component of force perpendicular to the tapered surfaces of the roll, which pretensions the rolls.

3,432,903
PROCESS OF PRODUCING SHEET METAL STRUCTURES
Albert Perlick, Werdohl-Kleinhammer, and Alfred Gareis, Werdohl-Eveking, Germany, assignors to Vereinigte Deutsche Metallwerke AG, Frankfurt am Main, Heddernheim, Germany, a corporation of Germany
Filed Oct. 21, 1965, Ser. No. 500,375
Claims priority, application Germany, Dec. 29, 1964, V 27,476
U.S. Cl. 29—157.3 **11 Claims**
Int. Cl. B21d *53/00;* **B21k** *29/00*



Metal sandwiches from which tubular structures are produced by expanding portions of the metal sandwich, and which are in hard condition, are subjected to a heat treatment in which a temperature gradient is provided over the thickness of the sandwich so that metal of one of the sheets is softened by annealing while the metal of the other of the sheets remains hard. In the subsequent expansion, the soft metal expands while the hard metal does not or expands relatively little.

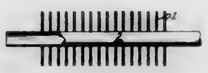
3,432,904
METHOD OF FORMING AND INSTALLING A RECESSED VALVE STEM
Jesse E. Stewart, Watkins, Colo. 80137
Filed June 29, 1966, Ser. No. 561,602
U.S. Cl. 29—157.1 **12 Claims**
Int. Cl. F16k *15/20*



1. The method of forming a recessed valve stem comprising the steps of cutting a valve stem assembly from an inner tube by forming a generally circular cut in the tube about and spaced at least slightly outwardly of the base end of the assembly thereby removing the assembly from the tube with a generally circular portion of said tube remaining attached to said assembly as a base therefor, positioning said valve assembly within a tubular member with said base disposed in one end portion of said tubular member and said assembly projecting toward the other end of said tubular member, and securing said base in said one end portion of said tube in fluid-tight sealed engagement therewith with said assembly at least substantially entirely enclosed within the confines of said tubular member.

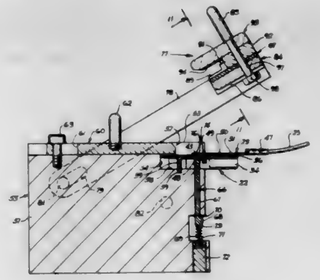
3,432,905
METHOD OF FABRICATING HEAT TRANSFER TUBING
Paul S. Monroe, Chatham, N.J., assignor to Halcon International, Inc., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,483
U.S. Cl. 29—157.3 **6 Claims**
Int. Cl. B21d *53/00;* **B23p** *15/26*

This invention relates to an improved means for joining flat plates to the external surface of thin wall tubing by introducing a fluid into a tube and freezing part of the



assembly while the tube is surrounded with closely fitting tube sheets.

3,432,906
FIXTURE FOR SECURING AN ELECTRICAL CONTACT WITH A SUPPORT SHELL
Kenneth McNamara, Fullerton, Md., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,280
U.S. Cl. 29—203 **12 Claims**
Int. Cl. B23p *19/04*

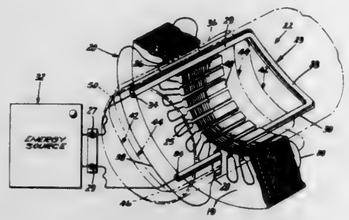


1. A fixture for assembling retroflexed bendable members on an apertured support, which comprises:
means for supporting and holding an apertured support with a substantial portion of one apertured surface of the support exposed and a free end of the support extending as a cantilever from the supporting and holding means,
means for holding a retroflexed end of each bendable member in an associated aperture in the exposed surface of the support with an intermediate portion of each member resting on the cantilever portion of the exposed surface of the support and the remaining portion of the member projecting beyond the cantilever portion of the support, and
means for bending the projecting portion of each member around the cantilever end of the support and into a position adjacent to the surface of the cantilever portion of the support opposite the exposed surface of the support so that each member is assembled with and secured to the support.

3,432,907
APPARATUS FOR ALTERING THE CONFIGURATION OF ELECTRICALLY CONDUCTIVE TURNS OF INDUCTIVE DEVICES
John E. Larsen, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed July 28, 1966, Ser. No. 568,588
U.S. Cl. 29—205 **5 Claims**
Int. Cl. H02k *15/00*

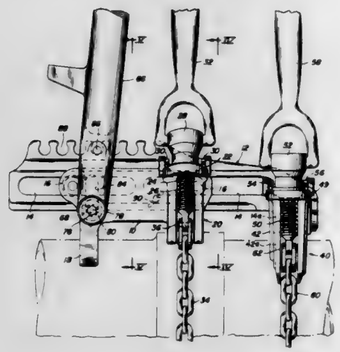
1. Apparatus for altering the configuration of electrically conductive turns comprising a portion of an electrical coil carried in coil accommodating slots of a magnetic core having a bore, the apparatus including: at least one rigid conductor means shaped to fit a coil accommodating slot of the magnetic core having conductive turns

therein; means for connecting said at least one rigid conductor means across an electrical energy surge source;



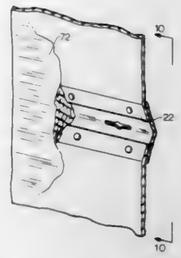
and means for supporting said at least one rigid conductor means in the coil accommodating slot of the magnetic core.

3,432,908
PIPE ASSEMBLING AND DISASSEMBLING TOOL
Floyd Y. Miller, Elyria, Ohio, assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed July 11, 1966, Ser. No. 564,138
U.S. Cl. 29—237 **9 Claims**
Int. Cl. B23p *19/04*



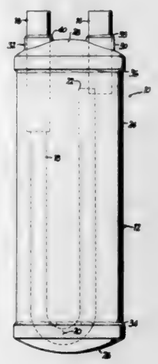
A tool for assembling and disassembling soil pipe sections and the like. The tool is provided with a slot and the frame member includes a slide disposed in said slot whereby the frame and the slide member are mounted for relative longitudinal movement. The slide member is provided with a series of grooves, and a handle is mounted for slidable vertical movement and pivotal movement on the frame member. A pivot pin is provided in the handle member and is adapted to be selectively engaged in the grooves to move the slide and frame members relatively reciprocally with respect to each other. Both the slide member and the frame member have pipe engaging devices, one of which preferably includes pivoted arms for adapting the device for use for different size pipes. The pipe engaging devices include chains which wrap around the pipe and screws which will tighten the chain to firmly grip the pipe. Movement of the handle member pivotally in one direction will force the pipe members together when they are engaged by pipe engaging means and movement in the opposite direction will force them apart when engaged with the pipe engaging means. Preferably a set screw is threaded through the frame and adapted to screw down against the slide member to selectively prevent movement and maintain the members in a selected position.

3,432,909
JOINING OF METAL SHEETS SO THAT WHEN SAID JOINED SHEETS ARE VIEWED FROM ONE SIDE, THE ILLUSION IS CREATED THAT THEY FORM ONE CONTINUOUS METAL SHEET
Richard S. Hopkins, 246 S. Broad St., Ridgewood, N.J. 07450
Filed Oct. 3, 1966, Ser. No. 583,852
U.S. Cl. 29—401 **4 Claims**
Int. Cl. B23p *7/04*



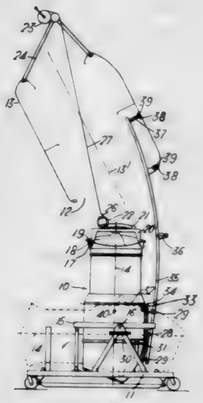
A V-shaped metal strip with perforation along the apex is joined to a first metal body along one arm of the V and to a second metal body along the other arm. The space between two bodies is filled with a filler material which is then smoothed to give the appearance of continuous metal body.

3,432,910
METHOD OF APPLYING A NON-FERROUS CORROSION RESISTANT COATING TO REFRIGERATION COMPONENTS
Edward W. Bottum and Frank H. Rockwell, Brighton, Mich., assignors to Refrigeration Research, Incorporated, Brighton, Mich., a corporation of Michigan
Filed Aug. 23, 1965, Ser. No. 481,573
U.S. Cl. 29—458 **6 Claims**
Int. Cl. B23p *3/00;* **B23k** *31/02*



The method is particularly useful for applying a corrosion resistant coating to a refrigeration component such as a receiver or an accumulator. The component includes a casing fabricated from a ferrous metal. It has a tubular portion with end closures. The end closures form joints with the tubular portion. Fittings extend into the component and also form joints. These joints are placed to provide a fluid-tight component. The method includes the step of first applying a copper-containing brazing material around the joints as a relatively thick layer. The entire exterior surface of the component is then coated with a copper-containing material in finely divided form in a liquid carrier. The component is then dried to form a relatively thin layer of the brazing material in finely divided form over the entire surface thereof. The component is then subjected to heat in a brazing furnace preferably having an inert atmosphere. The heating is continued for a time sufficient to braze the joint and braze the relatively thin layer to form a continuous uniform coating over the entire exterior surface of the component. The surface of the component is preferably prepared by roughening or by uniformly oxidizing before application of the thin layer of brazing material. This step improves the adhesion of the layer.

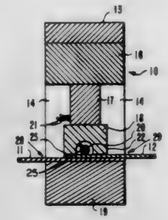
3,432,911
METHOD AND APPARATUS FOR INSTALLING JET ENGINES
Leonard John Rodgers, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Jan. 19, 1966, Ser. No. 521,682
Claims priority, application Great Britain, Feb. 4, 1965, 4,862/65
U.S. Cl. 29—464 **13 Claims**
Int. Cl. B25j *3/00;* **B66d** *1/30*



The invention concerns installing an engine in a housing, e.g. a V.T.O.L. jet engine in a pod. A curved guide rail is secured to the housing on which rollers or the like attached to the engine may run and the engine is hoisted into the housing by a hoist arrangement mounted on the housing. When the engine is in position within the housing, it is secured thereto, and the curved rail together with the rollers are detached and completely removed from the housing.

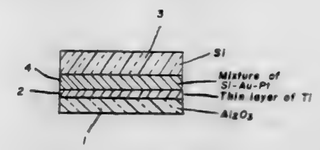
3,432,912
EXPLOSIVE SEAM BONDING METHOD AND MACHINE
Alfred E. Doherty, Jr., Anaheim, and Louis H. Knop, Glendora, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Sept. 20, 1965, Ser. No. 488,621
U.S. Cl. 29—470.1 **7 Claims**
Int. Cl. B23k *27/00, 31/02*

This disclosure concerns a method and apparatus for producing seam welds between superposed metallic layers by employing the force and pressure of explosively-generated shock waves. The apparatus includes an anvil and a restraining block provided with a cavity opening toward the anvil. An explosive charge is mounted within the cavity in overlying relation to the anvil. The metallic layers to be seam-welded are placed on the anvil in superposed relation, and the restraining block is then moved toward the anvil to clamp the metallic layers therebetween. The metallic layers when clamped



in position extend across the mouth of the cavity formed in the restraining block, thereby confining the explosive charge within the cavity. Upon detonating the explosive charge, the explosive energy generated thereby causes the metallic layers to be fused and bonded together.

3,432,913
METHOD OF JOINING A SEMI-CONDUCTOR TO A BASE
Robert L. Bronnes, Irvington-on-Hudson, Richard C. Sweet, North Tarrytown, and Ray C. Hughes, Ossining, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 301,866, Aug. 13, 1963. This application Nov. 26, 1965, Ser. No. 510,018
U.S. Cl. 29—472.7 **4 Claims**
Int. Cl. B23k *31/02;* **H01l** *7/24*

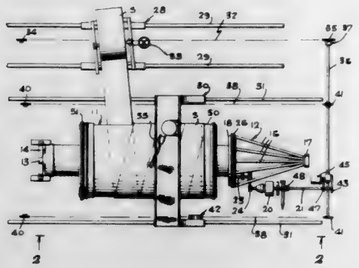


A method of bonding silicon or germanium to a substrate of a refractory material such as alumina, beryllium oxide, molybdenum or tungsten wherein the substrate is covered with a thin sputtered layer of titanium, tantalum, or columbium, which is covered with a layer of platinum and a layer of gold is applied over the platinum. The so-coated substrate is then pressed together with the silicon or germanium and heated to a temperature at which a eutectic mixture of gold, platinum and silicon or germanium is formed and the assembly allowed to cool to solidify the melt.

3,432,914
METHOD AND APPARATUS FOR FABRICATING THIN-WALLED LARGE DIAMETER STEEL PIPE CYLINDERS
George E. Huck, Fullerton, Calif., assignor to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California
Filed Feb. 1, 1966, Ser. No. 524,018
U.S. Cl. 29—477.3 **9 Claims**
Int. Cl. B23k *31/06;* **F16l** *9/16*

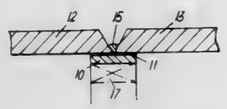
A method of making thin-walled steel cylinders wherein steel strip is helically wound from one to another substantially rigid end ring on a collapsible drum and a weld-

ed seam formed. The application also discloses a steel strip supply and feed means and a separate welding means



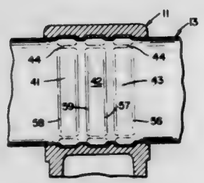
together with means for moving these axially of the drum in timed relation to rotation of the drum.

3,432,915
WELD BACKING MEMBER AND METHOD OF FORMING WELDED JOINTS IN METALLIC MEMBERS OR BETWEEN METALLIC MEMBERS
William Francis Doyle, Buckhill, Bedford, England, assignor to Stewarts and Lloyds Limited, Glasgow, Scotland, a British company
Filed Dec. 2, 1963, Ser. No. 327,232
Claims priority, application Great Britain, Dec. 5, 1962, 45,949/62
U.S. Cl. 29—491 2 Claims
Int. Cl. B23k *5/22, 31/02*

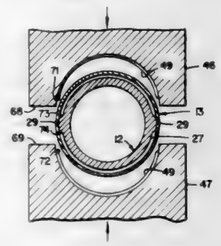


A method of welding in which is employed a metal backing member coated with a refractory oxide in particulate form.

3,432,916
METHOD FOR MAKING A JOINT FOR HARDENED ALUMINUM TUBING
Robert E. Fisher, Berkeley, Rijkent W. Kofman, and Ernest D. Reichert, Lafayette, and Reinold H. Visser, Albany, Calif., assignors to Up-Right, Inc., Berkeley, Calif., a corporation of California
Filed Apr. 18, 1966, Ser. No. 543,396
U.S. Cl. 29—516 4 Claims
Int. Cl. F16l *19/00*



A method for making a joint between an annular coupling member and a hardened aluminum tubing extending from one end of the coupling member, in which two axially spaced grooves are formed in the coupling member and in which the tubing member is permanently deformed into the grooves in such manner that the tubing member is deformed into the groove adjacent said end of the coupling member at a longitudinal curvature greater



than the deformation of said tubing member into the other groove. The joint is also formed so that a hoop stress is produced in the completed joint.

3,432,917
METHOD OF PREPARING A SINGLE CRYSTAL FOR IMPROVED ELECTRON EMISSION
Laurence O. van Someren, Wayland, Mass., assignor to Thermo Electron Engineering Corporation, Waltham, Mass., a corporation of Delaware
No Drawing. Filed Mar. 6, 1967, Ser. No. 620,650
U.S. Cl. 29—558 2 Claims
Int. Cl. H01l *7/66;* B23p *13/04*

A method for preparing the surface of a single crystal for optimal electron emission when used with a thermionic converter comprising the steps of:

Slicing a crystal along a pre-determined axis to present a plane having the highest atomic density, abrading the surface mechanically, heating the surface to a temperature of between 2250° C. and 2600° C. for a period of one to ten hours in a vacuum and allowing the crystal to cool under the same controlled atmospheric condition.

3,432,918
METHOD OF MAKING A CAPACITOR BY VACUUM DEPOSITING MANGANESE OXIDE AS THE ELECTROLYTIC LAYER
James E. Riley and Billy B. Williams, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Nov. 12, 1963, Ser. No. 322,751, now Patent No. 3,320,484, dated May 16, 1967. Divided and this application Sept. 13, 1966, Ser. No. 579,010
U.S. Cl. 29—570 4 Claims
Int. Cl. B10j *17/00;* H01g *9/00;* C23c *13/00*

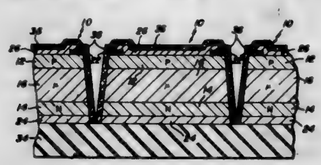


Disclosed is a method of forming a thin-film capacitor by forming from the vapor phase a layer of manganese oxide on a dielectric layer prior to the formation of a second thin-film metal electrode.

3,432,919
METHOD OF MAKING SEMICONDUCTOR DIODES
Warren C. Rosvold, Sunnyvale, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,640
U.S. Cl. 29—578 8 Claims
Int. Cl. B01j *17/00;* H01l *5/00, 7/00*

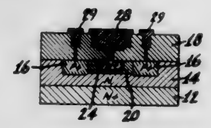
A method of making semiconductor diode units from a wafer cut in the [100] crystallographic plane by applying

contact material to both sides, temporarily securing the wafer to a handle means, etching normally to the [100]



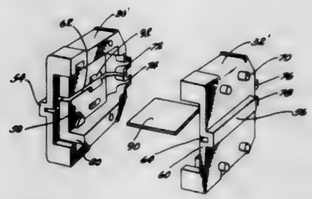
plane between units to sever them, and removing the handle means.

3,432,920
SEMICONDUCTOR DEVICES AND METHODS OF MAKING THEM
Ronald Rosenzweig, New York, N.Y., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,306
U.S. Cl. 29—578 7 Claims
Int. Cl. B01j *17/00;* H01l *5/00, 7/00*



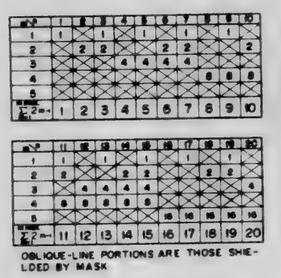
In the fabrication of semiconductor devices, an insulating layer having a variable thickness is provided on the surface of a semiconductor wafer. An opening through a thin portion of the layer and a recess in a thick portion of the layer are simultaneously etched. The first opening is closed and, thereafter, a second opening is made through the thin portion and at the same time an opening is made from the bottom of the recess through the thick portion.

3,432,921
METHOD OF MAKING A RECORDING ASSEMBLY
Leo W. Page, Potterville, Mich., assignor, by mesne assignments, to USI Corporation, Pasadena, Calif., a corporation of Illinois
Application Oct. 21, 1963, Ser. No. 317,461, now abandoned, which is a continuation-in-part of application Ser. No. 262,525, Mar. 4, 1963. Divided and this application July 27, 1967, Ser. No. 674,026
U.S. Cl. 29—603 3 Claims
Int. Cl. H01f *7/06;* G11b *5/00*



A method of making a recording assembly having a plurality of heads or transducers therein with a slit in the housing to prevent cross-talk between these heads or transducers comprising the steps of providing slits on the inner surfaces of opposite walls of the housing and embossment of the outer walls of the housing coincident with the slits. The slits extend into the embossments. After the transducer heads are assembled within the housing the embossments are removed by machine exposing the open slits in the walls.

3,432,922
METHOD FOR PRODUCING RESISTANCES OF THE MULTI-LAYER TYPE
Takeo Yamada, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Apr. 5, 1967, Ser. No. 628,763
U.S. Cl. 29—620 3 Claims
Int. Cl. H01c *9/00, 17/00*



1. Process for manufacturing a multilayered resistance on an insulating base plate by the sequential deposit of metal films to provide divisions or portions for the resistance, comprising the steps of successive shielding divisions or portions with a mask in which a positive integer N remains an even number and exposes only divisions or portions in which the integer N becomes an odd member determined by

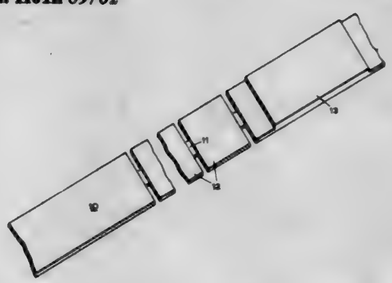
$$N \leqq \frac{n}{2^{m-1}} < N+1$$

where n is the required number of divisions or portions, and m is the order of deposition from the lowermost layer, then depositing successive film layers through the exposing portions of successive masks in accordance with the relationship of

$$2^m > n \geqq 2^{m-1}$$

and controlling the thickness of each film layer according to 2^{m-1} times the thickness of the lowermost layer.

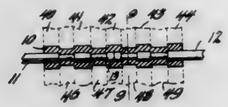
3,432,923
METHOD OF MANUFACTURING FUSE ELEMENTS FROM STRIP MATERIAL FOR CARTRIDGE FUSE LINKS
John Feenan, Eric Jacks, and John Eric Murphy, Liverpool, England, assignors to The English Electric Company Limited, London, England, a British company
Original application Jan. 30, 1964, Ser. No. 341,267, now Patent No. 3,288,968, dated Nov. 29, 1966. Divided and this application May 16, 1966, Ser. No. 550,447
Claims priority, application Great Britain, Feb. 8, 1963, 5,145/63
U.S. Cl. 29—623 2 Claims
Int. Cl. H01h *69/02*



This invention relates to a method of forming a fuse element from strip material by initially rolling in the strip a plurality of grooves spaced apart along its length

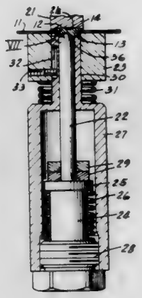
and subsequently forming notches on opposite sides of the strip along the length of each groove, whereby the thickness and width of each neck portion thus produced are less than the thickness and width of the remaining portions of the strip adjacent thereto.

3,432,924
METHOD OF CRIMPING A SLEEVE CONNECTOR
Charles H. Trimble, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 22, 1963, Ser. No. 274,869
U.S. Cl. 29—628 **3 Claims**
Int. Cl. B21d *9/14*; H01r *43/00*



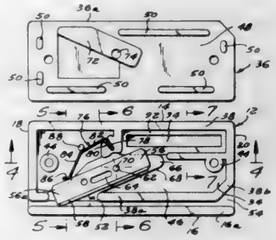
In crimping a sleeve connector onto the end of a pair of bare metallic leads, the leads are inserted into opposite ends of the connector after which the connector is sequentially crimped, first at innermost points located adjacent to the center of the connector and then at points spaced from the center. Crimping of the innermost points results in displacement of the lead material toward the center of the connector to improve contact between the leads. During the crimping operation, the material of the connector is confined to flow longitudinally from the points of crimping outward toward the ends of the connector.

3,432,925
METHOD OF SECURING A RIVET CONTACT IN AN APERTURE OF AN ELECTRICAL ELEMENT
Lee A. Woolley, Kokomo, Ind., assignor, by mesne assignments, to The Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio
Filed Oct. 14, 1966, Ser. No. 586,846
U.S. Cl. 29—630 **3 Claims**
Int. Cl. H01r *9/00*



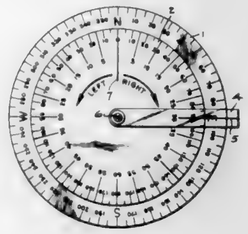
1. In a method of securing in an aperture of an electrical element a contact comprising a rivet having a head on one side of the element and a depending recessed shank portion for projection through the aperture to the outer side of the element, the steps of:
piloting the rivet shank through the aperture,
ramming the rivet endwise to compress and radially outwardly flow the material of said shank and form a metal flow controlling annular shoulder inset toward and generally aligned with the aperture wall, and
squashing the radially outwardly flowed material inwardly between the shoulder and the aperture to mold it into pressure contact with the interior wall of the aperture and with the excess material being flowed radially outwardly from the inset shoulder about the aperture and flattened in contact with said other side of said element.

3,432,926
COMBINATION PAPERWEIGHT AND LETTER OPENER
Robert M. Kristal, Garden City, N.Y. (% American Hydromath Co., 24—20 Jackson Ave., Long Island City, N.Y. 11101)
Filed May 23, 1966, Ser. No. 552,236
U.S. Cl. 30—294 **5 Claims**
Int. Cl. B26b *29/00*



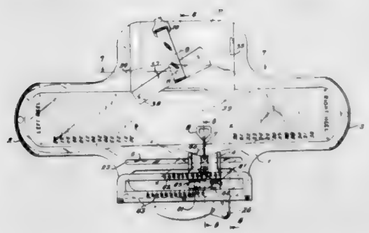
A combination paperweight and letter opener wherein the letter opener is composed of a housing block having a removable cover which mutually define a longitudinal guideway open at its ends and at its top. The guideway extends the full length of one side of the block and cover. A blade is spring urged across the guideway to trim the edge of an envelope as it is drawn through the guideway.

3,432,927
TURN COMPUTER
Earl W. Springer, 6711 Shelley St., Indianapolis, Ind. 46219
Continuation of application Ser. No. 388,404, Aug. 10, 1964. This application Aug. 21, 1967, Ser. No. 662,185
U.S. Cl. 33—1 **2 Claims**
Int. Cl. G01c *21/20*



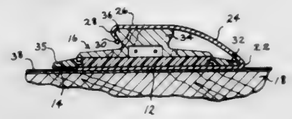
A turn indicator with a minor diameter disc pivotally mounted on a major diameter disc wherein a 360 degree scale is exposed in full around the periphery of the major disc; a circular scale extends around the periphery of the minor disc and is divided into 180 degrees extending from a common zero in right and left manner, with the right 180 degrees matching with the first 180 degrees of the 360 degree scale; and a time scale in circular arrangement within the circular 180 degree scale, the time scale running 60 seconds in opposite directions from a common zero.

3,432,928
SHOE FITTING
James D. Rice, Hendersonville, Tenn., assignor to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Continuation-in-part of application Ser. No. 340,316, Jan. 27, 1964. This application Feb. 28, 1967, Ser. No. 619,436
U.S. Cl. 33—3 **8 Claims**
Int. Cl. A43d *1/02*



A foot measuring device for use in fitting shoes to human feet having two or three pairs of oppositely readable length scales, and one pair of oppositely readable ball girth scales. The ball girth scale is on a reel which is mounted on a movable seat for accommodating the inside ball of the foot. On the reel there is wound a short length of chain which may be pulled out, against the bias of a spring to bring successive ball girth indicia into view. The free end of the reeled chain is connected to one end of a piece of flexible measuring tape, the opposite end of which is pivotally anchored, and the anchorage is movable lengthwise and cross-wise of the device to accord with the foot being measured.

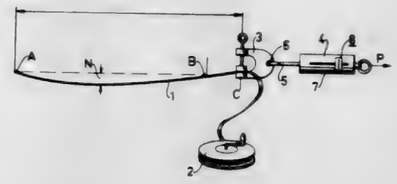
3,432,929
SPACER CLIP FOR A DRAFTSMAN'S STRAIGHT EDGE
Jack L. Youngblood, 401 W. Hively St., Elkhart, Ind. 46514
Filed Dec. 26, 1967, Ser. No. 693,247
U.S. Cl. 33—107 **5 Claims**
Int. Cl. B43l *13/00*



A spacer clip for a draftsman's straight edge which is releasably mounted upon and extends under and transversely of the straight edge at any selected position, causing the undersurface of said straight edge to be spaced slightly above the drawing table surface to avoid rubbing thereof at points spaced from the clip.

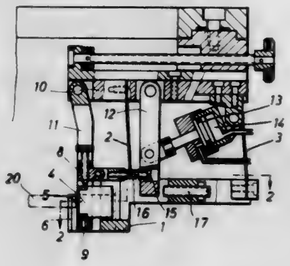
3,432,930
DEVICE FOR THE ACCURATE MEASUREMENT OF LARGE DISTANCES WITH AN UNSUPPORTED FLEXIBLE MEASURING TAPE
Ture Anders Ljungberg, Badstigen 6, Stuvsta, Stockholm, Sweden
Filed Feb. 8, 1966, Ser. No. 525,889
Claims priority, application Sweden, Feb. 25, 1965, 2,422/65
U.S. Cl. 33—137 **4 Claims**
Int. Cl. G01b *3/10*

A spring balance is adapted to be clamped to a length of flexible measuring tape to hold the tape horizontal and freely suspended. The spring scale is calibrated to read in terms of suspended tape length, thus directly establishing the right tension to be applied to just compensate for



the sag error. If the tape is of relatively inextensible material, then a relatively readily extensible insert such as a coil compression spring device may be provided at the free end of the tape.

3,432,931
MEASURING ARRANGEMENT
Franz Josef Meyer, Opladen, Germany, assignor to Goetzewerke Friedrich Goetze A.G., Burscheid, Germany
Filed Apr. 26, 1966, Ser. No. 545,331
Claims priority, application Germany, May 6, 1965, G 43,522
U.S. Cl. 33—169 **4 Claims**
Int. Cl. G01b *5/02*

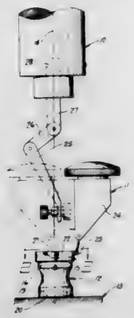


Measuring arrangement for determining the thickness of chrome plating on piston rings. A reciprocally movable carriage is centered on a piston ring, the plating of which is to be measured, and measuring means on the carriage is biased into contact with such piston ring to take the desired measurement. The carriage is reciprocally moved by pneumatic drive means provided therefore via a pivotable member mounted on the frame supporting such carriage.

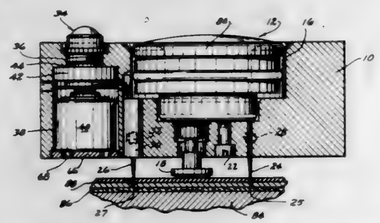
3,432,932
APPARATUS FOR LOCATING CENTER OF WORK SPINDLE
Werner B. Oellerich, 14170 Barbara St. 48154, and Richard A. Hurick, 36811 Angeline Circle 48150, both of Livonia, Mich.
Filed Mar. 8, 1967, Ser. No. 621,554
U.S. Cl. 33—172 **3 Claims**
Int. Cl. G01b *3/22*

An instrument for locating the true center of the spindle on a jig boring machine, a jig grinder, a boring milling machine, a basic milling machine, and the like, which includes a circular plate having a precision-ground outer periphery or diameter, and a hole in the upper surface of said plate

disposed tangent to the center line of the plate. The instrument is provided with magnet means for releasably securing the same in adjusted positions on the worktable of a machine tool.

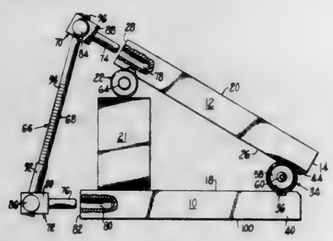


3,432,933
GAUGE FOR MEASURING THE THICKNESS OF BLANKETS ON PRINTING ROLLERS
Robert E. Wood, Racine, Wis.
(R.D. 1, Box 332C, Ashland, Ohio 44805)
Filed Nov. 14, 1966, Ser. No. 593,765
U.S. Cl. 33—172 2 Claims
Int. Cl. G01b 3/22



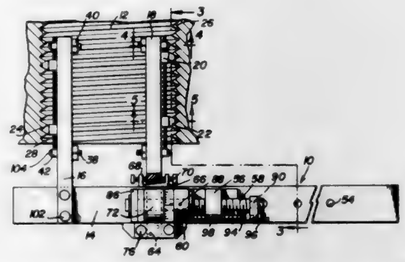
A portable gauge that enables a pressman to determine the thickness of the resilient blanket and packing overlaying a printing press cylinder is provided with a pair of spaced prods that penetrate the blanket and packing to establish electrical contact with the cylinder, thereby actuating a signal means. A dial indicator engages the upper surfaces of the blanket to indicate the thickness thereof with respect to the surface of the cylinder.

3,432,934
SINE PLATE ASSEMBLY
Hermann Schmidt, 237 Burnham St.,
East Hartford, Conn. 06108
Filed Aug. 30, 1966, Ser. No. 576,092
U.S. Cl. 33—174 5 Claims
Int. Cl. G01b 5/20



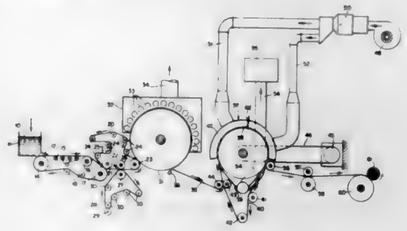
A sine plate assembly having a clamp for precluding movement of a top plate of the assembly from an angularly adjusted position relative to a base plate and including a rigid adjustable length fastener having upper and lower pivotally attached toggle yokes respectively having shank portions removably insertable into sockets formed in front end edges of the plates.

3,432,935
INTERNAL THREAD GAUGE
Percy J. Reish, 1807 Fox St., West Hyattsville,
Md. 20782
Filed July 25, 1966, Ser. No. 567,714
U.S. Cl. 33—199 8 Claims
Int. Cl. G01b 3/48



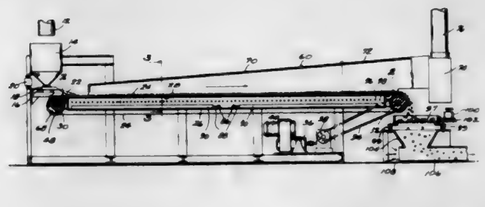
A thread gauge in the form of an elongated beam having a pair of spaced parallel legs thereon with one of the legs being movable along the beam. Each leg has a wire-like rod on which thread engaging members are movably mounted and means is provided for measuring the movement of the movable leg and to retain the movable leg in accurate perpendicular relation to the beam for providing an accurate device for measuring thread diameter.

3,432,936
TRANSPIRATION DRYING AND EMBOSSING OF WET PAPER WEBS
Richard I. Cole, Springfield, Pa., Donald E. Holcroft, Claymont, and Edward A. Milligan, Wilmington, Del., and Samuel Greenhalgh, Philadelphia, Pa., assignors to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 555,748, June 7, 1966. This application May 31, 1967, Ser. No. 649,776
U.S. Cl. 34—6 37 Claims
Int. Cl. F26b 3/06



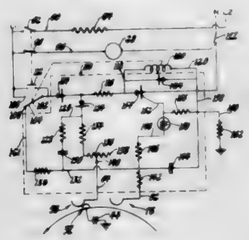
A method and apparatus are disclosed for drying a wet paper web by passing gaseous fluid such as air which may be at an elevated temperature, up to about 1500° F., through the web while it is supported upon a foraminous surface. The arrangement of the apparatus whereby the heated air passes through the web prior to passing through the foraminous surface enables the use of higher temperatures than heretofore possible. A method and apparatus for embossing the wet paper webs during drying are also disclosed along with the new products formed by the method and apparatus. The embossing is accomplished in one of several different ways, which involve rearranging the fibers in the web before the web is dried and interfiber bonds are formed. The rearranging may be done by a fluid pressure differential through the web while it is supported on a contoured foraminous surface such as a woven wire, by fluid flow at high speeds through the web, or by mechanical pressure against the web. In some embodiments, holes may be formed in the web during embossing by subjecting the web to sufficient fiber rearrangement in spaced localized areas to form breaks or create apertures. Paper web products are formed which have raised contoured portions in which substantially all of the bonds between fibers are intact so that the raised contoured portions possess substantial stiffness and permanency.

3,432,937
PREFOAMING METHOD FOR EXPANDING PARTICULATE FOAMABLE MATERIAL
Donald E. Stevens and Edward A. Doyle, Sheboygan Falls, Wis., assignors to Kohler General, Inc., Sheboygan Falls, Wis., a corporation of Wisconsin
Original application Mar. 5, 1965, Ser. No. 437,364. Divided and this application Jan. 16, 1968, Ser. No. 698,248
U.S. Cl. 34—22 3 Claims
Int. Cl. F26b 3/00, 17/04



Work particles are exposed to live steam substantially at atmospheric pressure, condensation being prevented by otherwise heating the steam and the work by radiant heat to a temperature materially in excess of 212° F., the prefoamed particles being delivered from such treatment substantially dry.

3,432,938
CLOTHES DRYER CONTROL SYSTEM
James L. Miller, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 31, 1967, Ser. No. 642,555
U.S. Cl. 34—45 2 Claims
Int. Cl. G21c 13/32, 25/22, 19/00



In preferred form, a drying apparatus control system including main switch means, electronic control means for controlling the operation of main switch means, a pair of feelers, a single button directly electrically connected to a first capacitor and adapted to be carried on the drum for rotation therewith into electrical engagement with the pair of feelers during each revolution and into random contact with articles in the drum, means including a second capacitor for directing a constant charge from one of the feelers to the single button on each drum revolution, capacitive circuit means connected to the other feeler, the single button electrically connecting to the capacitive circuit means on each drum revolution.

3,432,939
PORTABLE CLOTHES DRYER
Arthur H. Eichholz, Polo, Ill., assignor to Central Quality Industries, Inc., a corporation of Illinois
Filed Nov. 23, 1966, Ser. No. 596,660
U.S. Cl. 34—151 3 Claims
Int. Cl. F26b 19/00

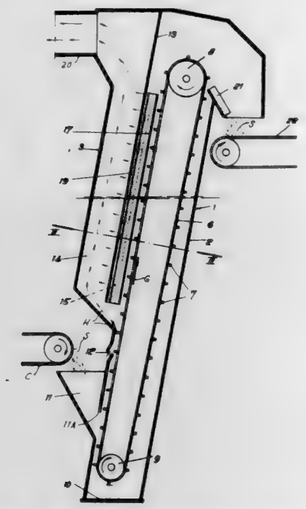


A collapsible portable clothes drying apparatus of the type having a top, base and collapsible sides defining a clothes drying chamber between the top and the bottom, characterized in that the blower and heating elements are located within the base to blow warm air upwardly into the clothes drying chamber and a removable drip tray is also positioned in the base to collect moisture which drips from the the clothes being dried in the chamber.

3,432,940
ELEVATOR-COOLER APPARATUS FOR PULVERIZED MATERIALS SUCH AS FOUNDRY SANDS
Robert Andre Marcel Ronceray, deceased, late of Paris, France, by Pierre Robert Ronceray, 3 Canterbury Lane, Short Hill, N.J. 07078; Lena Sarah Ronceray, nee Yeomans, 122 Ave. des Champs Elysees, Paris, France; Andree Jacqueline Laure Ronceray, 17 Ave. des Roches, Saint Maur des Fosses, France, and Francoise Monique Mary Ronceray, 1 Rue de la Banque, Chalon-sur-Saone, France, heirs
Filed Jan. 19, 1967, Ser. No. 611,219
Claims priority, application France, Jan. 19, 1966, 46,453
U.S. Cl. 34—189 3 Claims
Int. Cl. F26b 15/20

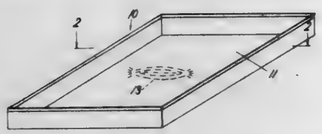
An elevator-cooler or evaporator is essentially a combination of an upright casing containing an endless conveyor belt having cleats and located in the casing so that said belt is longitudinally movable lengthwise of the casing. A passageway is provided in the casing parallel to the belt, and openings are located in the lateral walls of this casing so that they extend between the passageway and the part of the casing containing the belt. The casing side walls and the partition between the belt and

the passageway are pierced by openings spaced regularly along its entire length. An air moving device is connected



to the upper end of the passageway to draw air therethrough for cooling and dehumidifying the sand carried by the belt conveyor.

3,432,941
DEMONSTRATION OF MAGNETIC PHENOMENA
Raphael Isaac Minchom, 15 Cheyne Walk, Hendon, London NW. 4, England
Filed Feb. 11, 1966, Ser. No. 526,792
Claims priority, application Great Britain, Feb. 19, 1965 7,350/65
U.S. Cl. 35—19 **10 Claims**
Int. Cl. G09b *23/18*



A magnetic element for demonstrating magnetic phenomena comprising a cylindrical rod having a ferromagnetic core whose ends are exposed and a cylindrical layer of nonmagnetic material which has substantial thickness and which covers the cylindrical surface of said rod, said rod having a length less than one centimeter.

An apparatus for demonstrating magnetic phenomena with the aid of the magnetic elements is also disclosed. This apparatus comprises a sealed container within which are exposed a plurality of the magnetic elements, the container having a transparent portion through which the disposition of the magnetic elements may be seen.

3,432,942
CONVERSION DEVICE
Charles W. Jack, Old Chatham, N.Y., assignor to The Executive Line, Inc., Chatham, N.Y., a corporation of New York
Filed Apr. 13, 1967, Ser. No. 630,607
U.S. Cl. 35—31 **2 Claims**
Int. Cl. G09b *19/00, 23/02;* **G09f** *11/04*

A conversion device for converting, for example, fractions to millimeters, wherein two relatively rotatable discs are employed, one disc having on one half of a surface thereof an arrangement of fractions in a plurality of radially spaced circumferential lines and on the other half of the surface an arrangement of millimeters in a plurality of circumferential lines, the other disc comprising a cover

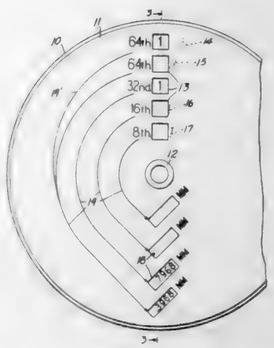
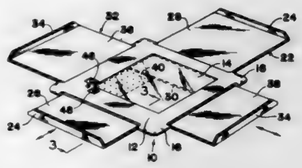


plate having a radial arrangement of apertures registering with the fractions of the first disc and a plurality of apertures arranged at substantially 45° to a radial line extending through the first apertures and registering with the millimeter characterizations of said first disc.

3,432,943
MATHEMATICS TEACHING DEVICE
Stephen L. Merkel, Bay Village, Ohio, assignor to Educational Research Council of Great Cleveland, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 2, 1967, Ser. No. 619,984
U.S. Cl. 35—31 **6 Claims**
Int. Cl. G09b *19/02*



A mathematics teaching device for displaying indicia in columns and rows including a frame having a window, a horizontal slide for varying the number of columns of indicia visible in the window and a vertical slide for varying the number of rows of indicia visible in the window.

3,432,944
BLACKBOARD
Toyo Ishida, 1–1 Nishi Hanaike-cho, Kita-ku, Kyoto, Japan
Filed Sept. 1, 1965, Ser. No. 484,215
U.S. Cl. 35—66 **5 Claims**
Int. Cl. B43l *1/04, 1/10*

An inexpensive lightweight blackboard includes a substantially rectangular backing sheet which may be of an inexpensive metal construction or a corrugated board construction. A facing sheet of a material such as cardboard is secured over the complete area of the backing sheet preferably by means of a pressure-sensitive adhesive to permit its removal and replacement when desired. The surrounding frame of the blackboard is made by channel members of substantially U-shaped configuration which include leg portions which extend inwardly from each side of the blackboard against the underlying facing sheet of each side of the blackboard. At least the top and the two sides of the frame are provided with members of this character and the bottom of the frame is advantageously formed by a combination frame member and chalk receptable which includes a U-shaped portion with legs which are resiliently biased against the respective underlying sheets and which also includes a substantially horizontal portion which extends outwardly from one side of the blackboard for receiving chalk or other materials thereon.



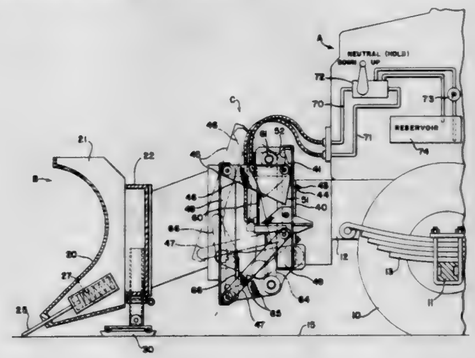
The blackboard may be suspended by means of clip elements which include U-shaped portions which fit over the frame elements and resiliently engage the blackboard and which carry upwardly extending portions defining eyelets for receiving securing screws and the like. Similar clip members are also formed with a cutout portion arranged to bridge two frame elements of adjacent blackboards which may be held together by such clip elements.

3,432,945
REPLACEABLE HEELS FOR SHOES
Frank Cesta, 795 S. 8th St., Vineland, N.J. 08360
Filed Nov. 25, 1966, Ser. No. 596,914
U.S. Cl. 36—36 **5 Claims**
Int. Cl. A01b *21/47*



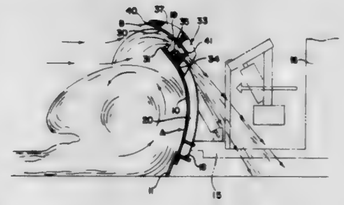
Replaceable heel construction for shoes in which a heel base portion and a heel tread portion are provided. The heel base carries a latch plate with rear and front openings having marginal tongues, the rear tongues being inclined and providing fulcrums and guides and the front tongues being upright and providing guides. The heel tread portion has inclined complemental rear projections for engagement with the rear tongues and the front projections have edges for engagement with the front tongues and opposite notched edges. The latch plate has a spring urged slidable latch member thereon with a transverse holding portion engageable in the notches. The latch member is movable against the force of the spring to permit removal of the heel tread portion.

3,432,946
LIFTING AND PRESSURE UNIT FOR SNOWPLOWS AND THE LIKE
Josef Peitl, Vienna, Austria, assignor to Meyer Products Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 459,568, May 28, 1965. This application Nov. 9, 1965, Ser. No. 506,934
U.S. Cl. 37—42 **2 Claims**
Int. Cl. E01h *5/06;* **E02f** *3/85*



A lifting and pressure apparatus for vehicle mounted snowplows wherein the snowplow is movable between an upper transporting position, a normal plowing position, and a lower pressure applying scraping position. Upper and lower links connect the snowplow to the sprung portion of the vehicle, the lower link being oriented in a downward and forward direction when the plow is in its normal plowing position, the upper link being shorter than the lower link so that the plow when raised is moved upwardly with the lower part of the plow moving upardly and forwardly relative the upper part of the plow. A substantially horizontal lever separate from the links raises and lowers the plow, and a reciprocating double acting fluid operated piston is operable in a substantially vertical direction against the lever to raise the plow and also press the plow downwardly to its lower scraping position, to transfer some of the vehicle weight to the plow.

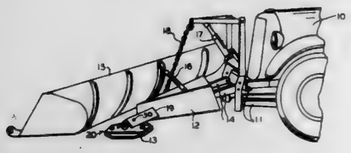
3,432,947
DEFLECTOR FOR BLOWN SNOW OVER SNOWPLOW BLADES
Josef Peitl, Vienna, Austria, assignor to Meyer Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 5, 1966, Ser. No. 562,898
U.S. Cl. 37—42 **2 Claims**
Int. Cl. E01h *5/06;* **E02f** *3/76*



A deflector is mounted adjacent the upper edge of a snowplow moldboard and includes a forward surface

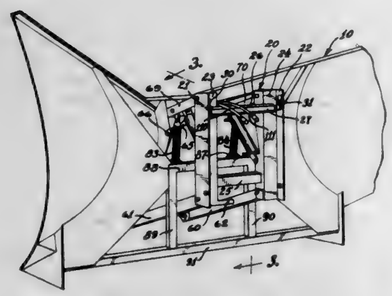
facing forwardly above the upper edge of the moldboard to deflect horizontally moving air downwardly to the rear of the moldboard.

3,432,948
ARTICULATED SNOWPLOW SHOE
Joseph Albert Myers, R.D. 4, Rome, N.Y. 13440
Filed July 20, 1966, Ser. No. 566,560
U.S. Cl. 37—42 2 Claims
Int. Cl. E01h *5/06*; B62m *27/02*



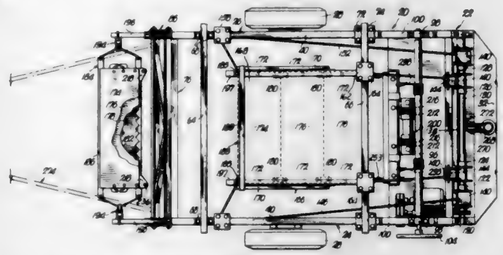
A snowplow subframe has a cross member which is disposed at an angle to the line of travel and has spaced bushings pendently secured thereon. The bushings have bores axially aligned parallel to the cross member. Each shoe has a plate to which the shoe is removably secured and the plate has upstanding support means interfitting between the bushings with a bore aligned with the bushing bores and at an angle to the line of travel of the shoe. A shaft in the bores pivotally connects bushings and support means and the cross member limits the rocking of the shoes.

3,432,949
VEHICLE-MOUNTED IMPLEMENT
Herbert C. Giesmann, Omaha, Nebr., assignor to Omsteel Industries, Inc., a corporation of Nebraska
Filed Mar. 8, 1966, Ser. No. 532,764
U.S. Cl. 37—44 7 Claims
Int. Cl. E01h *5/12*; A01b *51/02, 59/04*



A quick detachable mounting for a ground working implement or snowplow wherein the vehicle has a supporting frame and the snowplow has a mounting frame with hook structure at the upper end thereof to interfit with the supporting frame at the top thereof and with locking means at the bottom of the frames to lock the frames together after elevation of the snowplow off the ground which permits the weight of the plow to swing it into final located position. A snowplow construction wherein the mounting provides a yieldable floating action of the plow relative to a supporting vehicle and with structure to apply additional pressure to the nose of the plow to force the plow's front cutting edge beneath hard-pack snow.

3,432,950
METHOD FOR TRANSPLANTING
Allen E. Pollock, 3517 Holmes, Kansas City, Mo. 64109
Original application Feb. 3, 1965, Ser. No. 430,079, now Patent No. 3,339,299, dated Sept. 5, 1967. Divided and this application July 14, 1967, Ser. No. 653,375
U.S. Cl. 37—195 3 Claims
Int. Cl. E02f *1/00*; A01g *23/02, 23/06*



A method of transplanting wherein a trench is initially dug around a soil ball containing the roots of a plant. A support is then moved through the mass of soil at the base of the soil ball and the soil ball and plant are lifted on the support for transportation to a new location. The soil ball and the plant are tilted upon removal from the initial location to decrease the effective height of the plant.

3,432,951
COMPARTMENTED CONTAINER
Phil Cherrin, Huntington Woods, Mich., assignor of one-fifth each to Abe Cherrin, Lem Cherrin, Archie Cherrin, and the estate of Sam Cherrin, deceased
Filed July 21, 1966, Ser. No. 566,779
U.S. Cl. 40—107 5 Claims
Int. Cl. B65d *27/08, 83/04*

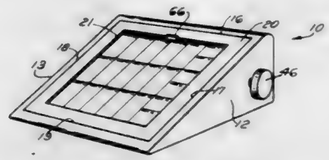


A compartmented container made of clear plastic for use in dispensing medicinal pills at periodic intervals such as daily on a mistake-proof basis. The plastic container is light weight and can be folded over for easy carrying on the person. Specifically, the plastic container is divided into seven compartments each marked with the day of the week. A party using the container removes the pills from the compartments one day at a time and since the container material is clear plastic the party can readily tell at a glance whether the pill(s) have been taken for that particular day of the week.

3,432,952
DESK APPOINTMENT CALENDAR
Robert W. Pratt, Box 1, Greene, R.I. 02827
Continuation of application Ser. No. 460,978, June 3, 1965. This application June 9, 1967, Ser. No. 646,418
U.S. Cl. 40—117 6 Claims
Int. Cl. G09d *3/10*; G09f *11/24*

A calendar having a permanent base with drive mechanism mounted therein and a removable disposable unit

removably positioned in the base with a web which may be written on extending from one reel to another reel



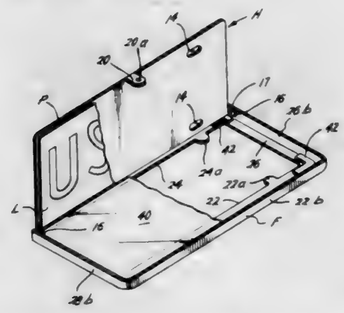
which reels have simple driven means to cooperate with the drive mechanism of the base and receive motion in either direction therefrom.

3,432,953
DISPLAY STAND AND METHOD FOR MAKING SAME
Herbert Pinzke, 28W511 Highland Road, West Chicago, Ill. 60185
Filed Feb. 6, 1967, Ser. No. 614,321
U.S. Cl. 40—124.1 8 Claims
Int. Cl. G09f *1/00*



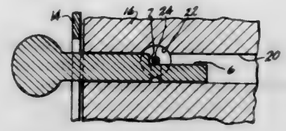
A display stand formed of an elongated sheet member which is bent to provide two depending, intersecting legs, and a method of making such display stands.

3,432,954
LICENSE PLATE HOLDER
Johnny S. Ford, 6801 Fairway St., Houston, Tex. 77017
Filed Feb. 13, 1967, Ser. No. 615,730
U.S. Cl. 40—202 3 Claims
Int. Cl. G09f *7/00, 3/18*



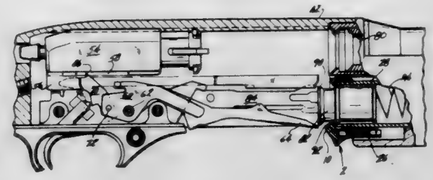
A holder for a license plate or similar object and having an inside plate for securing to an automobile bumper or other location, and an outside frame which is rectangular and is hinged to the inside plate by concealed corner hinges. A license plate or similar object is completely and securely enclosed between the inside plate and a transparent sheet disposed in the outside frame by means of a front locking tab extending from the inside plate through a slot in the outside frame for receiving a conventional padlock.

3,432,955
REMOVABLE COCKING HANDLE FOR A FIREARM BREECH BOLT AND MOUNTING MEANS THEREFOR
Edwin S. Vartanian, North Haven, and Jay P. Jarvis, North Branford, Conn., assignors to Olin Mathieson Chemical Corp., a corporation of Virginia
Filed Oct. 25, 1967, Ser. No. 677,936
U.S. Cl. 42—16 4 Claims
Int. Cl. F41c *11/00*



A cocking handle and means for removably mounting the same on the bolt assembly of a semi-automatic firearm to facilitate removal of the bolt assembly during take down, wherein the cocking handle is quickly detached from the bolt assembly by manually rotating the cocking handle and sliding the latter out of engagement with the bolt assembly.

3,432,956
TUBULAR MAGAZINE FIREARM WITH CARRIER RELEASE AND LATCH
Edward L. Morrow, Fairfield, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Dec. 14, 1967, Ser. No. 690,562
U.S. Cl. 42—17 5 Claims
Int. Cl. F41c *11/00*



For use in a firearm of the general type having a reciprocating bolt assembly operative to flip a cartridge carrier from a cartridge-receiver position to a cartridge-feeding position, and further having latching means operative, after the last shot has been fired, by a cartridge follower disposed in a tubular cartridge magazine to engage and detain the cartridge carrier in the cartridge-receiving position and thereby detain the bolt assembly in a breech-open position, manually operable release means conveniently accessible to counteract the latching means and release the cartridge carrier and thereby the bolt assembly for further movement.

3,432,957
FISH LURE
Santo Marino, 604 Rountree Road, Hanover, Mich. 49241
Filed Feb. 9, 1966, Ser. No. 526,312
U.S. Cl. 43—17.1 8 Claims
Int. Cl. A01k *85/04*

A fish lure for either underwater or surface use including a spinner member, a fish hook assembly connected to the spinner member, and a means to attach the spinner member to a fishing line. The spinner member is formed

as a spoon member having a first and second trailing fin member. Each fin member has a scoop portion and a flange portion. The fin members are in diverging relation-



ship with respect to each other in a direction away from the spoon member and the scoop portions of the fin members blend in with the said spoon member.

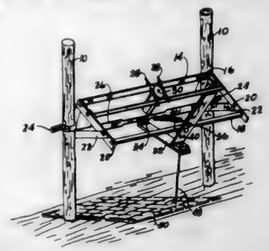
3,432,958
FISHING POLE
Victor Stanley Bellinger, 204 Leah St., Utica, N.Y. 13501
Filed Oct. 24, 1965, Ser. No. 504,738
U.S. Cl. 43—24 3 Claims
Int. Cl. A01k *87/04*



This pole comprises an elongated tube to be slipped over the end of a fishing rod to a point in which one end of the tube is adjacent to the handle of the rod. A hook shaped bolt secures the rod to the tube near said end of the tube. The other end of the tube is secured to a tubular container which is substantially the same size as the tube at one end and larger at its other end to permit a fish to be drawn into the container by the line. An apertured plug extends across the tube near said other end and is adjustably secured to the tube. This plug is to be adjusted to a position in which the entire line and hook can be drawn into the container when storing the rod or moving it through brush or the like. The plug also limits the distance that the line can be drawn into the tube.

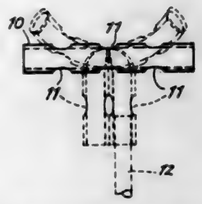
3,432,959
PROTECTION DEVICE
Benjamin L. Stroud, Hiway 80 East, Forest, Miss. 39079
Filed Nov. 15, 1967, Ser. No. 683,184
U.S. Cl. 43—84 5 Claims
Int. Cl. A01m *27/00*

A device to be placed in a cut in a beaver built dam and includes a frame member suspended between upright poles positioned on each side of the cut. The frame has mounted thereon a cartridge which is disposed in the path of a firing arm. A trigger arm releasably operated by a



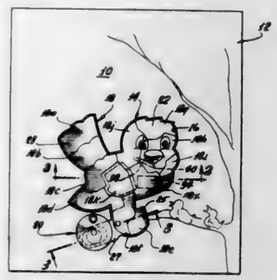
beaver releasably holds the firing arm in set position against the bias of a spring.

3,432,960
RODS AND TUBULAR CONNECTORS HAVING MEANS FOR LIMITING ROD INSERTION
Vincent A. Bombaci, 31 Yarmouth Road, Norwood, Mass. 02062
Filed July 2, 1965, Ser. No. 469,110
U.S. Cl. 46—29 5 Claims
Int. Cl. A63h *33/12*



Construction kit containing a plurality of rods of the same diameter and multipurpose connectors, each connector having a pair of holes transversely intersecting a passage in a tubular connector end, the connector end resisting axial distortion until a rod end is inserted a predetermined distance in that end with the pair of holes weakening the connector so that such distortion occurs if that distance is exceeded and before the inserted end blocks the holes.

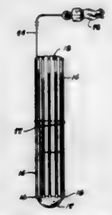
3,432,961
ANIMATED JIGSAW PUZZLE TOY
Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif. 91605
Filed Aug. 18, 1965, Ser. No. 480,700
U.S. Cl. 46—37 4 Claims
Int. Cl. A63h *13/00, 33/00*



The invention is a child's toy. It takes the form of a holder for a jigsaw puzzle comprising jigsaw puzzle pieces, the holder having the configuration of an animal or bird, or the like. The holder for the jigsaw puzzle pieces is

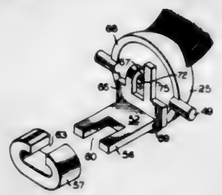
movably mounted on a base having imprinted or represented on it a background which is related to the figure which is formed in the holder by the jigsaw pieces. After the figure is formed in the holder from the pieces, the holder can be manually moved to simulate an animate relationship between the figure in the holder and the background.

3,432,962
AERIAL TOY
Arthur H. Boese, 1205 N. Utah, Oklahoma City, Okla. 73107
Filed Oct. 24, 1965, Ser. No. 504,313
U.S. Cl. 46—86 2 Claims
Int. Cl. A63h *33/20*



An aerial toy having a base, shrouds resiliently hinged to the base and movable from a relaxed, divergent status to a parallel, resiliently deformed status; a canopy secured to the shrouds and spaced from the base; and a flexible launching member secured to the base and of a length permitting it to be wrapped around the shrouds when they are parallel, and then extended past the ends of the shrouds connected to the canopy. The toy is launched by grasping the free end of the launching member, swinging the toy in an arc, and releasing it upwardly.

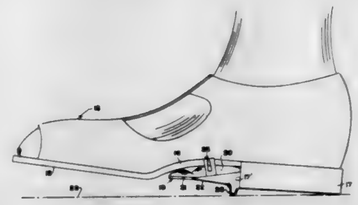
3,432,963
CONTROLLABLE WINKING EYE
Harry Brudney, New York, N.Y., assignor to Dollac Division, Jacoby-Bender, Inc., Woodside, N.Y.
Filed June 7, 1965, Ser. No. 461,711
U.S. Cl. 46—169 10 Claims
Int. Cl. A63h *3/40*



The construction provides for a unitary doll eye having an eyeball actuating pin carried by the doll eye casing as part of the unit. The pin is coupled to the eyeball and mounted substantially frictionlessly so that the weight carried by the eyeball can effect the usual opening and closing motions. However, by coupling an additional actuating element to the pin by means of a lost motion connection the eye can be manually opened or closed independently of the function of the weight.

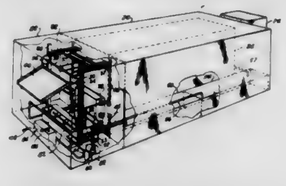
3,432,964
SHOE-BORNE, STEP-ACTUATED NOISE MAKERS
Aniceto R. Visitacion, 705 W. 179th St., New York, N.Y. 10033
Filed Oct. 20, 1965, Ser. No. 498,665
U.S. Cl. 46—189 6 Claims
Int. Cl. A63h *5/00, 33/00*

The invention relates to a shoe-borne step-actuated noise maker adapted to be removably secured to the underside of a conventional shoe adjacent to the breast of the shoe heel; the noise maker being so dimensioned that



when the sole and heel rest on the ground substantially the entire noise maker is within the space bounded by the ground, the shank and the breast of the heel.

3,432,965
HYDROPONICS APPARATUS
Charles M. Smith, 21 Turtle Creek Square, Apt. 2107, Dallas, Tex. 75219, and Robert V. Wilson, Jr., 2417 Idlewood, Odessa, Tex. 79760
Filed July 5, 1966, Ser. No. 600,675
U.S. Cl. 47—1.2 17 Claims
Int. Cl. A01g *31/00*

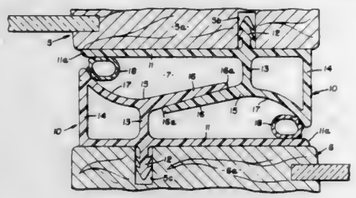


There is disclosed hydroponic apparatus for automatic germination of seed, growth of produce therefrom and harvesting of the produce in which there is provided a frame and conveyor means which comprise a pair of substantially parallel and spaced apart members supported within the frame along a tortuous path for movement therethrough. The tortuous path includes a plurality of spaced apart, substantially horizontally disposed sections arranged in a vertical array. Containers are rotatably connected to the flexible members whereby the containers will remain in an upright position when carried by the flexible members along the tortuous path. There is also provided feeder means for introducing seed into each container as it enters the vertical array, and cleaning means positioned between the harvesting means and the seed dispensing means for cleaning and sterilizing each container by directing hot water or steam onto the container as the container is transported from the harvesting means to the seed dispensing means.

3,432,966
COMBINATION INTERLOCK AND WEATHER SEAL STRIP ARRANGEMENT FOR RELATIVELY SLIDABLE CLOSURE MEMBERS
Paul G. Bordner, Columbus, Ohio, assignor to Crane Plastics, Inc., Columbus, Ohio, a corporation of Ohio
Filed Apr. 28, 1967, Ser. No. 634,511
U.S. Cl. 49—368 2 Claims
Int. Cl. E06b *3/30, 3/64, 3/88*

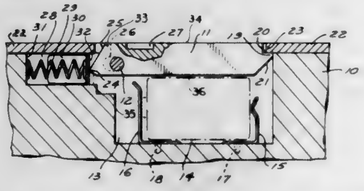
An extruded plastic interlock and weather seal strip for application to sliding doors and/or windows and which includes integral mounting and interlock portions of rigid composition and a weather seal portion of relatively softer,

flexible composition; a pair of such strips being mounted in opposing relation on the relatively overlapping end



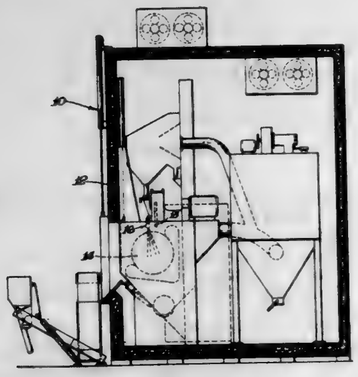
frames or stiles of a pair of sliding doors or windows to provide an interlocking weather seal therebetween.

3,432,967
MOVABLE COVER WITH LOCKING AND DETENTING MEANS
Horst Simon, Fellbach, near Stuttgart, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 15, 1967, Ser. No. 660,747
Claims priority, application Germany, Aug. 26, 1966, K 55,345
U.S. Cl. 49—386 **9 Claims**
Int. Cl. E05f *1/10;* **E05c** *17/10, 19/06*



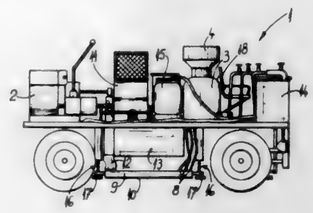
A cover provided with locking means for securing it in its closed position and detenting means for holding it in at least one open position, the cover being hinged in slots to permit longitudinal sliding thereof for locking and unlocking when in its closed position and rotation thereof for movement between its closed and open positions.

3,432,968
LIQUID NITROGEN DEFLASHING APPARATUS
Charles P. Croft and William W. Long III, Hagerstown, Md., assignors to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 536,349
U.S. Cl. 51—8 **9 Claims**
Int. Cl. B24c *3/00;* **B24b** *31/00*



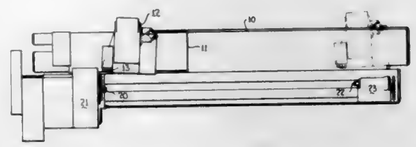
A deflasher which includes a tumbler for simultaneously supporting and turning workpieces in a dehumidifying housing wherein a freezing medium is applied to the workpieces so that excess material may be removed by abrasive blasting is characterized by applying the freezing medium, which is liquid nitrogen, at a rate of flow substantially independently of the storage pressure of the liquid nitrogen.

3,432,969
MACHINE FOR CLEANING A JOINT IN A WORK OF CONCRETE
Carlos Byttebier, La Conversion, Switzerland, assignor, by mesne assignments, to Sika Holding A.G., Glaris, Switzerland
Filed Oct. 27, 1966, Ser. No. 590,086
Claims priority, application Switzerland, Nov. 5, 1965, 15,268/65
U.S. Cl. 51—8 **2 Claims**
Int. Cl. B24c *3/00;* **E01c** *19/00, 21/00*



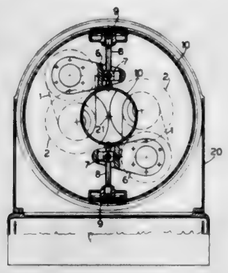
A machine for cleaning a joint in concrete which is mounted on a motor vehicle and which has sand blast nozzles and a bell shaped hood which surrounds the nozzles and which is evacuated, and the bell shaped hood has guide blocks for engaging the joint. The machine may have a feeler which engages the joint and steers the vehicle.

3,432,970
WHEELBASE SWIVELLING MEANS
John A. Boller, Thurmont, Md., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Oct. 7, 1965, Ser. No. 493,854
U.S. Cl. 51—49 **7 Claims**
Int. Cl. B24b *5/00, 13/00, 13/02*



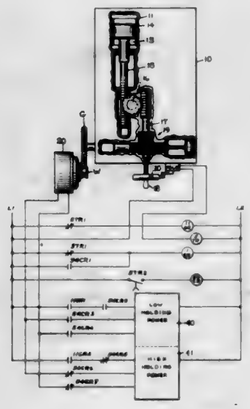
The apparatus of this disclosure is a cylindrical grinding machine having means for effecting relative transverse and longitudinal movements of a grinding wheel and work support. The grinding wheel support is mounted for swivelling movement so as to present the grinding wheel to the workpiece at an angle and to change the angle in response to a change in the direction of the relative longitudinal movement between the work and grinding wheel. The means for swivelling the wheel support consists of a cylinder mounted in fixed position on the wheel carriage. A pair of pistons in said cylinder are operable to shift the bracket and wheel support in either direction. By introducing fluid under pressure between the two pistons, the bracket and wheel support can be moved to an intermediate position. With the grinding wheel set at an angle in proper relation to the direction of the longitudinal movement, a heavy cut can be taken on the workpiece and the grinding action distributed uniformly across the face of the grinding wheel.

3,432,971
WIRE GRINDING MACHINE
Aldo Conti, Via Cima Dodici, 20, Vercelli 13100, Italy
Filed June 29, 1966, Ser. No. 561,528
Claims priority, application Italy, July 7, 1965, 15,222/65
U.S. Cl. 51—80 **11 Claims**
Int. Cl. B24b *7/02, 9/00*



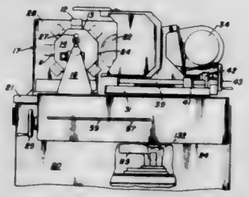
A metal wire grinding machine in which a drum is driven in rotation about its axis and supports on one side of a radial wall therein, a pair of grinding wheels arranged symmetrically and adjustably, with respect to the axis of rotation of the drum, and on the opposite side of the wall a driving means for rotating the wheels about their respective axes which are offset from the axis of rotation of the drum. The wheels are supported in heads which in turn are supported in the drum and resiliently urged against the wall therein, said heads containing a transmission for the drive between the wheels and the drive means therefor.

3,432,972
CONTROL MEANS FOR MAGNETIC FACE PLATES
Glenn M. Snyder, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Oct. 22, 1965, Ser. No. 501,417
U.S. Cl. 51—103 **2 Claims**
Int. Cl. B24b *5/18, 41/06, 51/00*



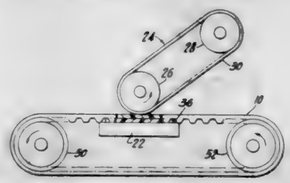
The apparatus of this disclosure relates to grinding machines of the type generally referred to as shoe type centerless. In this machine, the workpiece is supported on angularly spaced shoes in contact with the surface being ground. The shoes support the workpiece in offset relation to the magnetic face plate which, due to the offset relation, urges the workpiece into firm contact with the shoes. The current for energizing the face plate is supplied alternately by two magnetic chuck control rectifiers, one of which is adjusted to supply high energy to the face plate, the other of which is adjusted to supply lower energy to the face plate. During the first part of the grinding operation, the grinding wheel exerts a relatively large force on the work in a horizontal direction due to the advance of the grinding wheel, and in a vertical direction due to the rotation of the grinding wheel. During this part of the grinding operation, it is necessary that the face plate exert a gripping force on the workpiece in proportion to the grinding forces acting on said workpiece. For this purpose, the face plate is connected to a high energy rectifier. These forces are gradually reduced toward the end of the grinding operation, and it is desirable to reduce the gripping force of the face plate at the same time. This is accomplished by means of a switch actuated by the feed hand wheel at the proper point in the grinding operation which disconnects the face plate from the high energy rectifier and connects it to the low energy rectifier.

3,432,973
PRECISION CUTTING APPARATUS
Robert G. Heinrich, Rochester, N.Y., assignor to Hamco Machines and Electronics Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 22, 1965, Ser. No. 441,625
U.S. Cl. 51—108 **12 Claims**
Int. Cl. B24b *5/18, 47/02, 29/00*



A precision cutting apparatus in which a plurality of elements to be cut is positioned in each of a number of spaced stations on a rotatable drum which moves each plurality of elements successively past a cutting member. The elements in each station are cut seriatim and the cutting member is then indexed axially relative to the drum for the next cutting operation. A blank station is used to establish a cycling period during which the cutting member is indexed.

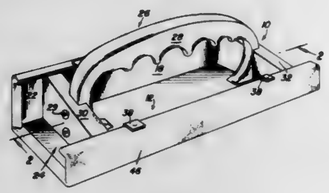
3,432,974
METHOD OF MAKING AN IMPROVED VACUUM BELT
Warren A. Stewart, Monkton, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,746
U.S. Cl. 51—328 **2 Claims**
Int. Cl. B24b *1/00, 7/00, 9/00*



A method of grinding the outer face of a resilient endless belt having a toothed inner periphery with an inner circumferential groove therein to provide a flat outer

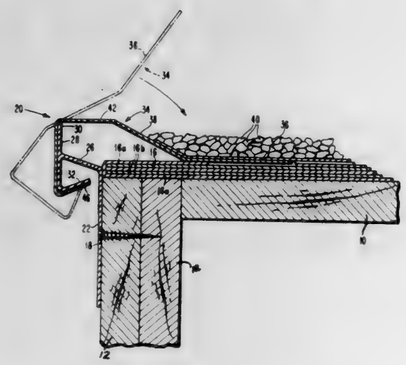
face on the belt which comprises moving the outer face of the belt past a grinding wheel while supporting the belt and the inner groove on the side opposite the grinding wheel so that the grinding wheel removes an outer layer from the belt.

3,432,975
SANDING TOOL
Fate E. Parker, 2531 Chestnut St., San Angelo, Tex. 76901
Filed Sept. 26, 1966, Ser. No. 581,947
U.S. Cl. 51—392 **9 Claims**
Int. Cl. B24d *15/00, 17/00*



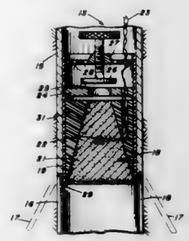
A hand manipulable sanding tool having a rectangular flat base portion and upstanding wall portions extending in parallel relation along the longer sides of the base portion. The upstanding wall portions are provided with inwardly turned flanges provided with resilient clip means for releasably retaining a sheet of abrasive material about the exterior surface of the base and wall portions. The tool further includes a handle means having its lower end portions fixed in a trough defined by the base portion and upstanding wall portions.

3,432,976
ARRANGEMENTS FOR INSTALLING FASCIAS, GRAVEL STOPS AND GUTTERS ALONG THE EDGES OF ROOFS
Edward T. Berg, 187 Fremont St., San Francisco, Calif. 94105
Filed Apr. 3, 1967, Ser. No. 627,877
U.S. Cl. 52—60 **3 Claims**
Int. Cl. E04d *3/40, 7/00, 13/04*



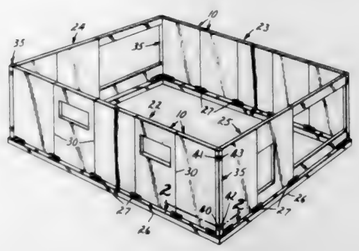
An anchoring member for installing both gravel stops and fascias or gutters, along the edges of roofs, comprising a bracket portion for attachment to the upper end of a wall, a neck portion slanting upwardly away from the upper end of the bracket portion, and secured to said neck portion a vertically disposed strip-shape support portion with a horizontally extending upper support edge and an inwardly turned anchoring lip along its bottom. The marginal area of gravel stop strips is formed to fit over the outside of the support portion of the anchoring member, and is held in position by the outside of its anchoring lip, and the upper end of a fascia or the inner side wall of a gutter is formed into a lip that may be engaged over and suspended from the inside of said anchoring lip.

3,432,977
APPLICATION OF SHAPED CHARGE TO EARTH ANCHOR
James E. Scholl, Fairfax, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 8, 1967, Ser. No. 621,713
U.S. Cl. 52—98 **3 Claims**
Int. Cl. E04h *12/22*



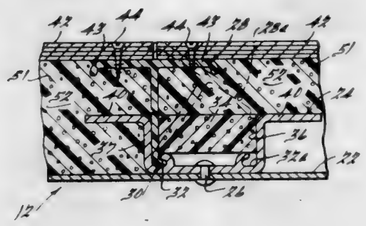
An earth anchor formed by exploding a shaped charge about an anchoring post to form a camouflet and filling the camouflet with cement to prevent failure of the anchor.

3,432,978
CONCRETE WALL AND WALL PANEL CONSTRUCTION
Donald O. Erickson, 7009 France Ave. S., Minneapolis, Minn. 55435
Filed May 18, 1967, Ser. No. 639,485
U.S. Cl. 52—227 **2 Claims**
Int. Cl. E04c *2/04, 2/46;* **E02d** *27/32*



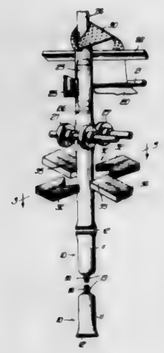
A generally rectangular pre-cast concrete wall panel having upper and lower continuous openings or ducts extending between the side edges thereof. A plurality of these wall panels are mounted on a suitable foundation in an edge-to-edge relationship to form a wall, and steel strands are threaded through the upper and lower ducts. The steel strands are placed under tension by stretching and then anchoring their ends at opposite ends of the wall to apply a compressive force to the wall to generally cause the wall to act as one monolithic structure rather than as individual elements. This compressive force seals the joints thereof and prevents settlement cracking of the wall.

3,432,979
INSULATED WALL CONSTRUCTION
Fred G. Heimann, Mount Clemens, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 25, 1966, Ser. No. 575,040
U.S. Cl. 52—309 **2 Claims**
Int. Cl. E04c *2/28;* **E04b** *1/62*



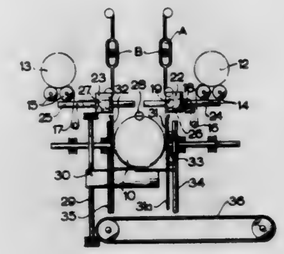
An insulated wall construction for use on semi-trailers, trucks, containers and the like, comprising a metal outer wall, at least one wall post supporting the outer wall, a second inner wall formed of wood partitions, with the wood inner wall being held stationary relative to the outer wall by a T-shaped spacer wherein the leg of the T hooks into connection with the wall post and is held in connection by means of a foam block wedged into the wall post, with the lateral arms of the T being used for supporting connection of the inner wood wall partitions, and a foam insulating material disposed between the inner and outer walls of the construction.

3,432,980
METHOD AND APPARATUS FOR MAKING A CLIP AND SEAL PACKAGE
Oscar E. Selferth and Glenn M. Austin, Madison, Wis., assignors to Oscar Mayer Co., Inc., Chicago, Ill., a corporation of Illinois
Original application Dec. 22, 1965, Ser. No. 515,629. Divided and this application June 7, 1967, Ser. No. 656,972
U.S. Cl. 53—14 **6 Claims**
Int. Cl. B65b *7/02, 51/04, 9/12*



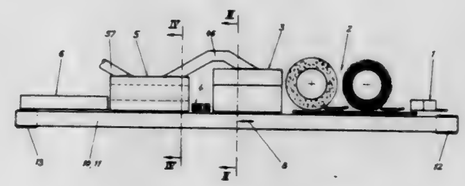
A method and apparatus for forming tubular packages which are closed at the bottom by a flat transverse heat seal and at the top by a wire tie closure wherein a package forming web is folded about a hollow mandrel and sealed to form a tube, a product is fed through the hollow mandrel and the tube is constricted at spaced intervals, and heat seals and wire tie members are applied to alternate constricted areas by mechanism carried on a frame which is reciprocated along the longitudinal axis of the mandrel and which also carries a knife for severing the tube in the constricted areas so as to form separate packages.

3,432,981
METHOD OF AND APPARATUS FOR PACKING, PREFERABLY OF TEXTILE LAPS OR BALES IN DOUBLE PLASTIC FILMS
Hans Minten, Suchteln, Germany, assignor to Johannes Menschner, Textilmaschinenfabrik, Dulken, Germany, a corporation of Germany
Filed May 15, 1967, Ser. No. 638,299
U.S. Cl. 53—33 **5 Claims**
Int. Cl. B65b *11/06, 53/02*



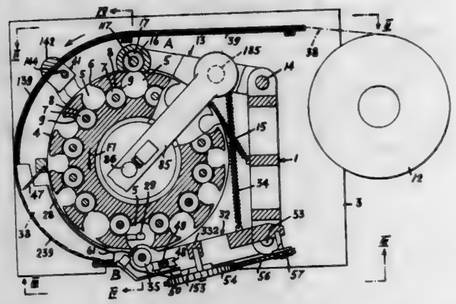
A method of and apparatus for packing of material, such as textile laps or bales of various heights in double films welded together at their cut edges, wherein the material to be wrapped is lowered through at least a distance equal to the height of the material and thereupon and directly in response thereto an upper welding of intermediate portions of the films is commenced about the top of the material.

3,432,982
METHOD AND APPARATUS FOR APPLYING CLOSURE HEAT-SEALS TO FILLED PLASTIC BAGS
Friedhelm Brinkmeier, Ladbergen, and Dietrich Aulmann, Lienen, Germany, assignors to Windmoller & Holscher
Filed Sept. 15, 1965, Ser. No. 487,422
Claims priority, application Germany, Sept. 21, 1964, W 37,587
U.S. Cl. 53—40 **26 Claims**
Int. Cl. B65b *7/00, 17/00, 55/00*



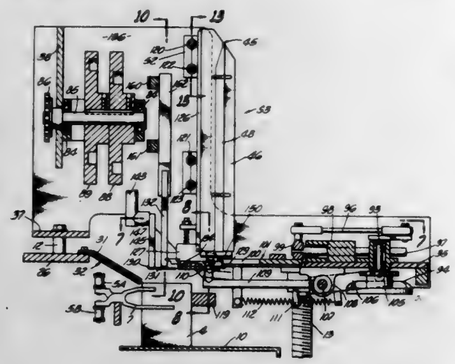
Method and apparatus for applying closure heat-sealed seams to filled plastic bags comprising spreading apart the edges of the open end of a filled bag by a vacuum device, removing a thin full-face material layer from the inner surface of the edges so that fresh material is exposed to form a seal, placing the edges of the bag into contact with each other and then heat sealing the edges of the bag.

3,432,983
AUTOMATIC COIN STACKING AND WRAPPING MACHINE
Giacomo Picollo, 116 Via F. Cavalotti, Novi Ligure, Italy
Filed Sept. 12, 1966, Ser. No. 578,721
Claims priority, application Italy, Sept. 13, 1965, 20,147/65
U.S. Cl. 53—52 12 Claims
Int. Cl. B65b *35/06*



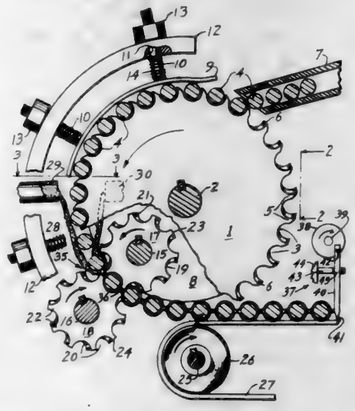
A coin stacking and wrapping machine including a conveyor drum which is mounted for rotation about a vertical axis, with an edge portion of the drum having a plurality of continuous coin storage bores which are offset relative to each other and have different diameters corresponding to different coins. A stacking station and a wrapping station which are angularly offset relative to each other are arranged around the conveyor drum, there being means for rotating the drum intermittently to transfer a coin storage bore from the stacking station to the wrapping station and then in the same direction of rotation back to the stacking station. Means are provided at the stacking station for introducing a sufficient number of coins from above into the coin storage bore to form a pile of coins of a selected height in the bore. Means are arranged at the wrapping station for wrapping in a wrapper the pile of coins contained in the coin storage bore and for removing the completed roll of coins in downward direction from the bore.

3,432,984
STUFFER FOR TRAVELING CARTONS
Elbert L. Bivans, Glendale, Calif., assignor to Bivans Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 28, 1967, Ser. No. 626,609
U.S. Cl. 53—120 15 Claims
Int. Cl. B65b *61/20, 63/04*



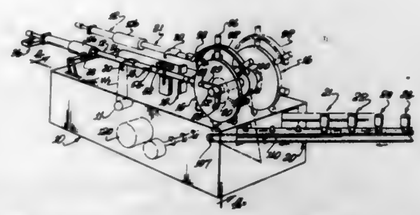
The disclosure relates to a continuous conveyor of open, upright cartons with an inserter station where a leaflet, or the like, is inserted in each carton while the carton is in motion.

3,432,985
STRIP PACKAGING MACHINE FOR NAILS AND OTHER SIMILAR ARTICLES
Donald B. Halstead, 278 Foxbury St., Pomona, Calif. 91767
Filed Oct. 4, 1965, Ser. No. 492,827
U.S. Cl. 53—140 7 Claims
Int. Cl. B65b *13/00, 27/10;* B29f *1/10*



A machine is provided for packaging articles such as nails and the like in plastic strip packs. The machine includes a pair of plastic molding wheels having spaced parallel axes of rotation and circumferentially spaced teeth defining intervening article receiving pockets that rotate in unison through a molding station between the wheels and receive the nails or other articles to be packaged. A fluent plastic is fed to the molding station in such a way as to form a continuous plastic strip which incapsulates the articles emerging from the molding station. The tips of the teeth on the molding wheels are slightly spaced to indent the plastic strip between the articles into thin connecting webs.

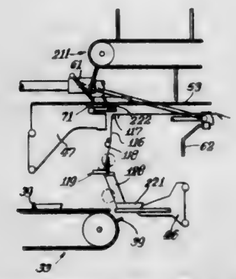
3,432,986
PACKAGING MACHINE OF THE FORM-AND-FILL TYPE
William S. Schneider, Glendale, and Arthur P. Corella, North Hollywood, Calif., assignors of twenty-five percent to Wayne V. Rodgers, South Pasadena, and ten percent to Carl Schneider, Palos Verdes Peninsula, Calif.
Filed Jan. 26, 1966, Ser. No. 523,084
U.S. Cl. 53—179 47 Claims
Int. Cl. B65b *9/10, 51/26;* B31b *1/10*



Packages with a base on which each can stand are made from a flat web of thin, flexible, heat sealable film. The web is formed into a tube and transverse seals then

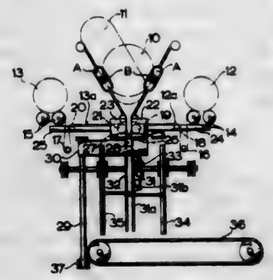
are placed at intervals. At each seal, the web is severed forming a container closed at one end. The base is then formed and thermally set, after which the tubular container is filled and closed to provide a filled package standing on a base formed from the web material.

3,432,987
WRAPPING MACHINE
Omar Hansen, Jr., Carl Littlefield, and Allen R. Haddix, Bluffton, Ind., assignors to Franklin Electric Company, Inc., Bluffton, Ind., a corporation of Indiana
Filed Apr. 30, 1964, Ser. No. 363,954
U.S. Cl. 53—210 11 Claims
Int. Cl. B65b *11/26, 49/00*



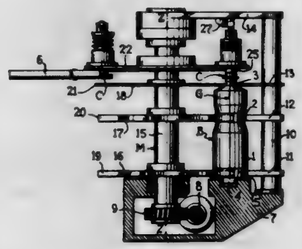
1. In a wrapping machine including a film feed and transport mechanism adapted to supply film as needed under tension and means for positioning an article to be wrapped on an end portion of the film and folding the film lengthwise over the top of the article, the improvement comprising a dancer roll for folding the film downwardly about the article, said dancer roll comprising a cylindrical metal rod having a plurality of axially spaced circumferential grooves formed in its outer periphery, and an O-ring positioned in each of said grooves, the outer periphery of said O-rings being spaced outwardly from the outer periphery of said rod and thereby forming an air layer between said rod and the film, such air layer preventing the film from substantially contacting said rod, said O-rings being made of a material which avoids clinging of the film thereto.

3,432,988
APPARATUS FOR PACKING, PREFERABLY OF ROUND OR FLAT LAPS OR BALES IN PLASTIC FILM PACKINGS
Hans Minten, Suchteln, Germany, assignor to Johannes Menschner Textilmaschinenfabrik, Dulken, Germany, a corporation of Germany
Filed May 15, 1967, Ser. No. 638,545
U.S. Cl. 53—229 2 Claims
Int. Cl. B65b *11/06, 27/00, 49/02*



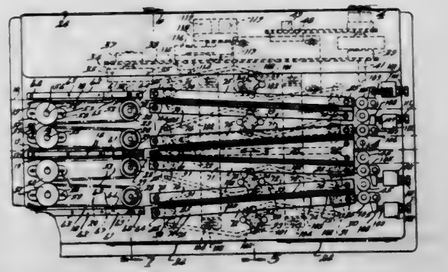
An apparatus for packing laps in film-wrappings particularly double-film wrappings having a feed formed of two spaced side walls movably connected to control jaws for moving apart therewith. When the control jaws are opened to an extent equal to the width of the material to be wrapped then the lap drops through onto a lowering floor and adjacent lateral guides are spaced equal to the thickness of the material to be wrapped by the positive opening stroke of the control jaws and laterally guide the material during its lowering on the floor.

3,432,989
MACHINE FOR STOPPERING BOTTLES
Daniel Emile Henri Bouzereau, Taverny, France, assignor to Centre de Recherches de Pont-a-Mousson, a French body corporate
Filed Jan. 23, 1967, Ser. No. 610,834
Claims priority, application France, Mar. 28, 1966, 55,179
U.S. Cl. 53—264 9 Claims
Int. Cl. B65b *7/28;* B67b *7/28*



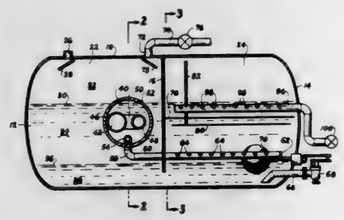
Bottle stoppering machines of known type comprise pered in a practically rectilinear path by conveying them in a rectilinear path to a rotating turntable having notches for engaging the bottles, the conveying path of the bottles being substantially tangent to the pitch circle of the notches, the turntable carrying means for holding stoppers vertically above the bottles and thrust elements for thrusting the stoppers downwardly into engagement with the bottles, the thrust elements being urged downwardly by a fixed cam located above the turntable in the region where the conveying path is tangent to the pitch circles of the notches.

3,432,990
FLUTED PACKAGE SEALING APPARATUS
William P. Hidden, Wenham, Mass., assignor, by mesne assignments, to Diamond Crystal Salt Company, St. Clair, Mich., a corporation of Michigan
Filed Oct. 20, 1965, Ser. No. 498,683
U.S. Cl. 53—373 18 Claims
Int. Cl. B65b *7/06, 51/14*



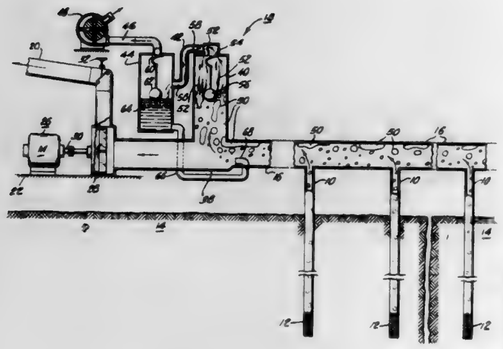
This invention relates to an improved sealing device for one or more strips containing a plurality of filled pockets which has the open end folded and sealed during the passage through the device.

3,432,991
METHOD AND APPARATUS FOR TREATING FLUID STREAMS CONTAINING GAS, WATER AND WATER-IN-OIL EMULSIONS
Robert A. Sauder, Emporia, Kans., and William H. Christopher, Jr., Tulsa, and Merrill E. Bailey, Oklahoma City, Okla., assignors to Sauder Tank Company, Inc., Emporia, Kans., a corporation of Kansas
Filed Apr. 10, 1967, Ser. No. 631,114
U.S. Cl. 55—42 8 Claims
Int. Cl. B01d *17/04, 19/00*



An elongated vessel having separate gas-separating and emulsion-treating zones with a confined and separate heating zone contained within the gas-separating zone for heating the emulsion only.

3,432,992
METHOD AND APPARATUS FOR REMOVING DISPERSED LIQUIDS FROM THE GROUND
Edward J. Moore, Morris Township, N.J., assignor to Moretrench Corporation, Rockaway, N.J.
Filed Oct. 14, 1966, Ser. No. 586,862
U.S. Cl. 55—51 4 Claims
Int. Cl. B01d *19/00*

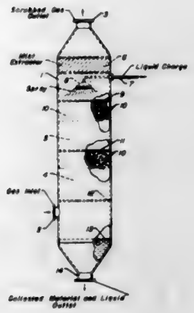


Well-point system with liquid pumping unit having dual chambers connected in series to one another and a gas evacuation pump connected to the chambers for separating gases from liquids being pumped from the ground. The first chamber receives gases directly from the liquid and passes them to the second chamber. The gas evacuation pump is connected to the second chamber. Since liquid collected in the second chamber is quiescent, water is not readily splashed into the vacuum line leading to the evacuation pump. This prevents damage to the evacuation pump. A drain system is provided for automatically returning any water collected in the second chamber back to the main body of water being pumped.

3,432,993
INHIBITION OF POLYMER DEPOSITION IN ACETYLENE EXTRACTION SYSTEMS
William J. Boyne and Jack R. Little, Baton Rouge, La., and Ulrich Wagner, Limburgerhof, Germany, assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey, and Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 440,602, Mar. 17, 1965. This application Mar. 26, 1968, Ser. No. 716,228
U.S. Cl. 55—64 8 Claims
Int. Cl. B01d *11/00*; C10h *23/00*

This invention relates to the inhibition of polymer deposition in acetylene extraction systems, particularly in the selective extraction of acetylene from cracked gas obtained by partial combustion of hydrocarbon feedstocks, by adding to the solvent used to carry out the extraction an amount sufficient to substantially inhibit polymer deposition without affecting the solvent, of an antifouling agent selected from the group consisting of alkali metal salts of acids having a maximum disassociation constant of 10^{-4} for the first hydrogen and alkali metal hydroxides.

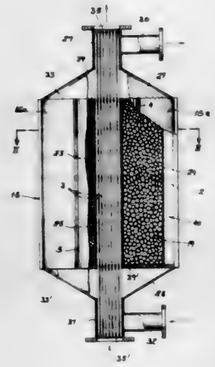
3,432,994
METHOD FOR EFFECTING COUNTERCURRENT CONTACTING OF GAS AND LIQUID STREAMS
Louis C. Whiton, Westport, and Alfred Arnold Petersen, Greenwich, Conn., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Original application Dec. 16, 1964, Ser. No. 418,798, now Patent No. 3,364,656, dated Jan. 23, 1968. Divided and this application Sept. 12, 1967, Ser. No. 667,120
U.S. Cl. 55—91 3 Claims
Int. Cl. B01d *47/06*



Countercurrent contacting of gas and liquid streams with the use of large surface area open contact elements which will provide both exterior and interior contact surfaces and in addition can be utilized in a floating bed manner to effect the turbulence and mutual contact between gas and liquid streams in a countercurrent flow, such elements being in hollow spherical form with large wall openings.

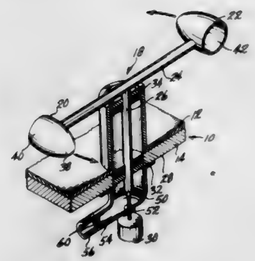
3,432,995
ADSORPTION TOWER
Karl Jaeger and Werner Scheffel, Munich, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany
Filed Nov. 16, 1966, Ser. No. 594,922
Claims priority, application Germany, Nov. 19, 1965, L 52,185
U.S. Cl. 55—179 8 Claims
Int. Cl. B01d *53/04*

An adsorption tower having an upright cylindrical housing whose upper and lower hoods are provided with an inlet and an outlet for delivering a gas to and removing it from an adsorption chamber at opposite axial ends thereof, the chamber being subdivided into at least a pair of angularly offset adsorption zones by a multiplicity of angularly spaced radial walls lying in respective axial planes of the chamber and subdividing it also into heat exchange zones inwardly of the respective adsorption zones; the zones are of sectoral configuration and are surrounded by an outer partition formed by a multiplicity of perforated plates spanning the radial walls and defining



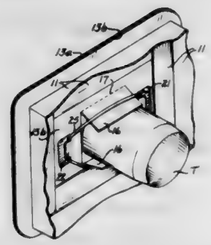
the outer side of each adsorption zone. An inner perforated tube forms a gas-penetrable retaining wall for the adsorption material of each adsorption zone along an inner side thereof. The heat-exchange zones are each provided with a bundle of cooling tubes extending axially within the housing means and forming a core of the tower surrounded by the adsorption zones; the walls in succession about the axis are provided alternately with openings outwardly of the adsorption zones and inwardly of the adsorption zones for passing the gas radially through the zones alternately in opposite radial directions.

3,432,996
CAVITATING VAPOR EXTRACTOR
Harold W. Patterson, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,406
U.S. Cl. 55—189 5 Claims
Int. Cl. B01d *47/18*



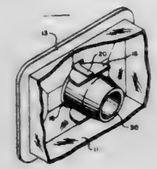
A cavitating member disposed in a tank of cryogenic fluid, said cavitating member comprising two cup-like members mounted for following a circular path through the fluid and having vent passages leading from the trailing edges of said cups to a location outside of the tank.

3,432,997
END CLOSURE FOR A DISPOSABLE VACUUM CLEANER DUST BAG
David F. Downey, Stamford, Conn., Jacques L. Le Baigue, Westbury, N.Y., and Bengt E. Ohlson, Stamford, Conn., assignors, by mesne assignments, to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland
Filed Mar. 6, 1967, Ser. No. 620,930
U.S. Cl. 55—367 5 Claims
Int. Cl. B01d *29/10*



An end closure for a dust collector or filter bag having a plurality of flaps which are moved from a closed to an open position by the suction tube of a vacuum cleaner when it enters into the associated dust bag. The flaps are urged to a closed position by a rubber band which is either secured directly to the flaps by tabs struck from the flaps, or by attaching the elastic band to a pair of lugs formed by cutting a pair of U-shaped openings in the end closure remote from the flaps and over which the elastic band is hooked so that it overlies the flaps and urges them to closed position.

3,432,998
END CLOSURE FOR DISPOSABLE VACUUM CLEANER DUST BAG
David F. Downey, Stamford, Conn., assignor, by mesne assignments, to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland
Filed Mar. 6, 1967, Ser. No. 620,929
U.S. Cl. 55—367 2 Claims
Int. Cl. B01d *29/10*

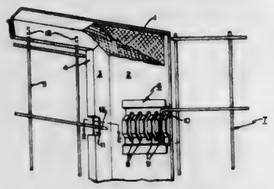


An end closure for a dust collector or filter bag having a plurality of flaps which are free to move from a closed to an open position relative to an entrance aperture opening into the associated dust bag. Each of the flaps are urged into their closed position by a resilient strip of spring steel or a resilient synthetic resin material associated with each flap and held in place by sandwiching the strips between two halves of the end closure which are folded upon one another and cemented together.

3,432,999
GAS FILTER HOLDING DEVICE
Theodor Ernst-Schraner, Wettingen, Switzerland, assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,615
Claims priority, application Switzerland, Jan. 13, 1967, 477/67
U.S. Cl. 55—490 6 Claims
Int. Cl. B01d *46/00*

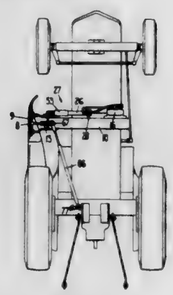
A unitary gas filter assembly including an encompassing

open-ended side wall frame and at least two grid-like retaining panels fastenable parallel to one another on the frame to retain a filter medium means disposed in the frame in position transverse the gas stream to be treated,



at least one of the retaining panels being secured by means of racks mounted on the frame to permit multiple adjustment of one of the retaining panels relative the other.

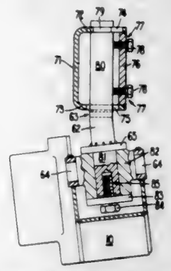
3,433,000
THREE POINT INDEPENDENTLY CONTROLLED MOWER FRAME MOUNTING
James N. Brade, Churchtown, Southport, England, assignor to Harrison, McGregor and Guest Limited
Filed Oct. 22, 1965, Ser. No. 501,115
Claims priority, application Great Britain, Oct. 29, 1964, 44,083/64
U.S. Cl. 56—25 **8 Claims**
Int. Cl. A01d *35/02, 55/32*



A mowing machine of the reciprocating knife-bar type for mounting in transverse relation at the forward end of a tractor comprises a knife-bar frame and three independent means flexibly attached to three spaced points on said frame for mounting the frame on the tractor, these points being disposed at the respective apices of a triangle, and each of the independent means being operative to independently control the position of the frame relative to the tractor.

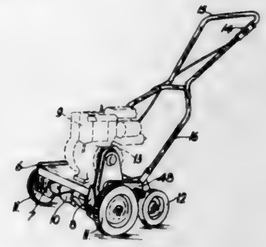
3,433,001
ADJUSTABLE PITCH BREAK BACK TYPE OF RECIPROCATING KNIFE MOWER FRAME MOUNT
James N. Brade, Churchtown, Southport, England, assignor to Harrison, McGregor and Guest Limited
Filed Oct. 22, 1965, Ser. No. 501,877
Claims priority, application Great Britain, Oct. 29, 1964, 44,084/64
U.S. Cl. 56—25 **10 Claims**
Int. Cl. A01d *35/02, 55/32*

A mowing machine of the type adapted to be mid-mounted on a tractor comprises a frame carrying a reciprocating knife-bar. A connecting member between the tractor and frame has a first portion rigidly connected to the tractor in an angularly adjusted location about a vertical axis and a second angularly related portion pivotally connected by trunnions to the frame. A telescopic strut element connects a point on the frame spaced laterally of the connecting member to a longitudinally spaced point on the tractor and this element collapses if the machine meets with an obstruction or other overload



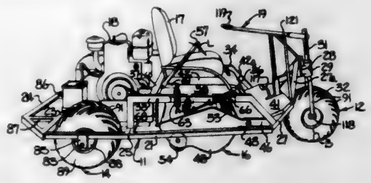
whereupon the mowing machine can pivot rearwardly relative to the tractor about the axis of one of the portions of the connecting member.

3,433,002
MOTORIZED FRICTION DRIVE MOWER
Raymond J. Custance, 47 Te Aute Road, Havelock North, Hawke's Bay, North Island, New Zealand
Filed Nov. 1, 1965, Ser. No. 505,859
Claims priority, application Sweden, Nov. 10, 1964, 13,537/64
U.S. Cl. 56—26 **11 Claims**
Int. Cl. A01d *35/24*



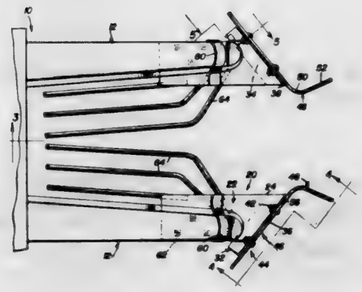
A motorized mower including four ground wheels with one wheel at the front and rear of each side and a driving friction roller rotatably mounted on a pivoted support on each side. The support is urged in the direction to bring the friction roller into contact with the two wheels on that side by biasing means and a drive is provided for the friction roller. Also means is employed to move the support in another direction to remove the roller from the contact, and the drive to the roller being unaffected by movement of the support.

3,433,003
MOWING MACHINE
Johnnie J. Musgrove, Charleston Heights, S.C. (1604 Amberly Road, Charleston, S.C. 29407)
Filed Mar. 23, 1966, Ser. No. 536,800
U.S. Cl. 56—26 **1 Claim**
Int. Cl. A01d *35/24*



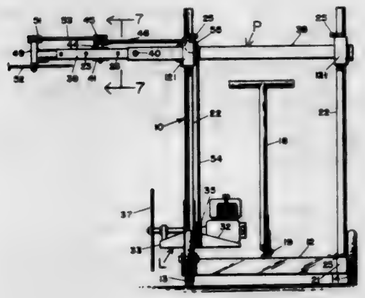
A three wheeled tricycle type vehicle having low pressure type tires, a rotary cutting device supported by said vehicle and power means for operating said vehicle and cutting device.

3,433,004
COTTON RETRIEVING ATTACHMENT
Boyde W. Blunk, Dell City, and Frank Owen III, El Paso, Tex.; said Frank Owen III, assignor to M & K Leasing Company, a corporation of Texas
Filed Mar. 4, 1966, Ser. No. 532,008
U.S. Cl. 56—119 **5 Claims**
Int. Cl. A01d *45/18*



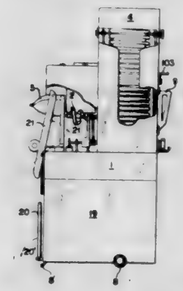
A retrieving attachment for the gathering shoe of a cotton picking machine comprising a flat mounting plate affixed to the leading portion of the gathering shoe and including an adjustable vertically orientated flat plow blade portion on the leading end thereof. A gathering rod is affixed to the plow blade and extends forwardly and downwardly therefrom, and a plurality of lift rods are fixed to the inner side edge of the mounting plate and extend inwardly, upwardly and rearwardly thereof for an inward directing of the gathered crops.

3,433,005
HEDGE TRIMMING MACHINE
Frank N. Delgaard, 4523 SW. 64th Ave. 33155, and Arthur W. Olson, 8575 SW. 52nd Ave. 33143, both of Miami, Fla.
Filed Dec. 3, 1965, Ser. No. 511,509
U.S. Cl. 56—235 **2 Claims**
Int. Cl. A01d *55/18, 55/26*



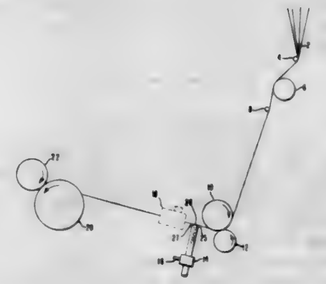
A hedge trimming machine having a frame mounted on wheels with a pair of upright support members mounted on the frame slidably supporting a lower platform on which a hedge cutter and motor are mounted. An upper platform on the upright support members and slidable in a horizontal direction with a second hedge cutter mounted on the upper platform; the two cutters being engaged by an endless belt for powering the cutters and permitting the movement of the lower platform a distance equal to the movement of the upper platform.

3,433,006
APPARATUS FOR EXCHANGING BOBBINS IN TEXTILE MACHINE
Sinichi Hamahata, Osaka-shi, Japan, assignor to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, a company of Japan
Filed Mar. 7, 1967, Ser. No. 621,324
Claims priority, application Japan, Mar. 10, 1966, 41/14,990; Mar. 11, 1966, 41/15,205
U.S. Cl. 57—53 **21 Claims**
Int. Cl. D01h *9/10, 13/10*



An improved apparatus for doffing full packaged cops produced by textile machines such as conventional ring frame, ring twister, draw twister, one after another, and for inserting bare bobbins on the spindles from which the full-packaged cops have just been doffed while the apparatus is displaced along the spindle rail from one end of the textile machine to the other. In the apparatus, the doffing operation is performed by the frictional contact of a spiral shaped doffing roller with the yarn surface of the full packaged cops during the rotation of the doffing roller and the displacement of the apparatus along the spindle rail of the textile machine.

3,433,007
SLUB YARN PROCESS AND PRODUCT
Neil O. Myers, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 29, 1966, Ser. No. 568,805
U.S. Cl. 57—140 **10 Claims**
Int. Cl. D02g *3/34*



A process comprising continuously overfeeding a multifilament yarn to an aspirating jet and withdrawing, coun-

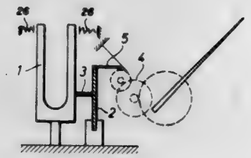
tercurrent to the aspirating stream, a random slub yarn. The product is characterized with respect to the number, size and length of slubs in a given length of yarn.

3,433,008
BULKED YARN
Thomas B. Gage, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 444,608, Apr. 1, 1965. This application Nov. 19, 1965, Ser. No. 508,725
U.S. Cl. 57—153 **6 Claims**
Int. Cl. D02g *3/34, 3/36*



An improved process and product prepared by applying a texturing finish of an ester of a polyethylene glycol of molecular weight between 150 and 600 and an aliphatic carboxylic acid to continuous melt spun filaments before the filaments are drawn. The filaments are then drawn and bulked in a turbulent fluid jet to give the improved product.

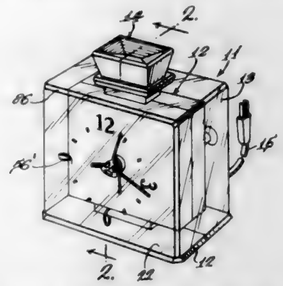
3,433,009
CLOCKWORK WITH TORSIONAL OR FLEXIBLE OSCILLATOR
Albrecht Haag, Schwenningen am Neckar, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany
Filed Aug. 29, 1966, Ser. No. 575,855
Claims priority, application Germany, Aug. 28, 1965, K 56,990, K 56,991
U.S. Cl. 58—23 **9 Claims**
Int. Cl. G04c *3/00*



A clockwork powered by a vibratory piezoelectric element subjected to an oscillating potential difference, and mechanically connected to a mechanical stabilizing oscillator. Means are provided to convert vibratory motion to intermittent rotary motion.

3,433,010
ELECTRIC CLOCK
James W. Richmond, Bensenville, and Donald R. Scott, Lombard, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 19, 1966, Ser. No. 521,639
U.S. Cl. 58—53 **17 Claims**
Int. Cl. G04b *37/00*

An electrically operated clock having a split housing with a base portion enclosing an electric clock movement and an inverted cup-shaped transparent crystal disposed over the housing and in engagement with the housing base portion. The crystal holds the split housing closed and a handle on top of the crystal locks the housing to the crystal. An electric cord attached to the movement is



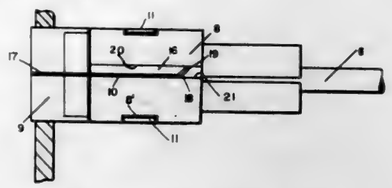
not visible until it emerges from outside of the housing base portion.

3,433,011
BARREL SPRING
Hiroshi Iwasawa, Hajime Isekil and Hiroshi Hirano, Kawasaki-shi, Japan, assignors to Citizen Tokei Kabushiki Kaisha, Tsunohazu, Shinjuku-ku, Tokyo, Japan, a Japanese corporation
Filed Apr. 28, 1967, Ser. No. 634,652
Claims priority, application Japan, Apr. 30, 1966, 41/27,432
U.S. Cl. 58—86 **7 Claims**
Int. Cl. G04b *1/16*



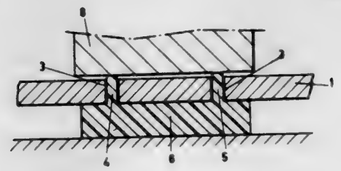
A barrel spring, having a lower elasticity at the reflex zone in proximity to the outer extremity of said spring than other plain part thereof.

3,433,012
COUPLING DETAINING CLOCK HAND OR POINTER AND ITS SPINDLE
Roland Siefert, Bad Durrheim, and Heinz Odenbach, Irslingen, Germany, assignors to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany
Filed Nov. 2, 1966, Ser. No. 591,505
Claims priority, application Germany, Nov. 5, 1965, K 57,580
U.S. Cl. 58—126 **2 Claims**
Int. Cl. G04b *19/04*



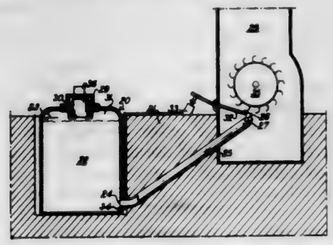
A coupling for mounting a seconds hand on its spindle comprising two interfitting partially cylindrical members having two planes of juncture to which the spindle is perpendicular. The members are slightly turnable relative to each other against force of a strip spring parallel to the spindle.

3,433,013
TIMEPIECE DIAL
Willy Köhli, Cormondreche, Neuchatel, and Charles Meroz, Chambesy, Geneva, Switzerland, assignors to Jean Singer & Cie S.A., La Chaux-de-Fonds, Switzerland, a company of Switzerland
Filed Mar. 15, 1967, Ser. No. 623,458
Claims priority, application Switzerland, Apr. 4, 1966, 4,886/66
U.S. Cl. 58—127 **6 Claims**
Int. Cl. G04b *19/06*



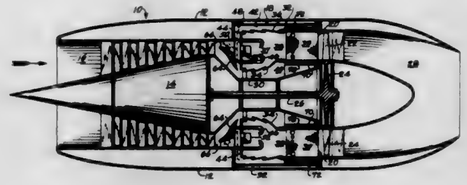
A watch dial having time signs affixed thereto, the signs having at least one projecting foot the length of which slightly exceeds the thickness of the dial plate. The foot, composed of a plastic material, passes through an opening in the dial plate and upon heating will be fused to the rugosities in the opening.

3,433,014
DEVICE FOR THE PRODUCTION OF ENERGY IN BURSTS
Jacques P. Duport, Montbonnot, and Michel de Crevoisier, Meylan, France, assignors to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France
Filed Jan. 5, 1967, Ser. No. 607,458
Claims priority, application France, Jan. 6, 1966, 4,866; Jan. 10, 1966, 4,868
U.S. Cl. 60—12 **7 Claims**
Int. Cl. F01k *7/16;* **F01b** *29/08*



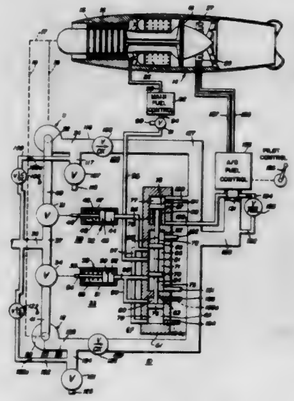
The apparatus herein comprises a tank providing an enlarged chamber for a large volume of working fluid and having a discharge outlet in its lower end portion. A conduit connected to the outlet may direct the working fluid to drive a rotary machine, or to create fluid streams in hydrodynamic testing tunnels. The tank has mounted on its top end a plug providing a chamber in communication with the upper end of the enlarged chamber for the working fluid and containing a charge of gas emitting material, which when triggered, is capable of evolving a large volume of gas for a sustained period to apply upon the working fluid in the enlarged chamber, a high pressure sufficient to discharge the working fluid through the conduit in a long burst of considerable power. The charges of the gas emitting material are activated by intermittently operable triggering means.

3,433,015
GAS TURBINE COMBUSTION APPARATUS
Ralph J. Sneeden, Woodcliff Lake, N.J., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 23, 1965, Ser. No. 466,390
U.S. Cl. 60—39.36 **4 Claims**
Int. Cl. F02g *1/00, 3/00;* **F02c** *3/00*



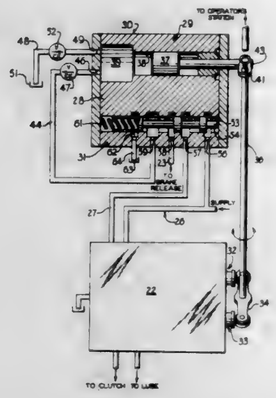
Combustion apparatus for a gas turbine engine which is made smaller and lighter than prior art devices by eliminating the conventional diluent section and introducing diluent air into the gas stream through the guide vanes.

3,433,016
FUEL DELIVERY SYSTEM
Ronald F. Borel, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 9, 1967, Ser. No. 621,925
U.S. Cl. 60—39.28 **10 Claims**
Int. Cl. F02c *7/22;* **F02k** *3/10;* **F04b** *49/00*



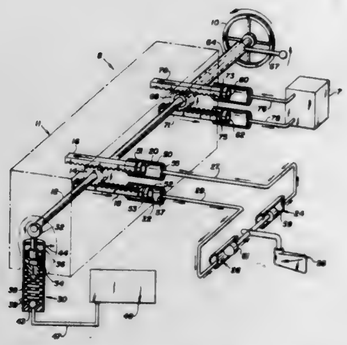
A fuel delivery system for the afterburner of a gas turbine engine, which comprises first and second centrifugal pumps respectively having a small and a large capacity. The pumps are mechanically driven from the rotor of the gas turbine engine. On-off valves are respectively provided in the inlet connection of each pump to a fuel supply. When the gas turbine engine reaches a predetermined speed, a pressure signal is fed to a selector valve which directs the pressure signal to an actuator for opening the inlet valve of the low capacity pump to direct fuel to a control unit which meters it to the afterburner. When afterburner flow exceeds a given level, the selector valve removes the pressure signal from the first actuator and directs it to a second actuator, thereby causing the first pump inlet valve to close and the second pump inlet valve to open, whereby larger fuel flow demands are satisfied by the second pump. Check valves prevent reverse flow of fuel through the pumps and drain valves are provided for automatically draining fuel from the pumps when they are not delivering fuel.

3,433,017
SAFETY OVERRIDE FOR HYDRAULIC CABLE CONTROL UNIT
Elmer W. Broeker, Washington, and Shairyl I. Pearce, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 2, 1967, Ser. No. 680,208
U.S. Cl. 60—52 **5 Claims**
Int. Cl. F15b *11/16;* **B66d** *1/54*



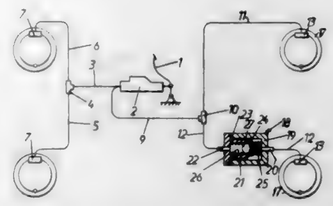
A safety override in a cable control unit having a control valve regulating fluid flow to a brake. The safety override has an auxiliary pump manually operated by the actuating lever for the control valve to supply fluid for brake release upon a pressure failure of its primary fluid source. A relay valve has a spring urging it into a position to communicate the auxiliary pump with the brake. Fluid pressure from the source overcomes the spring so that the relay valve communicates the control valve to the brake and the auxiliary pump to drain.

3,433,018
SELF-COMPENSATING SERVO SYSTEM CONTROL UNIT
Elmer E. Goehler, Portland, Oreg., assignor to Central Brass & Aluminum Foundry, Portland, Oreg., a partnership
Filed Oct. 23, 1965, Ser. No. 502,949
U.S. Cl. 60—54.5 **9 Claims**
Int. Cl. F15b *7/00, 15/14*



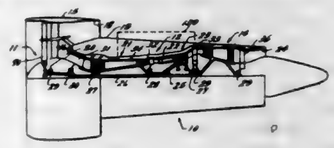
Coaxial shafts of a remote control drive pairs of pistons to control a rudder and a gearshift, and one of the shafts drives a replenisher piston to keep the system filled with liquid. In another remote control, a master unit has drive pistons of different diameters to drive a double action cylinder device to compensate for the different effective areas of the piston of the cylinder device.

3,433,019
HYDRAULIC BRAKE SYSTEMS FOR MOTOR VEHICLES
Werner Kleinstück, Russelsheim-Hassloch, and Klaus Heger, Bischofsheim, Germany, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 600,804
Claims priority, application Germany, Dec. 21, 1965, O 11,339
U.S. Cl. 60—54.5 **6 Claims**
Int. Cl. F15b *7/00;* **F16d** *65/32*



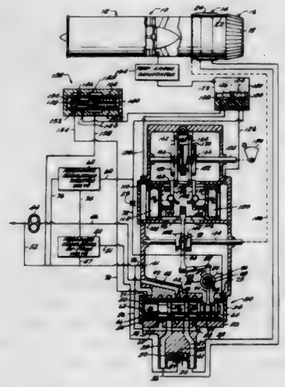
1. A hydraulic brake system for front and rear pairs of wheels of a motor vehicle, said system comprising:
a brake master cylinder having means for causing said master cylinder to produce hydraulic pressure;
front and rear pairs of brakes respectively associated with said front and rear pairs of wheels, each of said brakes including a wheel cylinder for converting hydraulic pressure produced by said master cylinder into brake actuating force for braking the wheel associated therewith;
first conduit means hydraulically connecting said master cylinder and the wheel cylinders of one of said pairs of brakes and the wheel cylinder of one brake of the other of said pairs of brakes;
second conduit means hydraulically connecting said master cylinder and the wheel cylinder of the other brake of the other of said pairs of brakes; and
hydraulic pressure modifying means in said second conduit means only hydraulically intermediate said master cylinder and the wheel cylinder of said other brake, said modifying means including a valve responsive to hydraulic pressure produced by said master cylinder to limit the brake actuating force of the other brake to a lesser amount relative to the brake actuating force of the one brake during at least a part of a brake actuating cycle.

3,433,020
GAS TURBINE ENGINE ROTORS
Roger T. Earle, Jr., Cincinnati, and Ivan E. Sumey, Fairfield, Ohio, assignors to General Electric Company, a corporation of New York
Filed Sept. 26, 1966, Ser. No. 581,984
U.S. Cl. 60—226 **4 Claims**
Int. Cl. F02k *3/04;* **F02g** *3/00;* **F02c** *7/12*



The disclosure shows a gas turbine engine of the turbofan type comprising a core engine for generating a hot gas stream which in turn drives a fan turbine connected to a bladed rotor. The bladed rotor pressurizes an air stream which is discharged through a nozzle to provide a propulsive force. The core engine comprises a rotor having three axially spaced shaft portions of relatively small diameter. The fan turbine and bladed rotor connected thereto comprise a second rotor element. Essentially all of the effective radial surfaces of both rotors are pressurized by portions of the gas flow through the engine, whereby the axial thrust loadings on the rotors are minimized and in a predictable direction.

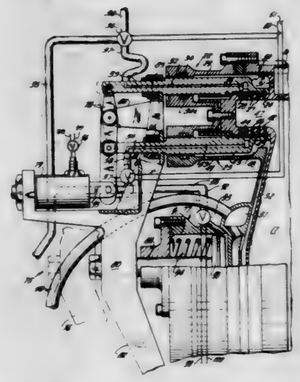
3,433,021
CONTROL SYSTEM HAVING OUTPUT VARIABLY RESPONSIVE TO TWO SIGNAL INPUTS
Howard B. Kast, Fairfield, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,751
U.S. Cl. 60—242 **7 Claims**
Int. Cl. F02k *1/18;* **F15b** *13/06*



During low power rates of operation of a gas turbine engine, the area of the propulsive nozzle is varied as a function of engine operation. During higher rates of operation, particularly with augmentation by an afterburner, the primary control of the nozzle is a function of gas stream temperature, with limits provided for preventing too great or too small a nozzle area. Nozzle area is regulated by a control piston which is displaced by fluid pressures on its opposite ends. The position of the control piston regulates hydraulic flow to actuators which vary the nozzle position. The control piston is displaced during low rates of engine operation as a function of the position of a pilot actuated operator lever. During high rates of operation, the pressure balance on opposite ends of the control piston is regulated by a temperature error responsive system. If the temperature error is too great, fluid is vented from one end or the other of the control piston by means positioned by the power lever to limit the piston's movement.

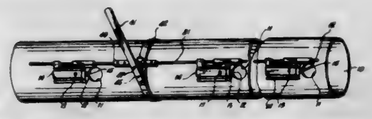
3,433,022
CONTROL FOR ADJUSTING PROPORTIONS OF BI-PROPELLANTS
Joseph J. Lovingham, Madison, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 611,024
U.S. Cl. 60—258 **8 Claims**
Int. Cl. F02k *9/02*

In a system for controlling the flow of liquids, and especially bi-propellants to the combustion chamber of a rocket engine, a valve for each liquid and operating mechanism connecting the valves for actuation as a unit to increase or decrease the rate of flow of the liquids



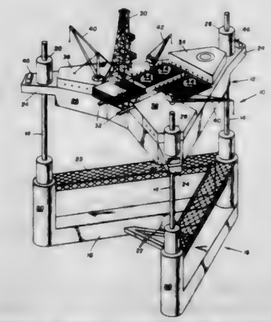
simultaneously, or relative to each other to change the relative rates of flow.

3,433,023
IRRIGATION SYSTEMS
Harlie O. Petersen, 4012 C St., Lincoln, Nebr. 68510
Filed Jan. 11, 1967, Ser. No. 608,678
U.S. Cl. 61—12 **3 Claims**
Int. Cl. A01g *25/02;* **E02b** *13/02, 13/00*



An operating and actuating structure for the multiple valves of an above-the-ground irrigation system in which a rod and latch structure is employed to open the valves to any desired degree, and latches on the rod of each valve are employed to close part or all of the valves.

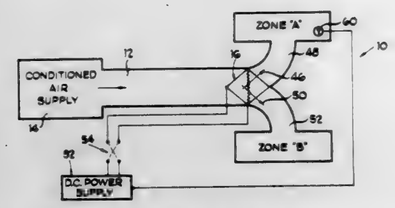
3,433,024
VERSATILE MARINE STRUCTURE
William E. Diamond, Diobu, Port Harcourt, Nigeria, and George W. Perry, Le Vesinet, Yvelines, France, assignors to Mobil Oil Corporation, a corporation of New York
Filed Mar. 31, 1966, Ser. No. 539,050
U.S. Cl. 61—46.5 **1 Claim**
Int. Cl. B63b *35/44, 21/50*



This specification discloses a versatile marine structure, primarily designed for drilling offshore wells, having an

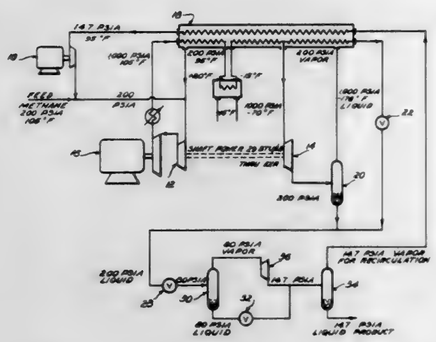
upper buoyant deck section, a lower buoyant wave transparent hull section, and jack-up legs between the sections whereby the structure is adapted to be used alternatively as a submerged barge in shallow water, a bottom-supported jack-up platform in intermediate depth water, and as a floating wave transparent vessel in deep water. The structure may also be floated with the lower buoyant wave transparent hull section at the surface of the body of water and the upper buoyant deck section at its lowest position with respect to the lower hull section, when the structure is to be transported through a body of water from one location to another.

3,433,025
AIR CONDITIONING SYSTEM
Alwin B. Newton, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 11, 1967, Ser. No. 674,499
U.S. Cl. 62—3 **7 Claims**
Int. Cl. F25b *21/00*



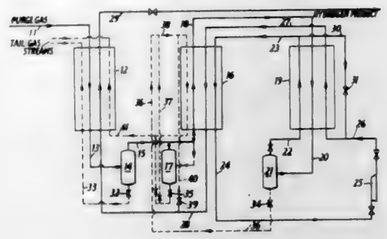
An air conditioning system having a thermoelectric apparatus mounted in a supply duct in a manner such that separate streams of conditioned air supplied by a central air conditioner source are selectively acted upon by the thermoelectric apparatus to pump heat from one stream to the other. The streams are coupled to line ducts extending into separate areas or zones.

3,433,026
STAGED ISENTHALPIC-ISENTROPIC EXPANSION OF GAS FROM A PRESSURIZED LIQUEFIED STATE TO A TERMINAL STORAGE STATE
Judson S. Swearingen, 500 Bel Air Road, Los Angeles, Calif. 90024
Filed Nov. 7, 1966, Ser. No. 592,563
U.S. Cl. 62—23 **7 Claims**
Int. Cl. F25j *3/06*



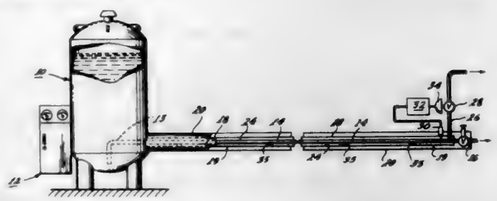
A first portion of a cooled natural gas stream is isentropically expanded causing partial liquefaction thereof and is thereafter separated. The separated liquid is combined with a second portion of cooled natural gas which has been liquefied and the combined liquid portion is isenthalpically expanded to an intermediate pressure and passed to a separator. Vapor from the separator is isentropically expanded while liquid bottoms are isenthalpically expanded, both portions being expanded to storage pressure, following which expansions they are combined, with the liquid therein being separated from the combined streams as liquid product.

3,433,027
HYDROGEN PURIFICATION WITH CONDENSATE WASH AND HYDROGEN ADDITION TO CONDENSATE
Paul L. Charlesworth, Huddersfield, and Alan A. Haslam, Stockport, England, assignors to Petrocarbon Developments Limited
Filed Oct. 9, 1967, Ser. No. 673,891
Claims priority, application Great Britain, Oct. 17, 1966, 46,397/66
U.S. Cl. 62—23 **4 Claims**
Int. Cl. F25t *1/02, 1/00*



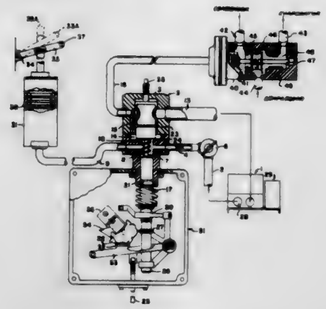
Hydrogen rich gas is passed upwardly through a next to the last heat exchange zone wherein it is contacted by descending condensate formed therein to remove substantially all the argon and methane present as well as part of the nitrogen. The concentrated hydrogen is then passed downwardly through a final heat exchange zone to condense remaining nitrogen therefrom. Resulting purified hydrogen is heated in the final heat exchange zone and then in the next to the last heat exchange zone after which it is work expanded and again passes through the final and next to the last heat exchange zones. A portion of the purified hydrogen is then added to combined expanded condensate streams and the thus combined stream passes downwardly through the initial heat exchange zone to cool and condense impurities from the hydrogen rich feed gas.

3,433,028
CRYOGENIC FLUID CONVEYING SYSTEM
David J. Klee, Emmaus, Pa., assignor to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 576,906
U.S. Cl. 62—45 **2 Claims**
Int. Cl. F17d *3/06*



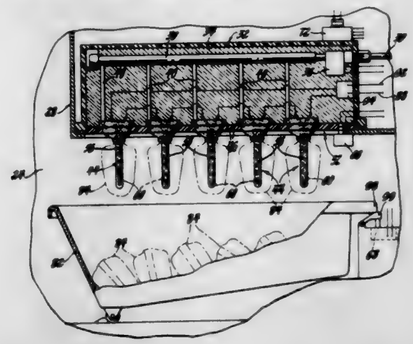
A cryogenic liquid transfer line is disclosed for conveying cryogenic fluids over substantial distances in pure liquid phase. The transfer line includes an inner line surrounded by an outer line with ports providing open communication between the two lines. The liquid is admitted to both lines such that heat leak is adsorbed by vaporization of the liquid in the outer line while that in the inner line remains in the pure liquid phase. A temperature responsive control system is provided for venting the vaporized liquid from the outer line.

3,433,029
CONTROL FOR HEAT TRANSFER SYSTEM
Charles W. Pflieger, 232 Oxford Road, New Hartford, N.Y. 13413
Continuation-in-part of applications Ser. No. 207,301, July 3, 1962, and Ser. No. 354,646, Mar. 25, 1964. This application Jan. 14, 1966, Ser. No. 521,248
U.S. Cl. 62—160 **8 Claims**
Int. Cl. F25b *13/00, 29/00;* **B60h** *3/00*



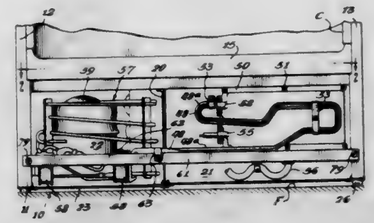
The disclosure relates to a temperature control system for heating and cooling in which a diesel driven heat pump is controlled by a single compartment temperature sensor. A fluid relay using the lube oil system of the diesel is actuated in response to the compartment temperature and the relay controls the movement of a switching valve of the heat pump and a diesel speed throttle to thereby control the compartment temperature by providing heating or cooling.

3,433,030
AUTOMATIC LIQUID FREEZER
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,075
U.S. Cl. 62—186 **6 Claims**
Int. Cl. F25c *1/04, 5/08;* **F25d** *17/04*



An automatic ice cube making machine wherein water is fed through a distributing manifold which drops the water into troughs formed in the tops of plastic fingers, each provided with a first electric heater extending along the finger and a second electric heater surrounding the water feed opening to the finger. Freezing air is circulated around the fingers to freeze the liquid as it accumulates on the fingers. A timer stops the water flow and energizes the first heaters extending along the fingers to release the frozen liquid which falls into a bin provided with a weight responsive stop switch. The stop switch stops the operation of the system when the bin is filled.

3,433,031
REMOVABLE UNITARY REFRIGERATION SYSTEM
Thomas G. Scheitlin, St. Paul, Minn., and William A. Hames and Alan J. Koch, Evansville, Ind., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,534
U.S. Cl. 62—448 **8 Claims**
Int. Cl. F25d *19/02, 17/06*



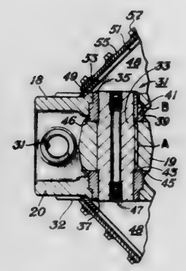
A removable unitary refrigeration system for a refrigerator comprising an evaporator connected by flexible conduits to a compressor and condenser mounted on a movable base, and means for moving air over the condenser and evaporator, with the evaporator, compressor and condenser accessible from the front and the air moving means accessible from the rear of the refrigerator.

3,433,032
ADJUSTABLE FINGER RING WITH MEANS FOR MAINTAINING ADJUSTMENT
Russell J. Dennen, 30 Horton St., Attleboro, Mass. 02703
Filed Jan. 27, 1965, Ser. No. 428,313
U.S. Cl. 63—15.65 **1 Claim**
Int. Cl. A44c *9/02*



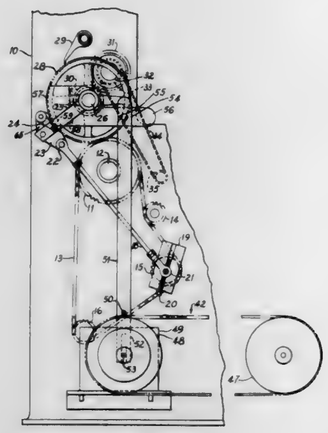
An expandable finger ring having a flexible shank terminating in a pair of free ends pivotally joined by a linking member for arcuate movement to vary the shank diameter, is provided with a stone setting at each of the free ends. The settings are of sufficient size that when they move with the free ends to change shank size, one setting is engageable with the other to resist movement of the shank and aid in maintaining it in adjusted position.

3,433,033
KELLY DRIVE MEANS
John V. Watson, P.O. Box 11006, Fort Worth, Tex. 76109
Filed Sept. 7, 1966, Ser. No. 577,787
U.S. Cl. 64—23.7 7 Claims
Int. Cl. F16d 3/06, 17/00; E21b 3/04



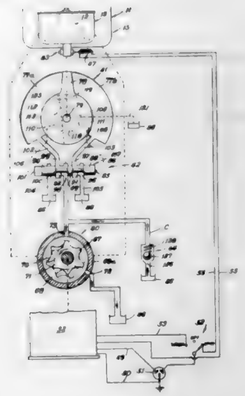
A kelly drive apparatus having rollers positioned to receive a kelly, with the rollers being supported on hollow bearing shafts partially filled with lubricant received from reservoirs on each side of each shaft.

3,433,034
WARP KNITTING ADJUSTMENT MECHANISM
Martin Traumuller, Dumont, N.J., assignor to Domestic Lace Mfg., Inc., Englewood, N.J.
Filed Mar. 2, 1967, Ser. No. 620,096
U.S. Cl. 66—150 2 Claims
Int. Cl. D04b 27/34



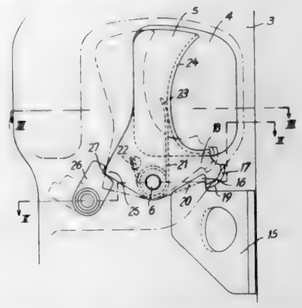
An apparatus for controlling the disengagement of the driving pawl from the ratchet gear of the fabric take-up mechanism on a warp knitting machine, thereby determining the circumferential movement of the take-up rollers in the warp-knitting machine and the size of the loops knitted in the fabric produced thereby. A chain having links of varying height is used to pivot a plate in contact with a roller on the driving pawl so as to disengage it from the ratchet gear in predetermined angular increments.

3,433,035
HYDRAULIC TRANSMISSION FOR FABRIC-TREATING MACHINES
Curtis E. Kurtz, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 7, 1967, Ser. No. 658,780
U.S. Cl. 68—23 15 Claims
Int. Cl. D06f 23/04



A transmission for operating an agitator and rotating a clothes container and having a container brake; a pump comprising a housing connected to the container, a pumping element rotatable to supply fluid to an agitator-operating hydraulic motor and contra-rotatable, upon brake release, to discharge fluid through a check valve open to sump to initiate unrestricted fluid flow through the pump to the sump for high reaction torque providing high container acceleration and, as relative rotation of pumping element and housing equalizes, flow and reaction torque diminish until internal pump parts friction alone provides high speed container rotation.

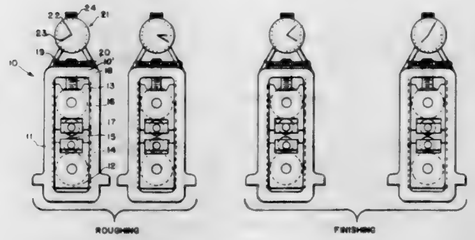
3,433,036
LOCKING SLIDING DOOR
Jacques Brasseur, St. Germain-en-Laye, France, assignor to Societe Anonyme Dite: Societe des Automobiles Simca
Filed Nov. 17, 1967, Ser. No. 684,074
Claims priority, application France, Dec. 6, 1966, 86,372
U.S. Cl. 70—99 5 Claims
Int. Cl. E05b 65/08; G05g 5/06



A locking sliding door comprising two recesses respectively formed in the inner and outer walls of the door. Inner and outer door handles disposed one within each recess and connected to a common spindle pivotally mounted in the door. One of the handles contains a locking bolt adapted to be held in position by a keeper

rigidly formed on the door frame in which the door slides and resilient means urging the bolt into its locking position.

3,433,037
SCREWDOWN CONTROL FOR METAL ROLLING MILLS
George Edward Lemon, 286 Lora Ave., Youngstown, Ohio 44504
Filed Nov. 7, 1966, Ser. No. 592,392
U.S. Cl. 72—35 5 Claims
Int. Cl. B21b 31/34, 13/08, 31/24



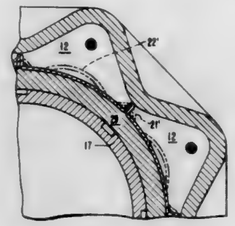
A multiple stand rolling mill in which the screws regulating the amount of separation between the upper and lower work rolls of the stands have differing pitches for each stand. For example, in a ten stand rolling mill installation having four roughing stand and six finishing stands, the screws of the roughing are in a proportion of 4:3:2:1 and the screws of the six finishing stands have a pitch ratio of 15:15:15:13:11:10.

3,433,038
COLD WORKING METAL
Paul E. Stump, Big Beaver Borough, Pa., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 385,752, July 28, 1964. This application Feb. 3, 1966, Ser. No. 524,821
U.S. Cl. 72—42 6 Claims
Int. Cl. B21b 45/02

A lubricant for cold working stainless steel workpieces wherein a cleaned workpiece is coated by an adhering film of a zinc salt of an acid, dried and overcoated by a layer formed from a fatty acid and a water soluble soap of a fatty acid. The overcoating reacts with the undercoating to form an adhering lubricating layer which is dried before cold working the stainless steel workpiece.

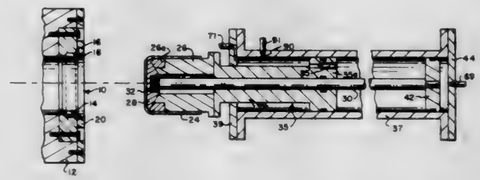
3,433,039
METHOD AND APPARATUS OF FORMING INTEGRAL RIBS ON TUBES
Erik K. Henriksen, Downey, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Feb. 24, 1966, Ser. No. 529,880
U.S. Cl. 72—56 10 Claims
Int. Cl. B21d 26/02, 22/10; B21j 5/04

This disclosure concerns a method and apparatus for forming integral longitudinally extending ribs on a tubular member by utilizing the energy generated from the detonation of explosive charges as a forming medium. The method employs two explosive forming sequences, each of which is carried on with a mandrel differing from the mandrel used in the other explosive forming sequence. The first explosive forming sequence employs a first mandrel having an outer surface comprising alternating radially outwardly extending large radii portions of arcuate extent and small radii forming ridges. The first mandrel is inserted within the tubular member, and explosive charges located externally of the tubular member are detonated, thereby conforming the tubular member to the shape of the outer surface of the first mandrel. The second mandrel which is cylindrical is then inserted within the tubular member for the second explosive forming sequence. The tubular member with the second mandrel inserted therewithin is received within a confining wall enclosure which



includes a plurality of internal limit stops corresponding to the respective small radii ridges on the tubular member and in radially spaced relation thereto. Upon detonating explosive charges located externally of the tubular member, the large radii portions previously formed on the tubular member are forced against the second mandrel which has the effect of compressing the small radii ridges into ribs. The radial extent of the ribs as so formed is gaged by the limit stops.

3,433,040
TUBE FORMING APPARATUS
John O. Lenz, Coon Rapids, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,831
U.S. Cl. 72—85 6 Claims
Int. Cl. B21b 19/08, 22/00; B21d 3/06

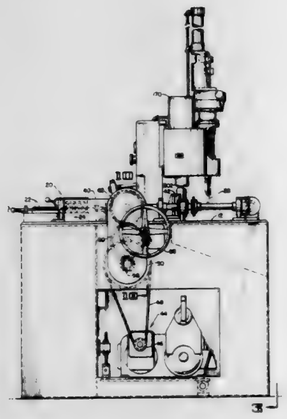


Apparatus for reducing the wall thickness of tubing by spinning in which the workpiece is drawn between a mandrel and relatively rotating rollers by a ram driven axially through the center of the mandrel.

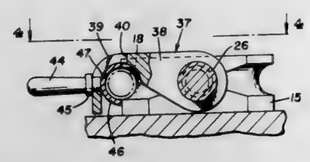
3,433,041
SPRING WINDING MACHINE
Erman V. Cavagnero, Torrington, Conn., Wilbur L. Sheffield, Westwood, Mass., and Joseph L. Morro, Torrington, Conn., assignors to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed Oct. 10, 1966, Ser. No. 585,337
U.S. Cl. 72—138 24 Claims
Int. Cl. B21f 3/10, 3/04

A highly versatile spring winding machine with feed mechanism and cams and camshafts for auxiliary mechanisms and with multidirectional rotatable and axially movable winding spindle. Feed and camshafts have clutch and brake drive and independent clutch and brake drive is provided for spindle so that former can be temporarily stopped during winding for conservation of cyclic operat-

ing time. Spindle drive includes adjustably inclined friction rollers for axial pitch inducing movement. A control unit comprising counters, pulse generator and associated circuitry provides precise slow-fast-slow winding, slow winding, and single and/or double stage recoil action.



3,433,042
TUBE CLAMP FOR A TUBE BENDING TOOL
Richard P. Crihfield, Mayfield Heights, and Harry G. Dodge, Painesville, Ohio, assignors to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio
Filed Mar. 10, 1967, Ser. No. 622,185
U.S. Cl. 72—159 **5 Claims**
Int. Cl. B21d *7/025*



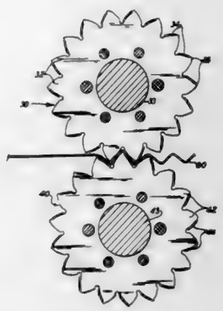
This application relates to a tube clamp which is utilized on a tube bending tool. The tube clamp has a swinging arm which has one end pivotally mounted on a tube clamp bar. The other end of the arm curves to form an arced section and a slot is cut therein. A handle passes through the slot from the outside and connects with an arcuate locking jaw at the inner face of the arced section of the arm. The arcuate locking jaw is rotatable by means of the handle to grasp and release a tube in the tube bending tool.

3,433,043
APPARATUS FOR MANUFACTURING A TUBULAR ELEMENT FROM A LONG METAL STRIP
Wilhelmus Georgius Vermeulen, The Hague, and Leendert Verhoef, Schipluiden, Netherlands, assignors to N.V. Nederlandsche Kabelfabrieken, Delft, Netherlands, a corporation
Filed Nov. 22, 1965, Ser. No. 508,970
Claims priority, application Netherlands, Dec. 2, 1964, 6413984
U.S. Cl. 72—176 **5 Claims**
Int. Cl. B21d *5/10;* **B21c** *37/06, 3/06*

A die for forming a tubular element from a flat metal strip and having a shaping body which is composed of a large number of lamellae superimposed one upon the other with their inner edges defining a forming channel for the metal strip, the dimensions of said channel being adjustable by virtue of said lamellae being slidably shiftable relative to one another whereby the die may be adjusted to produce tubes of various desired dimensions.



3,433,044
METHOD FOR FORMING HEAT EXCHANGE ELEMENT
Eugene E. Rhodes, Belleville, and Alvin M. Kurz, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Application Apr. 2, 1965, Ser. No. 445,073, now Patent No. 3,250,323, dated May 10, 1966, which is a division of application Ser. No. 259,547, Feb. 19, 1963, now Patent No. 3,214,954, dated Nov. 2, 1965. Divided and this application Dec. 30, 1965, Ser. No. 517,778
U.S. Cl. 72—186 **4 Claims**
Int. Cl. B21d *13/00, 31/02, 53/00*

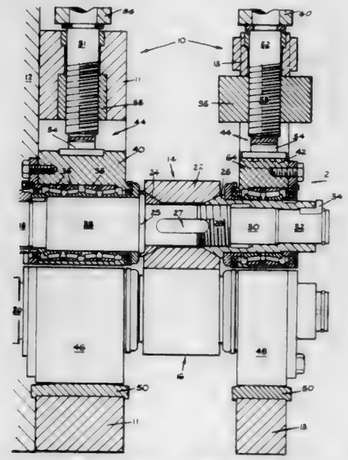


A method of manufacturing a heat exchange element from a strip of sheet metal wherein such strip is passed between a first roll die and a second roll die and in so passing is simultaneously corrugated, slitted and deformed characterized by providing on opposite sides of said strip during slitting and deformation opposing line pressures extending transversely in relation to such strip.

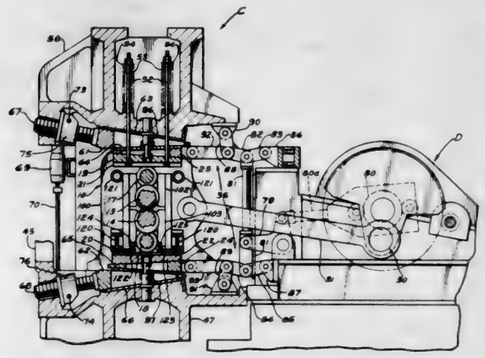
3,433,045
ROLLING MILL APPARATUS
Alexander Ian Wilson, Sheffield, England, assignor to The Hille Engineering Company Limited, Sheffield, England, a company of Great Britain and Northern Ireland
Filed Feb. 1, 1966, Ser. No. 524,311
Claims priority, application Great Britain, Feb. 4, 1965, 4,907/65
U.S. Cl. 72—239 **8 Claims**
Int. Cl. B21b *31/10*

The invention is concerned with rolling mills having at least two rolls. The rolls comprise sleeves mounted on intermediate portions of roll shafts. A bearing forming part of an end mounting is mounted on each roll shaft.

One end mounting of each roll shaft is carried by a movable structure. That structure is movable axially of the roll shaft to enable the end mountings to clear the ends of the shafts. Means is provided to support the movable structure during such axial movement. And means is provided for moving the structure away from the ends of the shafts to enable the sleeves to be withdrawn from the shafts without having to remove the shafts themselves. This makes it possible very conveniently and very quickly to remove a roll sleeve and replace it by another, e.g., when the sleeve has become worn or, e.g., when it is desired to roll a product of a different shape or thickness.

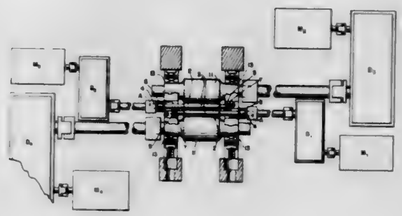


3,433,046
ROLL CHANGING MECHANISM FOR ROLLING MILLS
Robert A. Remner, Glenshaw, and James W. Schuetz, Pittsburgh, Pa., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 573,091
U.S. Cl. 72—239 **11 Claims**
Int. Cl. B21b *31/08, 17/00*



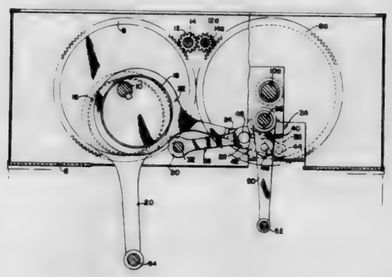
An improved construction for rolling machines that form elongated work pieces such as tubes, rods, bars and the like by reciprocating pairs of rolls while advancing the work pieces into the rolls. The improvement enables the rolls to be rapidly changed by means of adjusting wedges interposed between the thrust plate of a roll unit and the machine housing. The wedges may be easily and quickly withdrawn to separate the roll unit from the housing and thus facilitate removal and replacement of the roll units.

3,433,047
METAL ROLLING SYSTEM
Fred Harding Powell, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation-in-part of application Ser. No. 534,469, Mar. 15, 1966. This application Jan. 26, 1967, Ser. No. 611,871
U.S. Cl. 72—241 **8 Claims**
Int. Cl. B21b *13/14, 29/00;* **B29c** *15/00*



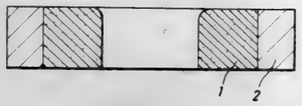
A backed rolling mill (such as a 4-high mill) is disclosed in which the working rolls are driven and the backing up rolls are also driven, with provision for predeterminedly controlling, preferably by an electric control system, the proportions of the total power or driving torque imparted to the working rolls and the backing up rolls respectively. The mill is adapted to compress and consolidate metal particles into a strip, which requires the application of exceptionally high power to the working rolls, which must have relatively small diameter. The controlled division of power among the rolls makes it possible to impart as much power to the working rolls as possible through their necks, and the balance through the backing up rolls to the working rolls, for purposes of reducing concentrated stresses in the working rolls.

3,433,048
HIGH-SPEED MULTIPLE-ACTION PRESS
Vincent J. Balunas, Jr., Wallingford, and Thomas R. Hitch, Aldan, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,779
U.S. Cl. 72—417 **4 Claims**
Int. Cl. B21d *43/02;* **B21j** *9/18*



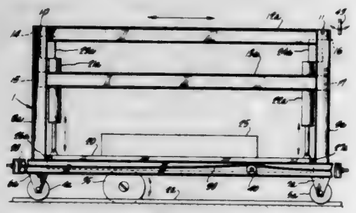
A reciprocating mechanism for a slide in a power press includes a pitman driven by an eccentric on a rotatable gear. A connecting link connects the pitman with a rocker arm. A pivot link has one end pivotally connected on a fixed pivot axis and its other end is connected on a common axis with the pitman and connecting link. The pivot link directs movement of common connecting axes to a controlled arcuate path.

3,433,049
DIE FOR THE EXTRUSION OF HEAVY METALS AT HIGH TEMPERATURES
Gerhard Naeser, Otto Wessel, and Kurt Darschewski, Duisburg, Germany, assignors to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed July 29, 1966, Ser. No. 568,797
Claims priority, application Germany, Aug. 2, 1965, M 66,187
U.S. Cl. 72—467 4 Claims
Int. Cl. B21c *3/00*



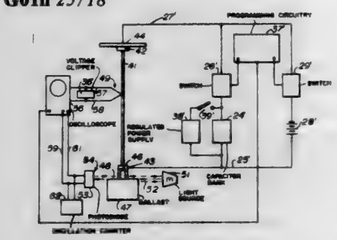
An extrusion die has a heat-resistant portion, a surface region of which, in contact with the metal block and with the product extruded therefrom, defines uniformly distributed fine pores, the porosity of which is from 10 to 50 percent.

3,433,050
APPARATUS FOR TESTING BOAT FENDERS
Duff L. Dean, North Hollywood, Calif., assignor, by mesne assignments, to Triple D Industries, Inc., Burbank, Calif., a corporation of California
Filed Mar. 28, 1967, Ser. No. 626,546
U.S. Cl. 73—11 10 Claims
Int. Cl. G01m *17/04*



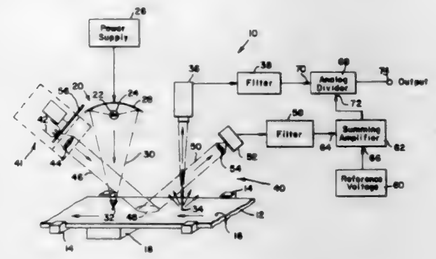
A vehicle and means, such as rails for guiding the vehicle along a straight path. The vehicle is transported back and forth between the ends of the path. The vehicle has a retractable mechanism for exerting an adjustable downward force as the vehicle moves. During test of radial strength, a boat fender is located under the lowered force-exerting mechanism, thereby rolling back and forth with the vehicle, while being subjected to a deforming force.

3,433,051
APPARATUS FOR DETERMINING MECHANICAL AND THERMAL PROPERTIES OF METALS
Robert Parker, Danville, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 28, 1966, Ser. No. 532,541
U.S. Cl. 73—15 1 Claim
Int. Cl. G01n *25/18*



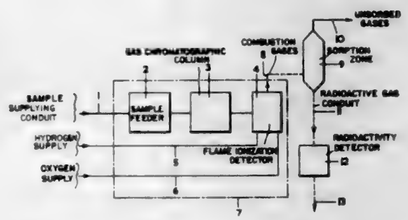
Apparatus for determining mechanical properties of material by substantially instantaneously heating it by discharge of a predetermined charge of electrical energy and immediately thereafter monitoring resultant changes.

3,433,052
MATERIAL TESTER
Dale R. Maley, Boulder, Colo., assignor to Automation Industries, Inc., Los Angeles, Calif., a corporation of California
Filed July 26, 1965, Ser. No. 474,811
U.S. Cl. 73—15 9 Claims
Int. Cl. G01n *23/20*



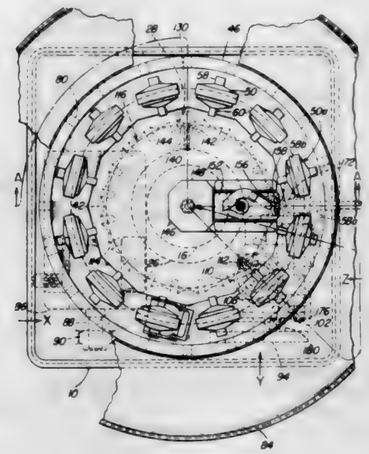
The nondestructive tester disclosed herein is effective to transfer heat or thermal energy into a workpiece and to measure the variations in temperature of the incremental areas on the surface of the workpiece to determine the internal characteristics of the workpiece. Means are also provided for continuously compensating for variations in the emissivity of the surface and eliminating variations produced by the changes in emissivity. This provides an output signal that is a function of the internal characteristics of the workpiece and independent of changes in surface emissivity.

3,433,053
METHOD AND AN APPARATUS FOR THE RADIO GAS CHROMATOGRAPHIC ANALYSIS OF A MIXTURE OF DIFFERENT COMPONENTS
Johannes Paulus Willem Houtman, Delft, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,373
Claims priority, application, Netherlands, Oct. 14, 1964, 6411926
U.S. Cl. 73—23.1 11 Claims
Int. Cl. G01n *31/08*



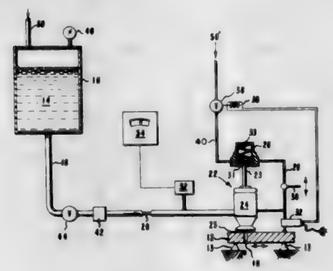
A method and apparatus for the radio gas chromatographic analysis of a mixture of different components is disclosed in which the effluent from a gas chromatographic column is passed through and combusted in a flame ionization detector where not only the concentration of the components in the mixture is measured but oxidation products are formed which are passed directly to a radioactivity detector to radioactively analyze those oxidation products.

3,433,054
MACHINE FOR TEST SMOKING CIGARETTES
Walter F. Mutter, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Jan. 24, 1967, Ser. No. 611,383
U.S. Cl. 73—28 11 Claims
Int. Cl. G01n *31/00*



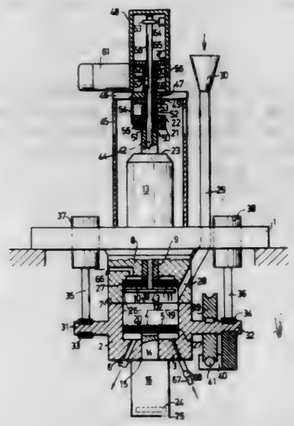
A machine for smoking cigarettes in which the cigarettes are carried on a wheel which is rotated to bring the cigarettes successively adjacent a puffing unit at which each is puffed. A series of smoke filter units are mounted on a second wheel which is rotated to position the filter units successively in a smoking position at the puffing unit so that the smoke puffed from the cigarettes is drawn through them. The two wheels are operated in timed relation with each other in such manner that the first puff taken from each cigarette is drawn through a first filter unit, the second puff taken from each cigarette through a second filter unit, and so on until the cigarettes are smoked completely.

3,433,055
METHOD OF MEASURING METERING ACCURACY OF A SPINNERET
Max Lorenz Booy and Benjamin Franklin Coe, Wilmington, Del., and Stephen Charles Stutler, Collinsville, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,206
U.S. Cl. 73—37.5 3 Claims
Int. Cl. G01b *13/08*



A method of measuring metering accuracy of spinneret capillaries that includes the steps of sequentially positioning the capillaries of a spinneret plate under a valve supplied with pressurized liquid then injecting the liquid into the capillary. The back pressure due to the flow resistance of the capillary is measured and compared to the back pressure generated by a previously tested standard capillary to determine deviation in flow resistance of the hole and finally the liquid flow is interrupted at the valve to maintain the system under pressure for purging the next capillary to be tested.

3,433,056
PERMEABILITY CELL
Hansrudolf Bruni, Brugg, and Heinz Nyffenegger, Villnachern, Switzerland, assignors to Cementfabrik Holderbank-Wildegg AG, Holderbank, Aargau, Switzerland, a corporation of Switzerland
Filed Nov. 4, 1966, Ser. No. 592,115
Claims priority, application Switzerland, Nov. 11, 1965, 15,598/65
U.S. Cl. 73—38 4 Claims
Int. Cl. G01m *3/00*

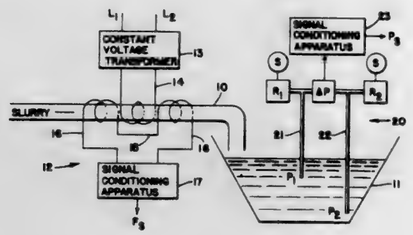


In apparatus for measuring the gas permeability of a specimen of material, a permeability cell receives the specimen. The cell includes a vertical hollow cylinder in the flow path of the measuring gas. The cylinder is provided with top and bottom screen plates between which the specimen, which has a prescribed weight, is pressed to impart to it a prescribed size and shape. The upper plate is movable out of the cylinder to permit removal and introduction of the material tested. The lower plate is movable to a position near the upper end of the cylinder to eject a tested specimen. In test position in the cylinder the plates are separated by a prescribed distance and confine the specimen between them. A stirrer is associated with one of the screen plates and serves to homogenize the specimen prior to its being pressed to final dimensions.

3,433,057
AUTOMATIC IRON ORE ASSAYER
Homer P. Halsey, Poland, Ohio, assignor to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed Apr. 14, 1966, Ser. No. 542,510
U.S. Cl. 73—61 11 Claims
Int. Cl. G01n *11/00*

Apparatus for continuously and automatically computing the amount of magnetic iron relative to the amount of ore in a slurry of ore and water. The ore itself is a mixture of gangue and magnetite, with the magnetite containing a known percentage of magnetic iron. The present

system continuously measures two characteristics of the constantly changing slurry, the specific gravity of the slurry and the amount of magnetite in the slurry. These two characteristics are represented as usable signals, and



apparatus is provided to combine these signals with various constants, including a constant representative of the specific gravity of the gangue, to develop the desired information.

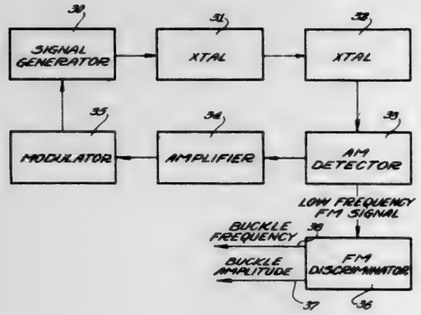
3,433,058

ACOUSTIC FLATNESS MEASUREMENT DEVICE

Henry G. Tobin, Jr., Chicago, and James N. Van Scoyoc, Oak Park, Ill., assignors, by mesne assignments, to United Engineering & Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 4, 1966, Ser. No. 547,492

U.S. Cl. 73—67.7 **10 Claims**
Int. Cl. G01n *9/24*



An acoustic flatness measuring device used in the manufacture of steel sheet, having a closed energy loop circuit wherein a modulated frequency signal passing through a discriminator is indicative of the buckles and amplitude of the buckles appearing in the moving sheet.

3,433,059

COUPLING MEMBER FOR ULTRASONIC SCANNING DEVICE

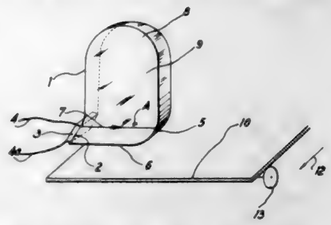
Gilbert Cavalier, Saint-Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, Yvelines, France

Filed Dec. 27, 1965, Ser. No. 516,224

Claims priority, application France, Dec. 31, 1964, 517

U.S. Cl. 73—71.5 **6 Claims**
Int. Cl. G01n *29/04*

An ultrasonic testing device has a coupling member carrying a transducer on a flat face obliquely inclined to another flat face of the coupling member normally in contact with the tested object. A third face is cylindrical about an axis parallel to the first and second faces, the axis being far enough from the contact face to be outside the radiation emitted from the transducer parallel to the



contact face. The contact face is tangential to the third face and prevents the formation of spurious signals which would be caused by an angular ridge at the contact face opposite the transducer.

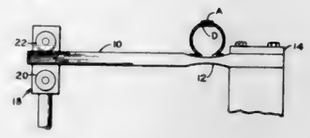
3,433,060

STRAIN GAGE TRANSDUCER ASSEMBLY

Kenneth D. Ives and Vijay Rastogi, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed July 26, 1966, Ser. No. 568,011

U.S. Cl. 73—88.5 **8 Claims**
Int. Cl. G01n *7/22*



A transducer assembly for measuring variations in strain of a cyclically loaded test specimen and determining failure of the test specimen due to fatigue. The apparatus comprises in combination, a cantilever test specimen having a waist portion between its ends, an arcuately curved member with its ends welded to the test specimen at its waist portion, a resistance strain gage attached to the curved member, and means for measuring variations in electrical resistance of the strain gage and determining failure of the specimen due to fatigue.

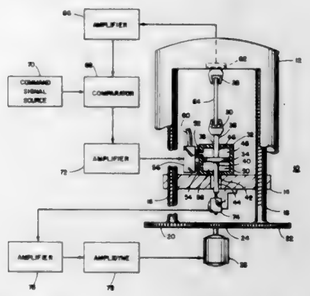
3,433,061

MOVABLE CROSSHEAD LOADING DEVICE

George Sterling Burr, Wellesley Hills, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts

Filed June 27, 1966, Ser. No. 560,699

U.S. Cl. 73—95 **3 Claims**
Int. Cl. G01n *3/10*



Materials testing machine having a hydraulic ram between its movable crosshead and one of two grips, a control system for actuating the ram to adjust a condition of the specimen, and a control system to adjust the crosshead including a sensor for directly sensing the relative positions of the ram and the crosshead.

3,433,062

INSPECTION METHOD AND MEANS

Orlando G. Molina, Westminster, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 253,254, Jan. 23, 1963. This application Aug. 3, 1966, Ser. No. 569,807

U.S. Cl. 73—104 **8 Claims**
Int. Cl. G01n *19/02*

The liquid dye penetrant consisting of a fast-drying, volatile, low viscosity solvent and a bleeding dye soluble therein is used for deep penetration into minute surface defects. The viscosity range of the solvent is from about .05 to 2.00 centipoises at room temperature.

3,433,063

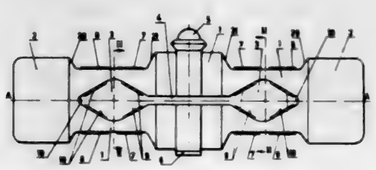
MEASURING ELEMENT FOR DYNAMOMETERS

Wilhelm Ten Cate, Rijswijk, South Holland, Netherlands, assignor to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands

Filed Dec. 6, 1965, Ser. No. 511,753

Claims priority, application Netherlands, Dec. 10, 1964, 6414342

U.S. Cl. 73—141 **3 Claims**
Int. Cl. G01l *5/12*



A measuring element for dynamometers comprises a relatively flattened ring having two long sides and two short sides, means to load the ring with the force to be measured at the midpoints of the long sides and perpendicular to the long sides, and strain gauges arranged symmetrically with respect to the line of action of the force to be measured. The short sides of the ring are formed of relatively rigid construction. The strain gauges are mounted on at least one and preferably both of the two long sides of the ring, and are disposed symmetrically with respect to the line of action of the force to be measured.

The strain gauges are arranged in pairs, with one gauge of each pair being on the outer surface of the ring and the other gauge of each pair being on the inner surface of the ring, and the two gauges of each pair being directly aligned with each other but on opposite ring surfaces. Each long side of the ring is divided into two sections each connecting the middle portion of the respective long side to a respective short side, and each of the two sections is symmetrical about its midpoint. The strain gauges are arranged with two pairs on each intermediate section of a long side, the two pairs being on opposite sides of the midpoint of the respective intermediate section and at equal distances from the midpoint.

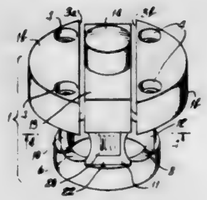
3,433,064

FLEXIBLE STRUCTURE FOR YIELDABLY WITHSTANDING FORCES

Walter E. Jacobson, Meriden, Conn., assignor to Revere Corporation of America, Wallingford, Conn., a corporation of New Jersey

Filed May 23, 1967, Ser. No. 640,669

U.S. Cl. 73—141 **14 Claims**
Int. Cl. G01l *5/00*



Flexible structure for yieldably withstanding forces, i.e., to allow a limited movement of a force applying member with respect to a support. The flexible structure may be used as the strain sensitive element in a load cell. When the structure is so used, electrical strain gages are mounted on parts of the strain sensitive element. Forces may be measured by the load cell as a function of tension, compression, shear, or bending, depending upon location of strain gages on the strain sensitive element.

Load cell may be modified for use as pressure transducer. Overload protection of highly stressed parts may be provided. Another disclosed modification of the flexible structure may be used as a flexure, i.e., as a support which allows a limited movement of the suported structure in two degrees of freedom with respect to the supporting structure.

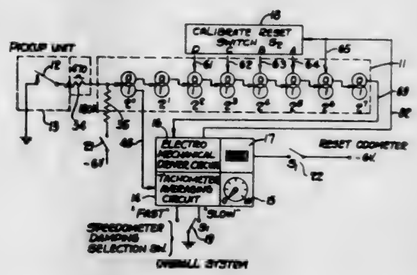
3,433,065

MARINE SPEEDOMETER AND ODOMETER

Harry W. Mergler, Cleveland, Ohio, assignor of one-tenth to Case Institute of Technology, a corporation of Ohio

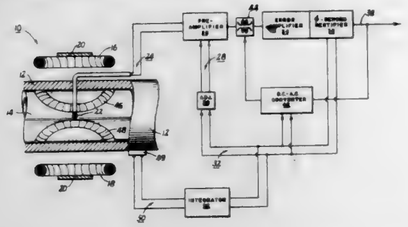
Filed Apr. 11, 1966, Ser. No. 547,068

U.S. Cl. 73—187 **10 Claims**
Int. Cl. G01c *23/00*



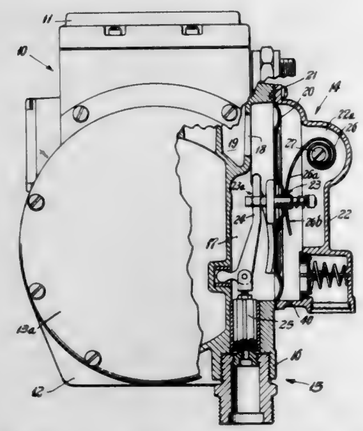
An impeller mounted on the hull of a ship, rotating proportionally to distance travelled by the ship is arranged to divert constant-current impulses from a generator to a current-responsive instrument to indicate speed of the ship. Rotation of the impeller is transmitted by magnetic pick-up, and a binary counter is provided, which is responsive to the pick-up for actuating a register to record distance travelled by the ship.

3,433,066
MAGNETIC FLOWMETER APPARATUS
John E. Bailey, Needham, Mass., assignor to The Foxboro Company, Foxboro, Mass.
Filed Oct. 3, 1966, Ser. No. 583,710
U.S. Cl. 73—194 5 Claims
Int. Cl. G01f *1/04*



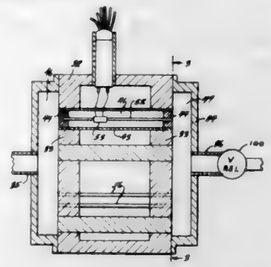
An A-C magnetic flowmeter comprising a pair of magnetizing coils on opposite sides of a flow pipe and electrodes in the wall of the flow pipe to develop a flow voltage corresponding to the rate of flow. The flow voltage is compared with a reference signal developed by a pickup coil aligned with the magnetizing coil to encompass all of the flux passing through the flow pipe across the full width thereof. The voltage induced in the pickup coil is directed to an integrator circuit to produce the reference signal with a magnitude proportional to the actual instantaneous magnitude of the flux, regardless of changes in the flux due to the line voltage variations, magnetic inhomogeneities in the liquid being measured, or other causes.

3,433,067
METER AND SIDE-MOUNTED REGULATOR COMBINATION
Theodore A. St. Clair, Fairfield, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 22, 1967, Ser. No. 625,118
U.S. Cl. 73—199 5 Claims
Int. Cl. G01f *1/02*



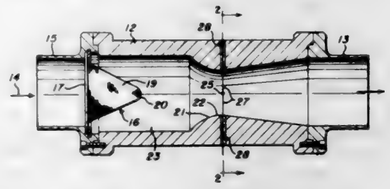
The combination gas meter and regulator has a downwardly facing inlet in the bottom of the meter and the regulator mounted in the side of the meter adjacent the inlet, said regulator having a large, vertically disposed pressure-responsive diaphragm for controlling a valve in the inlet. The vertically disposed diaphragm sheds condensate and is normally urged to a predetermined position by spring means.

3,433,068
THERMAL MASS FLOW SENSOR
Frank D. Werner and Rajabushanam Sathyakumar, Minneapolis, Minn., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 12, 1964, Ser. No. 410,602
U.S. Cl. 73—204 13 Claims
Int. Cl. G01f *1/00, 23/24*



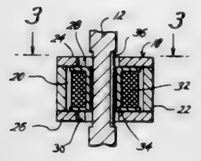
A mass flow sensor having at least one tubular element of small diameter in the path of flow. The tube is open to permit flow therethrough and another similar tube is blocked and also placed in the path of flow. Self-heating temperature-responsive resistance elements are placed on each of the tubes in good heat conducting relationship to the tubes and these resistance elements are connected into a bridge circuit. When fluid flows through the housing and passes through the open sensing tube, heat from the resistance element on that tube is convected to the fluid. This causes a reduction in temperature in the open sensing tube as compared to the closed tube. The resistance element on the open tube changes in resistance with the change in temperature causing a bridge unbalance which gives an output signal proportional to the reduction of temperature. The greater the flow, the greater the change in resistance of the resistance element on the open tube as compared to the plugged tube. By proper calibration an indication of the mass flow through the sensor can be obtained.

3,433,069
MASS FLOWMETER STRUCTURE
James H. Trageser, Kettering, Ohio, assignor to Technology Incorporated, Dayton, Ohio, a corporation of Ohio
Original application Oct. 1, 1965, Ser. No. 492,179, now Patent No. 3,374,673. Divided and this application Feb. 8, 1968, Ser. No. 704,008
U.S. Cl. 73—204 3 Claims
Int. Cl. G01f *1/00*



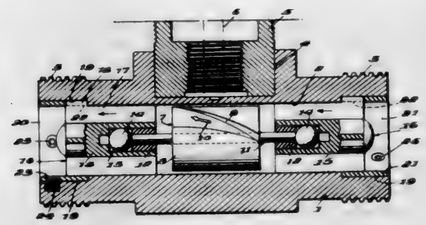
This invention relates to a mass flowmeter. The invention relates still more particularly to fluid conduit structure for use in combination with mass flowmeter apparatus. The fluid conduit structure comprises means for substantially eliminating turbulence in fluid which flows therethrough. This invention includes thermally responsive sensor means positioned in the conduit in a location of negligible fluid turbulence.

3,433,070
FLOWMETER APPARATUS FOR MEASURING FLOW RATE AND DIRECTION
Pierre Grimaldi, St-Maur, France, assignor to Societe de Prospection Electrique Schlumberger S.A., Paris, France, a corporation of France
Continuation of application Ser. No. 410,498, Nov. 12, 1964. This application May 15, 1967, Ser. No. 638,917
Claims priority, application France, Nov. 15, 1963, 953,994
U.S. Cl. 73—229 11 Claims
Int. Cl. G01f *1/00*



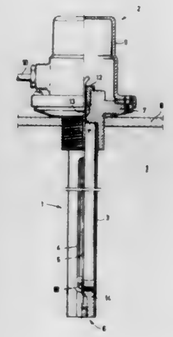
The particular embodiment disclosed herein as illustrative of one form of the invention in flowmeter apparatus comprises a rotatable shaft having an impeller, a coil mounted proximate said shaft, a core for said coil including a stationary portion and a movable portion eccentrically disposed on said shaft, said stationary portion of said core substantially encircling said shaft and being nonuniform about said shaft for varying the self-inductance of said coil, circuit means including said coil, and means for generating a carrier wave in said circuit means, said variations in self-inductance providing amplitude modulations of said carrier wave in response to such changes in self-inductance.

3,433,071
FLOWMETERS
Horace J. Homrig, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Mar. 15, 1966, Ser. No. 534,375
U.S. Cl. 73—231 8 Claims
Int. Cl. G01f *1/06*



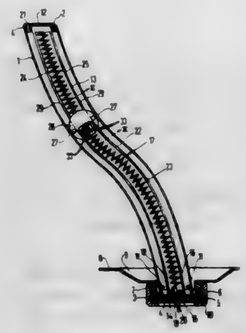
A flowmeter of the type having a central bore with a rotor mounted between bearing supports in the bore. The bearing supports include a plurality of radial vanes which engage the wall of the bore. The vanes are symmetrically disposed around each bearing support and a retaining ring is secured in a counterbore at the end of the meter body for holding the vanes in a proper orientation with respect to the body of the flowmeter. The proper orientation of the vane assemblies is determined by assembling a pair of vane assemblies in a master meter body and rotating one assembly relative to the other to produce minimum turbulence. The position of the retaining rings relative to the body is marked so that the pair of assemblies can be assembled in another meter body in the same orientation. The size and position of the retaining rings provides a substantially constant internal diameter for the fluid passage throughout the entire length of the flowmeter.

3,433,072
GAUGE FOR MEASURING THE LEVEL OF A LIQUID IN A TANK
Aate R. Virtanen, Vatisala, Kangasala, and Aarne Matias Auer, Takahuhti, Jukolankatu 12, Finland
Filed Dec. 18, 1967, Ser. No. 691,346
Claims priority, application Finland, Dec. 16, 1966, 3,354/66
U.S. Cl. 73—304 3 Claims
Int. Cl. G01f *23/26*



A tubular rod extends into the liquid in a tank and forms an outer electrode of a capacitive type liquid level sensor. The inner electrode of the sensor is in the form of cable extending into the tubular rod and including an endpiece which provides for the axial adjustment thereof. A transmitter connected to the tubular rod renders an electrical signal indicative of the capacitance and accordingly the level of the liquid in the tank.

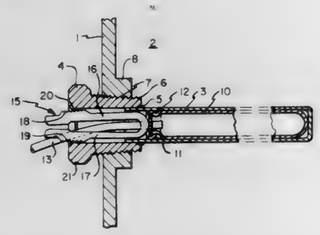
3,433,073
FLUID LEVEL MEASURING DEVICE
Werner Kunert, 4 Ortsstrasse, 6361 Grund-Schwalheim, uber Friedberg, Hesse, Germany
Filed Dec. 1, 1966, Ser. No. 598,244
Claims priority, application Germany, Dec. 2, 1965, K 57,811; July 15, 1966, B 88,023
U.S. Cl. 73—313 15 Claims
Int. Cl. G01f *23/10*



A device for measuring a fluid contained in a tank having a communicating tube extending into the tank from a flange connected to the tank by a cap. A guide

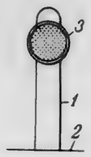
rod is provided and is positioned internally of the communicating tube and has a float thereon which is movable up and down as a function of the fluid level in the tank. The float has means by which portions of a resistance loop are connected together so that the resistance of the resistance loop varies as a function of the position of the float on the guide rod.

3,433,074
BULB RETAINER
Murrell F. Kautz, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 25, 1967, Ser. No. 611,721
U.S. Cl. 73—343 **3 Claims**
Int. Cl. G01k *1/08*



A temperature sensing well and bulb assembly wherein a U-shaped resilient member holds the bulb in the well. The legs of this member are pressed together to insert it in the well and then released to engage the well and hold it in place.

3,433,075
VISUAL INDICATION OF TEMPERATURE CHANGE
William Drummond Sutherland, Beckenham, Kent, England, assignor to Muirhead & Co., Limited, Beckenham, Kent, England, a British company
Filed Jan. 30, 1967, Ser. No. 612,529
Claims priority, application Great Britain, Mar. 25, 1966, 13,263/66
U.S. Cl. 73—356 **1 Claim**
Int. Cl. G01k *11/12*



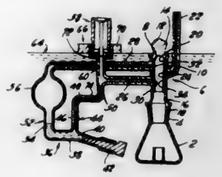
A glass or like reflector for mounting in a position exposed to ambient temperature, containing a solution undergoing a color change over a particular temperature range, e.g. at or near to freezing point, whereby on activation by a light beam, a marked color change is to be observed in the reflected beam when the ambient temperature passes through the particular temperature range.

3,433,076
THERMOMETER
John L. Chaney, Lake Geneva, Wis. 53147
Filed Oct. 12, 1966, Ser. No. 586,289
U.S. Cl. 73—374 **1 Claim**
Int. Cl. G01k *1/14*

An improved thermometer of the type that includes a mercury tube within an outer glass housing. A scale is also within the glass housing. A polyethylene washer is mounted on the upper end of the thermometer tube and is at least 1/10 inch in thickness to prevent tilting thereof. The polyethylene washer also has an outer diameter less than that of the inner diameter of the glass housing to provide an annular space for air flow above and below the washer.



3,433,077
COMPENSATED SYRINGE MANOMETER
Roger Gilmont, Douglaston, N.Y., assignor to Roger Gilmont Instruments, Inc., Great Neck, N.Y., a corporation of New York
Filed May 3, 1967, Ser. No. 635,847
U.S. Cl. 73—401 **15 Claims**
Int. Cl. G01l *7/18*

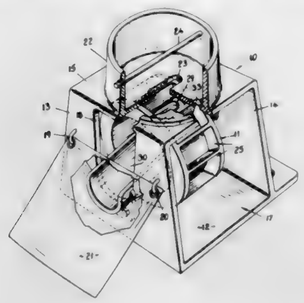


A syringe manometer selectively connected to a closed pressure system and vent tube by means of a valve. In one position of the valve communication is effected between the manometer and both the closed pressure system and the vent tube for purposes of equalization. A second valve position provides communication between the manometer and the system alone, whereby the syringe of the manometer is manipulated to vary the internal volume thereof and accordingly maintain the indicating liquid in the manometer at a predetermined level, the degree of volume variation required over a predetermined period of time being indicative of the pressure change within the closed pressure system.

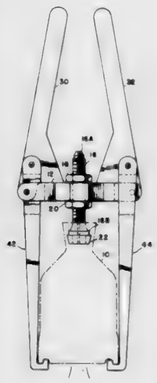
3,433,078
SLUDGE SAMPLER
Vaughan Thompson, Richmond Hill, Ontario, Canada, assignor to Vaughan Thompson Limited, Richmond Hill, Ontario, Canada, a corporation of Ontario
Filed Apr. 8, 1966, Ser. No. 547,059
U.S. Cl. 73—424 **3 Claims**
Int. Cl. G01n *1/10*

A sludge sampler which receives the entire sludge discharged from the hole of a rock drilling operation and passes it over a rotary sampling wheel which is provided with a plurality of similar pockets, one of which has an

opening which registers with a sample conduit on each revolution of the wheel. The wheel is driven by the flowing sludge and will thus extract a sample having a constant ratio to the whole; the proportion of the sample being regulated by the number of pockets arranged around the circumference of the wheel. The sampling wheel is automatic, being turned by the input flow which is positive even at low volume.



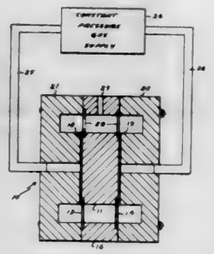
3,433,079
ROCKET CHAMBER LEAK TEST FIXTURE
William O. Wilson, Lancaster, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 13, 1967, Ser. No. 653,278
U.S. Cl. 73—49.8 **7 Claims**
Int. Cl. G01m *3/04*



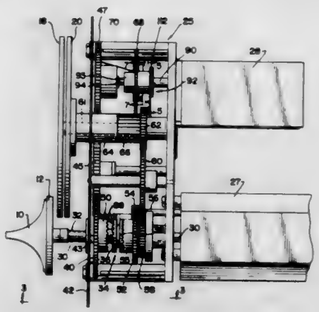
In order to test a rocket chamber for leaks, in accordance with this invention, a fixture is provided which fastens to the nozzle of the rocket chamber and inserts a tubular plug in the tapering throat section thereof. The tubular plug carries a tube which enables access to the interior of the rocket chamber.

3,433,080
PNEUMATIC ACCELERATION SENSOR
Ralph H. Larson, Wilmette, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed June 2, 1966, Ser. No. 554,810
U.S. Cl. 73—515 **3 Claims**
Int. Cl. G01p *15/00*

An inertial mass is supported on flexible supports between two apposed gas thrust bearings. When a gas from a constant pressure gas supply is supplied to the two gas thrust bearings, the increase in flow due to displacement of the inertial mass from its central position provides an output signal proportional to acceleration. By providing annular pick-off recesses adjacent each of the thrust bearings, a differential output signal is produced.



3,433,081
TUNER MECHANISM
Anthony T. Monaco, Skokie, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 17, 1966, Ser. No. 587,161
U.S. Cl. 74—10.8 **3 Claims**
Int. Cl. F16h *35/18*

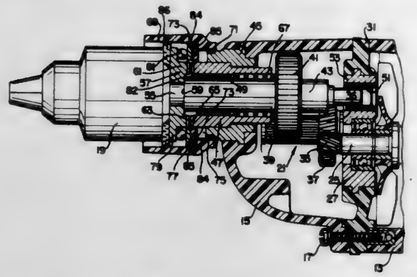


A multiband tuning unit including VHF and UHF tuners each having first and second concentrically mounted signal selector knobs and shafts. The first knob is connected through the first shaft to the VHF tuner to coarse tune the same. A connecting member is slidably and rotatably mounted to the second shaft and is moved to a predetermined position on the second shaft by rotating the first knob to a preselected position thereby coupling the second knob through a first gear train to the UHF tuner. Rotation of the second knob with the first knob in the preselected position coarse tunes the UHF tuner.

3,433,082
TRANSMISSION AND SELECTOR MECHANISM FOR ALTERNATE HAMMER AND HAMMER-DRILL POWER TOOL
Kenneth D. Bitter, Baltimore, George E. Atkinson, Linthicum Heights, and William B. Fogle, Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Sept. 20, 1967, Ser. No. 669,020
U.S. Cl. 74—22 **25 Claims**
Int. Cl. F16h *25/12*

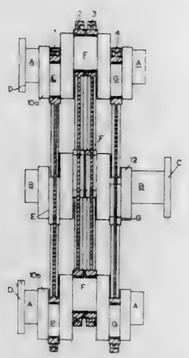
The device herein disclosed is a portable, hand-held tool comprising a housing with an electric motor supported

therein and a tool chuck extending outwardly thereof. A transmission interconnects the motor and chuck and is constructed to selectively provide rotating movement



alone or rotating together with reciprocating movement of the chuck and a tool bit carried thereby when the tool bit engages a work surface.

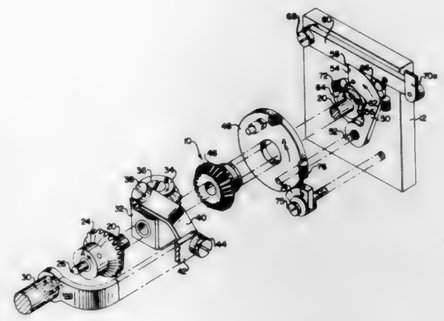
3,433,083
MULTI-SHAFT TRANSMISSION COUPLINGS
Joseph A. Pope, Bramhall, and John E. H. Appleby, Cheadle Hulme, England, assignors to Mirrlees National Limited, a company under the Laws of the Queen of Great Britain, Northern Ireland and the Isle of Man
Filed Nov. 1, 1966, Ser. No. 591,295
Claims priority, application Great Britain, Nov. 2, 1965, 46,412/65
U.S. Cl. 74—68 **7 Claims**
Int. Cl. F16h *21/48*



A multi-shaft transmission coupling intended to be used with at least three shafts wherein the axes of the shafts are parallel and in which there is a coupling crankshaft for each of the shafts, each crankshaft having at least two cranks of like throw, the cranks being arranged symmetrically about the axis of the crankshaft, the throws being the same and complementary for each crankshaft, the sets of corresponding cranks on the different crankshafts being coupled and common gyratory coupling members engaging each of said sets.

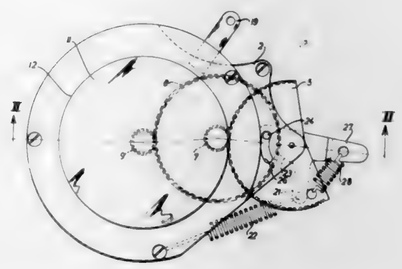
3,433,084
MECHANISM FOR PRODUCING INTERMITTENT ROTARY MOTION
James M. Steinke, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 17, 1967, Ser. No. 631,198
U.S. Cl. 74—84 **13 Claims**
Int. Cl. F16h *27/04*

A motion-translating device for producing intermittent rotary motion output from an input of constant velocity rotary motion. A train of three bevel gears and arcuately-shaped links is used to obtain the intermittent rotary motion. Latch means are added to the device to enable it to



also produce an output of constant velocity rotation when desired.

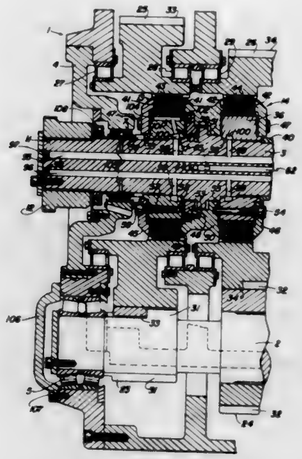
3,433,085
MECHANISMS FOR CAMERA SHUTTERS
Lennart G. O. Dahlgren, 61 Opalgatan, Vastra Frolunda, Sweden
Filed Mar. 13, 1967, Ser. No. 622,610
Claims priority, application Sweden, Mar. 16, 1966, 3,455/66
U.S. Cl. 74—89.19 **2 Claims**
Int. Cl. F16h *29/00*



A shutter delay control mechanism for a camera is provided which includes a nonmagnetic eddy current disc disposed in a variable magnetic field. The magnetic field is generated by two permanent magnets, one mounted on each side of the eddy current disc, and these may be disc shaped ferrite magnets mounted on shafts. The relative position of the permanent magnets is adjustable. The shutter delay time is adjustable according to the conditions to be met.

3,433,086
MULTISPEED DRIVING MECHANISMS
Louis F. Carrieri, La Grange Park, and Norton D. Skinner, Palos Heights, Ill., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed July 12, 1967, Ser. No. 652,821
U.S. Cl. 74—364 **15 Claims**
Int. Cl. F16h *3/08*

A multispeed driving mechanism embodying a drive shaft, a driven shaft, a plurality of gear trains driven by the drive shaft at all times during rotation of the latter, and selectively actuated clutch elements carried by the gear trains and driven shaft for selectively coupling the



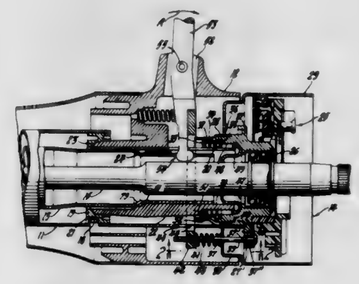
drive shaft to the driven shaft through respective ones of the gear trains.

3,433,087
TRANSMISSION SHIFT DEVICE
August Winter, Egon Mann, and Willi Pfeiffer, Friedrichshafen, and Wilhelm Arnegger, Ittendorf, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany
Filed Aug. 18, 1967, Ser. No. 661,701
Claims priority, application Germany, Aug. 19, 1966, Z 12,385
U.S. Cl. 74—473 **7 Claims**
Int. Cl. G05g *9/10*



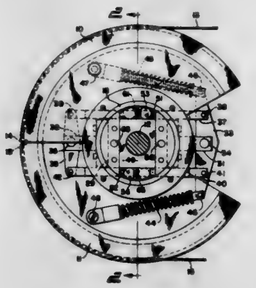
The invention features a mechanism for controlling two independently operable speed transmissions utilizing a manually rockable lever pivotally connected to a shaft which carries a shift fork for controlling one transmission. Accordingly, rocking of the lever in a first plane transverse to the shaft actuates the shift fork. The lever can also be swung in the plane of the shaft into a second plane at an angle to the first plane and be rocked in the second plane to control a second transmission. The lever is connected through a lost motion mechanism to the second transmission whereby rocking of the lever in the first plane controls the first transmission without affecting the second transmission. A slotted guide plate is provided to insure the lever being rocked selectively in either of the two planes.

3,433,088
STEERING COLUMN TRANSMISSION SHIFT CONTROL
John W. Skelley and Leonard F. Grandel, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,955
U.S. Cl. 74—484 **12 Claims**
Int. Cl. G05g *11/00*



A steering column mounted shift mechanism with a cap assembly, having a shroud, a turn signal mechanism, a cap member, a support column and a lock ring. The lock ring is secured to the cap assembly with a fastener while being spaced therefrom by a coil spring. The support column has a slot, located at its upper end, which is engaged by a projection on the lock ring so that when the fastener is tightened the cap assembly will be drawn onto the support column.

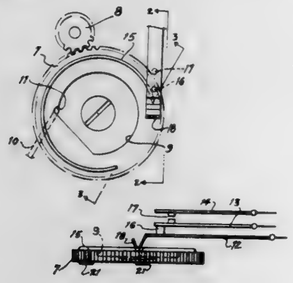
3,433,089
CABLE TENSION REGULATOR
Howard M. Geyer, Dayton, Ohio, assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,653
U.S. Cl. 74—501.5 **12 Claims**
Int. Cl. F16f *3/00*



Two rotatable cable-anchoring sectors having hub sections respectively coupled by roller clutches to an input upon relative rotation in both directions, each clutch including diametrically opposite rollers within a sector hub section backed by a floating block and being spring-

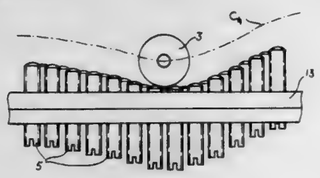
wedged between the block ends and the sector. Interconnected actuator arms shift with the relative rotation to unwedge the rollers of one clutch while releasing the rollers to wedging in the other for the direction responsive coupling of the sectors.

3,433,090
CAM CONSTRUCTION
Joseph L. Cassell, New York, N.Y., assignor to Automatic Fire Alarm Company, New York, N.Y., a corporation of New York
Filed Apr. 6, 1967, Ser. No. 628,961
U.S. Cl. 74—567 **6 Claims**
Int. Cl. F16h *53/02*



Cam for the control of fire alarm signals or for other purposes comprising a length of wire of predetermined circular extent on a rotatable support, for effecting actuation of a switch lever or the like in desired timed relation according to the length and position of the wire on the rotatable support.

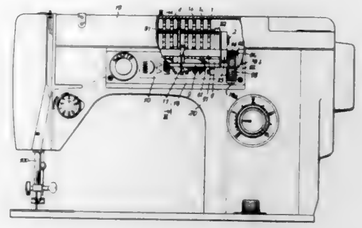
3,433,091
DEFORMABLE CAM
Jean Jullien-Davin, Valence, France, assignor to Crouzet, Valence, Drome, France, a French company
Filed July 12, 1966, Ser. No. 564,600
Claims priority, application France, July 12, 1965, 88,576
U.S. Cl. 74—568 **5 Claims**
Int. Cl. F16h *53/00*



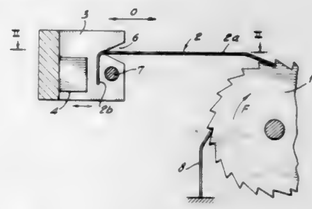
A deformable cam with a variable profile constructed from a plurality of adjustable screws carried by a rigid support to be used to vary the position of a control element according to a given program.

3,433,092
PATTERN CAM SELECTING ARRANGEMENT
Susumu Hanyu, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan
Filed Oct. 18, 1966, Ser. No. 587,493
Claims priority, application Japan, Oct. 20, 1965, 40/63,922
U.S. Cl. 74—568 **19 Claims**
Int. Cl. F16h *53/00*

A serrated knob is manually depressed in radial direction to retract a cam follower from a set of cams, and is turned in depressed condition to move the cam follower along the set of cams to a selected position located opposite a selected cam so as to engage the same when the serrated knob is released by the operator.

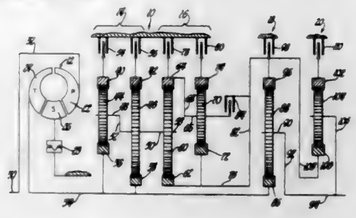


3,433,093
RATCHET MECHANISM
Fritz Marti, La Chaux-de-Fonds, Switzerland, assignor to Portescap, Le Porte-Echappement Universel S.A., La Chaux-de-Fonds, Switzerland
Filed Oct. 7, 1966, Ser. No. 585,130
Claims priority, application Switzerland, Oct. 14, 1965, 14,285/65
U.S. Cl. 74—578 **8 Claims**
Int. Cl. G05g *1/00;* **G04c** *5/00*



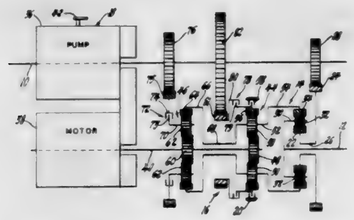
A timepiece ratchet mechanism having a ratchet wheel and a pawl. The pawl has blade-shaped arms pivotably mounted in V-shaped grooves in a mounting block. A permanent magnet holds the arms of the pawl in place in the grooves and urges the pawl into engagement with the teeth of the ratchet wheel.

3,433,094
DUAL PATH POWER TRANSMISSION
William V. Phillips, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,131
U.S. Cl. 74—682 **8 Claims**
Int. Cl. F16h *37/06*



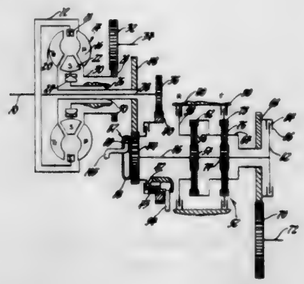
A power transmission having a plurality of dual paths of power flow is disclosed wherein a two-speed splitter planetary gear set divides the input power between a three-speed range planetary gear set and a combining planetary gear set. The splitter gear set and the range gear set are effective through the selective engagements of a plurality of torque establishing devices to provide a plurality of multi-speed split power gear trains. The combining gear set is effective to deliver the split power to a single output member.

3,433,095
SPLIT POWER TRANSMISSION
Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,608
U.S. Cl. 74—687 **6 Claims**
Int. Cl. F16h *47/04*



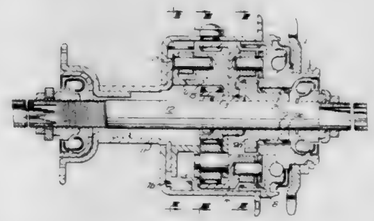
1. In a transmission the combination of input means; output means; power combining means operatively drive connected to said output means operable to drive said output means with plural power input drives; fixed speed ratio drive means operatively drive connecting said input means and said power combining means to provide a continuous fixed speed ratio input drive to said power combining means; infinitely variable speed ratio drive means connected to be driven by said input means; and multistep-ratio drive means having one input drive from said input means and another separate input drive from said infinitely variable speed ratio drive means for providing another input drive to said power combining means whereby said fixed speed ratio drive means, said infinitely variable speed ratio drive means and said multistep-ratio drive means cooperatively provide a plurality of split power drives between said input and output means.

3,433,096
TORQUE CONVERTER TRANSMISSION
Robert M. Tuck, Indianapolis, and Mark E. Fisher, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,912
U.S. Cl. 74—731 **25 Claims**
Int. Cl. F16h *47/06*



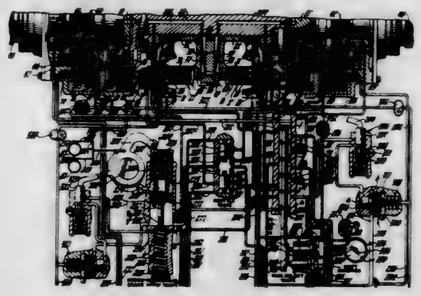
Dual turbine torque converter transmission and controls for vehicles in which the torques of both turbines are combined and transmitted to a drive shaft until mid-range speed ratio, at this speed ratio the first turbine can be released from the drive by disengagement of a clutching device so that the converter performance and efficiency will be improved. If desired the clutching device can remain engaged so that the negative torque developed by the first turbine after the mid-range speed ratio combines with positive second turbine torque to reduce drive shaft speed. This reduces vehicle speed-up when the transmission is unloaded.

3,433,097
EPICYCLIC CHANGE SPEED GEAR HUBS
Leonard Haydn Fox, Nottingham, England, assignor to Raleigh Industries Limited, a corporation of Great Britain
Filed June 1, 1966, Ser. No. 554,478
Claims priority, application Great Britain, May 29, 1965, 22,940/65
U.S. Cl. 74—750 **3 Claims**
Int. Cl. F16h *3/44*



An epicyclic change speed gear mechanism in which back pedaling causes rotatable pawls to ride along cams to a position alternately into and out of engagement with a ratchet affixed to the shell of the mechanism whereby the drive is alternately direct from the pedals (high gear) and indirect through the epicyclic gears (low gear).

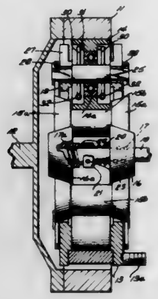
3,433,098
TRANSMISSION HAVING SPEED RESPONSIVE MANUAL SELECTOR VALVE BLOCKERS FOR FORWARD AND REVERSE SPEEDS
Robert H. Schaefer, Westfield, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Mar. 10, 1965, Ser. No. 438,634, now Patent No. 3,378,119, dated Apr. 16, 1968. Divided and this application Sept. 20, 1967, Ser. No. 678,472
U.S. Cl. 74—752 **2 Claims**
Int. Cl. F16h *3/74*



A transmission having a manual selector valve for selection of forward and reverse drives, is herein disclosed, in which the selector valve is prevented from shifting

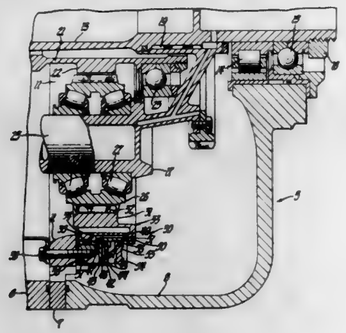
from forward to reverse and vice-versa when the vehicle speed is above a predetermined value. The shift inhibitor mechanism includes an output driven governor which supplies a pressure signal, proportional to vehicle speed, to a pair of plungers which, upon sufficient pressure signal, engage the selector valve to prevent forward-reverse shifting.

3,433,099
MULTI-ROLLER FRICTION DRIVE WITH CONICAL PRELOAD MECHANISM
Algirdas L. Nasvytis, Cleveland, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 514,082, Dec. 15, 1965. This application Nov. 21, 1967, Ser. No. 689,228
U.S. Cl. 74—798 **16 Claims**
Int. Cl. F16h *13/06*



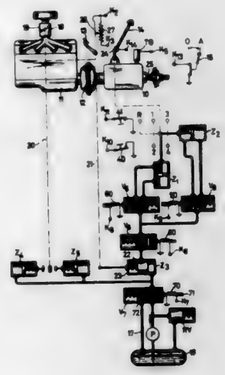
A friction drive system incorporating complementing frusto-conical planetary elements automatically loaded to provide an increasing drive contact pressure with increased torque, in at least one direction of rotation.

3,433,100
PLANETARY GEARING
Laurence M. Brady and Milton F. Lindgren, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,557
U.S. Cl. 74—801 **8 Claims**
Int. Cl. F16h *1/28*



A planetary gear system includes a nonrotating ring gear cooperating with a number of planet gears mounted on a rotating carrier. The ring gear is mounted on helical splines so that it can shift axially in response to variations in torque. The ring gear is connected to these splines by an axially extending rebent web so proportioned that radial deflection of the ring gear caused by the radial component of torque of the planet gears is not communicated to the splines which are at the other margin of the recurved flange from the ring gear. Also, springs which bias the ring gear axially are isolated from the ring gear.

3,433,101
ELECTRONIC ARRANGEMENT FOR SHIFTING GEARS IN MOTOR VEHICLES
Hermann Scholl and Friedrich Rabus, Stuttgart, Dieter Eichler, Bonlanden, Volker Kadelbach, Heutingsheim, Wolfgang Reichardt, Stuttgart-Rohr, and Peter Jürgen Schmidt, Botnang, Germany, assignors to Robert Bosch GmbH., Stuttgart, Germany
Filed Jan. 11, 1967, Ser. No. 608,520
Claims priority, application Germany, Jan. 27, 1966, B 85,564
U.S. Cl. 74—866 **16 Claims**
Int. Cl. G05d *13/62*

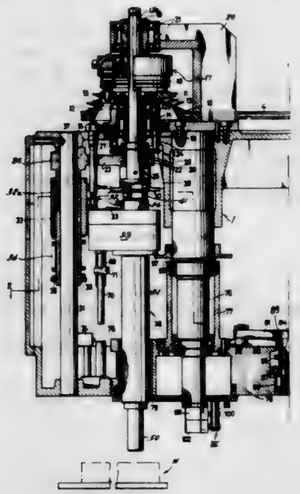


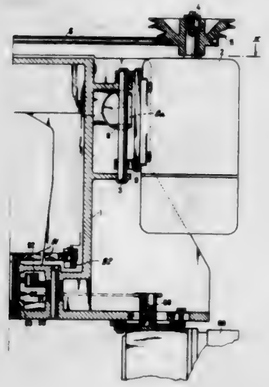
An electronic control arrangement for shifting gears automatically in a motor vehicle, as a function of speed and load or throttle position. A tachometer providing an output proportional to the vehicle speed, actuates a plurality of electronic switching circuits at predetermined and different levels of the tachometer output. The switching circuits, energize, in turn, electromagnetic coils each associated with a particular gear of the motor vehicle. The electromagnetic coils act upon hydraulic operating mechanisms to accomplish the appropriate gear shifting process. The switching circuits are designed so that their operation is independent of the battery voltage in the motor vehicle.

3,433,102
MULTISPINDLE MACHINE TOOL
Mikas Baublys, Ludwigsburg-Grunbuhl, Eugen Sigloch, Stuttgart-Zazenhausen, and Gotthilf Stark, Ebersbach-Sulpach, Germany, assignors to Firma Gotthilf Stark, Schlierbach, Teck, Germany
Filed Mar. 7, 1966, Ser. No. 532,240
Claims priority, application Germany, Mar. 5, 1965, St 23,463
U.S. Cl. 77—4 **44 Claims**
Int. Cl. B23b *39/16*

A multispindle machine tool in which a plurality of spindle assemblies are removably and reciprocably carried by an indexing member to be by movement of the latter successively brought in a working position aligned with a drive shaft, in which the drive shaft is reciprocable to be coupled with the aligned spindle assembly to drive

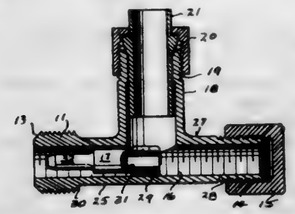
the latter, and in which each of the spindle assemblies has its own gear transmission so that the drive shaft may be driven for all spindle assemblies with the same speed





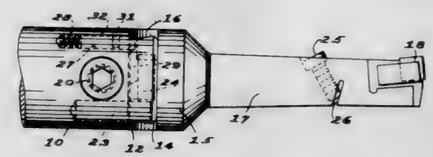
while a tool connected to the output shaft of the respective spindle assembly will be driven according to the gear transmission of the respective assembly.

3,433,103
PUNCHING T
Harry T. Waite, Jr., South Bend, Ind., assignor to The Fanner Manufacturing Company, a division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island
Filed Dec. 30, 1965, Ser. No. 517,646
U.S. Cl. 77—38 **6 Claims**
Int. Cl. B23b *41/12;* **F16k** *43/00;* **F16l** *55/18*



A punching T fitting having an enlarged threaded wall portion that terminates in a frusto-conical end. The enlarged wall allows the end to be welded to the container to be tapped without materially weakening the fitting. Alternatively, the threaded portion allows the fitting to be threaded into a saddle. Thus, a single fitting may be used either for welding applications or threaded applications. The thickening or enlargement of the wall may be either internally or externally, or both. When the thickening is internally the internally thickened portion may be shaped to coact with the punch to provide a seat to shut off the flow of the fluid.

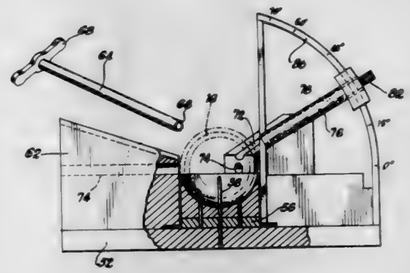
3,433,104
ADJUSTABLE DOVETAIL BORING BAR
Victor Milewski and William Yogus, Birmingham, Mich., assignors to The Valeron Corporation, a corporation of Michigan
Filed Oct. 26, 1966, Ser. No. 589,635
U.S. Cl. 77—58 **12 Claims**
Int. Cl. B23b *29/02, 47/00*



A tooling system comprising a combination of interchangeable tool shanks, adapters and spacers for axial adjustment providing presettable features, cost saving convertibility of a given tool shank to different machine spindle types and of a given machine spindle to different tool shanks, cylindrical press fit axially preloaded shoulder rigid assembly and in-place final axial adjustment.

3,433,105
APPARATUS FOR THE PRODUCTION OF MOLECULAR AND CRYSTAL MODELS
Bert E. Barickman, 1009 W. William, Champaign, Ill. 61820
Filed Apr. 7, 1966, Ser. No. 540,872
U.S. Cl. 77—62 **6 Claims**
Int. Cl. B23b *43/00, 47/28, 49/00*

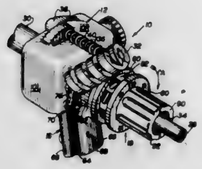
A jig for use in the production of models, wherein



generally spherical elements are assembled to form a composite arrangement. The jig includes a stationary base portion, a rotatably mounted cup portion, and a protractor attached to the cup portion whereby the angular position of the cup portion relative to the base can be determined. A plurality of guide members are mounted on the base in surrounding relationship relative to the cup member,

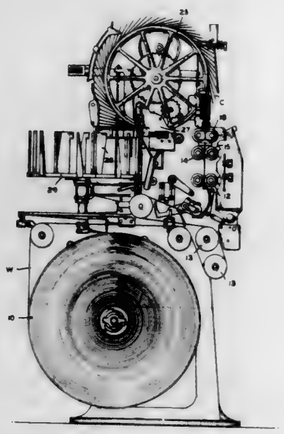
and pins are provided for securing the spherical elements in place. The guide members serve to determine the type of cut made in the spherical elements.

3,433,106
APPARATUS FOR REMOVING INSULATION
James J. Matthews, 14 Woodcrest Road, Hicksville, N.Y. 11801
Filed July 13, 1967, Ser. No. 653,202
U.S. Cl. 81—9.5 **11 Claims**
Int. Cl. H02g *1/12*



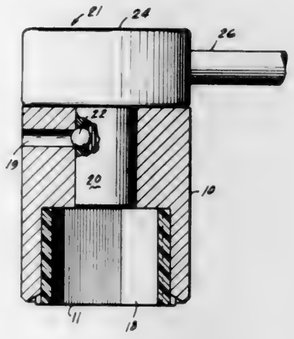
An apparatus for removing insulation from the mid-span section of cable or wire comprising a body having arranged therein adjustable clamping means for holding the cable, cutting means and means for rotating said body so as to simultaneously cut and remove the insulation.

3,433,107
ROUNDED CORNER CARD CUTTER
Gilbert Horton, High Point, Wayne A. Ruth, Jamestown, and Clarence Cox, High Point, N.C., assignor, by mesne assignments, to Control Data Corporation, Rockville, Md., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,294
U.S. Cl. 83—117 **14 Claims**
Int. Cl. B26d *7/06, 1/56;* **B23d** *25/02*



A device for cutting round corners on business machine cards includes a pair of blades **46** and **71** mounted on parallel rollers **30** and **31** on opposite sides of a moving web W of card stock, the cutting edge of the blades being helically arranged on the surface of the rollers, one blade **46** being fixed and the other being mounted for limited rotation about its roller axis to permit the blades to cut transversely across the web with a scissors-like action, the blades having mating convex and concave cutting edges at each end (FIGS. 5 and 6), whereby the card after cutting will have rounded corners **22** at one end and points **26** at its other end (FIG. 30) and additional reciprocating corner cutting devices **27** (FIGS. 15 to 18) for cutting the points **26** from the card to form concave corners **16** or angular corners **17** (FIGS. 31 and 32).

3,433,108
SOCKET WRENCH
Elmer J. Ondeck, 69 Akenside Road, Riverside, Ill. 60546
Filed May 23, 1967, Ser. No. 640,607
U.S. Cl. 81—121 **6 Claims**
Int. Cl. B25b *13/06, 13/58*



A wrench socket having a square bore for engagement by a turning tool head and at the opposite end thereof an aperture adapted to engage an insert in sliding fit relationship. The insert has an exterior which corresponds to the number of longitudinal surfaces of the aperture and an interior having ordinarily half the number of longitudinal sidewall surfaces as the exterior surface or, in any event, the same number as the number of flat surfaces found on the nut to be turned by the socket.

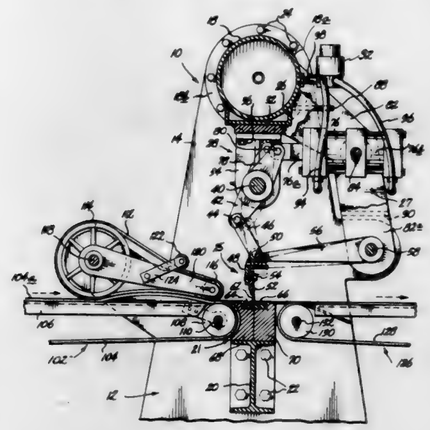
ERRATUM

For Class 83—117 see:
Patent No. 3,433,107

3,433,109
CLIPPER
Arthur E. Rola, Memphis, Tenn., assignor to Wilco Machine Work, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 3, 1966, Ser. No. 583,660
U.S. Cl. 83—401 **5 Claims**
Int. Cl. B26d *5/12, 5/18, 7/06*

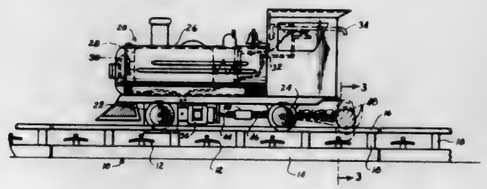
A clipper with a frame comprising an elongated torque resistant section with standards supporting the ends of this section. A knife mounting bar dependently supported underneath the torque resistant section is moved vertically in a cutting path through operation of a ram supported through its cylinder end on the torque resistant section.

The means dependently supporting the mounting bar beneath the torque resistant section comprises a shaft connected through multiple radially extending crank levers



and pivoted links to the knife mounting bar. Actuation of the ram produces rotation of said shaft with up and down movement of the mounting bar.

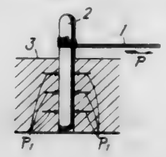
3,433,110
WHEELED VEHICLE WITH A VIBRATORY HAMMER
Frank Stanton, New York, N.Y., assignor to Cragstan Industries, Inc., New York, N.Y., a corporation of New York
Filed Jan. 10, 1966, Ser. No. 519,507
U.S. Cl. 84—102 **4 Claims**
Int. Cl. G10f *1/08*



This is a vibratory hammer for use in a xylophone type toy in which a hammer carried on a vehicle moving along a predetermined path strikes tone bars in the path. It consists of an elongated flexible shaft coupled to the drive shaft of the vehicle so as to be rotated axially by rotation of the drive shaft. A hammer is eccentrically mounted on the flexible shaft so as to deflect the rotating flexible shaft and carry the hammer repetitively into striking engagement with the tone bars in the path.

3,433,111
PIN PLATE FOR A PIANO
Masao Kanda, Hamamatsu-shi, Japan, assignor to Shigeru Kawai, Hamamatsu-shi, Shizuoka-ken, Japan
Filed Mar. 3, 1967, Ser. No. 620,371
Claims priority, application Japan, Mar. 4, 1966, 41/12,847
U.S. Cl. 84—188 **8 Claims**
Int. Cl. G01c *3/04, 3/06*

A material for the pin plate of a piano constituted by a thermosetting synthetic resin in which are uniformly dispersed small wood chips as a filling agent. The ratio by weight of the resin and wood chips is between 100:20



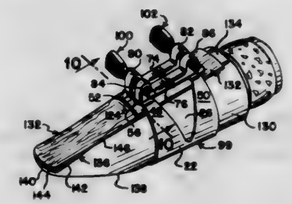
and 100:150. Optionally added is one or both of an extending agent and a reinforcing agent.

3,433,112
CHORD-FORMING DEVICE FOR STRINGED INSTRUMENT
Gordon E. Bradt, 828 Ashland Ave., Wilmette, Ill. 60091
Filed June 23, 1965, Ser. No. 466,402
U.S. Cl. 84—317 **13 Claims**
Int. Cl. G10d *3/06*



1. A chord-forming mechanism for a musical instrument having a body and a therefrom extending neck with thereover extended strings disposed in adjacent relationship, said neck having frets disposed therefrom against which said strings may be selectively impinged, the chord-forming mechanism comprising a plurality of actuatable note bars extending longitudinally of said neck and having lugs mounted adjacent said strings, respectively, for selective engagement therewith, and a plurality of manually engageable members extending from each note bar for actuation thereof, a manually engageable member of each note bar aligned transversely of said strings with a manually engageable member of other note bars, wherein, upon manual engagement of said manually engageable members at a selected station the instrument strings are impinged by said lugs against one or more of said frets for chord formation.

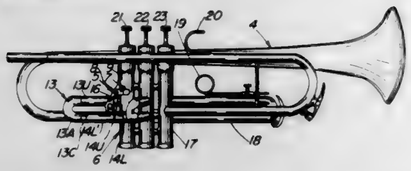
3,433,113
LIGATURES OR REED-HOLDERS FOR SINGLE-REED MUSICAL WIND INSTRUMENTS
Bernard A. Portnoy, 205 W. 89th St., New York, N.Y. 10024
Filed Oct. 22, 1965, Ser. No. 500,862
U.S. Cl. 84—383 **9 Claims**
Int. Cl. G10d *9/02*



A ligature or reed-holder for single-reed musical wind instruments is described in which the reed is held on the mouthpiece of the instrument by a lower and an upper pair of spaced and opposed bearing lugs positioned di-

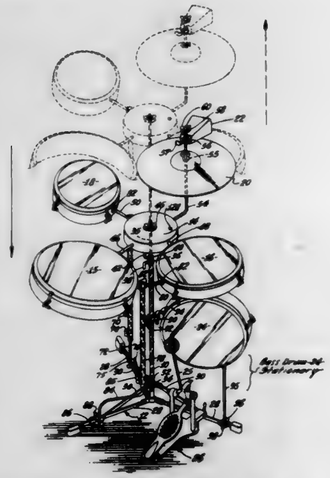
rectly over and in contact with small areas of the thick outer mid-apex section of the heel of the reed so that the relatively thin longitudinal side portions as well as the thick mid-apex heel portion, between the lower and upper pairs of lugs, of the heel are free to vibrate.

3,433,114
SLIDE CONTROL ARRANGEMENT
Frank J. Seme, Euclid, Ohio, assignor to the Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,740
U.S. Cl. 84—394 **5 Claims**
Int. Cl. G10d *9/04*



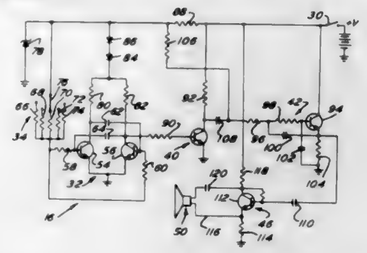
To control the positioning of a tuning slide of a trumpet or similar musical instrument, a pivoted member with one end adapted for actuation by the instrumentalist and the other end formed as a yoke to engage a pin on the tuning slide is provided. The yoke is formed in such a manner that rotation of the pivoted member to an extreme position permits the instrumentalist to disengage the tuning slide from the instrument.

3,433,115
DRUM ASSEMBLY
Elmer Kjelstrom, 8000 Reding Ave., Los Angeles, Calif. 90045; Leonard Taylor Kjelstrom, executor of said Elmer Kjelstrom, deceased
Filed Mar. 13, 1967, Ser. No. 622,788
U.S. Cl. 84—411 **17 Claims**
Int. Cl. G10d *13/02*



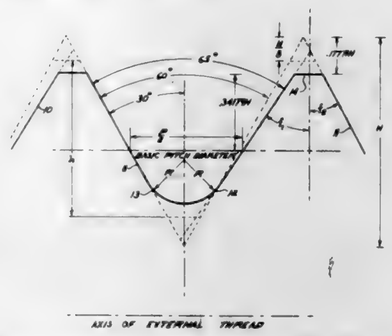
The invention is a relatively light drum set mounted on a collapsible support structure that permits the drum set to be dismantled into relatively small pieces for transportation and storage. A stanchion extending upward from a collapsible base structure carries at its upper end a support head which in itself is a percussion instrument and an array of drums is adjustably and removably mounted on this upper support head. The array of drums is stabilized by brace means extending downward to the collapsible base structure and both the stanchion and the brace means for extensible to different heights. The drums are provided with mufflers to convert the drum set quickly into a practice set and the mufflers are movable into and out of effective positions with a snap action.

3,433,116
TUNING DEVICE
Donald G. Althoff, 1135 Thomas St., Chester, Pa. 19013
Filed Sept. 20, 1966, Ser. No. 580,741
U.S. Cl. 84—454 **8 Claims**
Int. Cl. G10g *7/02*



A tuning device for a musical instrument having a plurality of members each of which requires tuning to a different predetermined pitch to enable use of the instrument. The tuning device comprises means for generating a plurality of frequencies, each of the frequencies corresponding to one of the predetermined pitches of the members requiring tuning. A selection member cooperates with the means for generating for selecting one of the plurality of frequencies at a time. The selection member is adapted to select the frequency corresponding to the pitch of the member of the instrument requiring tuning. Reproduction means are provided connected to the means for generating so that the tuning device produces a sound similar to that which is produced by the member of the instrument requiring tuning when properly tuned.

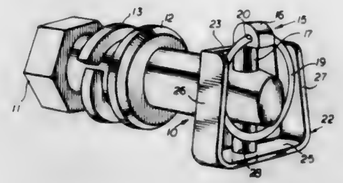
3,433,117
HIGH FATIGUE BOLT THREAD
Edward F. Gowen, Jr., Churchville, Raymond Ollis, Jr., Oreland, and Richard A. Walker, Warrington, Pa., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Continuation-in-part of applications Ser. No. 285,980, June 6, 1963, and Ser. No. 494,150, Oct. 8, 1965. This application June 5, 1967, Ser. No. 643,617
The portion of the term of the patent subsequent to June 6, 1984, has been disclaimed
U.S. Cl. 85—1 **4 Claims**
Int. Cl. F16b *35/00, 27/00, 29/00*



A screw thread member wherein the threads are formed by rolling in such a manner that the resulting thread form

has an asymmetric thread profile with the pressure flank angle being 32–37° and the non-pressure flank angle being 30°. In addition, the threads have a uniform negative lead correction of 0.001 to 0.007 in./in. of thread.

3,433,118
COUPLING PIN PROTECTOR
Gerald G. Ward, Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,913
U.S. Cl. 85—8.3 **1 Claim**
Int. Cl. F16b *21/18*



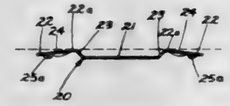
An implement is connected to a tractor having hitch links by pivotally connecting each link to a shaft carried by the implement. A vertical opening in the outer end of the shaft receives a pin having a resilient ring pivoted in its head large enough to be swung downwardly over and under the outer end of the shaft to prevent dislodgement of the pin. A generally rectangularly shaped protective shroud having two open sides and designed to prevent trash and dirt build-up from below dislodging the ring and pin has an opening in one side to receive the shaft interiorly of the pin, side walls and a horizontal base extending outwardly beyond the pin and ring parallel to the shaft and having means to prevent axial displacement of the shroud on the shaft.

3,433,119
FASTENER
David B. Ballantyne, Southfield, and Maurice T. Goring, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 593,493
U.S. Cl. 85—32 **9 Claims**
Int. Cl. F16b *37/00, 27/00, 29/00*



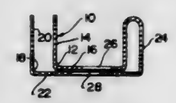
A fastener involves a cylindrical sheet metal shell with teeth struck both inwardly and outwardly from its surface. The outer teeth may be molded into a covering body or may be engaged by a wrench. The interior teeth may be molded onto a body or may be configured so as to form threads on a stud of soft material.

3,433,120
MULTIPLE TIE ROD FASTENER AND MOUNTING BRACKET
Kenneth C. Allison, Crystal Lake, Ill., and William L. Kelver, Arden, N.C., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Original application July 30, 1963, Ser. No. 298,742, now Patent No. 3,248,490, dated Apr. 26, 1966. Divided and this application Oct. 19, 1965, Ser. No. 498,032
U.S. Cl. 85—36 **2 Claims**
Int. Cl. F16b *17/00*



1. In a multiple tie rod fastener, the combination of a substantially planar central portion, a pair of substantially planar end members each integrally secured to one of a pair of extension members, said extension members being integrally secured to the central portion, the end members lying in a plane forming an acute angle with a plane in spaced parallel relation to the central portion, each of the end members being provided with an aperture for receiving an unthreaded member, means integrally secured to the peripheral edge of each of the apertures and having a helical edge portion, said means extending inwardly thereof for engaging the unthreaded members whereby upon assembling the fastener onto the pair of unthreaded members the angle between each of the end portions and the central portion is decreased for urging the means of each of the apertures into engagement with the associated unthreaded member, said helical edge portions and extension members projecting from respective ones of the end portions in a direction away from said plane and toward the central portion.

3,433,121
SPRING CLIP FASTENER
Daniel J. Vondran, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Dec. 19, 1966, Ser. No. 602,865
U.S. Cl. 85—36 **3 Claims**
Int. Cl. F16b *37/00, 17/00, 39/28*

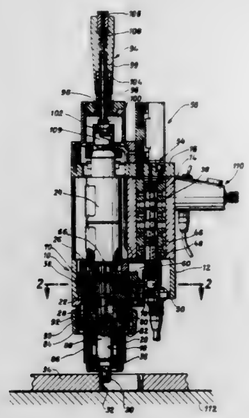


The fastener includes a pair of apertured, parallel legs connected together by a resilient portion which maintains the apertures in non-alignment when the fastener is in a relaxed position. Stressing the resilient portion reciprocates the legs to align the apertures and allow passage of a stud therethrough. Upon release, the legs are drawn in parallelly opposing directions so that the fastener engages the stud by shearing action.

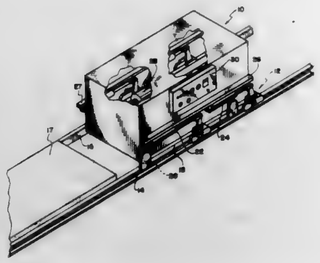
3,433,122
DEVICE FOR MACHINE TOOLS
Otto Wachter, Zizishausen, and Gerd Lorber, Nurtingen, Germany, assignors to Trumpf & Co., Stuttgart-Weilimdorf, Germany
Filed Oct. 19, 1966, Ser. No. 587,707
Claims priority, application Germany, Oct. 27, 1965, H 57,730
U.S. Cl. 90—13.5 **28 Claims**
Int. Cl. B23c *1/16, 1/18;* **B23d** *1/30*

A control device for machine tools for moving a tool in correspondence with a contour surface of a cam or

template includes a scanning element having a magnetizable roller engaged with the contour surface and rotated by an electric motor which is substantially coaxial with the roller. Magnetizing means establish a magnetic field including the roller and the cam contour surface to maintain the roller in engagement with the cam contact surface. The scanning element is mounted for universal angular displacement and controls fluid pressure actuated servo-mechanism for moving the tool relative to a workpiece. A manual control is provided, and the scanning element may be retracted to an inoperative position by electromagnetic means.

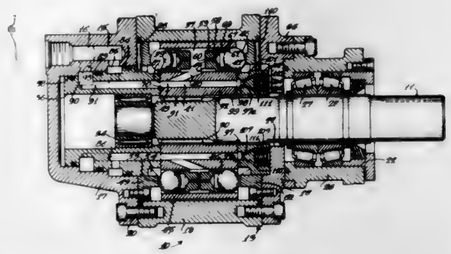


3,433,123
HYDRAULIC DRIVE SYSTEM
Cordis W. Jones and Clinton R. Hinman, Salina, Kans., assignors to Hastings Dynamold Corporation, Salina, Kans., a corporation of Nebraska
Filed Sept. 28, 1967, Ser. No. 671,446
U.S. Cl. 91—36 **10 Claims**
Int Cl. F15b *21/02, 11/22, 13/07*



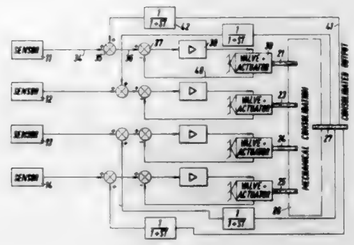
This invention relates to a hydraulic drive system for continuously moving a load for an indefinite distance under fluid pressure at a constant speed, and more particularly, this invention relates to a new and novel hydraulic drive system mountable upon a machine mechanism having cam drive assemblies connectable to guide rails for the continuous, uninterrupted movement therealong at a desired speed. More specifically, this invention relates to a hydraulic drive system having a cooperating pair of hydraulic cam drive assemblies interconnected by a fluid flow control means to supply under fluid pressure successively to the pairs of cam drive assemblies to provide for a continuous positive drive for movement of a machine mechanism along a track structure on movement from extended to retracted positions of the cam drive assemblies thereby providing for continuous and uninterrupted movement.

3,433,124
HYDRAULIC MOTOR
John T. Parrett, Benton Harbor, Mich., assignor to Benton Harbor Engineering Works, Incorporated a corporation of Michigan
Filed Oct. 10, 1967, Ser. No. 674,203
U.S. Cl. 91—198 **8 Claims**
Int. Cl. F01b *13/04;* **F04b** *1/22*



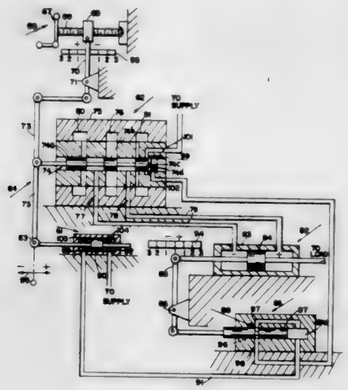
A hydraulic energy translating device of the multiple piston type wherein the pistons comprise spherical balls slidable within cylinders with sealing rings engaging the balls preventing leakage around the balls, there being provided an orifice in each of the sealing rings sized so that if separation occurs between the balls and the associated sealing rings the pressure drop across the orifice will produce a net hydraulic force acting on the sealing rings urging them back into engagement with their associated balls.

3,433,125
MULTIPLE CHANNEL SERVO SYSTEMS
Douglas B. Gemmell, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Mar. 13, 1967, Ser. No. 622,559
Claims priority, application Great Britain, Mar. 15, 1966, 11,372/66
U.S. Cl. 91—363 **6 Claims**
Int. Cl. F15b *9/02;* **H02p** *1/04;* **B64c** *13/38*



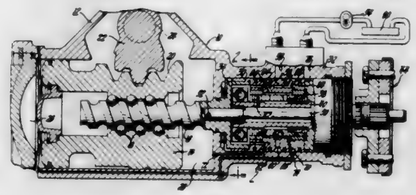
A composite control signal for each separate channel of a multiple channel servo system having a common output is obtained from the input signal for each channel, the actuator feedback signal for each channel, and a lagged feedback signal derived from the common output for the system. In this way, the separate, channels are prevented from drifting apart.

3,433,126
HYDRAULIC FEEDBACK SYSTEM
Paul F. Hayner, Lexington, Mass., and Lawrence W. Sharp, Glencliff, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 661,151
U.S. Cl. 91—367 **17 Claims**
Int. Cl. F15b *13/16, 9/10*



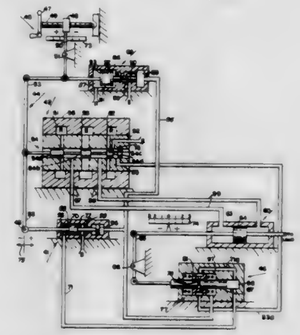
A hydraulically operated mechanism for positioning a remote load in accordance with the position of a local input member. Movement of the input member operates a control valve which transmits fluid pressure to an actuator which displaces the load and also actuates a mechanism which transmits feedback fluid pressure which repositions the control valve. Errors which accumulate due to leakage, fluid expansion due to temperature, etc. are corrected each time the system becomes static with both the input member and the load in their central or zero displacement positions.

3,433,127
POWER STEERING SYSTEM WITH HYDRAULIC REACTION
William B. Thompson, Frankenmuth, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,328
U.S. Cl. 91—372 **6 Claims**
Int. Cl. F15b *9/10*



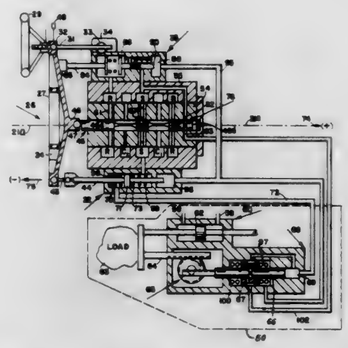
A servo assist system for automotive vehicle steering includes a servomotor, a control valve having a pair of valve members adapted upon relative movement therebetween to control flow of pressurized fluid to the servomotor, and a set of hydraulic reaction pistons communicated with the pressurized fluid directed to the servomotor and operative through compression springs to oppose the control input movement applied between the valve members to provide proportional "feel" at the steering wheel. Stops are provided to limit the reaction by the pistons at a predetermined system pressure, above which the reaction or "feel" imparted to the steering wheel undergoes transition to a second lesser proportional rate of reaction derived from the deformation rate of the compression springs.

3,433,128
HYDRAULIC FEEDBACK SYSTEM
Paul F. Hayner, 5 Colony Road, Lexington, Mass. 02173, and Lawrence W. Sharpe, P.O. Box 16, Glencliff, N.H. 03238
Filed Oct. 19, 1966, Ser. No. 587,742
U.S. Cl. 91—384 **15 Claims**
Int. Cl. F15b *9/10, 13/16, 21/00*



A hydraulically operated mechanism for positioning a remote load in accordance with the position of a local input member. Movement of the input member operates a control valve which transmits fluid pressure to an actuator which displaces the load and also actuates a mechanism which transmits feedback fluid pressure which repositions the control valve. Errors which accumulate due to leakage, fluid expansion due to temperature, etc. are corrected each time the system becomes static, even although the input member and the load may be displaced from their central positions.

3,433,129
HYDRO-MECHANICAL POSITIONING SYSTEM
Paul F. Hayner, Lexington, Mass., and Lawrence W. Sharpe, Glencliff, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,893
U.S. Cl. 91—384 **9 Claims**
Int. Cl. F15b *9/10, 13/14, 13/16*



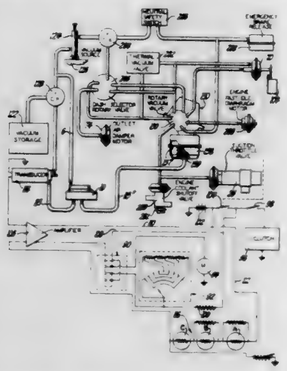
A hydro-mechanical load positioning system in which a multi-armed mechanical summing mechanism adds vectorially several mechanical inputs such as one represent-

ing a preprogrammed pattern of desired load position, another, a manual input and a third negative feedback input obtained from the load. The sum of the inputs operates a valve which controls the flow of fluid to an actuator which positions the load. Additionally, apparatus is provided which corrects the system for errors which might otherwise accumulate in the feedback loop.

3,433,130
AUTOMOTIVE COMFORT CONTROL SYSTEM WITH VACUUM HOLD

Ronald D. Freiberger, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,874
U.S. Cl. 91—447 **1 Claim**
Int. Cl. F15b *13/042;* **B60h** *1/00;* **F16k** *7/17*

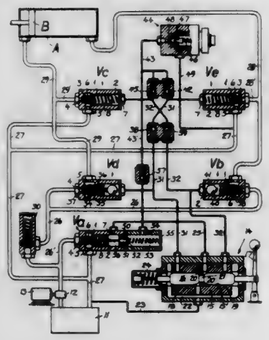


This invention relates to a vacuum system for automatically controlling a condition such as temperature existent in an automobile passenger compartment and more particularly to a system in which a regulated vacuum is maintained to stabilize the control despite interruptions in the supply of raw vacuum which would otherwise occasionally effect extreme or unpleasant side results in the system operation.

3,433,131
CONTROL SYSTEMS FOR HYDRAULIC POWER UNITS

Ingebret Söyland and Kristian Söyland, Bryne, near Stavanger, Norway

Continuation of application Ser. No. 420,308, Dec. 22, 1964. This application Aug. 22, 1967, Ser. No. 662,543
U.S. Cl. 91—447 **3 Claims**
Int. Cl. F15b *11/08, 13/04*

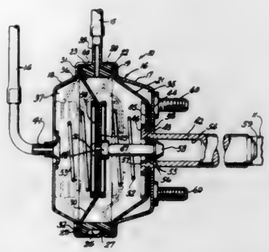


A double-acting power cylinder having its ends connected to two sets of fluid delivery and fluid return valves which are equipped with pressure relief means for opening and closing the same. A pilot valve is connected to the pressure relief means of the two sets of valves and is selectively positionable to open the delivery and return valve in either set while closing those in the other set.

3,433,132
VACUUM MOTOR

George A. James, Dearborn, Mich., assignor to F & E Manufacturing Company, Wyandotte, Mich., a corporation of Michigan

Filed Nov. 28, 1966, Ser. No. 597,372
U.S. Cl. 92—48 **8 Claims**
Int. Cl. F01b *19/00, 7/00, 21/02*

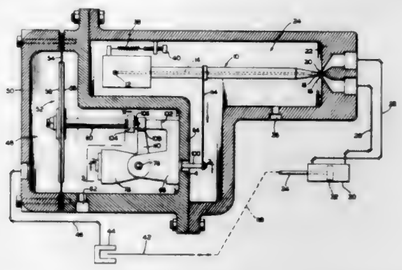


A vacuum motor comprising a housing between which a pair of diaphragms are clamped to divide the housing into three chambers. An actuator is fixed to one of the diaphragms and extends exteriorly of the housing. A stem is fixed to the other of the diaphragms and extends into a closed end opening in the actuator. Interengaging means are provided between the stem and the actuator so that when the stem is moved in one direction the actuator is moved in unison therewith. Vacuum is supplied selectively to two of the chambers.

3,433,133
MOTION-TRANSMITTING LINKAGE

Nathaniel Brewer, Doylestown, Pa., and Francis B. Wilson, Hillside, Ill., assignors to GPE Controls, Inc., Morton Grove, Ill., a corporation of Illinois

Filed Sept. 1, 1966, Ser. No. 576,767
U.S. Cl. 92—100 **9 Claims**
Int. Cl. F01b *19/02;* **F16j** *3/00;* **F16k** *31/365*

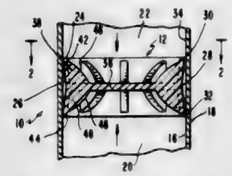


A linkage for transmitting a mechanical motion into a sealed chamber subject to variations in pressure wherein the linkage remains insensitive to such pressure changes although exposed thereto. The linkage is mounted for pivotal movement and the forces to which the linkage is exposed due to said pressure variations are balanced about an axis which intersects the pivotal axis. Novel means are provided for adjusting the two aforementioned axes to bring them into intersection during assembly of the linkage.

3,433,134
PISTON FOR AEROSOL DISPENSERS

Peter Barrie Vellekoop, Neshanic, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Nov. 22, 1967, Ser. No. 685,154
U.S. Cl. 92—243 **6 Claims**
Int. Cl. B67d *5/40;* **F16j** *1/100*

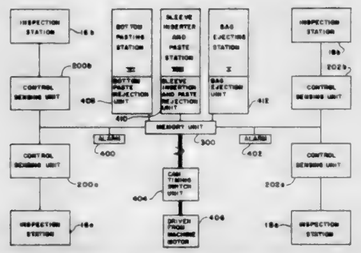


A piston for use in an aerosol can having an outer tubular container provided with a propellant gas therein. The piston has a cylinder provided with a centrally concave wall together with a centrally disposed disk. A plurality of supports join the cylinder and the disk and are equally spaced at an angle of approximately forty-five degrees to each other. The wall supports are arranged in vertically aligned pairs and extend along the disk substantially one-half the radius thereof. The cylinder has upper and lower wiping edges defined by the concave wall and the entire piston assembly may be integrally molded from a synthetic plastic material.

3,433,135
BAG INSPECTION METHOD AND APPARATUS THEREFOR

Burke P. Lokey, Metairie, and Charles R. Rein, Gretna, La., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,850
U.S. Cl. 93—8 **34 Claims**
Int. Cl. B31b *1/00*



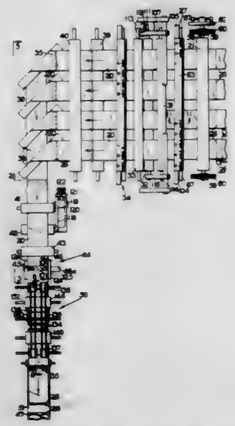
1. A bag making apparatus comprising:
(a) means for folding a plurality of bags into a predetermined shape,
(b) means for inspecting said bags after folding,
(c) means for performing an additional process to said bags after folding, and
(d) means connecting said inspecting means to said additional performing means for rendering said additional performing means inactive.

3,433,136
METHOD AND APPARATUS FOR ACCUMULATING INDIVIDUAL PLASTIC WEBS INTO STACKS

Ellsworth A. Hartbauer, Concord, Alfred B. Talbot, Alamo, and Rudolf R. Weis, Antioch, Calif., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Nov. 9, 1967, Ser. No. 681,726
U.S. Cl. 93—8 **17 Claims**
Int. Cl. B31b *1/26;* **B26f** *3/00;* **B65h** *35/10*

A plurality of flattened tubular plastic webs, each having a plurality of equidistantly spaced transverse seal lines, are concurrently advanced along spaced horizontal paths. While spaced from each other, each of the webs is provided with a pair of transverse perforated lines of weakness adjacent each of the seal lines. One of the lines of weakness of each pair is more easily ruptured than the other. After being perforated, and while still moving, the lines of advancement of the webs are turned 90° so as to stack the webs with corresponding lines of weakness in vertical alignment with each other. The stacked webs are then adhered together by heat-

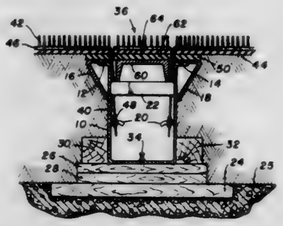


sealing between the lines of weakness in each pair. Then, sequential rupturing along the more easily ruptured lines of weakness provides separated stacks having the individual webs adhered together on one side of the less easily ruptured line of weakness with the web sections on the opposite side of the less easily ruptured line of weakness being free of attachment and including the transverse seal line. Individual web sections in the form of plastic bags can thereafter be separated from the stack by tearing each section along the less easily ruptured line of weakness.

3,433,137
ANCHORING SYSTEM FOR SYNTHETIC SURFACE MATERIALS

Zack L. Henderson, Greenwood, S.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

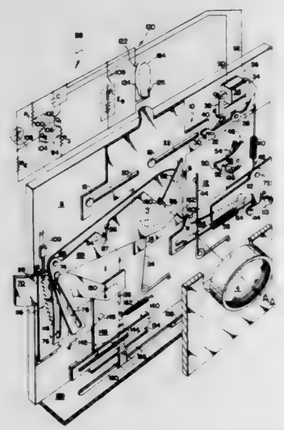
Filed Dec. 28, 1966, Ser. No. 605,283
U.S. Cl. 94—7 **6 Claims**
Int. Cl. A47g *27/04;* **E04b** *5/43*



An anchoring system which provides for the joinder of separate units of synthetic recreational surface materials such as synthetic grass which is comprised of means for securing the separate synthetic surface products in a common preformed trench and a section of the surface product which bridges the gap between the adjoining surfaces. The system is particularly useful for installing man-

made surfaces on areas which may be readily converted to accommodate a different type event without necessitating the removal of the entire installation of surface material.

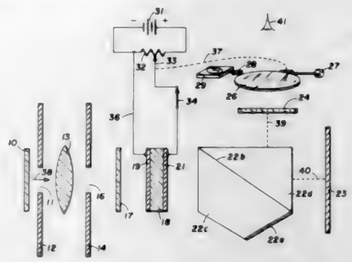
3,433,138
SHUTTER CONTROL SYSTEM FOR PHOTOGRAPHIC APPARATUS
John P. Burgarella, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,972
U.S. Cl. 95—10 **7 Claims**
Int. Cl. G01j *1/52*



1. In photographic apparatus including an exposure aperture for exposing photosensitive material in the apparatus, the combination comprising:
shutter means including at least one exposure control member movable from an initial position to a final position to control the amount of light admitted by the exposure aperture during exposure;
means for urging said exposure control member toward said final position;
electrical control means responsive to electrical potentials exceeding a predetermined level for retaining said exposure control member in said initial position;
flash connection means for energizing a luminous energy source; and
electrical power supply means for supplying electrical potentials exceeding said predetermined level across said control means and across said flash connection means, said power supply means having sufficient resistance that upon energization of said luminous energy source the potential applied to said control means drops below said predetermined level to effect a release of said exposure control member.

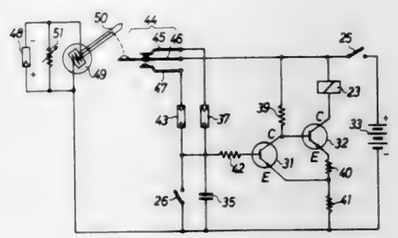
3,433,139
ELECTRO-OPTIC CONTROLS FOR REFLEX CAMERAS
Werner J. Beyen and Henry J. Caulfield, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,846
U.S. Cl. 95—10 **8 Claims**
Int. Cl. G01j *1/52*

3. In a camera having a lens for focusing light at a plane occupied by film, the combination which comprises:
(a) a polarizer, an electro-optic body and a beam splitter optically interposed between said lens and said film, said beam splitter oriented so that a first polarized light path emerging therefrom leads to said film, said polarizer having its axis aligned with the preferred axis of polarization of a second polarized light path emerging from said beam splitter, and



(b) means for applying to said electro-optic body a voltage of selectable magnitude within a predetermined range to control the amount of light to follow said first path.

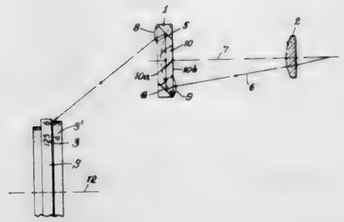
3,433,140
EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERA
Richard Wick and Friedrich Bestenreiner, Grunwald, and Erwin Von Wasielewski, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Jan. 31, 1967, Ser. No. 612,877
Claims priority, application Germany, Feb. 4, 1966, A 51,505
U.S. Cl. 95—10 **11 Claims**
Int. Cl. G01j *1/44*



A light control arrangement for photographic cameras based upon photoelectric timing circuits and electromagnets energized thereby. When the light intensity is substantially high, control is exercised over the diaphragm as well as the exposure time. When, on the other hand, the light intensity is relatively low, the exposure period is controlled through a photoelectric timing circuit. A photoelectric converter determines the intensity of the prevailing light and switches to one or the other control circuits, depending upon whether the light intensity is relatively high or low.

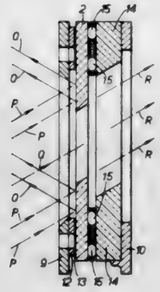
3,433,141
DIRECT-VIEWFINDER
Hans Rühle, Stuttgart, and Helmut Ebertz, Stuttgart-Mohringen, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Feb. 2, 1965, Ser. No. 429,827
Claims priority, application Germany, Feb. 22, 1964, F 10,667/64
U.S. Cl. 95—11 **4 Claims**
Int. Cl. G03b *13/06, 13/02, 13/04*

A direct-viewfinder for photographic cameras in which the finder objective lens is associated with two vertically spaced reflecting surfaces, either arranged on a vertical prism bar or cut directly into the objective lens body,



for permitting the viewing of the adjusting scales which extend at least partially concentrically around the optical axis of the camera objective.

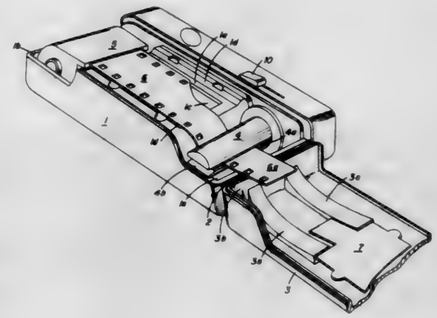
3,433,142
IRISES
Geoffrey King, Chelmsford, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 4, 1965, Ser. No. 477,163
Claims priority, application Great Britain, Aug. 14, 1964, 33,148/64
U.S. Cl. 95—12.20 **11 Claims**
Int. Cl. G03b *9/06, 33/00*



An iris having a number of co-planar parts with mating edges which slide one on the other to vary the iris opening is provided in distinction to the generally used form of iris consisting of a number of overlapping parts wherein the extent of overlap determines the extent of iris opening. Movement of a number of co-planar parts at one speed and movement of others at another speed results in the provision of an elliptical iris opening.

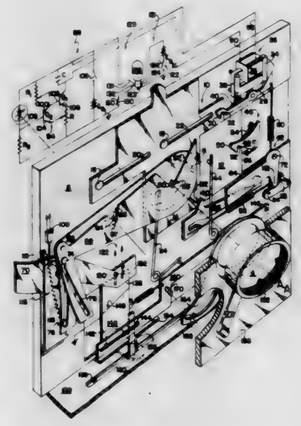
3,433,143
PHOTOGRAPHIC CAMERA
Ernst Lieser, Horst Simon, Edwin Mueller, and Kurt Steisslinger, Stuttgart-Wangen, Germany, assignors to Eastman Kodak Company, Rochester, N. Y., a corporation of New Jersey
Filed Aug. 27, 1965, Ser. No. 505,298
Claims priority, application Germany, Aug. 27, 1964, K 53,850
U.S. Cl. 95—31 **10 Claims**
Int. Cl. G03b *19/04*

Camera apparatus that facilitates film loading by axially attaching a film leader to a furcated take-up spool in spool chamber. Guide surfaces on the camera housing,



such as the camera back, moving relative to the spool displaces the leader end back into the spool chamber.

3,433,144
APERTURE TRIM MEANS FOR A PHOTOFLASH EXPOSURE CONTROL SYSTEM
Andrew S. Ivester, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,971
U.S. Cl. 95—64 **9 Claims**
Int. Cl. G03b *9/06*



1. In a photographic camera including an exposure aperture on an optical axis for exposing photosensitive material, the combination comprising:
variable diaphragm means on said optical axis for defining a range of effective exposure apertures;
control means coupled to said diaphragm means for effecting a progressive variation in the effective exposure aperture defined by said diaphragm means;
exposure means including flash means for effecting a flash-illuminated exposure through said exposure aperture of photosensitive material on said optical axis;
adjustable means positionable in accordance with the range of the selected subject to be photographed;

actuating means responsive to said control means and to said adjustable means for effecting actuation of said exposure means at various settings of said diaphragm means dependent upon the setting of said adjustable means; and

aperture trim means acting upon said actuating means for effecting fine adjustments in the exposure value at which said exposure means is actuated.

3,433,145

IMPELLERS, ESPECIALLY FOR VENTILATORS

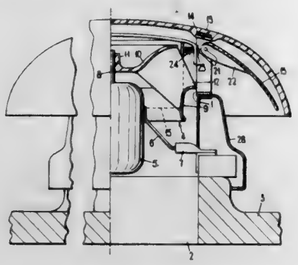
Brian Bowman Daly, London, and Alec Gerard James Baker and Joseph Percival Anderson, Colchester, England, assignors to Woods of Colchester Limited, Colchester, England, a British company

Filed Mar. 3, 1967, Ser. No. 620,430

Claims priority, application Great Britain, Mar. 4, 1966, 9,561/66

U.S. Cl. 98—43 **8 Claims**

Int. Cl. F24f *7/06, 13/06;* **F04d** *25/08*



An impeller of the mixed flow type for gaseous fluids, especially suitable for use in a ventilator, comprising an inlet shroud, blades and back-plate so arranged as to give a particularly advantageous performance throughout the operating range of the impeller from maximum to minimum fluid flow.

3,433,146

GREASE EXTRACTING VENTILATING APPARATUS

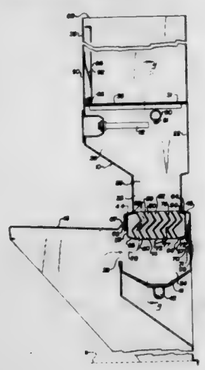
Kenneth Sinclair Russell, 3928 Marine Drive, West Vancouver, British Columbia, Canada

Filed Nov. 30, 1966, Ser. No. 597,910

Claims priority, application Canada, Oct. 8, 1966, 972,487

U.S. Cl. 98—115 **12 Claims**

Int. Cl. B01d *45/00;* **F23j** *11/00*



Ventilating apparatus for handling grease-laden air and having a main duct with a cartridge removably mounted therein and quickly and easily removable therefrom. The cartridge has a passage therethrough through which all the grease-laden air travelling along the duct passes. Baffle means in the cartridge passage divide the latter into a plurality of zigzag channels arranged to change the direction of the air flow in the channels to cause grease to be deposited in the cartridge. Spray means in the duct operate to wash down said duct and the cartridge, and means for automatically and manually operating a damper in the main duct above the cartridge close off said duct in case of fire.

3,433,147

PLANT FOR CONTINUOUS STERILISATION OF MILK

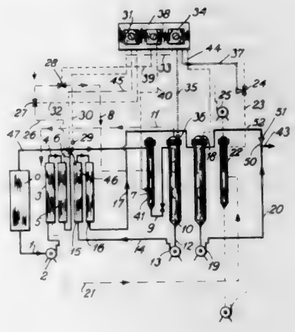
Aksel Pedersen, Silkeborg, Denmark, assignor to Aktieselskabet Paasch & Silkeborg Maskinfabrikker, Horsens, Denmark

Filed Oct. 2, 1964, Ser. No. 401,113

Claims priority, application Denmark, Oct. 2, 1963, 4,633/63; June 19, 1964, 3,097/64

U.S. Cl. 99—249 **9 Claims**

Int. Cl. A65b *55/06;* **A23b** *69/10*



1. A plant for continuous sterilisation of milk, consisting of a pump **2** for forcing non-sterilised milk from an accumulating tank **0** to a preheater **3, 5** for the milk, a sterilising tank **7** which receives the milk from the preheater and to which pressure steam is fed, an evaporation tank **10** which receives milk and steam from the sterilising tank **7** and in which the milk is separated from the water, a condenser for condensing the vapor from the evaporation tank, an equalising tank **18** which receives the milk from the evaporation tank **10**, a valve member **46** being provided in a pipe between the preheater **3, 5** and the sterilising tank **7**, a return pipe **47** being provided between the valve member **46** and the pipe leading to the pump **2** for non-sterilised milk and the valve member **46** is adapted to cut off the communication between the preheater **3, 5** and the sterilising tank **7** and to establish communication between the preheater **3, 5** and the return pipe **47**.

3,433,148

MAIN AND AFTER FERMENTATION TANK FOR BEER BREWERY

Sho Takayanagi, Tokyo, Japan, assignor to Asahi Breweries Ltd., Tokyo, Japan

Filed Sept. 6, 1966, Ser. No. 577,206

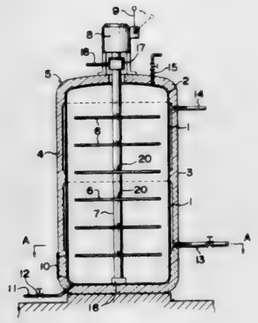
Claims priority, application Japan, Sept. 6, 1965, 40/72,725

U.S. Cl. 99—276 **7 Claims**

Int. Cl. C12f *1/00*

A fermentation and storage tank for brewing beer having a plurality of vertically spaced and parallel plates

therein so that when the tank is filled with beer, said beer is divided into a plurality of layers relative to the vertical



axis of the tank to facilitate a faster rate of clarification by deposition of said sediment onto said plates.

3,433,149

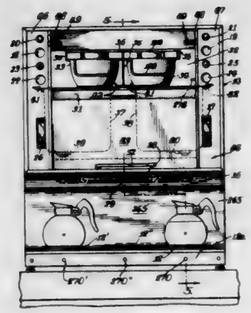
BREWING APPARATUS

Harvey R. Karlen and David C. Eisendrath, Chicago, Ill., assignors to Cory Corporation, a corporation of Delaware

Original application Dec. 31, 1962, Ser. No. 248,681, now Patent No. 3,326,115, dated June 20, 1967. Divided and this application Apr. 28, 1967, Ser. No. 634,653

U.S. Cl. 99—282 **25 Claims**

Int. Cl. C12l *7/00, 7/02;* **A47g** *19/14*



An automatic brewing device for use in restaurants and the like having dual brewers and brew storage tanks with controls for selectively brewing in one brewer while the brew is being dispensed from the storage tank associated with the other brewer. The apparatus is enclosed in a housing which is arranged to permit facilitated front and top access to the apparatus as for servicing thereof. The brewer comprises a removable cartridge and means are provided for facilitating the sealing connection of the cartridge in the apparatus in the brewing arrangement. The control prevents brewing into a partially filled storage tank, prevents dispensing from the storage tank during brewing of fresh brew, prevents dispensing of brew from the storage tank when no receptacle is placed in position for receiving the brew therefrom, prevents attempted brewing when the cartridge is not properly installed in place as when the cartridge seal is released, prevents heating of an empty decanter in position for receiving the brew, maintains the brew in the tank at a desired temperature, and prevents heating of an empty storage tank. The hot water supply tank is an open to atmosphere type tank. The apparatus further includes removable valve means for controlling delivery of the brew from the storage tank.

3,433,150

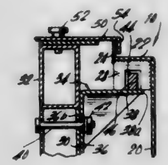
FOOD PROCESSING MACHINE

Edward W. Fries, Baltimore, Md., assignor to DCA Food Industries Inc., New York, N.Y., a corporation of New York

Filed Jan. 10, 1968, Ser. No. 696,862

U.S. Cl. 99—403 **8 Claims**

Int. Cl. A47t *27/14, 27/00*



A food processing machine having a support frame and a metallic cooking vessel wherein the cooking vessel is suspended from mounting rails of the support frame by a plurality of space gussets, with the gussets engaging stops on the mounting rails to enable the cooking vessel to expand and contract laterally incident to the heating and cooling thereof within preset limits.

3,433,151

DEVICE FOR MAKING SHISH-KABOBS

Edward John Farran and Frederick John Farran, both of 716 Dorroll St. NE., Grand Rapids, Mich. 49505

Filed Feb. 1, 1967, Ser. No. 613,283

U.S. Cl. 99—441 **5 Claims**

Int. Cl. A47j *43/18*



This invention relates to a device for making shish-kabobs, with the device being in the form of an elongated open mesh, open topped basket, having one of its ends open and formed to define a receptacle of shish-kabob defining configuration for food segments of the type used in this cookery that are placed in the basket for cooking. Hinged to the basket is a cover that closes the basket open top and includes an appendage which also closes the basket open end when the cover is in place. The device includes a cover handle that is positioned adjacent the handle of the basket and a releasable latch device for locking the cover handle against movement from the closed position of the cover. The food segments placed in the basket to form the shish-kabob are then cooked in the manner similar to roasting a weiner as by either hand-held, or placed on a grill, and when done, the cover is opened and the food segments slid in a row out of the basket through its open end onto a plate or the like, as by using an imple-

ment to reach in through the open top and pushing on the inside end of the food segment row.

3,433,152

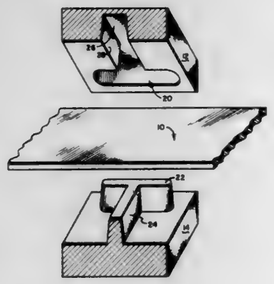
APPARATUS FOR PRODUCING CONTRAST COLOR EMBOSSMENTS IN PLASTICS

James William Mullen, Orinda, and Leo Tan de Bos, Albany, Calif., assignors to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed Oct. 27, 1964, Ser. No. 406,799

U.S. Cl. 101—28 2 Claims

Int. Cl. B44b *5/02*; B29c *1/00*



A die set for producing a contrast color embossment in a planar plastic sheet through permanent deformation of the sheet by cold forming of the material of the sheet, the die set including a die having a cavity with a draft angle of about 5° and a punch with a draft angle of about 17°.

3,433,153

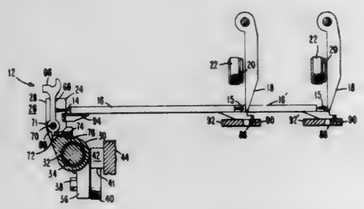
PRINTER WITH SWIVELING PUSHRODS

Richard H. Harrington, Vestal, and Michael A. Henkel, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 29, 1967, Ser. No. 694,585

U.S. Cl. 101—93 10 Claims

Int. Cl. B41j *1/32*



A plurality of print hammers for impacting a document to print thereon are mounted in spaced apart relation on a support member movable to position the hammers at extreme and one or more intervening print positions, and are actuated to print by stationary actuating means operatively connected to the hammers by swiveling pushrods.

3,433,154

PRESSURE PRODUCING MEANS FOR REPRODUCTION MACHINE

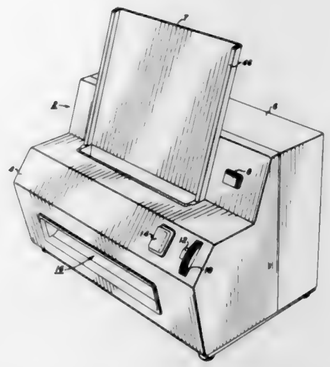
Howard C. Davis and Harold E. Trumbull, Columbus, Ohio, assignors, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,550

U.S. Cl. 101—132 2 Claims

Int. Cl. B41f *3/02, 11/08*

A pressure-transfer reproduction machine for transferring ink from one sheet to another having rotatable drum and a tapered pressure roller for exerting equal pressure along the line of contact of the drum and the roller. The machine includes suitable sheet guides, drives and controls for the operation thereof.



3,433,155

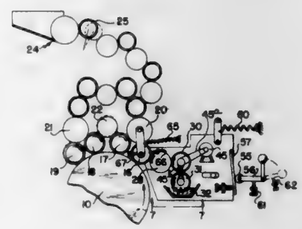
MECHANISM FOR APPLYING A COATING TO A PLATE

Robert K. Norton, Twinsburg, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 13, 1965, Ser. No. 486,680

U.S. Cl. 101—148 8 Claims

Int. Cl. B41l *23/04, 25/02*; B41f *31/14*



A dampening mechanism for applying a dampening fluid to the surface of a rotating printing plate of a printing press is disclosed. The dampening mechanism comprises a form roll driven by the printing plate, a hard surface, hydrophilic roll for transferring dampening fluid to the form roll, a resilient metering roll running in pressure engagement with the hydrophilic roll for transferring the dampening fluid to the hydrophilic roll and a resilient pan roll for transferring dampening fluid from a supply to the metering roll. The hard surface, hydrophilic roll is positively rotated to have the same surface speed as the rotating printing plate and the resilient metering roll is driven at a speed which is adjustable to adjust the relative surface speeds between the hard surface, hydrophilic roll and the resilient metering roll to control the amount of dampening fluid delivered to the hydrophilic roll.

3,433,156

COMBUSTIBLE BLANK CARTRIDGE

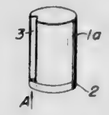
Teruhiko Suzuki, Nobeoka-shi, Junichi Nomura and Daijiro Kameyama, Oita-shi, and Minoru Miyoshi, Soka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Apr. 18, 1967, Ser. No. 631,750

Claims priority, application Japan, Apr. 21, 1966, 41/24,927; May 23, 1966, 41/32,435; Nov. 15, 1966, 41/104,775; Feb. 16, 1967, 42/12,413

U.S. Cl. 102—39 14 Claims

Int. Cl. F42b *5/20, 9/18*



Production of a combustible blank cartridge is effected by preparing a firing sheet impregnated with priming composition, cutting a firing sheet into the form of a circular base having an appropriate size and adhering the circular base to the surface of one end of a solid propellant previously molded into a column-shape.

3,433,157

PRACTICE PROJECTILE

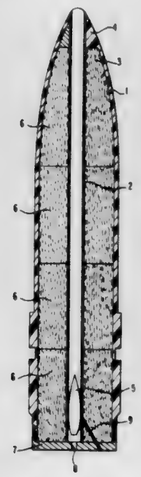
Erich Joch, Bensberg-Refrath, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Dec. 30, 1966, Ser. No. 606,162

Claims priority, application Germany, Dec. 31, 1965, D 49,056

U.S. Cl. 102—92.7 12 Claims

Int. Cl. F42b *11/18, 13/20*



The present disclosure relates to a practice projectile that will fire from the barrel of a weapon in the manner of live ammunition, will partially disintegrate upon ejection from the barrel, hit the target with a simulated live projectile, and have a greatly reduced range of danger. The projectile includes a large calibre projectile that will readily disintegrate upon leaving the corresponding calibre barrel of the weapon and a small calibre projectile that will be guided along and projected from a sub-calibre barrel centrally arranged within the large calibre projectile. The small calibre projectile will receive its motive force through orifices in the rear of the large calibre projectile from the propellant gases so that it will leave the sub-calibre barrel around the time that the large calibre projectile leaves the barrel of the weapon. The rigid, small calibre projectile will then travel the trajectory to strike the target to simulate the effect of live ammunition. Preferably, the large calibre projectile is constructed with an outer thin walled case and inner sub-calibre barrel forming tube of a synthetic polymer; the space between these two elements is filled with particulate material.

3,433,158

SOLID PROPELLANT GRAIN WITH SURFACE BONDED BURNING INHIBITOR COMPOSITION OF HYDROXY-TERMINATED POLYBUTADIENE

Everette M. Pierce, Somerville, Ala., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,635

U.S. Cl. 102—103 5 Claims

Int. Cl. C06b *19/02*; F42b *1/00*

An inhibitor composition, for substances such as wood, metal and propellants, that includes an intimate mixture of hydroxy-terminated polybutadiene, an organic diisocyanate, a metal oxide or metal salt catalyst and a heat resistant agent such as refractory oxides, carbon and asbestos.

3,433,159

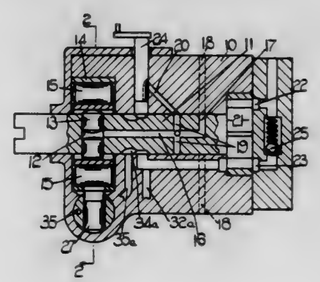
LIQUID FUEL INJECTION PUMPS

Kenneth Albert Walters Kemp, Ealing, England, assignor to C.A.V., Limited, London, England, a British company

Filed Jan. 17, 1967, Ser. No. 609,943

U.S. Cl. 103—2 3 Claims

Int. Cl. F04b *13/02*; F02m *39/00*



A device for adjusting the timing of the delivery of fuel in a fuel injection pump having a reciprocable plunger and an adjustable cam, the device comprising a fluid pressure operable piston which is spring loaded, the piston being provided with a bore in which is mounted a slidable spring loaded valve member, the valve member being acted upon in opposition to its spring by a fluid control pressure and the valve member upon movement by the control pressure being arranged to open a port in the wall of the bore to permit fluid under pressure to act on one end of the piston in opposition to the spring.

3,433,160

LIQUID FUEL PUMPING APPARATUS

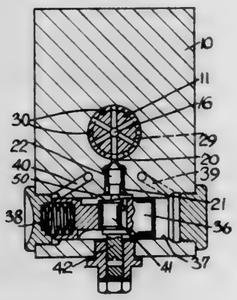
Kenneth Albert Walters Kemp, Ealing, London, England, assignor to C.A.V. Limited

Filed Jan. 17, 1967, Ser. No. 609,955

Claims priority, application Great Britain, Jan. 31, 1966, 4,096/66

U.S. Cl. 103—37 3 Claims

Int. Cl. F04b *49/02, 13/02, 49/00*



A liquid fuel pumping apparatus comprising a shuttle slidable within a cylinder, the excursion of the shuttle determining the maximum amount of fuel which can be supplied by the pump, and a stop slidable in a direction substantially at right angles to the longitudinal axis of the cylinder, said stop mounting a part having a shaped surface with which the shuttle co-operates and having an adjustable member upon which the part bears during movement of the stop.

3,433,161

DIAPHRAGM PUMP

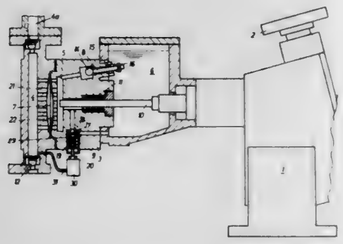
Gerhard Vetter, Niefern, Germany, assignor to LEWA Herbert Ott, Stuttgart, Germany

Filed Feb. 27, 1967, Ser. No. 618,615

Claims priority, application Germany, Mar. 1, 1966, L 52,982

U.S. Cl. 103—44 7 Claims

Int. Cl. F04b *9/10*; F15b *7/00*



A diaphragm pump having a diaphragm separating a pump chamber and a pressure fluid chamber, the latter chamber communicating with a pressure fluid reservoir by both an inlet valve and an overflow valve in order to limit the fluid pressure created within the pressure fluid chamber in dependence on the pressure developed in the pump chamber.

3,433,162

CENTRIFUGAL PUMP WITH SLIP COUPLING

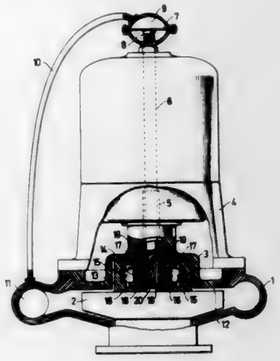
Sixten Englesson, Djursholm, Sweden, assignor to Stenberg-Flygt AB, Solna, Sweden

Filed Mar. 20, 1967, Ser. No. 624,313

Claims priority, application Sweden, Apr. 7, 1966, 4,865/66

U.S. Cl. 103—87 2 Claims

Int. Cl. F04d *13/04*; F04b *49/02*



A membrane-actuated throttle valve is provided between the discharge and the suction side of a slip-coupling connecting the impeller of a centrifugal pump to the drive motor shaft.

3,433,163

PUMP

Herman E. Sheets, Mumford Cove, and Claude P. Brancart, Old Lyme, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,599

U.S. Cl. 103—87 4 Claims

Int. Cl. F04d *13/02, 29/06*



A multi-stage, axial flow liquid pump with a self-contained, floodable drive motor. In inside-out motor arrangement, the motor stator is mounted concentrically within the confines of the rotor. Cooling and lubrication are provided by the liquid being pumped.

3,433,164

MOTOR-PUMP UNIT

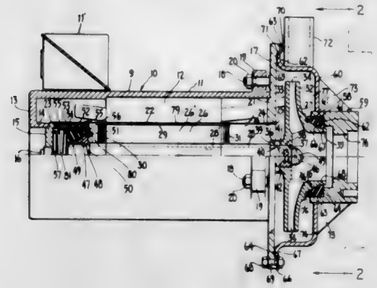
Maynard J. Neal, North Tonawanda, N.Y., assignor to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York

Filed Mar. 3, 1967, Ser. No. 628,205

U.S. Cl. 103—87 10 Claims

Int. Cl. F04d *13/04, 1/14*

An hermetic motor-pump unit having contiguous motor and impeller housings and a common shaft mounting the motor rotor and impeller, with one end of the shaft being journalled in a bearing in the motor housing and the other end of the shaft being indirectly supported by a bearing mounted on the impeller housing which journals the impeller, with no bearing being located between the motor rotor and impeller. The impeller housing consists of a dished disc which is attached to the motor housing plate by means of fasteners.



3,433,165

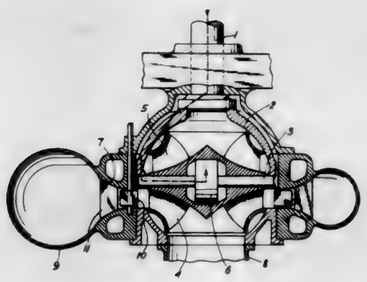
HYDRAULIC APPARATUS

Václav Hosnedl and Miroslav Nechleba, Brno, Czechoslovakia, assignors to ČKD Blansko, narodni podnik, Blansko, Czechoslovakia

Filed July 18, 1967, Ser. No. 654,160

U.S. Cl. 103—97 7 Claims

Int. Cl. F04d *1/00, 23/00*



A hydraulic apparatus including a plurality of impellers of different characteristics. One of the impellers can be selected to be situated in an operative position so as to provide a predetermined type of operation determined by the selected impeller which is placed in the operating position. In particular, a pair of impellers are provided, these impellers having a common turning axis and being joined to each other so as to form a single unitary structure, while at the same time the pair of impellers are respectively located on opposite sides of a predetermined plane which extends perpendicularly across their common turning axis. An inner housing means is provided for accommodating in its interior one or the other of the impellers, and a support means carries this inner housing means and supports the impellers for turning movement about a positioning axis situated within this predetermined plane and extending perpendicularly across the common turning axis of the impellers, so that one or the other of the impellers may be selected to be located in an operating position at the exterior of the inner housing means.

3,433,166

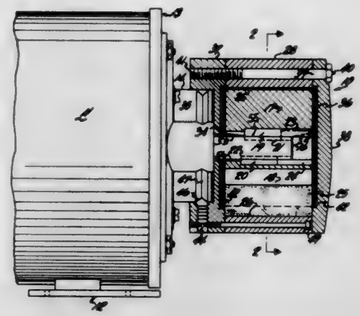
ROTATING VANE MACHINE COUPLINGS

Henry Paul Birkemeier, Chicago, Ill., assignor to International Telephone and Telegraph Corporation

Filed Sept. 11, 1967, Ser. No. 666,900

U.S. Cl. 103—118 4 Claims

Int. Cl. F04c *15/00*; F04b *21/00*



Structure for mounting a rotary vane type machine utilizing a free floating rotor on a prime mover.

3,433,167

FLUID MACHINES

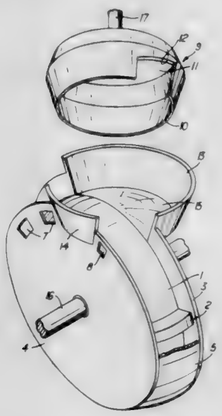
Thomas Moodie Craig, Garelochhead, Scotland (2518 Wildwood Road, Wildwood, Pa. 15091)

Filed Feb. 24, 1967, Ser. No. 618,412

Claims priority, application Great Britain, Feb. 24, 1966, 8,112/66

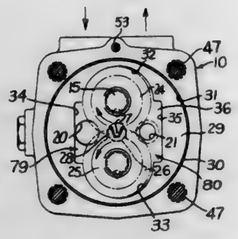
U.S. Cl. 103—125 4 Claims

Int. Cl. F04c *1/16, 3/00*



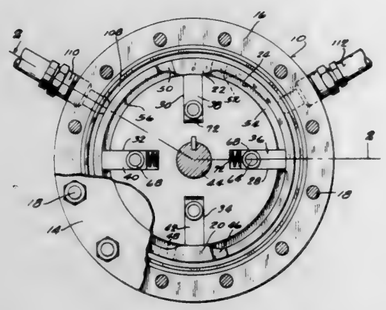
A fluid machine including a first member formed by a spherical segment and having at least one vane outstanding therefrom, the member being rotatable such that the vane sweeps a passage defined in the casing, the ends of said passage being defined by a second member rotatable in phase with the first member about an axis perpendicular to the axis of rotation of the first member, said second member having an opening therein to permit the through passage of the vane, and the casing being provided with inlet and outlet ports in communication with the passage.

3,433,168
GEAR PUMP WITH TAKEUP FOR WEAR
Oscar H. Banker, Bay Village, Ohio, assignor to Meyer Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 609,060
U.S. Cl. 103—126 6 Claims
Int. Cl. F04c *1/04*; F04b *21/08*



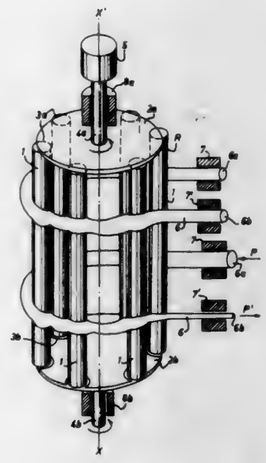
A gear-type pump includes a shiftable shroud member for radially sealing against the peripheries of the gears. The shroud is shifted under influence of pressure exerted against the shroud at the outlet port of the pump. The shroud is shifted into engagement with the gears adjacent the inlet port of the pump. The shroud is releasably locked in position sealingly engaged with the gears. When the shroud becomes worn so that the radial seal is ineffective, the locking means may be released to allow the shroud to shift once again into proper sealing engagement with the gears. The shroud is symmetrical on opposite sides of a line connecting the rotational axes of the two gears so that it may be reversed when one side becomes worn. The releasable locking means for retaining the shroud against further shifting movement may comprise the same clamping means for holding the pump housing parts together.

3,433,169
ROTARY PUMP OR MOTOR
Edward A. Graetz, Pound, Wis. 54161
Filed May 22, 1967, Ser. No. 639,955
U.S. Cl. 103—136 3 Claims
Int. Cl. F01c *1/04*



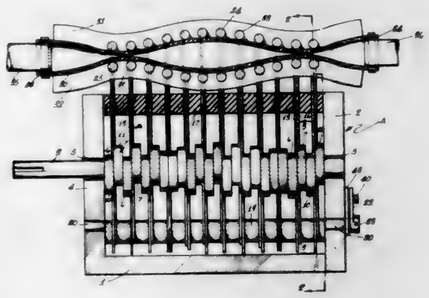
The present invention relates generally to improvements in the field of hydraulics, and relates more particularly to the provision of an improved hydraulic pump or motor of the rotary sliding vane type wherein the vanes are positively actuated within, the displacement chamber by cam action.

3,433,170
UNIVERSAL ROTARY VOLUMETRIC-PULSATION MACHINE
Edouard Malbec, 32 Rue Viatal Carles, Bordeaux, Gironde, France
Filed Feb. 11, 1966, Ser. No. 526,781
Claims priority, application France, Jan. 12, 1966, 45,699
U.S. Cl. 103—149 7 Claims
Int. Cl. F04b *43/08*



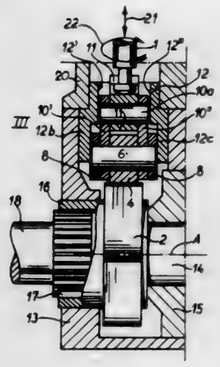
A rotary machine having a rotor with peripheral rollers on which hollow deformable tubes are applied with a pressure which can be regulated. When a fluid under pressure is sent into the tubes the rotor rotates and the machine is a motor. When the rotor is rotated, fluid can be moved in the tubes and the machine is a pump.

3,433,171
PERISTALTIC FLUID PUMP
Ernest R. Corneil, R.R. 1, Thorold, Ontario, Canada
Filed Nov. 23, 1966, Ser. No. 596,533
U.S. Cl. 103—149 16 Claims
Int. Cl. F04b *43/08, 17/02*



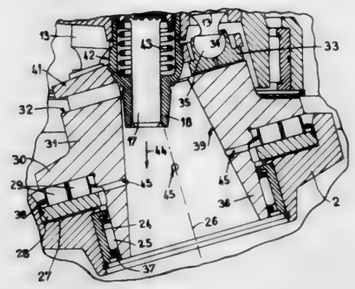
A peristaltic pump in which positive and negative pressures are produced by distortion of a resilient tube. One use of the pump may be to pump blood, for example, in such as artificial heart and lung machines.

3,433,172
FUEL INJECTION PUMP
Giuseppe Sola, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Jan. 31, 1967, Ser. No. 613,008
Claims priority, application Italy, Feb. 4, 1966, 2,723/66
U.S. Cl. 103—154 3 Claims
Int. Cl. F04b *19/22, 9/04, 15/00*



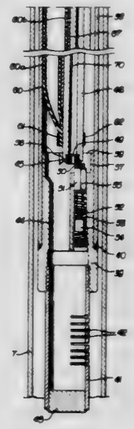
The pumping member of the pump is connected by a link to one arm of a beam which is rotatable about a fulcrum carried by the pump casing. The beam arms are proportioned to uninterruptedly establish contact with the periphery of the driving cam, which cam is formed with a plurality of equal lobes symmetrical in profile. Contact between the beam arms and the cam takes place either over the opposite flanks of one lobe or over the adjacent flanks of two consecutive lobes, so that when the end of one arm is driven away from the cam axis the other is drawn towards it and vice versa.

3,433,173
HYDRAULIC PUMPS AND MOTORS HAVING AXIAL PISTONS AND INCLINED SWASHPLATES
Roger Chanal, Saint-Etienne, Loire, France, assignor to Bennes Marrel, Saint-Etienne, Loire, France, a French joint-stock company
Filed Feb. 8, 1967, Ser. No. 614,663
U.S. Cl. 103—162 1 Claim
Int. Cl. F04b *1/10*



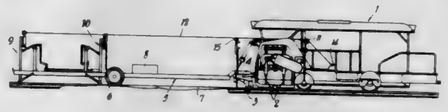
An improved bearing and lubrication arrangement is provided for hydraulic pumps and motors of the type having axial pistons and inclined swashplates. Radial and axial bearing means are provided between the cradle and the swashplate and radial lubrication passages extend between a central opening in the swashplate and the bearings to provide adequate lubrication for the same. Vibration damping means are provided between the bearings and the cradle.

3,433,174
SUBSURFACE WELL INTERMITTER
David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., Commerce, Calif., a corporation of California
Filed Jan. 13, 1967, Ser. No. 609,028
U.S. Cl. 103—232 22 Claims
Int. Cl. F04f *1/20*; F16k *31/145, 31/365*



A subsurface intermitter for lifting oil or water from gas wells, or high gas/oil ratio wells, and embodying a gravity valve for maintaining the liquid level in the well within a range of several feet by controlling the flow of liquid into a tubing string in the well bore under the action of the gas pressure, and also embodying a longitudinally disposed, laterally operative differential gas lift valve that opens when the liquid level in the tubing string reaches a predetermined level to admit the gas pressure to the tubing string for lifting the liquid therein to the surface of the well.

3,433,175
RAILWAY TRACK LIFTING AND TAMPING MACHINES
Norman Jamieson MacLeod, Copmanthorpe, England, assignor to Franz Plasser (trading as Franz Plasser Bahnbaumaschienen), Vienna, Austria
Filed Mar. 10, 1967, Ser. No. 622,244
Claims priority, application Great Britain, Mar. 17, 1966, 11,767/66
U.S. Cl. 104—7 14 Claims
Int. Cl. E01b *27/17*



A railway track lifting and tamping machine arranged in operation to run on the track and comprising lifting apparatus for continuously lifting the track and tampers for tamping ballast beneath the track so lifted as the machine

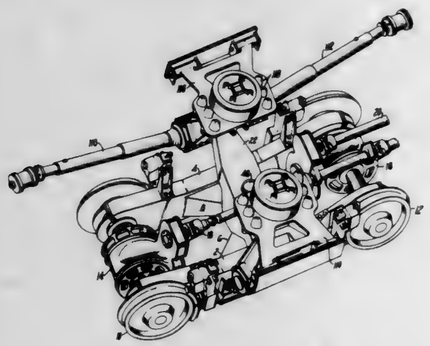
moves along the track, and a datum arrangement associated with the machine for providing a forward datum for controlling operation of the track lifting apparatus.

3,433,176
TRANSPORT APPARATUS PARTICULARLY FOR CONVEYING PERSONNEL
Takehisa Fujita, Fuse, Japan, assignor to Nippon Conveyor Co., Ltd., Osaka-fu, Japan
Filed Nov. 22, 1965, Ser. No. 509,109
Claims priority, application Japan, Dec. 10, 1964, 39/70,895
U.S. Cl. 104—20 **3 Claims**
Int. Cl. B61b *3/00, 13/04*



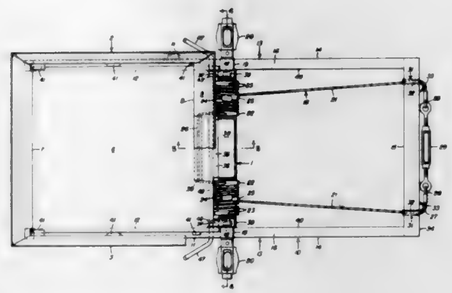
A transport apparatus comprising, in the recited order, a first slow speed conveyor, a first variable speed conveyor, at least one high speed conveyor, a second variable speed conveyor, a second low speed conveyor, a third variable speed conveyor, at least one further high speed conveyor, and a fourth variable speed conveyor, said conveyors being arranged in a closed loop, guide means along at least one side of the path of said conveyors, and article carrying means carried by said conveyors, said article carrying means including friction means engaging said conveyors for causing the conveyors to move the article carrying means, and guide engaging means on said article carrying means engaged with said guide means for holding the article carrying means in an upright position and guiding the article carrying means in a path along the conveyors.

3,433,177
RESILIENT STABILIZING RAILWAY TRUCK ASSEMBLY
Alan R. Cripe, Richmond, Va., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 1, 1966, Ser. No. 530,960
U.S. Cl. 105—199 **12 Claims**
Int. Cl. B61f *5/26, 3/04, 1/06*



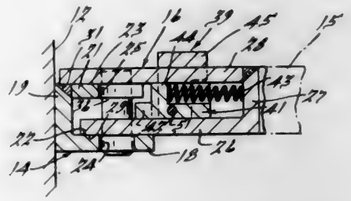
A railway truck assembly is described which incorporates independently-oscillatory side frames which directly support a bolster on which in turn a vehicle body is resiliently mounted through torsilastic mountings which allow controlled rolling of the body. A gimbal member held captive between the side frames serve as the pivot point for the bolster and the side frames and means, particularly pillow blocks, are provided between the confronting surfaces of the side frames and the bolster for accommodating a relative rocking motion therebetween.

3,433,178
RAILWAY HOPPER GATE FLEXIBLE OPERATING ASSEMBLY
Walter L. Floehr, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 9, 1966, Ser. No. 600,477
U.S. Cl. 105—282 **15 Claims**
Int. Cl. B61d *7/18*



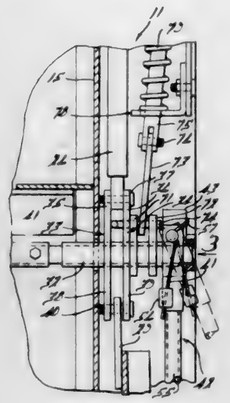
A railway hopper car discharge gate slidable on rails between positions to open and close a hopper opening in a gate frame and movable therealong by an operating shaft connected thereto for linear movement in unison and rollable along the rails by being rotated in turns of a cable anchored beyond the shaft to the frame.

3,433,179
FREIGHT BRACING APPARATUS
Floyd M. Sharp, San Marino, Calif., assignor to Evans Products Company, a corporation of Delaware
Filed Apr. 7, 1966, Ser. No. 540,900
U.S. Cl. 105—369 **9 Claims**
Int. Cl. B61d *45/00*



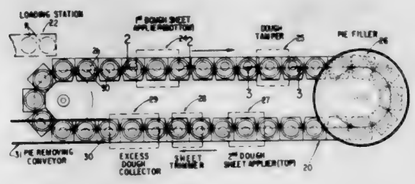
A freight bracing system of the cross bar type embodying an improved end fitting construction for the cross bars and an improved belt rail arrangement that affords greater strength. The belt rail has a pair of outstanding legs, one of which is apertured, the other of which is slotted. The end fitting has first and second supporting means adapted to be supported on the belt rail legs, a fixed pin that is adapted to be received in the apertures and slots in the belt rail and a releasable lock for engaging the underside of one of the belt rail legs for precluding accidental disengagement.

3,433,180
FREIGHT BRACING DEVICE
Jackson A. Shook, Northville, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed July 6, 1966, Ser. No. 563,281
U.S. Cl. 105—376 **18 Claims**
Int. Cl. B61d *45/00;* **E05c** *9/16*



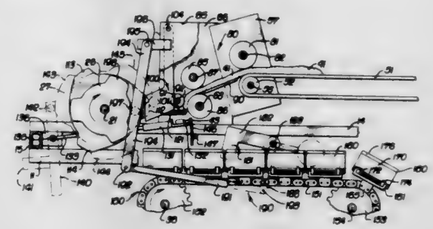
A bulkhead assembly for bracing freight in a cargo area embodying an improved operating mechanism for the bulkhead lock and an improved counterbalancing spring arrangement. The operating mechanism includes an operating handle that is pivotally supported with respect to the torsion shaft that operates the bulkhead lockpins about an axis that extends transversely to the axis of the torsion shaft. Pivotal movement of this operating handle about its respective pivot axis couples the handle to the torsion shaft whereby rotation of the handle about the axis of the torsion shaft will operate the torsion shaft. The spring mechanism includes a pair of oppositely disposed levers each of which is spring biased for moving the torsion shaft to its locked position.

3,433,181
PIEMAKING MACHINE
Henry Steins, 217—85 28th Ave., Queens Village, N.Y. 11360
Filed Apr. 6, 1966, Ser. No. 545,200
U.S. Cl. 107—1 **12 Claims**
Int. Cl. A23g *3/00*



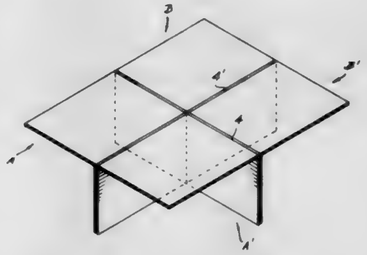
A high speed piemaking machine including a horizontal endless continuously moving conveyor having two lineally extending strands and two 180° turns; a bottom dough sheet applier and a sheet tamper in one of the strands; a top dough sheet applier, a dough sheet trimmer and a trimmings collector in the other strand; and a continuously rotating filling material measuring and feeding arrangement at one of the turns.

3,433,182
AUTOMATIC FEEDING CUTOFF AND BAGEL FORMING MACHINE
Meyer Thompson, Los Angeles, Calif., assignor to Thompson Bagel Machine Mfg. Corp., Los Angeles, Calif., a corporation of California
Filed Apr. 11, 1966, Ser. No. 541,795
U.S. Cl. 107—69 **12 Claims**
Int. Cl. A21c *3/10, 15/02;* **A23g** *7/00*



Machine for forming a succession of toroids from ribbon of plastic material such as dough by severing strips therefrom and forming them about a mandrel into toroids. Separation of the severed strips from the cutoff means and the ribbon is effected by separator means.

3,433,183
TABLE STRUCTURE
Howard Yarme, 93 Sanford St. E., Yonkers, N.Y. 10704, and Ira Saltz, 341 Greenlawn Road, Greenlawn, N.Y. 11740
Filed June 24, 1966, Ser. No. 560,180
U.S. Cl. 108—12 **5 Claims**
Int. Cl. A47b *85/00*

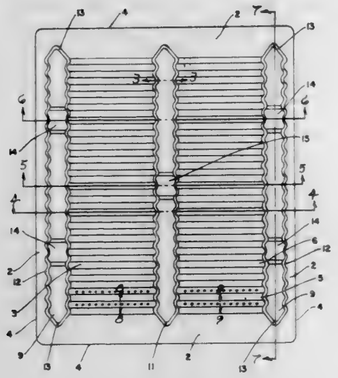


A table consisting of at least two units each of which comprises portions which are located in three intersecting planes all of which extend at right angles to one another. The units are adapted for movement to a plurality of different relative positions in which the portions of the units together occupy respective areas whose dimensions differ in dependence upon the relative positions of the units.

3,433,184
NESTABLE PALLETS
Allan Addy, 3169 Mary Jane Drive, Cincinnati, Ohio 45211
Filed Dec. 11, 1967, Ser. No. 689,477
U.S. Cl. 108—53 **4 Claims**
Int. Cl. B65d *19/38*

The application discloses a pallet formed from a sheet of plastic having a formed reinforcement around the

entire perimeter of the pallet. In general, the pallet comprises a corrugated top with the corrugations extending downward into channels to reinforce the top and the channels. The channels provide legs and are transverse of the corrugations. In addition there are other channels crosswise in the transverse channels. The channels are formed with tapered sides to permit a series of pallets to be nested on top of each other when the pallets are

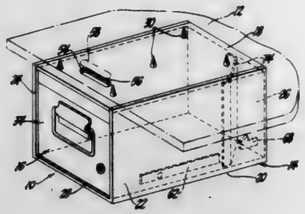


not loaded and can be stored in a relative small area. In the ridges of the corrugations there are concave depressions adapted to secure packages from sliding on the pallet where friction by reason of stacked cartons or packages is not sufficient to keep the stacked material from sliding on the pallet. As an alternate, convex nodules are spaced on the ridges of the corrugations to grip packages and cartons while in position on the pallet.

3,433,185
SECURITY BOX

Marvin E. Roberts, Reno, Nev., assignor to B. C. Wills & Company, Lathrup Village, Mich., a corporation of Michigan

Filed Aug. 30, 1967, Ser. No. 664,482
U.S. Cl. 109—55 **9 Claims**
Int. Cl. E05g *1/04*

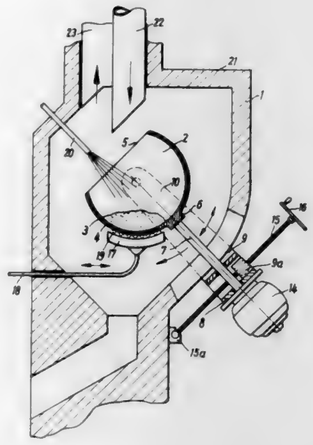


A security box installation including a closed container received in a housing shell which is adapted to be secured to the underside of a supporting structure, and having means for locking the back walls of the shell and container together, operable from the front of the container by a latching mechanism provided therein, a top opening cover wall with locking means disposed within the protection of the shell, and a protective slide for a currency slot in the cover wall operable only when the box is properly disposed and locked in the housing shell.

3,433,186
ROTARY DRUM FURNACE FOR INCINERATING RUBBISH

Walter Koecher, Munich, Germany, assignor to Fellner & Ziegler G.m.b.H., Frankfurt am Main, Germany, a firm

Filed Aug. 16, 1967, Ser. No. 660,994
Claims priority, application Germany, Aug. 18, 1966, K 60,050
U.S. Cl. 110—14 **3 Claims**
Int. Cl. F23g *5/06;* **F23b** *1/32*

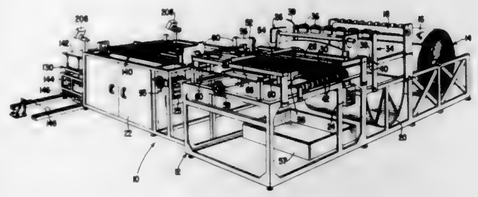


Incinerator for rubbish or the like, where a generally dome-shaped perforated basket which has a large intake or discharge aperture is rotatably and tiltably supported in a furnace proximate an igniting burner and above a combustion air supply housing which has a rubbish supply duct and a chimney at the top and a discharge opening at the bottom.

3,433,187
APPARATUS FOR AUTOMATICALLY PRODUCING DIAPERS, TOWELS AND THE LIKE

Henry A. Haefele, Cedar Grove, and Orland B. Reid, Kenilworth, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed July 3, 1967, Ser. No. 650,777
U.S. Cl. 112—2 **24 Claims**
Int. Cl. D05b *23/00, 27/00, 35/02*

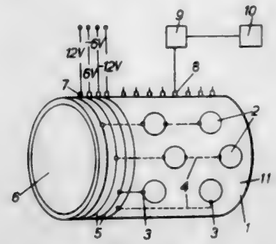


A machine having apparatus for automatically drawing cloth from a roll of cloth, cutting it into sections of predetermined size, sewing a hem along at least one side of the cut cloth section and stacking the sewn cloth sections on a self-adjusting movable platform.

3,433,188
PATTERN PRODUCING SWITCHING DEVICE

Norman Pickles, Paddiham, England, assignor to Blackburn Electronic Production Controls Ltd., Lancashire, England, a British company

Filed Dec. 2, 1966, Ser. No. 598,703
U.S. Cl. 112—79 **4 Claims**
Int. Cl. D05c *15/26;* **H01h** *41/00*

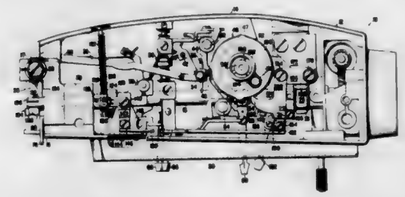


A pattern producing switching device for use on a textile machine including a flexible double sided printed circuit with an insulating base separating the sides of the circuit. The printed circuit is mounted on an insulated rotatable drum and the pattern side of the circuit is connected through a slip ring to sources of different potentials thereby producing different potentials for different areas of the pattern. A set of independent brushes sweep the pattern face to receive the voltage signals. Each brush is connected via a buffer amplifier to a voltage step selector that can control different features of a textile machine, such as color, needles or tuft pattern.

3,433,189
SKIP-STITCH MECHANISM FOR HOUSEHOLD SEWING MACHINES

William Weisz, Rockaway, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 29, 1967, Ser. No. 671,663
U.S. Cl. 112—158 **12 Claims**
Int. Cl. D05b *3/02, 69/30*



A zigzag sewing machine equipped with mechanism for jogging the needle-bar to produce zigzag stitches and with cam actuated skip-stitch mechanism separate and distinct from the needle-bar jogging mechanism, which provides for skipped-stitches by interrupting the endwise reciprocation of the needle-bar at predetermined intervals dependent upon the contour of the cam or cams that actuate the skip-stitch mechanism.

3,433,190
SKIP-STITCH MECHANISM FOR HOUSEHOLD ZIGZAG SEWING MACHINES

Zsigmond L. Sagi, Parsippany, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 7, 1967, Ser. No. 621,311
U.S. Cl. 112—158 **18 Claims**
Int. Cl. D05b *3/02*

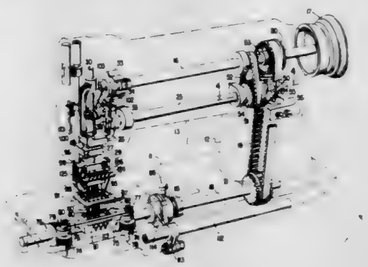
A zigzag sewing machine equipped with cam actuated skip-stitch mechanism which provides for skipped stitches by interrupting the endwise reciprocation of the needle-bar at predetermined intervals dependent upon the contour of the cam or cams that actuate the mechanism.



3,433,191
KNIT STITCH MACHINES

Gregory Goebel and Stanley J. Ketterer, Morris Plains, N.J., assignors to The Singer Company, New York, N.Y. a corporation of New Jersey

Filed Feb. 1, 1966, Ser. No. 524,067
U.S. Cl. 112—166 **5 Claims**
Int. Cl. D05b *1/10;* **D04b** *23/10, 31/00*



A machine for making a strip of warp knitted cloth employs a number of endwise reciprocatory needles and a number of cooperating orbital loopers. The needles are jogged sideways of the direction of cloth feed, and the number of needles employed is at least one greater than the number of loopers.

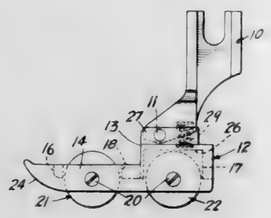
3,433,192
PRESSER FOOT ASSEMBLAGE

Domenick C. Pingitore, 129 Monmouth St.; Angelo Spagnuolo, 2 Wall St.; and John N. Ricci, 22 De Forest Ave., all of Red Bank, N.J. 07701

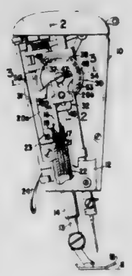
Filed June 12, 1967, Ser. No. 645,266
U.S. Cl. 112—235 **7 Claims**
Int. Cl. D05b *29/00, 29/10*

A presser foot assemblage comprising a channel member, to which is pivoted and tensionally controlled a foot casing rotatably supporting front and rear rollers,

between which is the needle operating station, the pivot of said member being above and between the axes of said rollers. The front of the casing has, at one side, an upwardly curved toe portion. Further, each of said rollers, comprising three rollers, collectively control feed of coated or laminated materials beneath said foot casing, the needle station having a yieldably supported needle guide and material stripper element.



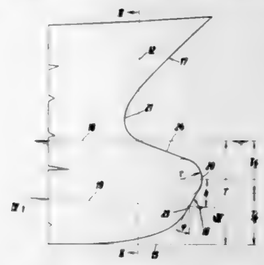
3,433,193
ADJUSTABLE PRESSER DEVICES FOR SEWING MACHINES
Jin Takahashi, Kamimikawa, Japan, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 13, 1967, Ser. No. 645,802
U.S. Cl. 112—235 **3 Claims**
Int. Cl. D05b *29/02;* **D05l** *29/00*



A flat element of a slidable linkage having a horizontal elongated aperture is mounted on a mounting bracket with the flat element connected to a rod element having a spring between it and a presser bar. A regulating member having a crank pin is mounted on the mounting bracket with the crank pin in the horizontal elongated aperture in the flat element for shifting the slidable linkage and hence changing the pressure on the presser bar.

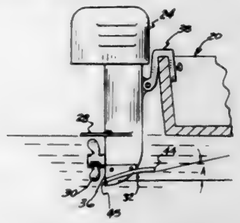
3,433,194
BOWS OF SHIPS
Denis Csupor, Vernier, Switzerland, assignor to Maierform Trust Reg., Schaan, Liechtenstein
Filed Mar. 23, 1967, Ser. No. 625,512
Claims priority, application Germany, Mar. 26, 1966, M 68,925; July 7, 1966, M 70,152
U.S. Cl. 114—56 **14 Claims**
Int. Cl. B63b *1/06*

The bow of a ship with a forwardly projecting bulb, the stem having below the load waterline an arcuately forwardly projecting portion and a maximum width wherein this most forward point and this maximum width are located above the ballast waterline but below the point to which the water is banked up when the ship travels at its normal speed. The stem tapers from its maximum width in the form of a wedge down to the keel line. The



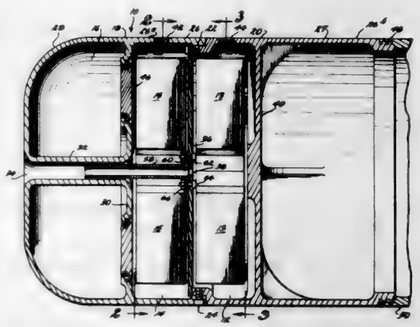
invention also relates to such bulbous bows for ships travelling in frozen seas.

3,433,195
HYDROFOIL DEVICE FOR OUTBOARD MOTORS
Charles W. Poole, Livonia, Mich. (1426 Pleasant View Drive, Redlands, Calif. 92373)
Filed Aug. 23, 1967, Ser. No. 662,734
U.S. Cl. 114—66.5 **9 Claims**
Int. Cl. B63h *21/26;* **B63b** *1/24*



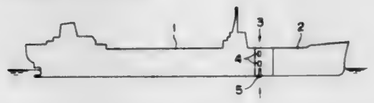
A lift and stabilization device for use with stern-drive motors wherein the driveshaft housing has integral or detachable fins positioned on the skeg portion of the housing to provide a hydrofoil effect that enables the boat to assume a horizontal attitude while stabilizing the boat in the water.

3,433,196
SUBMARINE WAKE SIMULATION GENERATING SYSTEM FOR SELF-PROPELLED SUBMARINE TARGET
Jorma J. Sjoblom, Huntington, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 16, 1966, Ser. No. 602,417
U.S. Cl. 114—67 **7 Claims**
Int. Cl. B63b *1/34, 35/28*



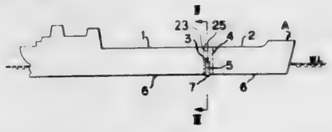
A wake simulation generating system for attachment to an elongated self-propelled submersible submarine target. The apparatus includes a chemical content of a metal hydride and acid salt selected for efficiency in use, uniform production of hydrogen bubbles in both fresh and salt water on a desired volumetric basis, and a delivery means in the form of a housing of minimum size with selective detachable tubular means for varying the flow of water over the chemicals to adjust the system to variations in water temperature and hence to variations in operational water depth. The chemical material is also selected to have the characteristic of smooth reaction with sea water, long shelf life, safe handling, chemical density similar to water and to produce a wake having passive reaction to sonar detection.

3,433,197
METHOD OF CUTTING THE HULL OF A SHIP
Kazuyoshi Yamada, Hiroshi Wakazaki, and Jyuro Doi, Yokohama-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 19, 1966, Ser. No. 602,711
Claims priority, application Japan, June 28, 1966, 41/41,963
U.S. Cl. 114—77 **9 Claims**
Int. Cl. B63b *3/02, 9/04*



A plurality of control plates with strain measuring means are welded to the hull of a vessel across a cutting line. As the vessel is cut the strain is measured and the vessel reballasted to keep the strain as low as possible.

3,433,198
WATER-TIGHT SEAL ASSEMBLY
Kazuyoshi Yamada and Juro Doi, Kanagawa-ken, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Mar. 14, 1968, Ser. No. 713,227
Claims priority, application Japan, Apr. 10, 1967, 42/22,769
U.S. Cl. 114—77 **17 Claims**
Int. Cl. B63b *3/06*



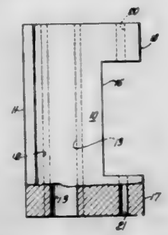
A removable water-tight seal assembly for the exterior of a floating structure, such as the hull of a ship, is formed of a longitudinally extending waterproof wall member formed of a resilient material such as rubber and having a generally U-shaped transverse section. When placed on the exterior of a floating structure, the interior of the U-shaped section in combination with the opposite surface of the floating structure forms a closed compartment. Support for the wall member is provided by transversely arranged and longitudinally spaced rib members disposed within the inner surface of the wall member, these rib members are formed of a rigid material and are fitted into the wall member. Support members are attached to the rib members and extend through the longitudinally extending edge surfaces of the wall members. The support members are spaced apart in the longitudinal direction to afford flexibility to the wall member in conforming to the exterior configuration of the floating structure. Sealing members extend along the longitudinally extending edge surfaces of the wall members and provide a water-tight seal with the surface of the floating structure. Preferably, these sealing members are of a hollow construction for receiving a hydraulic fluid for assisting in forming the water-tight seal. Serially arranged longitudinally extending beam members with overlapping ends are disposed within the interior of the U-shaped wall members for supporting the wall members from a floating structure. The overlapping ends of the beam members are pin-connected and support elements are attached to the pins and extend into and are secured within the floating structure. In place of the beam means, where the wall member is to be fitted to the curvilinear surface of the floating structure, a wire or cable is provided through the interior of the wall member secured to its ribs and a pulling force is exerted on the wire for forcing the wall member into water-tight relationship with the curvilinear surface of the floating structure.

3,433,199
BATTEN FOR SAILS
George A. Lasko, El Cajon, Calif., assignor to Woolsey Marine Industries, Inc., New York, N.Y., a corporation
Filed Dec. 28, 1967, Ser. No. 695,317
U.S. Cl. 114—102 **2 Claims**
Int. Cl. B63b *9/08*



A laminated sail batten of specified shape for use with all types of sailboats. The batten has major and minor parallel edges with a tapered connecting portion and is of uniform thickness.

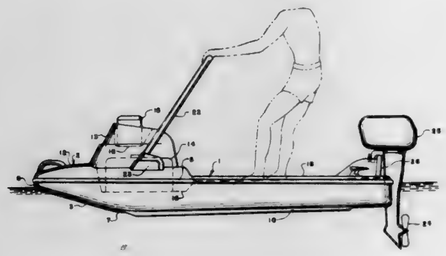
3,433,200
BOAT FENDER
Frank M. Le Compte, Watchung, N.J., assignor to Tingley Rubber Corporation, a corporation of New Jersey
Filed Sept. 22, 1967, Ser. No. 669,939
U.S. Cl. 114—219 **13 Claims**
Int. Cl. B63b *21/04*



Comprises a wooden spar and two transversely notched molded soft rubber bumpers held together in assembled

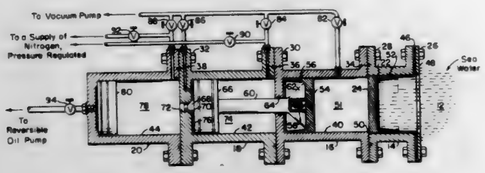
relation by a hemp rope which passes through aligned openings formed in the bumpers and the opposite ends of the spar.

3,433,201
WEIGHT-STEERED WATER SLED
Floyd R. Brown and Walter L. Floehr, Toledo, Ohio, assignors to Unitcast Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 12, 1967, Ser. No. 608,842
U.S. Cl. 115—70 **8 Claims**
Int. Cl. A63c *15/04*



A self-propelled water sled driven by an outboard motor mounted against turning astern of a driver's position and steerable at any speed by the shifting of the weight of the driver without reliance upon either a rudder or directional surfaces on the hull.

3,433,202
IMPACT-ENERGIZED SOUND SOURCE
Arnold G. Sharp, Woods Hole, and William S. Shultz, Cataumet, Mass., and James R. Sullivan, Newport, R.I., assignors to Woods Hole Oceanographic Institution, Woods Hole, Mass., a corporation of Massachusetts
Filed July 14, 1966, Ser. No. 565,140
U.S. Cl. 116—27 **12 Claims**
Int. Cl. B63b *45/04*



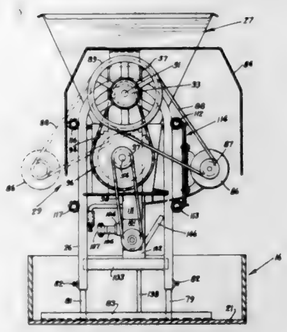
1. A pressure pulse transmitter having, in combination,
a tubular horn member, one end of said member extending within a sound propagating medium,
a plate member having an annular guide rim slidably fitted in said tubular member,
a flexible seal means attached to said one end and extending into said tubular member and against said plate member to prevent said medium from passing through the sliding fit between said plate member and said tubular member,
a guide tube connected with the other end of said tubular member, said guide tube and tubular member being dimensioned to provide an abutment means for said plate member in its strike position,
a piston-like striker member slidably mounted in said guide tube and adapted for impact with said plate member when the plate member is in its strike position, and
fluid actuating means operatively associated with said guide tube and striker member to propel said striker member along said guide tube and against said plate member, thereby to cause said plate member to move toward said one end and to radiate a pressure pulse to said medium.

3,433,203
REFLECTIVE INDICATOR DEVICE
John F. Sharkey 350 Fellows Ave., Syracuse, N.Y. 13210, and Raymond E. Lavole, Jr., County Home Road, Mexico, N.Y. 13114
Filed Aug. 3, 1966, Ser. No. 570,001
U.S. Cl. 116—28 **4 Claims**
Int. Cl. B60q *1/26*



Marking device comprising a sphere of Styrofoam or the like with a heat formed compacted wall radial aperture, in which one end of a section of resilient rubber tubing is inserted, the other end being provided with an external ring clamp for contracting the tube about a support rod, and a sealing and reflective coating for the sphere.

3,433,204
BUNK FEEDER
Floyd E. Buschbom, Long Lake, Minn., assignor to Van Dale Corporation, Wayzata, Minn., a corporation of Minnesota
Original application Oct. 22, 1965, Ser. No. 500,601, now Patent No. 3,318,287, dated May 9, 1967. Divided and this application Feb. 13, 1967, Ser. No. 615,447
U.S. Cl. 119—52 **10 Claims**
Int. Cl. A01k *5/00*; **B65g** *47/16*

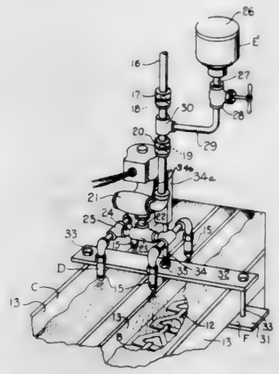


A conveyor type bunk feeder having a motor for driving the conveyor that is mounted so it may be shifted on opposite sides of the feeder to permit access to the silo chute.

3,433,205
AUTOMATIC POULTRY FEEDING DEVICE WITH WATER SPRAYED FEED MIX
Edward W. Pittard, Box 157, Winterville, Ga. 30683
Filed Feb. 27, 1967, Ser. No. 618,760
U.S. Cl. 119—51.11 **5 Claims**
Int. Cl. A01k *39/00*

An automatic feeding device for poultry which incorporates a hopper which automatically delivers poultry feed to a conveyor at regulated intervals. The conveyor

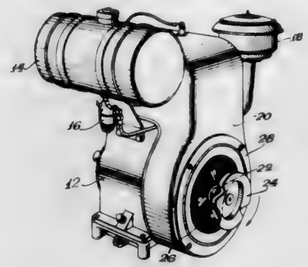
transports the feed under a high pressure water sprayer which manipulates the feed passing thereunder, to provide a uniform mixture of feed and water. The sprayer is supported by an adjustable bracket for properly positioning longitudinally spaced sprayers. A quick connection is provided in a high pressure line connected to the sprayer for mixing a medicant with the water, and in turn, the poultry feed prior to feeding such to the poultry.



ERRATUM

For Class 122—7 see:
Patent No. 3,433,218

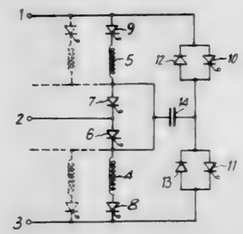
3,433,206
ANTI-CLOG DEVICE FOR AIR INTAKE ON AIR-COOLED GAS ENGINES
Clifford C. Pennington, Melody Lane, Wheaton, Ill. 60187
Filed Aug. 4, 1967, Ser. No. 658,481
U.S. Cl. 123—41.7 **7 Claims**
Int. Cl. F01p *5/02, 5/06*



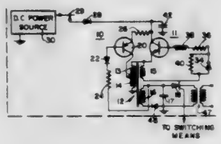
A rotating circular screen with attached fins which fits over the air intake duct of an air-cooled gas engine to prevent grass and similar debris from clogging the air intake and subsequently causing the engine to overheat.

3,433,207
ELECTRONIC CONTROL SYSTEM FOR FUEL INJECTION SYSTEMS
Jacques Bassot, Paris, and Louis Monpetit, Etang-la-Ville, France, assignors to Societe des Procedes Modernes d'Injection Sopromi, Boulogne, France
Filed Sept. 28, 1967, Ser. No. 671,503
Claims priority, application France, Sept. 30, 1966, 78,307
U.S. Cl. 123—119 **15 Claims**
Int. Cl. F02m *51/00*

A voltage source with a center tap. Injector coils and their control circuit connected in identical branches from end points of voltage source to center tap. Starting thyristors, one for each coil and also one common starting thyristor for each branch, allow current flow through corresponding coils when "injection start" signal is received. Firing of an extinction thyristor in one branch causes series oscillating circuit of injector coil and a capacitor to be connected across the voltage source. Oscillations in the circuit cause extinction of starting thyristors thus interrupting current flow. Capacitors so connected that charge acquired during opening of one injector coil is transferred to next energized injector coil for causing rapid opening of next injector.



3,433,208
TRIGGERING CIRCUIT
Peter Dogadko, Chicago, and Arthur G. Hufton, Elk Grove, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 14, 1967, Ser. No. 615,987
U.S. Cl. 123—148 **6 Claims**
Int. Cl. F02p *3/04*

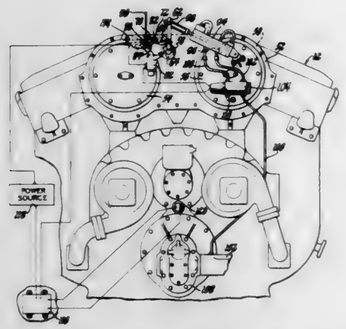


A circuit in which the input electrode of a trigger transistor is coupled to the ignition capacitor and the output electrode of the trigger transistor is connected to a tap on a transformer secondary winding in the output circuit of a blocking oscillator. The discharge of the ignition capacitor triggers the trigger transistor into conduction through the tapped portion of the transformer which in turn causes the blocking oscillator to fire and charge the capacitor.

3,433,209
ENGINE OVERSPEED CONTROL
Glenn W. Freitag, Woodridge, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 28, 1967, Ser. No. 656,831
U.S. Cl. 123—198 **10 Claims**
Int. Cl. F02d *31/00, 23/02, 1/00*

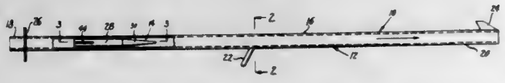
An engine overspeed control including a mechanically actuated overspeed shutdown mechanism which acts to shut off fuel injection above a preset engine speed, an automatic reset mechanism which resets the shutdown mechanism to restore normal operation when engine has dropped to a predetermined safe level and manually actuated shutdown and lockout means which manually

trip the overspeed shutdown mechanism and prevent actuation of the reset mechanism to secure a complete shut-



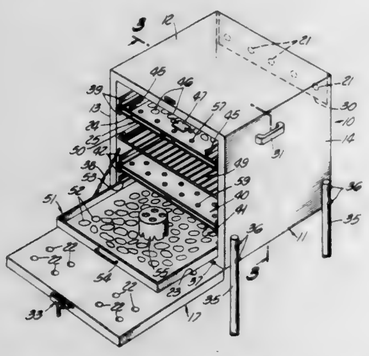
down of the engine when desired. Both electrical and hydraulic systems for controlling the reset mechanism are disclosed.

3,433,210
BLOW GUN AND MISSILE TOY HAVING FOLDING WINGS
Ples E. Schnitz, 2114 Arizona St., El Paso, Tex. 79930
Filed June 28, 1966. Ser. No. 561,192
U.S. Cl. 124—12 **10 Claims**
Int. Cl. F41b *1/00, 1/02;* **A63h** *27/00*



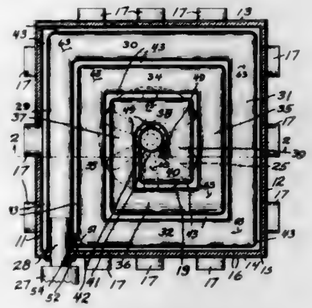
A toy blow gun and missile in which the gun is provided with a barrier to prevent insertion into the mouth too deeply and the missile is provided with wings retracted into a slot during the firing of the missile and extended by spring element when the missile is in free flight.

3,433,211
COOKING APPARATUS
Lee M. Latta, 3984 S. Normandie Ave., Los Angeles, Calif. 90037
Filed Apr. 25, 1967, Ser. No. 633,451
U.S. Cl. 126—25 **12 Claims**
Int. Cl. F24b *3/00;* **A47j** *37/01, 37/07*



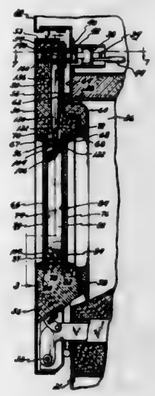
An oven or the like having a grill and a pair of asbestos plates both above and below the grill. Both pairs of plates have offset holes therein. That is, one plate has holes therethrough which are out of alignment with the holes in the other plate. Charcoal is placed on top of the upper pair of plates and below the lower pair of plates. Uniform heat is thus produced around food or meat products on the grill. The asbestos plates are made of a composition of cementitious material or the like which have a rather high specific heat. The offset holes in the upper plates prevent charcoal ashes from dropping on the food. The offset holes in the lower plates prevent meat drippings or the like from dropping onto the charcoal below the lower plates.

3,433,212
CIRCULATING HEATER
Alloyd J. Hofmeyer, Sanborn, Iowa 51248
Filed May 9, 1966, Ser. No. 548,748
U.S. Cl. 126—110 **3 Claims**
Int. Cl. F24h *3/02, 3/00*



A heater having a convolute flue comprising the heat exchanger. An insulating housing encloses the flue which lies substantially horizontally. A fan beneath the flue blows air over the flue and outward through ducted openings in the housing.

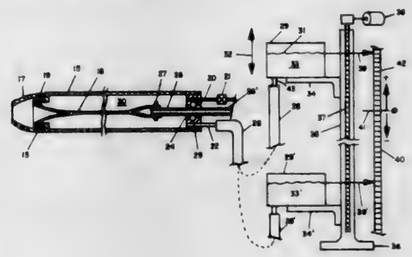
3,433,213
SHUTTER FOR WINDOW IN OVEN DOOR
Herbert G. Huff, Royal Oak, and Donald J. Shelly, Westland, Mich., assignors, by mesne assignments, to Kelvinator, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Nov. 15, 1967, Ser. No. 683,373
U.S. Cl. 126—197 **12 Claims**
Int. Cl. F24c *15/02, 15/04;* **F23m** *7/00*



A shutter arrangement of movable louvers positioned and operable between glass panes of a viewing window in a domestic range oven door. The louvers, normally

held open, are automatically actuated into and held in closed position with the latching of the door to form a heat reflective wall barrier. Upon the door being unlatched the louvers automatically resume open position for viewing the oven chamber through the window.

3,433,214
METHOD AND APPARATUS FOR EVERTING UNDER PRESSURE A TUBULAR PROBE INTO A BODY CAVITY
Daniel Silverman, 5969 S. Birmingham St., Tulsa, Okla. 74105
Filed Oct. 20, 1965, Ser. No. 498,256
U.S. Cl. 128—2 **26 Claims**
Int. Cl. A61b *5/00;* **A61m** *3/00*



This invention concerns an instrument for the placement of a sampling, inspecting or treating device within an extended tubular cavity. The device consists of a tubular casing, a flexible thin-walled tubular probe inside of the casing with the inside end closed and outside end sealed circumferentially over a first end of the casing. The second end of the casing is closed. A reservoir of liquid is provided that can be raised above and lowered below the level of the casing. The reservoir is connected by conduit to the casing. When the reservoir is raised, liquid flows into the casing causing the tubing to evert out of the end of the casing. When the reservoir is lowered, liquid flows out of the casing, causing the tubing to be inverted back into the casing.

3,433,215
APPARATUS FOR PLACING IN AND RETRIEVING A TUBULAR PROBE FROM A BODY CONDUIT
Daniel Silverman, 5969 S. Birmingham, Tulsa, Okla. 74105
Filed Oct. 20, 1965, Ser. No. 498,462
U.S. Cl. 128—2 **20 Claims**
Int. Cl. A61m *5/00*



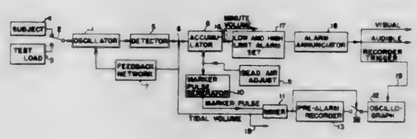
This invention concerns an instrument for the placement of a sampling, inspecting or treating device within an extended cavity or tubular conduit, such as in a human body. The device consists of a tubular casing, a flexible thin-walled tubular probe inside of the casing with the inside end closed, and the outside end sealed circumferentially to a first end of the casing. The second end of the casing is closed with an elastomeric wall that can be pierced by and sealed to a small bore tube through which fluid can be pumped into the casing to extravert the tubing out of the first end of the casing, which can have a tapered nozzle, such as a hypodermic needle, to guide the extraverting tube into the body cavity.

3,433,216
SELF-EVACUATING FLUID SAMPLING DEVICE
Roger P. Mattson, Casper Clinic, 940 E. 3rd St., Suite 105, Casper, Wyo. 82601
Filed Dec. 22, 1966, Ser. No. 603,986
U.S. Cl. 128—2 **15 Claims**
Int. Cl. A61m *1/00*



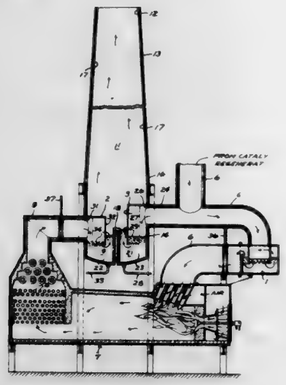
1. An instrument for drawing fluid from the human body, comprising;
   - an inner housing and an outer housing means, said outer housing slidably and longitudinally receiving said inner housing and outer housing defining a variable volume chamber receiving a fluid receptacle, said outer housing having an orifice communicating with the variable volume chamber so that by closing said orifice when longitudinal movement is imparted to said outer housing relative to said inner housing a vacuum is created within a receptacle placed within said inner housing,
   - a fluid receptacle having an opening at one end receiving a plug means, thereby defining a fixed volume chamber within said variable volume chamber,
   - plug means for said fluid receptacle mounted in said chamber, said plug means having a passageway providing communication between said receptacle and a portion of said variable volume chamber exterior of said receptacle,
   - a hollow bored needle means for puncturing the surface of the body and mounted in said plug means to define a conduit for said body fluid to said receptacle when fluid is to be withdrawn from the body, whereby longitudinal movement of said outer housing relative to said inner housing creates a vacuum within said receptacle, allowing body fluid to flow in said hollow bored needle from the body to said receptacle.

3,433,217
RESPIRATION MONITOR
Richard J. Rieke, Brookfield, Wis., assignor to General Electric Company, a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,753
U.S. Cl. 128—2.08 **7 Claims**
Int. Cl. A61b *5/08*



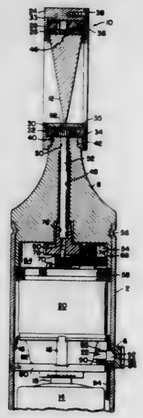
Transthoracic impedance variations due to respiration modulate the envelope of the waveform from a 100 kHz. oscillator. The amplitude modulated oscillations are negatively peak detected to produce a voltage analog of tidal volume. A feedback system attenuates impedance variations which are either above or below breathing rate. Dead-air space is subtracted from tidal volume and the residual signals are integrated over a one-minute time constant so that a voltage analog of average alveolar ventilation is displayed continuously.

3,433,218
OFF GAS FIRING SYSTEM
Peter von Wiesenthal, 17 E. 89th St., New York, N.Y. 10028
Filed July 3, 1964, Ser. No. 380,139
U.S. Cl. 122—7 **2 Claims**
Int. Cl. F22b *1/18*



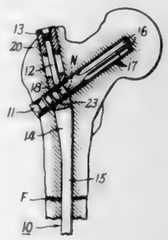
A stack and seal pot arrangement for use with a CO-fired furnace and especially suited to vent either combustion gases when the furnace is in operation or CO when the furnace is shut down. Two wells are formed in the lower portion of the stack, one connected in flow series between the CO-fired unit and the stack and the other between the supply of off gas and the stack. Levels of water are maintained in each of the wells and each well has a shroud projecting downward therein so that heads of water can be maintained thereacross to serve as seals against passage of either combustion gases or vented off gas through their respective wells for exit via the stack.

3,433,219
ROTARY ORTHOPTIC INSTRUMENT
Noel C. Genevay, 712 Common St., New Orleans, La. 70130
Filed Sept. 8, 1966, Ser. No. 578,025
U.S. Cl. 128—76.5 **7 Claims**
Int. Cl. A61h *5/00*



1. A rotary Orthoptor adapted to be hand-held comprising:
an elongated tubular casing openable at one end and including a detachable cap for closing said end, the other end of the casing terminating in a neck having a bore therethrough longitudinal of said casing;
an annulus mounted at the outer end of said neck with its axis transverse to the longitudinal axis of the casing, the wall of said annulus being pierced with a hole therethrough coaxial with said bore;
a prism-holding cylindrical barrel rotatably mounted within the annulus with its axis coaxial with the axis of the annulus;
a circular gear on the outer rim of the barrel for rotating the latter when the gear is rotated;
a prism fastened in the barrel for rotation therewith;
an electrical motor fixed in the casing with its shaft longitudinally oriented therewithin;
a drive shaft rotatably mounted in said bore and having inner and outer ends, the inner end being adjacent the motor rotor shaft and the outer end protruding into said annulus to be adjacent said circular gear;
drive means coupling said rotor shaft to said inner end;
a gear fixed on said outer end and engaging said circular gear; and
control means for starting and stopping said motor, the latter, when energized, causing said prism to rotate.

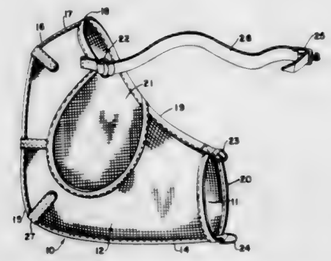
3,433,220
INTRAMEDULLARY ROD AND CROSS-NAIL ASSEMBLY FOR TREATING FEMUR FRACTURES
Robert E. Zickel, 115 E. 61st St., New York, N.Y. 10021
Filed Dec. 30, 1966, Ser. No. 606,145
U.S. Cl. 128—92 **6 Claims**
Int. Cl. A61f *5/04*



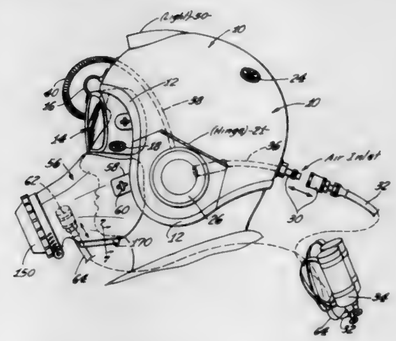
A surgical appliance comprising, when assembled for use in connection with a fracture of the femur, an intramedullary rod having portions which conform generally in shape and dimensions to those of the medullary canal, means for anchoring the rod in operative immobilizing position in the femur including a cross-nail extending through the rod and having its ends positioned to be engaged in adjoining trochanteric portions of the femur, and a set screw in the rod for locking the cross-nail in operative anchoring position.

3,433,221
SHOULDER SUPPORTED ARM SLING
Henry O. Kendall and Florence P. Kendall, both of 3900 N. Charles St., Baltimore, Md. 21218
Filed Dec. 14, 1966, Ser. No. 601,725
U.S. Cl. 128—94 **3 Claims**
Int. Cl. A61 *5/40*

1. A surgical arm sling comprising juxtaposed front and rear fabric panels, each having a lower substantially horizontal edge, a substantially vertical side edge and a curved edge portion joining the substantially lower horizontal edge and substantially vertical side edge, said front and rear panels each further having an upwardly inclined edge portion extending from the upper end of the substantially vertical side edge, all of said mentioned edges of said front and rear panels being joined in a continuous seam and forming a cradle like support for the forearm, elbow and upper arm of a wearer, said front and rear panels each additionally having a downwardly inclined edge extending from the upper end of the upwardly inclined edge portion to a generally second vertical edge portion, which latter extends downwardly and joins the lower generally horizontal edge, said rear panel also having an opening therein of curved configuration extending inwardly from the downwardly inclined edge thereof into the body of the rear panel, the front and rear panels being secured together along the corresponding downwardly inclined edges thereof in a continuous seam between the point where the opening extends inwardly into the rear panel and the point where the downwardly inclined edges of the front and rear panels meet the second vertical edge portions of said panels, the portions of the downwardly inclined edges of the front and rear panels above the opening extending into the rear panel being disjoined to form a pocket to receive the shoulder of a wearer and said second vertical edge portions of said front and rear panels also being disjoined and forming an opening for emergence of the hand of a wearer, and means to secure the thus joined front and rear panels to the arm and body of a wearer to support the arm therein.



3,433,222
UNDER-WATER DIVING EQUIPMENT
Olympio F. Pinto, Rio de Janeiro, Brazil, assignor, by mesne assignments, to Bioengionics, Inc., Beverly Hills, Calif., a corporation of California
Filed Apr. 1, 1966, Ser. No. 539,477
U.S. Cl. 128—142.2 **7 Claims**
Int. Cl. A62b *7/04*



A diving helmet assembly is provided to be worn by under-water skin divers. The diving helmet serves to mount all the essential equipment needed by the diver. It is composed, for example, of hard plastic, and it has internal cavities for electronic and acoustical equipment. The helmet assembly also includes a transparent face mask, a mouthpiece, and ear cups. Air pressure is introduced into the helmet for breathing purposes and also for pressure equalizing purposes.

3,433,223
ASPIRATING CARTRIDGE SYRINGE WITH GAS ACTUATION
Robert B. Black, 2925 Denver St., Corpus Christi, Tex. 78404
Continuation-in-part of application Ser. No. 559,703, Apr. 28, 1966. This application Mar. 5, 1968, Ser. No. 710,570
U.S. Cl. 128—218 **14 Claims**
Int. Cl. A61m *5/24, 31/00, 5/32*



Hypodermic syringe adapted to be actuated by fluid pressure power means for effecting the delivery of liquid material from the syringe through the needle, the syringe being adapted to receive a disposable cartridge containing the liquid to be injected and having a closure at one end adapted to be punctured by the hypodermic needle and having a free piston at its other end, mechanism being provided for controllably delivering the fluid pressure to the free piston. The fluid pressure power means includes a source of expandable fluid under pressure, with mechanism for recycling or recompressing the pressure fluid. Provision is also made for aspirating action in advance of making an injection under the influence of the fluid pressure power.

3,433,224
GAS ACTUATED HYPODERMIC SYRINGE
Robert B. Black, 2925 Denver St., Corpus Christi, Tex. 78404
Continuation-in-part of application Ser. No. 559,703, Apr. 28, 1966. This application Mar. 5, 1968, Ser. No. 710,571
U.S. Cl. 128—218 **10 Claims**
Int. Cl. A61m *5/24, 5/20*

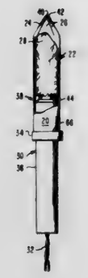


Hypodermic syringe adapted to be actuated by fluid pressure power means for effecting the delivery of liquid material from the syringe through the needle, the syringe being adapted to receive a disposable cartridge containing the liquid to be injected and having a closure at one end adapted to be punctured by the hypodermic needle and having a free piston at its other end, mechanism being provided for controllably delivering the fluid pressure to the free piston. The fluid pressure power means includes a capsule of pressure fluid or propellant arrangement to apply pressure to the free piston for effecting the injection.

3,433,225
HYGIENIC DEVICES AND METHODS OF MAKING THE SAME
Joseph A. Voss, 1223 Race St., Apt. 902, Denver, Colo. 80206, and Carl W. Johnson, Boulder, Colo.; said Johnson assignor to said Voss
Filed Dec. 22, 1965, Ser. No. 515,592
U.S. Cl. 128—263 **17 Claims**
Int. Cl. A61l *15/10*

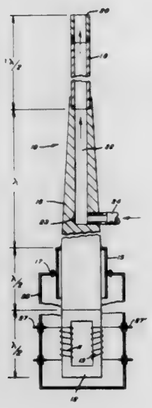
An hygienic medium applicator tube, having a tapered, substantially closed forward end, is disclosed. The for-

ward end of the tube comprises a plurality of shaped segments, the edges of adjacent segments being held in close approximation to provide the tapered configuration. The applicator is formed of a resilient material, such as a plastic or cellulosic material and the segments readily



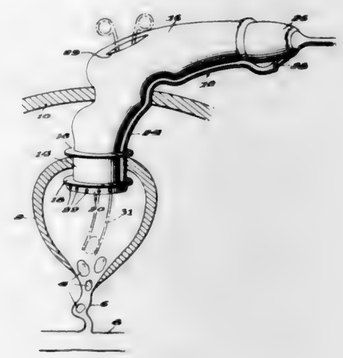
part during expulsion of the hygienic medium. In making the applicator tube, a plurality of shaped segments are formed in the forward end of a tubular member. The taper is formed by folding the segments inwardly and bringing the edges of adjacent segments into abutment along a substantial portion of the length of the edges.

3,433,226
VIBRATORY CATHETERIZATION APPARATUS AND METHOD OF USING
Charles A. Boyd, West Chester, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed July 21, 1965, Ser. No. 473,596
U.S. Cl. 128—305 **8 Claims**
Int. Cl. A61b *17/32;* **A61h** *1/00;* **A61m** *25/00*



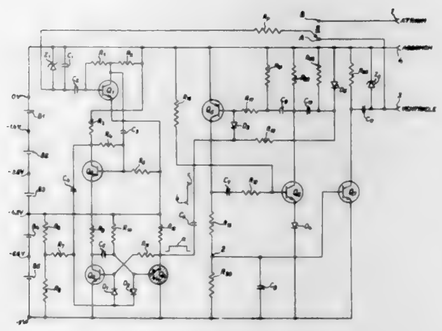
Vibratory catheterization apparatus and method of using the same for medicinal purposes such as decimation of atheromatous placques. Acoustical vibratory energy is transmitted from a transducer means through a resonant coupling member to a tip which is an anti-node on said member. The coupling member is partially hollow and open at the tip end so that a cooling liquid may be pumped therethrough. The tip is provided with an optional cutting edge.

3,433,227
SURGICAL DRAINS
Edward L. Kettenbach, 1011 N. Craycroft Road, Tucson, Ariz. 85711
Filed Oct. 25, 1965, Ser. No. 505,175
U.S. Cl. 128—350 **5 Claims**
Int. Cl. A61m *27/00, 1/00*



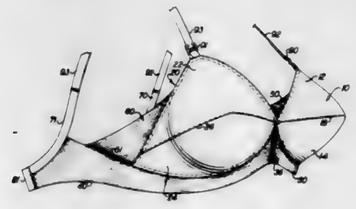
A cholecystostomy appliance including an open-ended flexible cylindrical barrel for insertion into an incision in a human gallbladder. The barrel has a pair of radially extending thin flexible fins adjacent the opposite ends thereof to resist the accidental withdrawal of the barrel from the gallbladder. A drainage tube is attached to the end of the barrel external of the gallbladder drainage. A second tube may be provided to introduce a sterile fluid whereby residual stones may be flushed out of the gallbladder through the drainage tube during the postoperative period. The drainage tube may have a large diameter portion intermediate its ends which can be incised for the insertion of a pair of forceps through the barrel into the gallbladder for the removal of stones. A flexible tape may be secured to the barrel to provide a fistulous tract upon the removal of the barrel from the gallbladder.

3,433,228
MULTIMODE CARDIAC PACER
John Walter Keller, Jr., Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed May 6, 1966, Ser. No. 548,239
U.S. Cl. 128—422 **2 Claims**
Int. Cl. A61n *1/36;* **H03k** *3/28*



A cardiac pacer which includes a pulse generating source and a ventricular electrode for applying the pulses as stimuli to the heart also includes means for sensing a heart potential by which the pulse generating circuitry will operate in response to the sensed heart potentials. The pulse generating source comprises a free running multivibrator with an R–C cross coupling path from the collector of each transistor to the base of the other transistor. Incoming signals corresponding to a sensed heart potential are connected to a diode which, when not reversely biased, passes them to the base of one of the transistors to recycle the multivibrator. A capacitor and a charging and discharging circuit maintain the diode reversely biased for a simulated refractory delay period following the delivery of each heart stimulating pulse and/or sensed heart potential pulse. The means for sensing a heart potential may include both an atrial electrode and the ventricular electrode with switching means to select either for controlling the pacer.

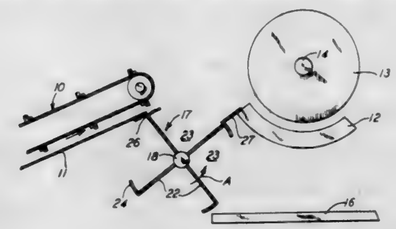
3,433,229
BRASSIERE
Moe Tuschman, Flushing, N.Y., assignor to Sarong, Inc., Dover, Del., a corporation of Delaware
Filed May 3, 1966, Ser. No. 547,346
U.S. Cl. 128—494 **14 Claims**
Int. Cl. A41c *3/00*



A brassiere constructed to expand and contract in the underarm region of the wearer, the brassiere having a pair of breast cups, a body encircling band, and a rear closure means for holding the brassiere on the body of the wearer, the body encircling band having stretchable left and right halves, each half extending from the front center of the brassiere under its respective cup to said closure means, with each half of the body encircling band having a lower edge, a curved upper edge the inner portion of which is secured to the lower edge of its respective cup and its outer portion is upwardly inclined, a rear edge a portion of which is secured to said rear closure means, and a front edge secured in the central area of the front of the brassiere; and a pair of stretchable triangular-shaped underarm gussets, each gusset including a lower edge secured to the inclined outer portion of the upper edge of its respective half of said body encircling band, an inner edge secured to the outer edge of its respective cup, and a free outer edge.

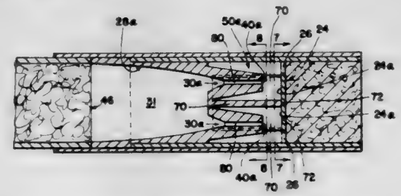
3,433,230
STONE TRAP FOR COMBINES
Gary V. Larsen, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 10, 1966, Ser. No. 533,343
U.S. Cl. 130—27 **6 Claims**
Int. Cl. A01f *7/02, 12/20, 12/00*

A stone trap for combines having a conveyor and a concave spaced from the conveyor. A stone trap is movably disposed in the space between the conveyor and the concave, and the trap provides means for holding stones and for moving to a position for dumping the stones. The trap is rotatably mounted, and seals extend between the trap and the conveyor and the concave. Also, the trap



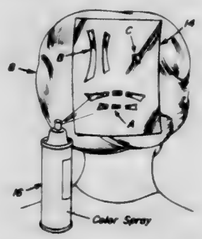
has upturned ends for retaining the stones during a portion of the rotation of the trap.

3,433,231
FILTER
Frank Siragusa, 4 Elmwood Court, Westbury, N.Y. 11590
Continuation-in-part of application Ser. No. 589,432, Oct. 25, 1966. This application Dec. 5, 1966, Ser. No. 599,239
U.S. Cl. 131—10.5 **11 Claims**
Int. Cl. A24d *1/04*



A filter has a main body portion with a plurality of separate passages therein in combination with a plurality of nozzle assemblies, and a mouthpiece portion containing a transverse baffle. Each passage contains a nozzle assembly, the exit portion of which is directed to that portion of the baffle which is at the end of the respective passage. Each baffle portion contains an opening offset from the exit portion of the nozzle.

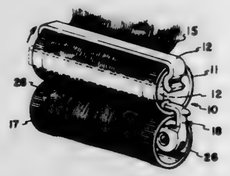
3,433,232
PROCESS FOR APPLYING DESIGNS TO THE SURFACE OF THE HAIR
William Garrett, Old Bridge, N.J. (86—11 Whitney Ave., Elmhurst, N.Y. 11373)
Filed Dec. 15, 1965, Ser. No. 514,031
U.S. Cl. 132—7 **7 Claims**
Int. Cl. A45d *19/02, 19/16*



A method and means by way of which one is able to advance the art of uniquely adorning and styling a hairdo. The concept has to do with a pliant stencil cut to delineate the pattern or design effect desired. A prescribed surface of the coiffure is uniformly coated with a film of self-setting adhesive media which provides a

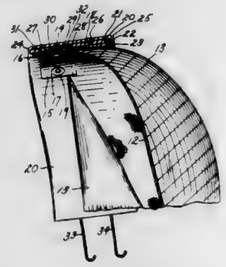
foundation for the applicable design. The stencil is lined up with the prepared foundation or surface and stays put for a limited time. A colorful liquid is sprayed on the foundation to designate the contemplated design.

3,433,233
ROLLER-TYPE HAIR CURLER ADAPTED FOR INTERCOUPLING
William E. Thackeray, Ogden, Utah, assignor of one-half to Norman F. Agricola, Ogden, Utah
Filed Oct. 23, 1965, Ser. No. 502,832
U.S. Cl. 132—40 **13 Claims**
Int. Cl. A45d *2/14*



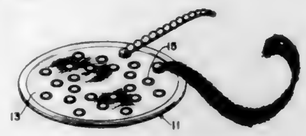
Hair curlers of roller-type adapted for use singly or in intercoupled multiple. Each curler comprises a roller of tubular, relative thin-walled formation having open ends. At least one of the curlers also comprises a flexible, hair-retaining bar having a flat hair-engaging surface intermediate its ends, which ends are formed as resilient hooks for snapping over the tube wall at opposite ends of the roller so as to press the hair, that is wound on the roller, against such roller, while leaving the tube wall free at both ends of the roller for receiving other attachment hooks. The other hair curlers for multiple use may have the afore-described roller and bar components, with the bar being used to couple contiguous rollers together, or they may be constructed with swivel hook latching means mounted within the roller, inwardly of the respective ends thereof, so as to leave such ends free for receiving hook members of additional hair curlers.

3,433,234
COMBINATION WIG AND FALL CONSTRUCTION
Rafael Klugmann, 455 Fort Washington Ave., New York, N.Y. 10033
Filed Aug. 11, 1966, Ser. No. 571,747
U.S. Cl. 132—53 **1 Claim**
Int. Cl. A41g *3/00*



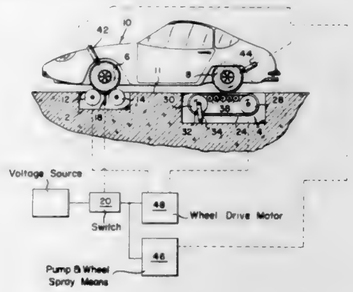
A combination wig and fall construction, including a lining element having a peripheral edge and interconnected hair strands on an outer surface thereof. A flexible strip foldably interconnected to said lining element at said edge, and disposable in either of two positions, in one of which the same is disposed beneath the peripheral edge, permitting the lining element to be worn as a wig, and in a second in which it is folded outwardly to extend forwardly thereof to be interconnected by a head-band concealing the same, permitting the device to be worn as a fall.

3,433,235
DECORATIVE FEMALE HAIR PIECE
Paul A. Doolittle, 100 S. Pennington Road, New Brunswick, N.J. 08901
Filed Oct. 17, 1967, Ser. No. 679,284
U.S. Cl. 132—53 **11 Claims**
Int. Cl. A41g *3/00*



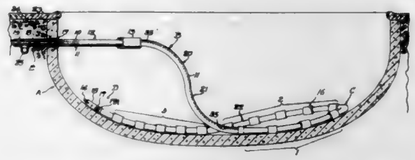
My invention is a decorative female hair piece having at least one but preferably a plurality of generally elongated tongues at least a portion of which are covered with a material simulating hair, the tongues being bendable into a wide variety of shapes and fabricated of a material having a high degree of shape memory.

3,433,236
WHEEL WASHING APPARATUS
Henry A. Koch, 621 N. Morley St., and Robert L. Long, 712 St. Charles St., both of Moberly, Mo. 65270
Filed June 7, 1967, Ser. No. 644,241
U.S. Cl. 134—45 **1 Claim**
Int. Cl. B60s *3/06;* **B08b** *3/02*



Wheel washing apparatus including roller means and endless conveyor means for supporting the front and rear wheels, respectively, of a motor vehicle. The roller and endless conveyor means are so driven by a common drive motor that the front and rear wheels are driven in opposite directions during the application of cleaning fluid thereto by conventional pump and wheel spray nozzle means.

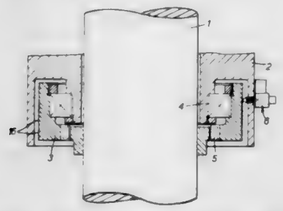
3,433,237
POOL CLEANER EMBODYING COMBINATION JET SUCTION, SELF-UNDULATING HOSE
Ralph J. Gelinas, Sepulveda, Calif., assignor to Marine Swimming Pool Equipment Company, Van Nuys, Calif., a corporation of California
Filed Sept. 5, 1967, Ser. No. 665,571
U.S. Cl. 134—168 **10 Claims**
Int. Cl. B08b *9/00, 3/00*



A pool-cleaner consisting essentially of a dual flexible hose embodying a tube for delivering a jet of water

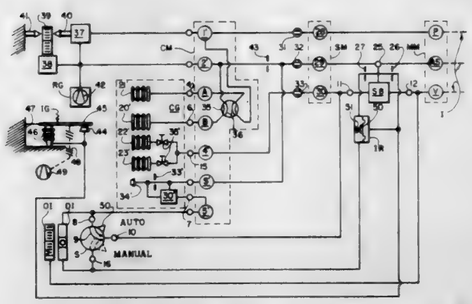
from a free end thereof which is thereby caused to undulate over the bottom of the pool with a writhing movement, and a suction tube having an inlet adjacent said free end of the hose, adapted to draw off a mixture of water and sediment stirred up by the jet issuing from the jet tube. The hose is encircled by spaced bearing collars, to avoid abrasive deterioration and to control the writhing action. The hose depends from a float.

3,433,238
ANGULAR POSITION INDICATORS FOR ROTATABLE SHAFTS
Robert Allen Nightingale, Chelmsford, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Apr. 27, 1966, Ser. No. 545,755
Claims priority, application Great Britain, Mar. 11, 1966, 18,923/65
U.S. Cl. 137—81.5 **10 Claims**
Int. Cl. F15c *1/10;* **G06m** *1/12*



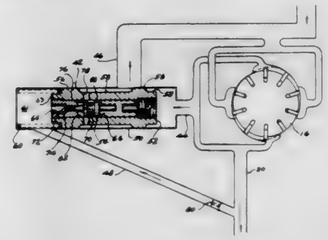
Apparatus for providing an indication of or effecting a control in dependence upon the angular position of a rotatable shaft includes a plurality of tracks driven together in predetermined relation to rotation of the shaft, each track having raised and unraised portions representative of two binary states. Associated with each track is a fluid conduit means positioned to discharge fluid under pressure upon the associated track. The fluid pressure in each conduit varies according to whether the fluid is discharged against a raised or unraised track portion, and the pressure variations in the several conduits are utilized to produce digital outputs dependent upon the angular position of the shaft, the digital outputs, in turn, being utilizable for effecting an indication or a control in accordance with the angular position of the shaft.

3,433,239
PROCESS CONTROL INSTRUMENT HAVING SIGNAL BOOSTER
Howard R. Jaquith, Rochester, and Stanley G. Norton, Jr., Spencerport, N.Y., assignors to Sybron Corporation, a corporation of New York
Filed July 18, 1966, Ser. No. 565,790
U.S. Cl. 137—85 **3 Claims**
Int. Cl. F15b *5/00;* **G05d** *16/08*



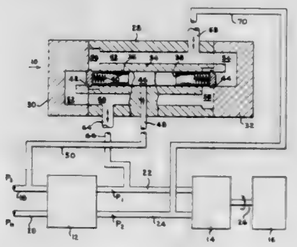
A pneumatic process control instrument has an output signal booster relay receiving both the manually-controlled and automatically-controlled outputs of the control instrument.

3,433,240
HYDRAULIC PRESSURE RELIEF VALVE UNIT
Harold Adolf Lehmann, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 18, 1967, Ser. No. 631,822
U.S. Cl. 137—108 **5 Claims**
Int. Cl. G05d *7/01*



A relief device for a hydraulic system arranged to relieve excess pressure caused by continuous pumping of the hydraulic fluid after reaching the extreme position in the cycle of the hydraulic motor. A pilot operated differential effect is attained by the varying pressure surfaces in the relief device in that the pilot part initially opens at a high pressure and relieves at a lower pressure.

3,433,241
PRESSURE LIMITING DEVICE
James R. Kremidas, Livonia, and Don B. Kantz, Ferndale, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,081
U.S. Cl. 137—112 **4 Claims**
Int. Cl. G05d *11/00;* **F16k** *15/00, 17/00*

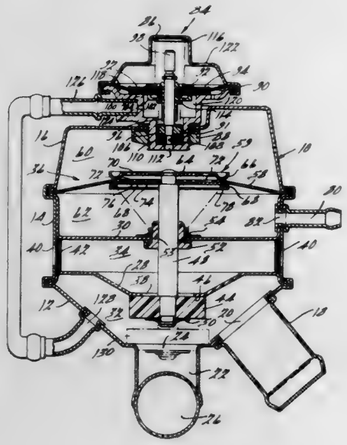


A pressure limiting valve means for use with hydraulic servo-valve motor systems. Line pressure surges are prevented when the servo-valve is centered and the motor is running at high speed by providing two normally closed valve crossover connections between the motor delivery passages which open when the pressure goes above the supply pressure. When a valve opens, fluid is allowed to recirculate through the motor.

3,433,242
FLUID BYPASS AND PRESSURE RELIEF VALVE ASSEMBLY
Wylie J. Voorhels, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,802
U.S. Cl. 137—119 **12 Claims**
Int. Cl. G05d *11/03;* **F16k** *31/12*

An integrated air bypass and pressure relief valve as-

sembly for use with an internal combustion engine having a secondary air system for exhaust emission control. During steady state engine operation, a valve normally closes an air bypass port so that all of the air is delivered to the engine exhaust ports, unless an excessive pressure buildup occurs. If this happens, the air acts through a parallel circuit to operate a pressure relief valve that



moves the main valve to open a bypass port. The bypass port is also opened by a vacuum controlled diaphragm type motor that is connected to the main valve stem and moves it to when the engine intake manifold vacuum suddenly changes, as during deceleration of the engine, or suddenly acceleration; and, of which the following is a specification.

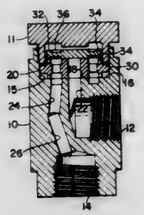
3,433,243

STEAM TRAP

Albert W. Schroder and Robert G. Miner, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed June 20, 1966, Ser. No. 558,939

U.S. Cl. 137—183 **3 Claims**
Int. Cl. F16t *1/00*



A steam trap of the "impulse" or "thermodynamic" type having a valve seat of disc form and being symmetrical about a median plane parallel to the plane of its disc whereby the seat may be reversed to extend its operating life and a valve closure disc similary generally symmetrical for reversal to extend its operating life.

3,433,244

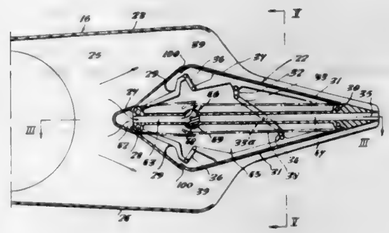
VARIABLE AREA DUCT

Terence Edward Gouvenot Gardiner and John Rodney Dyson Fuller, London, England, assignors to Bristol Siddeley Engines Limited, London, England, a British company

Filed Apr. 20, 1967, Ser. No. 632,368

Claims priority, application Great Britain, Apr. 21, 1966, 17,439/66

U.S. Cl. 137—221 **5 Claims**
Int. Cl. F16k *7/00, 13/00, 45/00*



The disclosure of this invention pertains to a jet propulsion nozzle whose flow area is varied by a dilatable body comprising hinged walls by means of which the body can be dilated. The dilation is controlled by air pressure acting on the walls at the interior of the body. The admission and discharge of the air is controlled by a valve situated within the body.

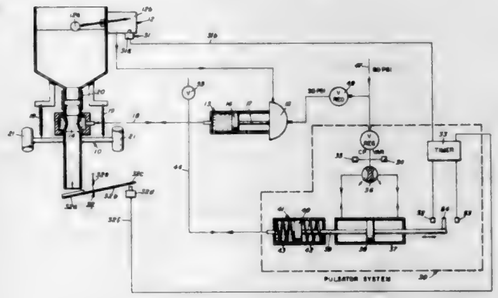
3,433,245

DISCHARGE VALVE PULSATOR SYSTEM

Lubomyr M. O. Cymbalisty, Edmonton, Alberta, Canada, assignor of thirty percent to Cities Service Athabasca, Inc., a corporation of Delaware, thirty percent to Imperial Oil Limited, a corporation of Canada, thirty percent to Atlantic Richfield Corporation, a corporation of Pennsylvania, and ten percent to Royalite Oil Company, Limited, a corporation of Canada

Filed Apr. 28, 1967, Ser. No. 634,680

U.S. Cl. 137—242 **16 Claims**
Int. Cl. F16k *31/18*



A pneumatic, hydraulic or other means for developing selectively variable pressure pulsations and superposing them on the hydraulic control system for the resilient discharge orifice of a variable throat restrictor valve for the purpose of restoring normal flow through the valve when a clogged condition of the valve is sensed.

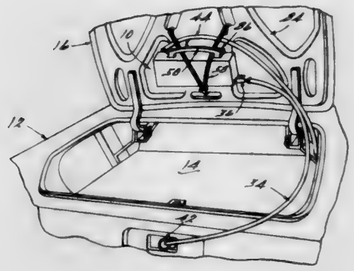
3,433,246

TANK

Andrew G. Henry, 2010 Edison, Detroit, Mich. 48206, and Herman Rekolt, 22514 Haussner, Warren, Mich. 48089

Filed Sept. 1, 1965, Ser. No. 484,266

U.S. Cl. 137—351 **14 Claims**
Int. Cl. A01m *7/00;* **B60p** *3/00;* **F16l** *3/16*



An auxiliary fuel tank for use in supplying fuel to the main fuel tank of a vehicle, the auxiliary tank being mounted on the inside surface of the trunk compartment.

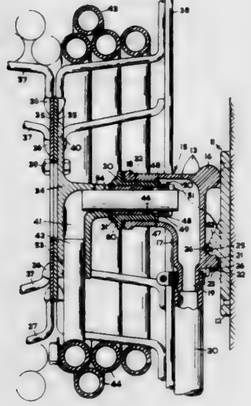
3,433,247

HOSE REELS AND MOUNTINGS THEREFOR

Andrew George Philip Haselden, 27 Collingwood Ave., Tolworth, Surbiton, Surrey, England

Filed Feb. 24, 1966, Ser. No. 529,802

U.S. Cl. 137—355.26 **10 Claims**
Int. Cl. F16l *3/16, 27/04*



A hose reel and mounting therefor comprises a stationary support, a hose reel with a hub which is rotatable with respect to the support, and a connector-assembly between the support and the hose reel hub. The connector-assembly comprises a rotatable hollow spindle fixed in an axial water passage in the hose reel hub, a journal-bush for the spindle which journal-bush is fixed in a water passage in the support and is of bearing material, a water-tight seal at the water end of the journal-bush, and comprising a soft washer which has an interior diameter which is undersize for the spindle, and an end-thrust bearing on the water side of the seal.

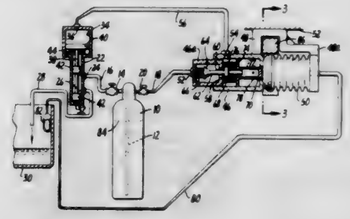
3,433,248

MECHANICAL DISPENSING MEANS FOR CRYOGENIC LIQUIDS

Albert V. Hedstrom, Pinole, Calif., assignor to Almac Cryogenics, Inc., Oakland, Calif., a corporation of California

Filed Mar. 13, 1967, Ser. No. 622,715

U.S. Cl. 137—386 **4 Claims**
Int. Cl. F16k *21/18*



Apparatus for filling vessels to a predetermined level with a cryogenic liquid where the valve means includes a pneumatic servo system and an optionally usable automatic latch. The latch prevents automatic repeat flow of the cryogenic liquid, and when the latch is removed the apparatus operates automatically and continuously to maintain a constant liquid level of the cryogenic liquid in the vessel being filled.

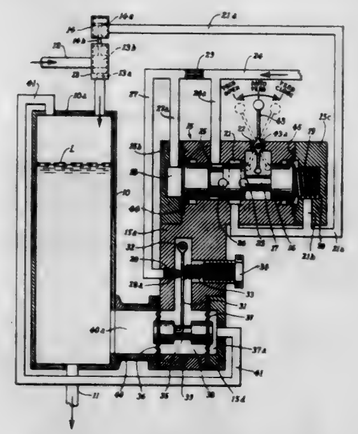
3,433,249

LIQUID LEVEL CONTROLLER

Kurt Nelson, Wappingers Falls, N.Y., assignor to The De Laval Separator Company, Poughkeepsie, N.Y., a corporation of New Jersey

Filed Mar. 22, 1965, Ser. No. 441,480

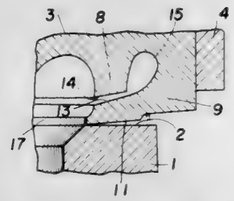
U.S. Cl. 137—390 **9 Claims**
Int. Cl. F16k *21/18;* **F16b** *5/00*



A cylinder forms a piston chamber connected by a duct to a pneumatically actuated device for operating a valve which supplies liquid to a tank, the cylinder having first and second cavities at opposite ends of the piston slidable therein. The first cavity communicates with the duct, and the second cavity has a throttled flow connection to a pneumatic pipeline and also has a port opening to atmosphere and provided with a greater through-flow area than the throttled flow connection. The piston has a first normal operating position in which it vents the duct to atmosphere to operate the pneumatic device so as to close the supply valve, the piston also

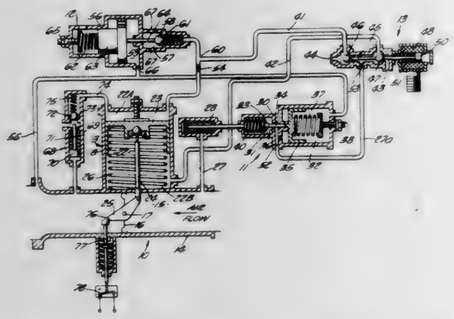
having a second normal operating position for connecting the duct to the pneumatic pipeline and thereby causing said device to open the supply valve. A control valve normally closes the port to atmosphere to allow the pneumatic line to maintain in the second cavity a pressure operable to cause displacement of the piston to its second normal position, and means responsive to rising of the liquid to a predetermined level in the tank serve to actuate the control valve to open the port, the piston having biasing means operable to shift the piston from its second to its first normal position in response to opening of the port, whereby the second cavity is connected to atmosphere to allow the biasing means to hold the piston in its first position.

3,433,250
POP SAFETY VALVE
Noboru Hagihara, Nishinomiya, Japan, assignor to Toa Valve Co. Ltd., Amagasaki, Japan
Filed Dec. 12, 1967, Ser. No. 689,846
Claims priority, application Japan, Dec. 27, 1966, 42/278
U.S. Cl. 137—469 **5 Claims**
Int. Cl. F16k *17/30, 25/00*



A pop safety valve comprises a valve disk and a valve seat. The bottom surface of the disk is provided with an annular protrusion slightly inward from the peripheral edge and an inwardly extending annular flange along the peripheral edge of the bottom. The upper surface of the flange is kept in contact with the end surface of the protrusion, with an annular space formed between the flange and the protrusion. The under surface of the flange serves as a contacting surface for contact with the valve seat.

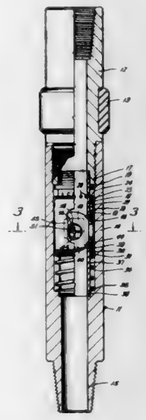
3,433,251
REGULATOR VALVE MECHANISM
William W. Avant, Scottsdale, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 2, 1966, Ser. No. 577,009
U.S. Cl. 137—488 **11 Claims**
Int. Cl. F16k *31/12, 31/36*



The subject valve **10** includes a body **14**, having a passage **15** in which a valve element **16** is arranged for pivotal movement, a pressure responsive actuator **13** which is provided to operate the valve, and a coil spring normally holding the valve in closed position. A fluid line **27** extends from the inlet side of the valve to an On-Off valve **13** of the solenoid operated type. When this valve is deenergized it connects a branch line **41**, leading from valve **13** to one end of the actuator, with the ambient atmosphere. It also connects another branch line **42**, leading from the valve **13** to the other end of the actuator, with line **27**. At this time fluid supplied to the inlet of valve **10** may flow through line **27** and branch **42** to the end of the actuator to assist the spring in holding the valve closed. When the solenoid valve is energized it reverses the connections between branches **41** and **42**, the latter then being connected with the ambient atmosphere and branch **41** being connected with line **27**. At this time fluid supplied to valve **10** may flow through lines **27** and **41** to the actuator to cause it to move valve **16** toward an open position.

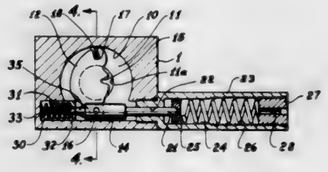
Pilot regulators **11** and **12** are provided to control the operation of valve **16**. Regulator **11** is connected in line **27** and has a valve **33** for controlling fluid flow through line **27**. It also has an actuator **35**, responsive to fluid pressure from line **27**, to limit the flow of fluid under pressure through line **27** to the actuator to cause the initial opening movement of valve **16** to be relatively slow. Element **11** also is responsive to fluid under pressure from the outlet side of valve **16** to increase flow through line **27** to accelerate the opening movement of valve **16** after the slower initial movement. Regulator **12** has a valve **58** connected with line **41** and is responsive to fluid pressure in the passage **15**, at the outlet side of valve **16**, to bleed fluid from line **41** and cause actuator **13** to move valve **16** toward a closed position when outlet pressure reaches a predetermined value to maintain such outlet pressure. A safety mechanism **68** is provided to bleed fluid from the actuator in the event element **12** fails to function to prevent the building up of excessive pressure at the outlet side of valve **16**.

3,433,252
FLUID CONDUIT VALVE
Thomas A. Kennard, 6202 Taggart, Houston, Tex. 77007
Continuation-in-part of application Ser. No. 409,648, Nov. 9, 1964. This application Dec. 5, 1966, Ser. No. 605,119
U.S. Cl. 137—496 **7 Claims**
Int. Cl. F16k *3/02*



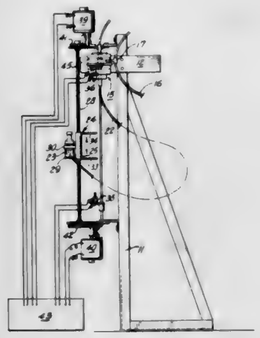
A valve for inclusion in a fluid conduit for controlling fluids flow therethrough. The valve is responsive to changes of fluid pressure in the conduit for moving to and from the closed position. The valve is particularly useful for inclusion in a drill string below the kelly to prevent loss of drilling fluid while making connections during make-up and break-out while performing downhole drilling operations. In such use, the valve is designed to close upon termination of the pumping of fluid through the kelly, and in the closed position supports a column of drilling fluid thereabove to prevent its being lost onto the drilling platform.

3,433,253
FREE DELIVERY CONTROLLED RETURN VALVE
Lewis P. Tomer, Mentor, Ohio, assignor to Fluid Controls, Inc., Mentor, Ohio, a corporation of Ohio
Filed Apr. 14, 1967, Ser. No. 631,042
U.S. Cl. 137—493 **9 Claims**
Int. Cl. F16k *17/26*



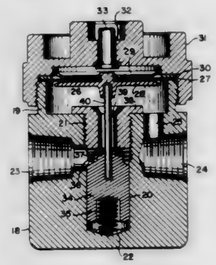
The present disclosure is directed primarily to a bydirectional control valve for a hydraulic hoist. The structure permits relatively free flow through the body from the inlet to the outlet, but restricts the flow from the outlet to the inlet in response to the pressure of fluid at the oulet side as modified by the action of a time delay means.

3,433,254
VACUUM CONTROL SYSTEM
Frank P. Frascati, Fishkill, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed June 24, 1966, Ser. No. 560,145
U.S. Cl. 137—505.16 **5 Claims**
Int. Cl. F16k *31/12, 31/36*



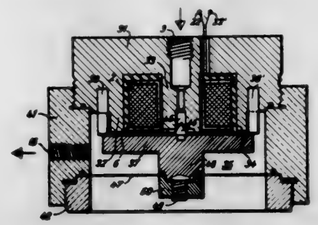
A system for controlling the amplitude of a vacuum, which system employs a diaphragm-controlled valve. A low pressure source for producing a vacuum is connected to one side of the valve, and the vacuum is connected to the other side. The other side of the valve is also connected to one side of the diaphragm. And, the other side of the diaphragm is connected to a reproducibly controlled variable vacuum of predetermined amplitude.

3,433,255
VALVE ASSEMBLY
Harold A. Cubberley, Chagrin Falls, Edmund Abel, Jr., Rocky River, and John E. Sackett, Mentor, Ohio, assignor to The Service Recorder Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 3, 1966, Ser. No. 524,942
U.S. Cl. 137—510 **1 Claim**
Int. Cl. F16k *7/00*



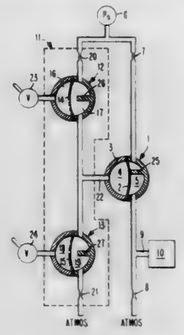
A flow control valve for an oil furnace or the like in which suction in the line between the valve and the furnace resulting from turning on of the latter causes a diaphragm to drive a spring-biased normally closed piston valve member open to establish flow of the oil through the valve assembly. The piston member is in a chamber at the inlet side having substantial axial length and diameter and the piston substantially fills the chamber in close fit.

3,433,256
ELECTROHYDRAULIC VALVE
Bruno Stillhard, Saint Gall, and Walter Tobler, Uzwil, Switzerland, assignor to Gebrüder Buehler, Uzwil, Switzerland
Filed Mar. 10, 1966, Ser. No. 533,316
Claims priority, application Switzerland, Mar. 11, 1965, 3,380/65; Jan. 18, 1966, 598/66
U.S. Cl. 137—529 **29 Claims**
Int. Cl. G05d *7/00, 16/20;* **F16k** *31/06*



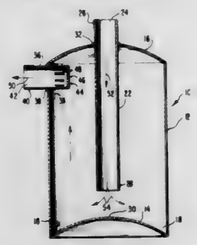
An electromagnetically controlled fluid pressure regulator comprises a bell-shaped magnetic core having a central leg with a magnetizing winding imbedded in an annular recess surrounding the central leg and arranged for connection to a source of regulable electric potential. A movable yoke is axis-symmetrical with the core and has magnetically active surfaces for movement of the yoke relative to the core in accordance with energization of the winding. A pressure medium inlet bore extends through the central leg of the core, and a valve element is mounted on the yoke to control discharge of pressure medium toward the yoke in accordance with the spacing of the yoke relative to the core, the valve element normally closing the pressure medium bore. The arrangement is such that the electromagnetic forces on the yoke tend to draw the yoke toward the core and oppose the fluid pressure forces on the yoke which tend to force the yoke away from the core. Membrane or spring means may be used to support the yoke.

3,433,257
DIAPHRAGM TYPE FLUID LOGIC LATCH
Donald F. Jensen, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,166
U.S. Cl. 137—561 7 Claims
Int. Cl. E03b 7/07; F17d 3/00; F16k 31/145



An arrangement of diaphragm-controlled valves, flow restrictors and ducts for fluid providing a bistable logic device which can be switched from one state to another in response to short fluid signals of switching pressures that are determined according to a preselectable hysteresis pattern.

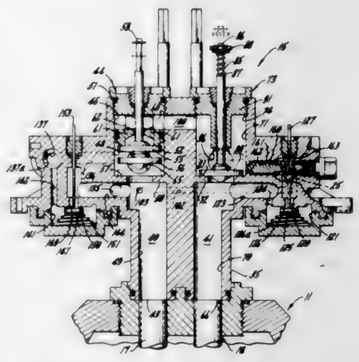
3,433,258
MULTI-PURPOSE UNDERGROUND TANK
Irvin E. Steele, 1004 Houghton St., Connersville, Ind. 47331
Filed Sept. 28, 1965, Ser. No. 490,987
U.S. Cl. 137—590 6 Claims
Int. Cl. E03b 11/14; B01d 17/00



The multipurpose tank comprises cylindrical side walls and like arcuate top and bottom walls presenting external convex and concave surfaces. An inlet pipe extends coaxially through the top wall and terminates in a downwardly directed opening spaced slightly above and in axial registry with the apex of the arcuate bottom wall. An outlet pipe extends through the side cylindrical wall adjacent the top wall and has an inwardly extending extension terminating in a disc having a central aperture and a plurality of apertures spaced about the inner end of the extension.

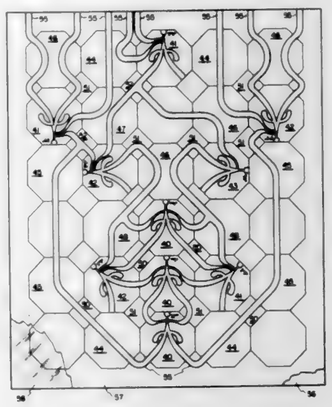
3,433,259
WATER SOFTENING VALVE
James E. Hiers, Mahtomedi, and Edward C. Grout, White Bear Lake, Minn., assignors to Union Tank Car Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,146
U.S. Cl. 137—599.1 8 Claims
Int. Cl. F16k 11/22; G05b 19/00

A water conditioning control valve assembly for a five cycle water conditioning system including service, backwash, brining, slow rinse and fast rinse. The assembly has first and second main passages, a transfer passage, a brining passage, a fast rinse passage, a first drain passage operable during backwash and a second drain passage operable during brining. A first valve controls flow through the first main passage, a second valve controls flow through the transfer passage, a third valve controls flow through the second main passage, a fast rinse valve controls flow through the fast rinse passage, and first and second drain valves control flow through the first and second drain passages, respectively.



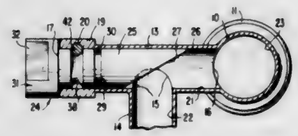
During the service cycle, the first and third valves are open and the others are closed. During the backwash cycle, the second and third valves and first drain valve are open and the other valves are closed. During the brining cycle and the slow rinse cycle, the first and third valves, fast rinse valve and first drain valve are closed and the other valves are open. During the fast rinse cycle, the first and third valves and first drain valve are closed and the other valves are opened.

3,433,260
INTEGRATED CIRCUITS AND METHODS OF MANUFACTURE
Paul T. Higgins, Birmingham, Mich., assignor to The Bendix Corporation, Southfield, Mich.
Filed Jan. 17, 1966, Ser. No. 521,090
U.S. Cl. 137—608 4 Claims
Int. Cl. F15c 1/08; F15d 1/14



This disclosure describes fluidic circuit elements having regular polygonal shapes which may be placed side-by-side in an abutting relationship to form a fluidic circuit. By establishing the passageways through the elements with ports at the midpoints of the abutting sides and normal thereto, fluid flow between the elements is unimpeded by sharp angle turns and easily passes from one element to the next.

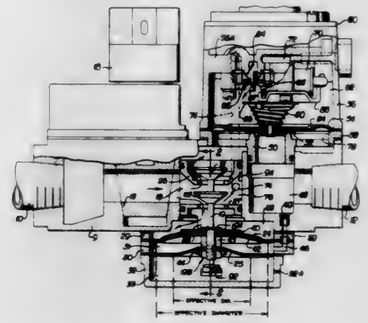
3,433,261
FLOW CONTROL DEVICE
Lester John Fox, Glen Allen, Va., assignor to Eskimo Pie Corporation, Richmond, Va., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,636
U.S. Cl. 137—608 8 Claims
Int. Cl. A23g 5/02



A flow control and manifold device for controlling the divided flow from a main feed line utilizing a plurality of tubular T's, each having one end connected into a length of feed pipe at spaced intervals with a cylindrical plug being insertable into an open end of a cross member of each T with each plug of a length that the tip of the innermost end extends past the stem member of the T and the inner end portion of at least one of the plugs being cut obliquely to the plug axis to present a restriction in the T which is variable according to the rotative position of the plug.

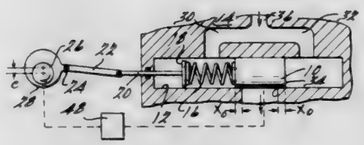
3,433,262
BILEVEL PRESSURE REGULATING VALVE
William Alton Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Continuation-in-part of application Ser. No. 284,208, May 29, 1963. This application Nov. 18, 1965, Ser. No. 508,443
U.S. Cl. 137—614.19 5 Claims
Int. Cl. F17d 3/00; F16k 31/145, 31/02

1. In a fluid control system:
a confined fluid path;
control valve means in said path normally precluding the passage of fluid therethrough;
valve actuating means for operating said control valve means to partially open and fully open positions responsive to respective first and second pressures on the inlet side of said control valve means to provide low capacity and high capacity fluid flow through said path;
and pressure regulating means for sequentially establishing said fluid first and second pressures, said pressure regulating means including a regulator valve in said path on the inlet side of said control valve means and having a valve seat and a movable valve element which cooperates with said seat, a diaphragm connected to said movable valve element having one side exposed to the pressure between said regulating valve and said control valve means, said diaphragm and said element being arranged such that the pressure between the regulating valve and the control valve means urges said element to close said regulator valve, means defining a control chamber having one wall formed by the other side of said diaphragm, means defining a restricted passageway connecting said chamber to the outlet side of said control valve



means whereby the pressure in said chamber reacting against said diaphragm urges the diaphragm in a direction to open said regulator valve, and a spring connected to urge said regulator valve in an opening direction.

3,433,263
SPEED LIMITING DEVICE
Thomas M. Sebestyen, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,167
U.S. Cl. 137—624.15 11 Claims
Int. Cl. F15c 3/02

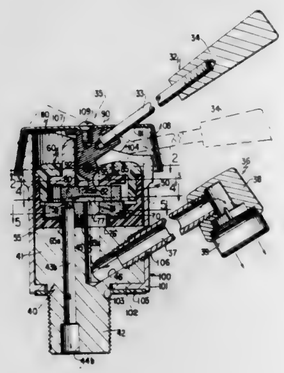


A rotating shaft has an eccentric providing an input pulse of a constant magnitude to a spring-mass system, the mass being a valve that oscillates with an amplitude that varies as a function of the change in frequency of the input to variably control the rise in fluid pressure in a port, the attainment of a predetermined pressure level in the port operatively inhibiting the speed of the rotating shaft beyond a selected level.

3,433,264
NOISE REDUCTION STRUCTURE FOR MIXING VALVE
Richard G. Parkison, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 423,534, Jan. 5, 1965. This application Feb. 28, 1967, Ser. No. 619,400
U.S. Cl. 137—625.17 10 Claims
Int. Cl. F16k 19/00

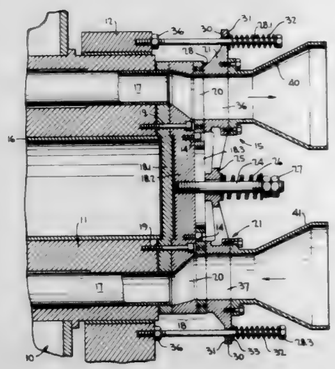
A single-lever volume and proportion control valve such as used in a kitchen or bathroom which employs a

ceramic member as the principal moving part. The member has a recess which provides communication between



the inlet and outlet ports. The recess has a plurality of ridges in order to reduce the noise level of the valve.

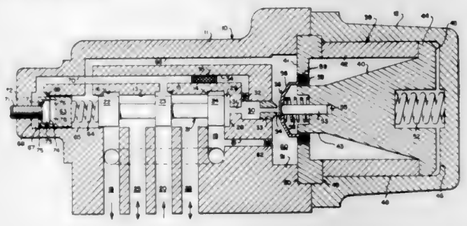
3,433,265
BALANCED ROTARY VALVE
Emil J. Bartholet, Leonia, N.J., assignor to Komline-Sanderson Engineering Corp., Peapack, N.J., a corporation of New Jersey
Filed Feb. 27, 1967, Ser. No. 618,985
U.S. Cl. 137—625.18 **10 Claims**
Int. Cl. F16k *3/08*



A rotary filter valve in which the valve members are arranged for constant relative rotation about a fixed axis and are urged into axial contact at their interface. The members are provided with a plurality of parts at different angular locations of the interface and respectively in communication with the different pressure sources. To counteract the tilting tendency caused by the unequal fluid pressures between the valve members, there are provided means, such as springs, spaced angularly around the rotational axis and arranged to urge the members axially toward each other at the respective spring locations with different axial forces which are so related to the axial forces resulting from fluid pressure at the respective locations as to achieve a substantially uniform axial engagement pressure between the valve members at all locations around their interface.

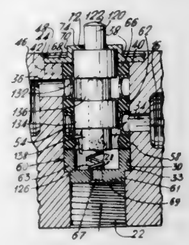
There is also included a novel association of O-rings with the valve members for providing an improved seal capable of self-adjustment to compensate for wear, and to occupy and seal spaces between the opposed surfaces of the valve members due to slight separation of said members.

3,433,266
POSITIVE CENTERING SERVOVALVE HAVING MOVABLE SPRING BACKUP
Jerald D. Bidlack, East Aurora, N.Y., assignor to Moog Inc., East Aurora, N.Y., a corporation of New York
Filed Mar. 22, 1967, Ser. No. 625,130
U.S. Cl. 137—625.61 **6 Claims**
Int. Cl. F16k *11/32*



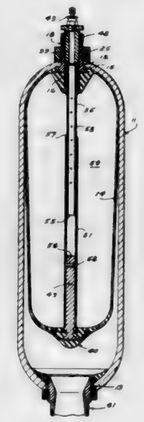
A servovalve having a valve slide the position of which is normally obtained by a balance of a force exerted by a spring in a chamber at one end of the slide and a force due to the controlled pressure of fluid in a chamber at the other end of the slide, the null position of the slide being maintained when there is no signal input and fluid supply pressure is below a predetermined minimum operating level by moving the backup for the spring to reduce appropriately the force exerted by this spring.

3,433,267
CONTROL VALVE STRUCTURE WITH ALIGNED AXIAL PORT
Seymour F. Stryker, Skokie, Ill., assignor to Air-Mite Devices, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 15, 1966, Ser. No. 572,437
The portion of the term of the patent subsequent to Nov. 14, 1984, has been disclaimed
U.S. Cl. 137—625.69 **5 Claims**
Int. Cl. F16k *11/10*



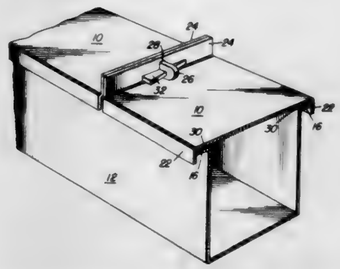
A miniature valve structure which is especially suitable for application to valves of relatively small sizes for use in pneumatic systems. The valve including a body provided with a cylindrical valving cavity opening at one end thereof to a first surface of the body, a plurality of lateral ports in said body opening to said cavity on different levels thereof, and a port at the second end of the valving cavity substantially co-axial therewith; a plurality of alternately stacked spacers and annular packing members co-axially engaged in said cavity; a spring-biased plunger having a plurality of valving surfaces disposed within said co-axial spacers and packing members such that reciprocative movement of said plunger establishes different fluid paths between said ports for two different axial positions of the plunger in cooperation with the packing members; and assembly means at said one end of the cavity removably to retain said plunger and the stack spacer and packer members in assembly within the valving cavity such that actuating means may reciprocate said plunger.

3,433,268
PRESSURE VESSEL
Edward M. Greer, Beverly Hills, Calif., assignor to Greer Hydraulics, Inc., Los Angeles, Calif., a corporation of New York
Filed Apr. 19, 1967, Ser. No. 632,028
U.S. Cl. 138—30 **11 Claims**
Int. Cl. F16l *55/00*



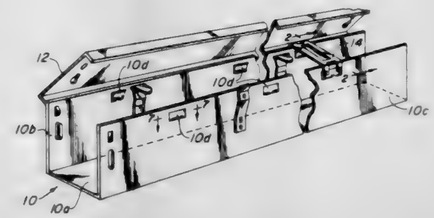
This invention relates to the art of pressure vessels, more particularly of the type known as pressure accumulators and which provide a high rate of flow of fluid therefrom.

3,433,269
RAPID ACCESS CLOSURE SYSTEM FOR HOUSING
Walter J. Sackett, Sr., Baltimore, Md., assignor to The A. J. Sackett & Sons Co., Baltimore, Md., a corporation of Maryland
Filed Oct. 22, 1965, Ser. No. 501,802
U.S. Cl. 138—92 **3 Claims**
Int. Cl. F16l *45/00*; **E04c** *3/32*



A rapid access closure is provided for an opening in a duct having a pair of flanges defining the opening, the closure comprising a pair of covers positioned end-to-end over the opening, with the adjacent ends of the covers each having an outwardly extending flange, one of these flanges having an aperture and the other flange having a tongue extending through the aperture, with a tapered pin extending through the tongue for drawing the adjacent ends of the covers together. The flanges defining the opening in the duct each have a plurality of elongated holes therealong, with each cover having inclined pin elements extending through the elongated holes to draw the covers down onto the duct upon the drawing of the adjacent ends of the covers together.

3,433,270
LAY-IN DUCT HAVING SIDE-BRACING AND WIRE-RETAINING MEANS
Donald G. Fischer and Clifford W. Jones, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 13, 1966, Ser. No. 586,457
U.S. Cl. 138—162 **1 Claim**
Int. Cl. E04f *17/08*; **H02g** *3/28*; **E04b** *5/48*

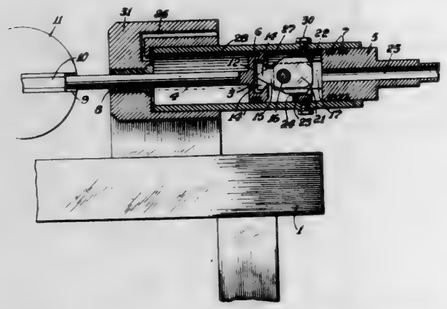


1. A lay-in duct for receiving electrical wires, said lay-in duct comprising an elongated channel-shaped duct having a bottom wall and a pair of opposed generally parallel side walls, and an elongated side-bracing and wire-retaining member extending transversely of said duct and disposed opposite said bottom wall adjacent free end portions of said side walls, each of said side walls being provided on an outer surface thereof with an indentation opposite an indentation on an outer surface of the other of said side walls, each of a pair of opposite end portions of said member being provided with an outer leg portion engaging an outer surface of a respective one of said side walls and an inner leg portion engaging an inner surface of the respective one of said side walls, each of said outer leg portions being provided with an inwardly projecting portion received in a respective one of said indentations, each of said side walls being provided on an outer surface thereof with a shoulder defining an edge of the indentation therein and facing toward said bottom wall, each of said inwardly projecting portions of said outer leg portions being provided with a shoulder facing the shoulder of the respective side wall, and each of said side walls being provided on an outer surface thereof with a camming surface forming an end of the indentation therein in a direction longitudinally of said duct, whereby said member may be removed from said duct by first moving the member longitudinally of said duct to force said inwardly projecting portions respectively out of said indentations by means of said camming surfaces and then pulling said member off said duct in a direction generally perpendicular to said bottom wall.

3,433,271
SHUTTLE DRIVING APPARATUS FOR WEAVING LOOMS
Vladimír Svatý, Jan Bílek, and Jiří Zlatohlávek, Liberec, Czechoslovakia, assignors to Elitex Zavody textilního Strojirenstvi, Liberec, Czechoslovakia
Filed Sept. 9, 1966, Ser. No. 578,200
Claims priority, application Czechoslovakia, Sept. 10, 1965, 5,563/65
U.S. Cl. 139—144 **9 Claims**
Int. Cl. D03d *49/42*

A loom shuttle is actuated by the rod of a driving piston in a pneumatic cylinder also equipped with an axially movable carrier piston. Two catch levers movably mounted on the carrier by a common pivot pin having an axis transverse to the cylinder axis have first arms which

can enter the hollow interior of the piston through a restricted opening when the second arms are spread apart, but are locked in the piston by camming engagement of cooperating conical surfaces on the levers and on the piston when the second lever arms are held near the cylin-



der axis. The first lever arms are moved toward each other by engagement of conical frontal cam faces with the opening in the piston, and are moved apart by camming engagement of the second lever arms with a stationary control ring on the cylinder during movement of the carrier.

3,433,272

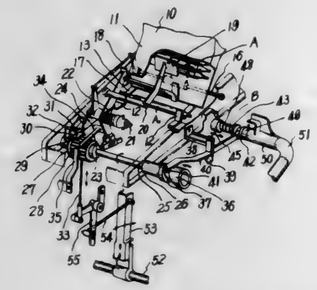
DEVICE FOR AUTOMATICALLY UNWINDING A WEFT OUT OF A BOBBIN AND AN AUTOMATIC BOBBIN CHANGING DEVICE AND A SPECIAL BOBBIN THEREFOR

Osamu Nakako, Yokkaichi, Japan, assignor to Tokai Loom Works Ltd., Ooguchi Machi, Niwa-gun, Japan, a body corporate of Japan

Filed May 13, 1966, Ser. No. 549,848

U.S. Cl. 139—257 **3 Claims**

Int. Cl. D03d *45/02*



The end of a weft is wound around a retractable bushing to form the nose bunch of the weft on a bobbin. The bushing is retracted into a funnel suction opening of an unwinding pipe by means of a projection at the opening. When the bushing is retracted into the guide pipe, tension between the nose bunch and the weft wound on the bobbin is released so that the weft can be easily and smoothly unwound from the bobbin.

3,433,273

WEFT CONTROLLER

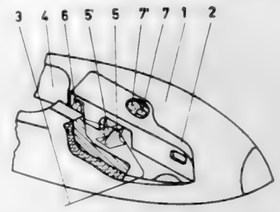
Erich Loepfe, Sennhofstrasse 44, CH–8125 Zollikerberg, Switzerland

Filed Oct. 3, 1967, Ser. No. 672,537

U.S. Cl. 139—371 **8 Claims**

Int. Cl. D03d *51/34*

A weft controller has a base made of rubber or rubber-like material and fixed to the shuttle and a sheet carried by the base and having an edge engaged by the weft moving out of the shuttle. Due to the resiliency of the base, the sheet will be maintained in an inclined position by the weft but will be swung into a position of rest when



the yarn is broken. The weft controller is connected with a preferably optical signalling device also carried by the shuttle. The base is mounted so as to prevent penetration of dust or dirt to the signalling device.

3,433,274

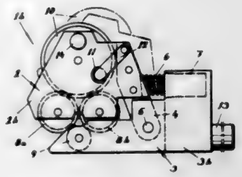
APPARATUS FOR THREADING OR SCREWING TOGETHER THE ENDS OF HELICAL SPRINGS

Gustaf H. Kärrberg, Goteborg, Sweden, assignor to Wafios Maschinenfabrik Wagner, Ficker and Schmidt, Wittenberg, Germany

Filed Oct. 18, 1965, Ser. No. 496,855

U.S. Cl. 140—88 **12 Claims**

Int. Cl. B21f *15/02*



A machine for producing components of ring shape by threading one end of a helical spring into the other end thereof in which a head is provided with a plurality of wheels with one of the wheels being movable in relation to the other wheels. The wheels are arranged to grip and rotate one end of the spring and the other end thereof is held in end to end engagement with the first mentioned end by suitable means.

3,433,275

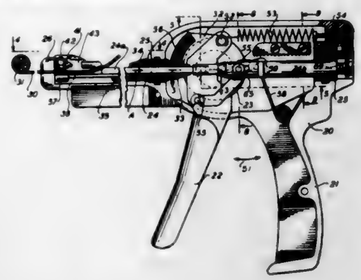
STRAP APPLYING TOOL

Daniel Eppler, Nutley, N.J., assignor to The Thomas & Betts Co., Inc., Elizabeth, N.J., a corporation of New Jersey

Filed Aug. 11, 1965, Ser. No. 479,349

U.S. Cl. 140—93.2 **13 Claims**

Int. Cl. B21f *9/02, 9/00, 45/16*



A tool for applying a strap to a bundle of wires or the like is provided wherein the tool has means for draw-

ing the end of the strap thereinto on actuation of a movable handle until a certain tension is applied to the strap, the tool then effecting twisting of an end portion of the strap end, if desired cutting the end off from the strap.

3,433,276

CARBON FILLING METHOD AND MACHINE

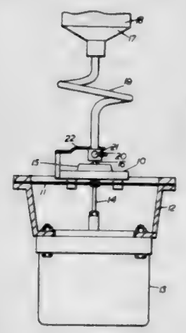
Anthony Crisp Beadle and William Garner, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,592

Claims priority, application Great Britain, Oct. 5, 1964, 40,408/64

U.S. Cl. 141—12 **7 Claims**

Int. Cl. B65b *1/22, 1/28;* **B01f** *13/00*



Method and apparatus for filling containers with granular material to a consistent percentage of full volume. The containers are mounted on horizontal strips of flexible material and vertically vibrated coincident with the container axis while granular material is allowed to fall freely into the containers. Subsequent to the vertical vibration the container is vibrated horizontally.

3,433,277

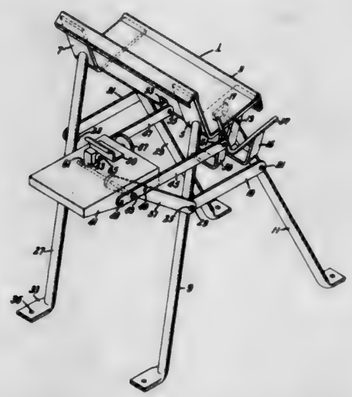
FOLDABLE SAWBUCK

Charles H. Ribley, 3702 State St., Niskayuna, N.Y. 12304

Filed Oct. 20, 1966, Ser. No. 588,207

U.S. Cl. 143—91 **10 Claims**

Int. Cl. B27b *21/02*



The device relates to a foldable sawbuck for supporting a workpiece and a portable chain saw. It comprises a work platform and a swingable chain saw platform attached thereto; the attachment being such that the chain saw can be moved into and out of operating relationship with the work.

3,433,278

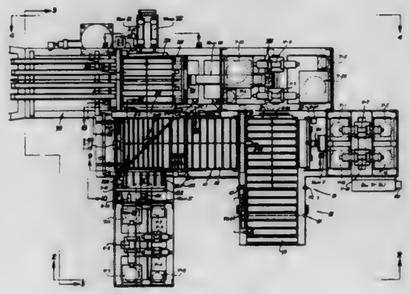
APPARATUS FOR CUTTING BLOCK-LIKE ARTICLES

Alfred E. Comstock, Belvedere, and Burdsal Gardner Wilcox, Oakland, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Filed Oct. 9, 1964, Ser. No. 402,746

U.S. Cl. 146—78 **25 Claims**

Int. Cl. B26d *1/44, 7/26;* **A01j** *15/00*



1. In apparatus for cutting articles of random sizes and having at least one exterior dimension which differs from article to article, cutting means comprising a plurality of spaced cutting elements for cutting the article into a number of separate parts greater than two, means independent of the cutting means for measuring one exterior dimension of the article to be cut, means controlled by the dimension measuring means for adjusting the spacing between the cutting elements of the cutting means in accordance with the dimension measured, and means for causing relative movement between the cutting means and the article to be cut to cause the article to be cut into separate parts with at least certain of said parts having an exterior dimension proportional to the dimension measured.

3,433,279

ARTICLE OF LEATHER GOODS HAVING FOLDABLE MULTICARD HOLDER

Al Seamon, Nassau, N.Y., assignor to A. & L. Seamon, Inc., Jamaica, N.Y.

Filed Dec. 16, 1966, Ser. No. 602,332

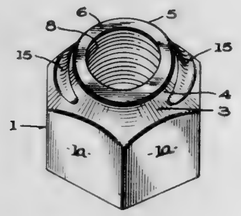
U.S. Cl. 150—39 **1 Claim**

Int. Cl. A45c *1/06, 11/18*



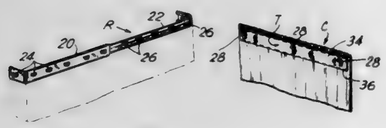
An article of leather goods, such as a billfold, wallet, secretary, handbag, purse or the like, having a multicard holder and a pocket therefor, said multicard holder being foldable and retractable into said pocket and being removable therefrom while remaining anchored at one end thereto.

3,433,280
LOCKNUT
Hans E. Reusser, Cleveland, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed July 20, 1966, Ser. No. 566,562
U.S. Cl. 151—21 **4 Claims**
Int. Cl. F16b *39/28, 39/02;* **B21d** *53/20*



A prevailing torque locknut having a nondeformed sidewall, a frustoconical crown and a planar end face. Displaced threads are formed by a plurality of crescent-shaped indentations provided within the confines of the crown.

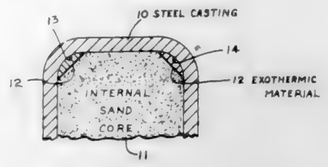
3,433,281
CURTAIN SYSTEM INCLUDING ELASTICIZED TOP CURTAIN PANELS AND SUPPORT FOR SAME
Milton Lukashok, 27 W. 86th St., New York, N.Y. 10024
Filed Mar. 11, 1968, Ser. No. 712,094
U.S. Cl. 160—330 **7 Claims**
Int. Cl. A47h *1/00, 13/14*



Plural curtain panels are suspended from a telescoping curtain rod. The panels have elasticized shirred tops which permit the tops to be stretched to different widths in order to accommodate spaces of different widths. The sections of the curtain rod are provided along their lengths with spaced fastener elements integral with the rod. Drapery hooks are engaged to correspondingly spaced points along the tops of the stretched curtain panels. The drapery hooks detachably engage the fastener elements.

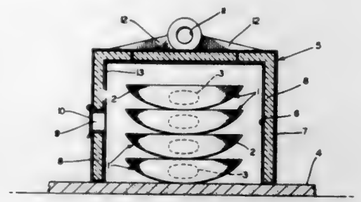
3,433,282
METHOD FOR ELIMINATING HOT TEAR CRACKS IN CASTINGS
Bryant W. Crocker, Reading, and Frederick Schmid, Cambridge, Mass., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 14, 1965, Ser. No. 513,874
U.S. Cl. 164—53 **3 Claims**
Int. Cl. B22d *19/00*

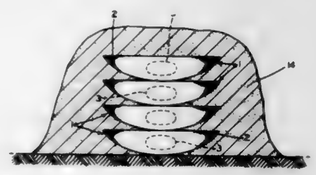
High quality castings having recessed portions cast about a core having means to maintain the recessed portions longer at a higher temperature than the balance of the castings by application of additional heat to such recessed portions, such heat being supplied by a layer of exothermic material on the surface of the core. Alternatively to addition of heat, the heat of the recessed portions of the castings is retained for a longer period of time than the heat



of other portions of the castings by use of a heat insulating core.

3,433,283
METHOD OF REDUCING FRIABILITY OF FERRO-ALLOYS
Vernon H. Montgomery and Roger N. McClure, Canton, Ohio, assignors to Ohio Ferro-Alloys Corporation, Canton, Ohio, a corporation of Ohio
Filed Apr. 3, 1968, Ser. No. 718,515
U.S. Cl. 164—69 **11 Claims**
Int. Cl. B22d *23/00, 27/04, 7/10*



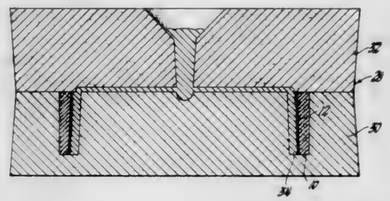


A method for reducing the friability of ferro-alloys intended for use as ladle or furnace additions in steel making. The method consists in casting ingots of ferro-alloys such as ferro-silicon, silico manganese, magnesium ferro-silicon, ferro-manganese, iron-chromium-silicon alloy, and the like, removing the ingots from the chills or molds while the centers of the ingots are still molten, covering the hot ingots and permitting them to cool slowly to about 1200° F., then uncovering the ingots and permitting them to cool to room temperature, and then crushing the cold ingots to desired size for use as ladle or furnace additions.

3,433,284
METHOD OF CASTING A PITTED SURFACE
Fred J. Webbere, Orchard Lake, and Robert G. Williams, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,792
U.S. Cl. 164—111 **4 Claims**
Int. Cl. B22d *19/00, 31/50, 25/06*

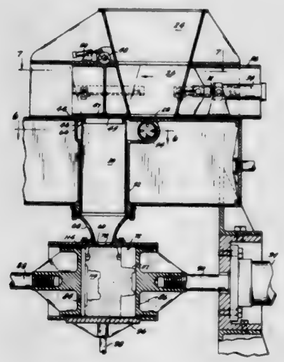
A method is disclosed of forming a cast surface characterized by a multiplicity of discrete cavities and re-

cesses. In a preferred embodiment a thin layer of thermosetting adhesive material is applied to a surface of a suitable mold. Sharp angular granular refractory material such as carbon is distributed on the adhesive-coated surface so that the granules are bonded to the surface and a



major portion of each granule protrudes from the adhesive layer. When molten metal is cast against the coated mold surface the metal flows around the protruding granules whereby, upon solidification of the metal, cavities and recesses are formed in the cast body.

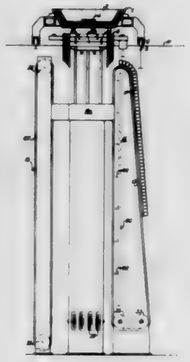
3,433,285
PNEUMATIC IMPACT-MOLDING MACHINE WITH SHUTTLE HOPPER
Harrison E. Fellows, Clearwater Lake, Wis. 54518
Filed July 30, 1965, Ser. No. 476,090
U.S. Cl. 164—193 **8 Claims**
Int. Cl. B22c *5/12, 15/22*



A pneumatic impact-molding machine including a magazine for delivering sand into the molding chamber, a source of sand offset from the magazine, a shuttle hopper mounted for movement transversely of the magazine between a position of registry with the source and a position of registry with the magazine, means for sealing the shuttle hopper to the magazine, and means for admitting a pneumatic fluid under pressure to the magazine for the impact filling of the molding chamber with sand delivered from the magazine.

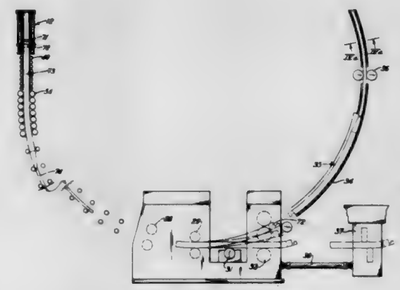
3,433,286
APPARATUS FOR CASTING SLAB TYPE INGOTS
Niels H. Jensen, Glen Moore, and Hubert C. Smith, West Chester, Pa., assignors to Lukens Steel Company, Coatsville, Pa., a corporation of Pennsylvania
Filed Jan. 20, 1966, Ser. No. 521,847
U.S. Cl. 164—274 **7 Claims**
Int. Cl. B22d *7/00, 11/12*

This abstract concerns a method and apparatus for casting a metal slab or ingot. A mold is positioned in a casting floor and molten metal is cast in the mold. Below the mold a stool is positioned which is lowered during casting by the elevator means. At the same time, multiple supports sustained the sides of the slab during downward



movement. Coolant is supplied to the mold as well as to the slab as it moves downwardly. After casting, the slab is again raised on the stool above the casting floor and a stripper crane removes the cast ingot.

3,433,287
DUMMY BAR DEVICE FOR CONTINUOUS CASTING MACHINE
Joseph I. Greenberger, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Jan. 11, 1965, Ser. No. 424,779, now Patent No. 3,370,641, dated Feb. 27, 1968. Divided and this application May 18, 1967, Ser. No. 655,696
U.S. Cl. 164—274 **10 Claims**
Int. Cl. B22d *11/08*

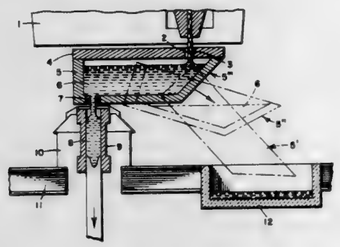


The present disclosure relates to an improved dummy bar assembly for use in a continuous casting machine. The invention also is addressed to a novel and useful pinch roll dummy bar arrangement.

3,433,288
CONTINUOUS CASTING APPARATUS WITH TILTABLE INTERMEDIATE LADLE
Klaus Bick and Bernhard J. Tinnes, Paderborn, Germany, assignors to Paderwerk Gebr. Benteler, Paderborn, Germany
Filed Oct. 18, 1965, Ser. No. 497,342
Claims priority, application Germany, Oct. 21, 1964, P 35,320
U.S. Cl. 164—281 **3 Claims**
Int. Cl. B22d *11/10*

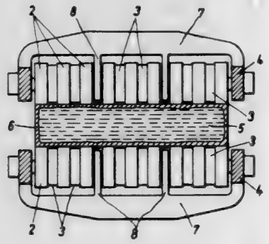
An intermediate ladle movably mounted above a casting

mold and below a casting ladle, on sliding means and



roller means for guiding its movement horizontally and vertically in a tilting manner.

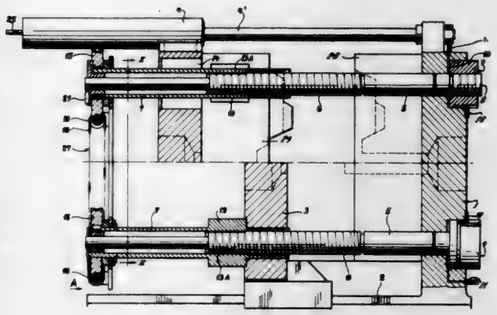
3,433,289
GUIDE MEANS FOR THE CASTING IN A CONTINUOUS CASTING MACHINE
Hans Schrewe, Duisburg-Ungelsheim, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed June 23, 1966, Ser. No. 559,899
Claims priority, application Germany, June 23, 1965, M 65,684
U.S. Cl. 164—282 **3 Claims**
Int. Cl. B22d *11/12*



Guide means for a continuous casting have externally recessed guide rolls that engage the casting, and the recesses form with the casting surface passages for conducting away in divided streams a cooling liquid that is applied to the rolls.

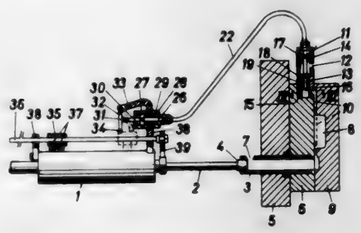
3,433,290
PRESSURE-TYPE DIECASTING MACHINE WITH SCREW THREADED ADJUSTMENT OF MOLD HALVES
Ulrich Eggenberger and Karl A. Neuenschwander, Oberuzwil, Saint Gall, Switzerland, assignors to Gebruder Buhler, Uzwil, Switzerland
Filed Jan. 21, 1966, Ser. No. 522,263
Claims priority, application Switzerland, Jan. 29, 1965, 1,248/65
U.S. Cl. 164—303 **10 Claims**
Int. Cl. B22d *17/00;* **B29f** *1/022*

A diecasting machine includes a frame, a stationary mold carrier fixed to said frame, a movable mold carrier movably mounted on said frame for movement relative to the fixed mold carrier between a mold closing and a mold opening position, and hydraulic actuator means connected between the fixed and movable mold carriers for effecting such movement. Plural rods have fixed ends secured to the stationary mold carrier, and extend through openings in the movable mold carrier with free ends of the rods projecting substantially beyond the movable mold carrier. Nut members are associated with the rods and each includes a sleeve having an end engaged in the movable mold carrier with each sleeve extending beyond the movable mold carrier, in mutually supporting relation with their respective rod, throughout the projecting free length of their respective rod. The nut members are threadedly engaged with the rods, and include projections normally abutting against that side of the movable carrier facing away from the fixed carrier. The movable carrier is formed with channels extending therethrough and align-



able with the projections on the nut members by rotation of the nut members so that the movable carrier may move along the nut members toward and away from the fixed carrier. Common driving means are provided to conjointly rotate all of the nut members in either selected direction, and the common drive means include fluid pressure actuated means selectively operable to move the nut members through selected arcs to either align the projections with the channels or move the projections out of alignment with the channels. Fluid pressure actuator means are operable between the fixed carrier and the rods to exert a closing pressure on the two mold halves carried by the mold carriers.

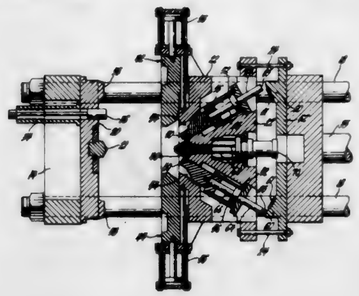
3,433,291
VENTING OF PRESSURE MOLDING APPARATUS
Fritz Hodler, Ave. de Collonge 28, Territet, Switzerland
Filed Aug. 8, 1966, Ser. No. 570,956
Claims priority, application Germany, Aug. 16, 1965, H 56,886
U.S. Cl. 164—305 **16 Claims**
Int. Cl. B22d *17/32, 17/26*



A venting valve on the die of a diecasting machine is closed by a slender compression member when the die is filled with metal. The compression member is a flexible, laminated strip guided in a flexible tube by balls. The compression member is moved either by a hydraulic

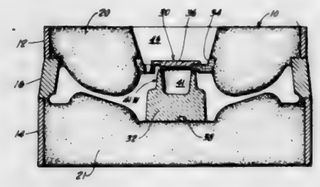
piston which responds to maximum pressure in the pressure fluid operating the injection cylinder or by an abutment on the injection piston through a linkage.

3,433,292
LOCKING MECHANISM FOR DIECASTING
John W. McDonald, Toledo, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,853
U.S. Cl. 164—343 **7 Claims**
Int. Cl. B22d *17/26*



A locking mechanism is disclosed for diecasting machines employing a die member in the ejector die assembly which member is movable obliquely with respect to the axis of movement of the ejector die. In a preferred embodiment a backup plate is connected to the ejector die assembly by means of a lost motion connection. The backup plate locks the die member in the machine closed position and is moved away from the ejector die in the machine open position to permit withdrawal of the die member from the die cavity.

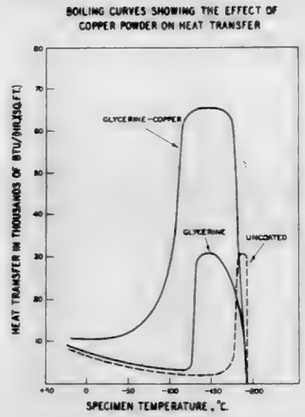
3,433,293
MOLD FOR CASTING RAILROAD CAR WHEELS
Fred W. Ponzar, St. Louis, Mo., assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,989
U.S. Cl. 164—358 **3 Claims**
Int. Cl. B22c *9/28*



A mold for casting a railroad wheel comprising a center core, a gate core reposing on the center core, and a float core resposing on the gate core; and so arranged and formed in relation to a riser opening in the mold as to facilitate completion of the hub opening of the wheel.

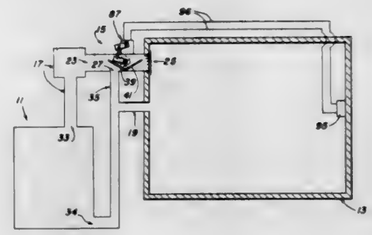
3,433,294
BOILING HEAT TRANSFER SYSTEM
William J. Timson, Arlington, Mass., assignor to Union Carbide Corporation, a corporation of New York
Original application Dec. 6, 1963, Ser. No. 329,350, now Patent No. 3,291,198, dated Dec. 15, 1966. Divided and this application July 7, 1966, Ser. No. 586,313
U.S. Cl. 165—1 **9 Claims**
Int. Cl. F28c *3/00*

Heat transfer between boiling liquid such as liquid nitrogen and a metal solid in thermal contact with the liquid is increased under conditions such that an insulating film of superheated vapor would normally exist, by coating the metal surface with material of lower thermal



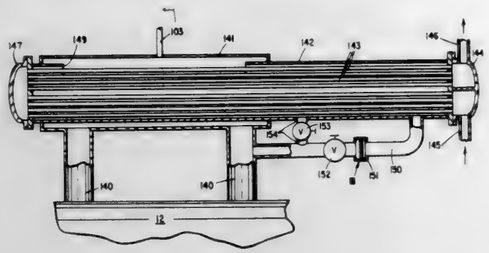
conductivity than the metal, the coating being of sufficient thickness to reduce the temperature difference between the boiling liquid and the metal surface and prevent the creation of the insulating film.

3,433,295
ROOM AIR DISTRIBUTION AND CONTROL DAMPER MEANS IN AN AIR CONDITIONING SYSTEM
Gilbert H. Avery, 4542 Aldersgate Road, Memphis, Tenn. 38117
Continuation-in-part of applications Ser. No. 444,195, Mar. 31, 1965, and Ser. No. 538,505, Feb. 25, 1966. This application Oct. 3, 1967, Ser. No. 681,608
U.S. Cl. 165—35 **17 Claims**
Int. Cl. G05d *23/13*



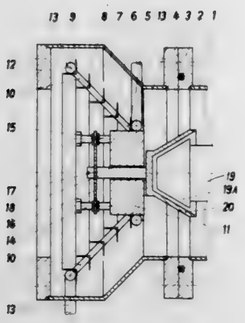
An air conditioning system having a primary duct with first and second valve means in said primary duct which are linked together and actuated by temperature control means to provide a substantially constant velocity of air through the primary outlet opening of the primary duct. A by-pass leads from the primary duct and the amount of air diverted therethrough is controlled by the first valve means. A modified form of the air conditioning system has a secondary duct, heater means therein, and a third valve for controlling the amount of air diverted therethrough.

3,433,296
HEATING AND COOLING SYSTEM
Louis H. Leonard, Jr., De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Application May 23, 1966, Ser. No. 552,257, now Patent No. 3,389,747, dated June 25, 1968, which in turn is a division of application Ser. No. 377,314, June 23, 1964, now Patent No. 3,289,745. Divided and this application Aug. 28, 1967, Ser. No. 663,810
U.S. Cl. 165—39 1 Claim
Int. Cl. F25b *29/00*



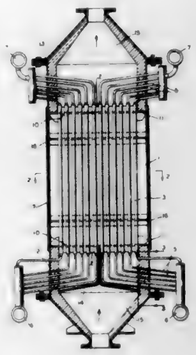
A heat exchanger for circulating heating medium for heating a load. The heating medium is heated by steam. A trough surrounds a tube bundle and contains water about the tube bundle for regulating the heating capacity of the tube bundle. The amount of water is varied to regulate the heating capacity of the heat exchanger.

3,433,297
SELECTIVELY COOLED MOTIVE FLUID TRAP FOR A VACUUM STEAM PUMP
Marcel Kohler, Balzers, Liechtenstein, assignor to Balzers Patent- und Lizenz-Anstalt, Balzers, Liechtenstein
Filed Aug. 21, 1967, Ser. No. 661,903
Claims priority, application Switzerland, Aug. 23, 1966, 12,251/66
U.S. Cl. 165—40 6 Claims
Int. Cl. F28b *9/10*; F28d *1/06*



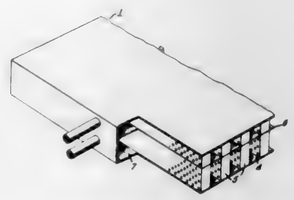
A motive fluid trap for a vacuum steam pump formed by a trap housing mounted on the steam pump. Means are disposed within the trap housing for condensing the motive or fluid vapor including a support block secured to the trap housing. A nozzle cap for a nozzle, located in the upper part of the pump, is positioned just below the support block. A shield for the nozzle cap is dependently secured to a thermally responsive support element mounted on the block whereby the shield is movably positionable with respect to the nozzle cap in relation to the temperature to which the thermally responsive support element is exposed within the trap housing.

3,433,298
HEAT EXCHANGER ESPECIALLY FOR THE COOLING OF HOT GASES
Frohmut Vollhardt, Kassel-Brasselsberg, Germany, assignor to Schmidt'sche Heissclampf Gesellschaft m.b.H., Kassel-Bettenhausen, Germany
Filed Apr. 17, 1967, Ser. No. 631,250
Claims priority, application Germany, May 3, 1966, Sch 38,925; Nov. 2, 1966, Sch 39,762
U.S. Cl. 165—134 12 Claims
Int. Cl. F28f *1/32, 1/34*; F28d *7/10*



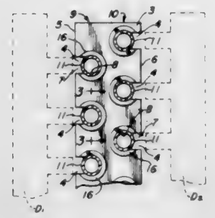
The heat exchanger has a plurality of substantially straight pipes with longitudinally extending fins thereon for the cooling medium. The fins on the pipes are used to form parallel pipe walls for the medium to be cooled. The exterior pipes are secured together by welding longitudinal fins on the pipes to adjacent and neighboring pipes. The construction permits the formation of passages for the gas to be cooled and at the same time forms at the exterior a casing which is resistant to pressure. The passages between the walls are closed laterally by ribs on the pipes.

3,433,299
HEAT EXCHANGER OF POROUS METAL
Robert B. Fleming, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 16, 1967, Ser. No. 616,644
U.S. Cl. 165—135 3 Claims
Int. Cl. F28f *1/10*



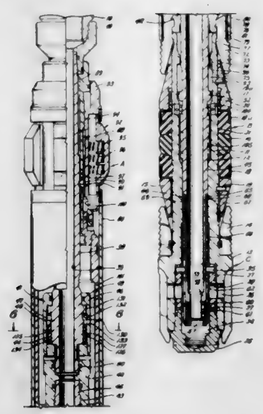
A heat exchanger made of two or more channels in which fluids pass in counterflow or parallel flow through a plurality of plates made of porous heat conductive material. The plates extend across the channels and are in thermal contact from one channel to the adjacent channel or channels so that heat may be conducted laterally while the fluids are flowing longitudinally in counterflow or parallel flow relation.

3,433,300
HEAT EXCHANGERS AND THE METHOD OF MAKING SAME
Stephen F. Pasternak, Park Ridge, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Sept. 1, 1966, Ser. No. 576,599
U.S. Cl. 165—151 10 Claims
Int. Cl. F28f *1/24*; F28d *21/00*



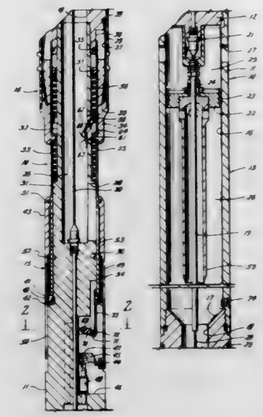
Heat exchangers of the side-entry cross fin type wherein the fin slots have small entry portions opening into the tube accommodating portions thereof.

3,433,301
VALVE SYSTEM FOR A WELL PACKER
Robert M. McEver, Jr., Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 5, 1967, Ser. No. 673,176
U.S. Cl. 166—128 4 Claims
Int. Cl. E21b *23/00, 33/12, 33/13*



The particular embodiment described herein as illustrative of one form of the invention is a well packer valve system including a rotary valve sleeve for opening and closing a flow passage through the well packer, tubular valve actuating means sealingly slidable in the flow passage and having one end portion releasably coupled to the valve sleeve and the other end portion adapted for connection to a pipe string, coengageable means for rotating the actuating means and valve sleeve in response to successive downward and upward movements of the pipe string, and means for limiting alternate upward movement of the pipe string.

3,433,302
APPARATUS FOR DISCHARGING FLUENT SUBSTANCES INTO WELL BORES
James B. Shore, Friendswood, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 6, 1967, Ser. No. 680,647
U.S. Cl. 166—162 30 Claims
Int. Cl. E21b *27/00, 43/11, 23/00*

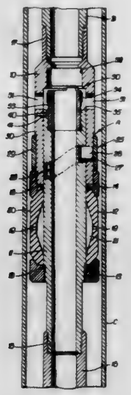


The particular embodiment described herein as illustrative of the invention is directed to a well-completion tool having a reservoir adapted to contain a fluent substance to be discharged into a well bore. An extendible flow diverter is mounted around the tool and normally secured in a retracted position by a selectively-operable latch. Upon reaching a desired position in a well bore containing fluids, the latch is actuated to release the diverter for movement by first biasing means to its extended position. Thereafter, continued movement of the tool along the well bore will induct well bore fluids into the reservoir ahead of the diverter to displace fluent substances from the reservoir and into the well bore behind the diverter. When the fluent substances are exhausted, the first biasing means are selectively disabled and second biasing means will return the diverter to its retracted position. When the tool also includes a well perforator, selectively-operable switching means may also be provided for arming the perforator upon extension of the diverter.

3,433,303
ROTATIONALLY SET WELL PACKER
Earnest H. Clark, Jr., Downey, John F. De Rochemont, La Habra, and Julian D. Keithahn, Downey, Calif., assignors to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed Nov. 7, 1966, Ser. No. 592,628
U.S. Cl. 166—184 12 Claims
Int. Cl. E21b *33/12*

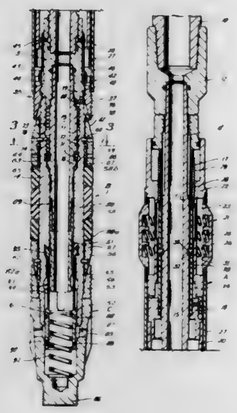
A rotationally set well packer in which upper and lower telescopic bodies have abutments movable toward and away from one another upon telescopic movement of the bodies, a resilient packer sleeve being disposed between the abutments for expansion and retraction responsive to such telescopic movement of the bodies, and in which telescopic movement of the bodies is effected by a pin on one body engaged in a compound slot in the other body including axially and circumferentially spaced slot portions disposed on planes normal to the axis of the bodies and an inclined slot interconnecting said slot por-

tions, rotation of one body relative to the other effecting telescopic movement of the bodies by the camming action of the pin and inclined slot. Such a packer in which



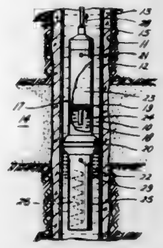
the bodies have cooperable valve means openable upon telescopic extension of said bodies and closable upon telescopic contraction of said bodies.

3,433,304
COUPLING DEVICE FOR USE IN WELL TOOLS
Garnet L. Pavlas, Stafford, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed May 18, 1967, Ser. No. 639,439
U.S. Cl. 166—226 **16 Claims**
Int. Cl. E21b *23/00*



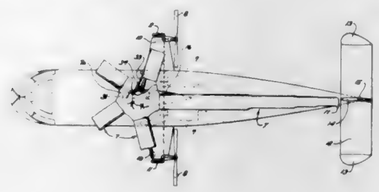
A coupling apparatus for use with well tools in well bores to releasably couple elongate members to one another includes a coupling device on one of the members which can engage the other member in one position to prevent longitudinal relative movement of the members. In response to rotation of one of the members, the coupling device is movable along at least one of the members to another position of engagement with the other member wherein limited reciprocation is permitted of one member relative to the other. In further response to a predetermined force applied to one of the members without rotation, the coupling device can be released from engagement with the other member to uncouple the members from one another, and the members can be recoupled as desired with the coupling device in the second position.

3,433,305
METHODS FOR DISCHARGING FLUENT SUBSTANCES INTO WELL BORES
William T. Bell, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 6, 1967, Ser. No. 680,648
U.S. Cl. 166—297 **4 Claims**
Int. Cl. E21b *43/11, 33/13*



The particular methods described herein as illustrative of the invention are operative for replacing fluids in a selected interval of a well bore with suitable fluent substances. Various embodiments of apparatus for practicing the methods of the invention are described and generally include a reservoir adapted to contain a fluent substance. A flow diverter is also included with each of the disclosed tools so that movement of at least a portion of the tool in relation to a well bore will induct well bore fluids into the reservoir and discharge the fluent substance into the well bore.

3,433,306
CAMBERED BLADE FOR AIRCRAFT SUSTAINING ROTOR
Paul H. Stanley, Glenside, Pa., assignor to Autogiro Company of America, Jenkintown, Pa., a corporation of Delaware
Filed Oct. 18, 1967, Ser. No. 676,342
U.S. Cl. 170—159 **8 Claims**
Int. Cl. B64c *27/46, 27/00, 11/00*

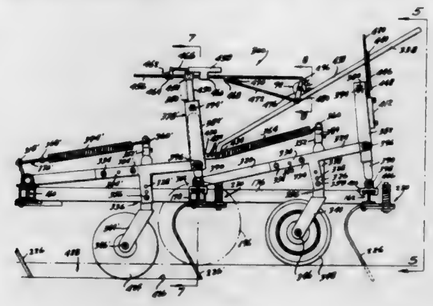


A sustaining rotor blade for rotary wing aircraft having a substantially fixed center of pressure cambered blade section throughout at least most of the outboard portions of the blade, having substantially the same mean camber line throughout the cambered portions of the blade and being of reduced chord dimension and reduced thickness ratio in the tip region of the blade as compared with inboard regions of the cambered portion of the blade.

3,433,307
AUTOMATIC CUTTING DEPTH REGULATOR FOR SHANK-TYPE CULTIVATORS AND THE LIKE
Wayne C. Gilbert, 807 1st St. W., Roundup, Mont. 59072
Filed Dec. 10, 1965, Ser. No. 512,931
U. S. Cl. 172—4 **6 Claims**
Int. Cl. A01b *63/111, 63/10, 19/04*

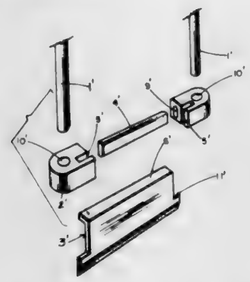
A mobile farm implement having frame supporting ground engaging tools, at least one frame supporting

wheel vertically adjustable relative to said frame to control the depth of penetration of said tools, an automatically operated control means monitoring said vertical adjustment means to maintain a constant depth of ground penetration of said tools, said automatic means including tracking means suspended on a substantially vertical swivel axis from said frame and swingable about a horizontal pivot to track the bottom of a furrow cut by a ground engaging



tool, sensing means suspended on a substantially vertical swivel axis from said frame and swingable about a horizontal pivot for sensing the surface of the ground, and means connected with the tracking and sensing means operable in response to a change in the vertical distance between the tracking and sensing means to move said vertical adjustment means for the wheel to maintain a constant vertical adjustment of the tool from the ground surface.

3,433,308
LAWN TOOL
William F. Tufts, Atlanta, Ga., assignor to C. M. Tuck & Associates, Inc., Athens, Ga., a corporation of Georgia
Filed Aug. 25, 1965, Ser. No. 483,030
U.S. Cl. 172—18 **2 Claims**
Int. Cl. A01b *45/00, 41/00*



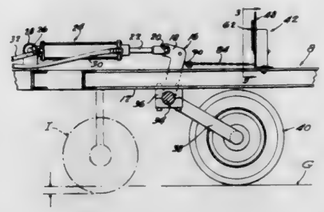
A lawn tool having a frame carrying floating blade which can pivot in the frame and also move vertically.

ERRATUM

For Class 172—67 see:
Patent No. 3,433,706

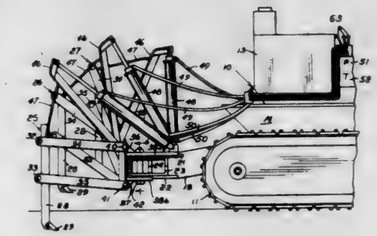
3,433,309
AGRICULTURAL IMPLEMENT WORKING DEPTH GAUGE
Henry L. Michaelis, Box 152, and Larry D. Michaelis, both of Utica, Kans. 67584
Filed Jan. 7, 1966, Ser. No. 519,282
U.S. Cl. 172—430 **1 Claim**
Int. Cl. A01b *65/06, 71/02;* **G09f** *9/40*

A tool depth indicator for an agricultural implement of the type having a depending tool and a hydraulically-operated actuating lever controlling the position of a ground-engaging depth wheel. The indicator consists of a dial plate fixed to the implement and a rotary pointer on a shaft journalled in the dial plate. A peripherally-



grooved wheel is secured on the shaft. A chain is secured on the periphery of the wheel and extends through a fixed guide tube to the actuating lever. A spring acts on the wheel in a direction to maintain the chain taut.

3,433,310
RIPPER TOOTH MOUNTING FOR EARTH-WORKING MACHINES
Cecil R. Harper, E. 8525½ Main, Spokane, Wash. 99206
Filed Apr. 25, 1966, Ser. No. 544,882
U.S. Cl. 172—471 **4 Claims**
Int. Cl. A01b *63/108, 13/08*

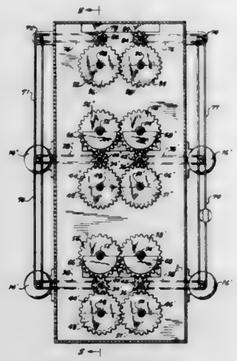


A ripper tooth attachment for an earth working machine embodies a cross bar with means to secure it to the machine so that the cross bar is held in a horizontal position and extends transverse to the direction of travel of the machine. A plurality of clevises are mounted to the cross bar and spaced apart along the bar. Each clevis has a pair of vertically spaced parallel yokes pivoted thereon and extending rearwardly therefrom. An upright ripper tooth is pivoted to the free ends of each pair of yokes so it can be raised and lowered while maintaining its upright position. Each clevis has an individually operable hydraulic jack thereon connected to the upper yoke carried by that clevis to raise and lower the yokes and thus individually control the level of each one of the several yokes. Individual control lines extend from each jack to a control unit on the machine.

3,433,311
PILE DRIVER AND EXTRACTOR WITH ROTATING ECCENTRIC MASSES OF VARIABLE WEIGHTS
Jean Louis Lebelle, 35 Rue Gounod, Saint-Cloud, France
Filed May 31, 1967, Ser. No. 642,487
U.S. Cl. 173—49 **10 Claims**
Int. Cl. E02d *7/18;* **F16h** *33/14;* **E21c** *3/02*

A pile driver and extractor in which sets of balanced counter rotating eccentric masses are rigidly connected to an elongated ground engaging element in such fashion

that the masses develop a vibratory force along the axis of the element with forces at right angles thereto being cancelled. Clutches are provided to vary the number of

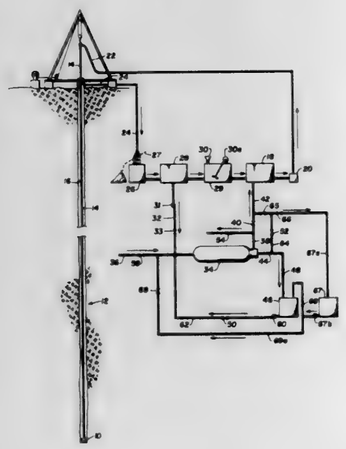


operating sets of such masses and the masses when driven turn in cadence (as hereinafter defined) so that the vibratory effect is equivalent to that of masses of variable weight.

3,433,312
PROCESS FOR RECOVERING VALUABLE COMPONENTS FROM DRILLING FLUID

Ralph F. Burdyn, Dallas, and Murrell D. Nelson, Arlington, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 1, 1967, Ser. No. 642,740
U.S. Cl. 175—66 **16 Claims**
Int. Cl. E21b *21/04*; **E21c** *7/08*



This specification discloses a method of recovering and using a valuable heavy solids phase and a valuable fine solids phase from a drilling fluid being used to drill a well into subterranean formations. The method comprises the steps of: (a) running a portion of the drilling fluid through a particle segregator and effecting a separation of the portion of the drilling fluid into two streams; one, an underflow containing the heavy solids phase and, the second, a low density effluent containing an intermediate solids phase and the fine solids phase, (b) returning the heavy solids phase to the drilling fluid being circulated, (c) subsequently treating the low density effluent to separate the intermediate solids phase therefrom, and (d) employing the fine solids phase to control the properties of the drilling fluid being circulated. The subsequent treatment of step (c) preferably comprises rerunning the low density effluent through a particle segregator operating under conditions effecting separation of the low density effluent into an underflow containing the intermediate solids phase and an effluent containing the fine solids phase. The treatment of step (c), however, may comprise adding a flocculant and subsequently separating the flocculated intermediate solids from the low density effluent. Furthermore, both (1) the step of rerunning the low density effluent through the particle segregator and (2) the addition of a fluocculant and separation of a solids phase may be employed as the treatment of step (c).

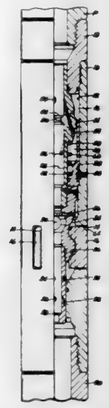
ERRATUM

For Class 175—330 see:
Patent No. 3,433,331

3,433,313
UNDER-REAMING TOOL

Cicero C. Brown, 8490 Katy Road, Houston, Tex. 77024

Filed May 10, 1966, Ser. No. 548,914
U.S. Cl. 175—270 **15 Claims**
Int. Cl. E21b *9/26*



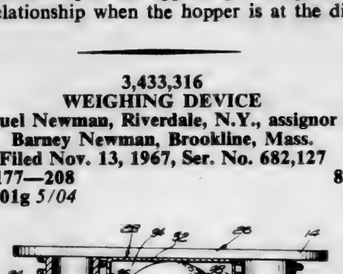
A drilling tool having a tubular body with a sleeve movably positioned therein and adapted when moved in one direction responsive to the pressure of drilling fluid to move cutters to their opposite direction, also responsive to the pressure of drilling fluid, to allow the cutters to retract from their cutting position, a drilling fluid passage to increase the flow area for drilling fluid when the cutters are in their cutting position and a means of positively moving the sleeve in the opposite direction with a wireline tool.

3,433,314
JACK-TYPE WEIGHER WITH CANTILEVER SPRING

Robert W. Peterson, Park Ridge, Ill., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware

Filed Aug. 14, 1967, Ser. No. 660,462
U.S. Cl. 177—146 **9 Claims**
Int. Cl. G01g *19/52*, *19/02*

A light, portable, adjustable stand with a transverse lever to engage and lift the rim of a racing car wheel has a liquid level to show the correct position to start the lift and a pointer co-operating with a scale that is calibrated



to indicate by bending of the lever how much weight is lifted.

3,433,315
METHOD AND APPARATUS FOR HANDLING BULK CEMENT

Dennis E. Kohls, Salina, Donald L. Moe, Topeka, and Harry W. Reece, Scandia, Kans., assignors to Reece Construction Co., Inc., Scandia, Kans., a corporation of Kansas

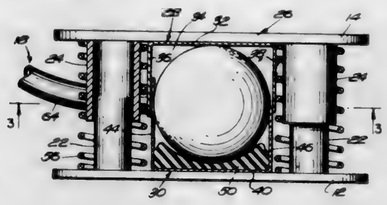
Filed Nov. 2, 1966, Ser. No. 591,575
U.S. Cl. 177—151 **2 Claims**
Int. Cl. G01g *23/02*

Method and apparatus for handling cement in bulk form wherein the cement is delivered from a closed container under fluid pressure into an accumulator for subsequent delivery to a weighing hopper, which hopper is shiftable from its weighing position to a position for discharging the cement therefrom into a cement mixer. The hopper is shiftably carried by track structure having a live portion coupled with the weighing scale and a dead portion extending from the live portion to the discharge position, the dead portion supporting the hopper in cantilevered relationship when the hopper is at the discharge position.

3,433,316
WEIGHING DEVICE

Samuel Newman, Riverdale, N.Y., assignor to Barney Newman, Brookline, Mass.

Filed Nov. 13, 1967, Ser. No. 682,127
U.S. Cl. 177—208 **8 Claims**
Int. Cl. G01g *5/04*

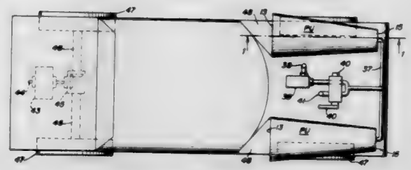


A weighing device having a base and platform and between which an air cell is located, the air cell communicating through a flexible tube with an indicator that is movable to a variety of positions, and the air cell being further responsive to a load that is imposed on the platform for producing a corresponding indication on the indicator.

3,433,317
VARIABLE SYSTEMS OF PROPULSION FOR AUTOMOBILES

Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Minn. 55424

Filed Sept. 26, 1966, Ser. No. 581,868
U.S. Cl. 180—7 **14 Claims**
Int. Cl. B62d *57/04*

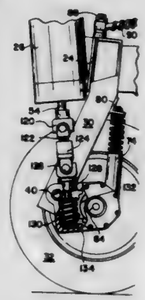


Propulsion systems for automobiles wherein the primary power producing means is a gas turbine means, which is arranged to produce propulsion power for an automobile through several means, one of which is electromagnetic transmission means and another of which is impulsive jet thrust type means. The electro-magnetic transmission means may be either of two types, one of which includes generation means and motor means and the other of which is by a single unit electro-magnetic drive.

3,433,318
POWERED STEERABLE WHEEL AND SUSPENSION MEANS FOR VEHICLES

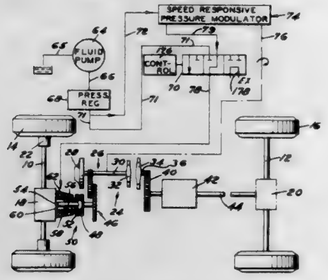
Theodore A. Packard, 2711 W. Coulter, Phoenix, Ariz. 85017

Filed Mar. 16, 1967, Ser. No. 623,766
U.S. Cl. 180—26 **2 Claims**
Int. Cl. B62d *61/06*, *7/00*



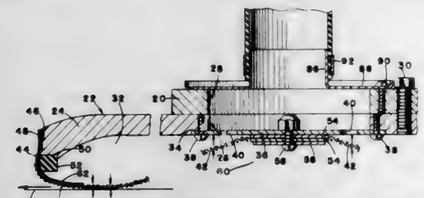
A powered steerable wheel and suspension means for vehicles, wherein a wheel suspension strut is pivotally steerable on a substantially vertical axis, and a swing arm is pivotally and resiliently mounted on a lower portion of the strut to carry a wheel hub to thereby provide resilient suspension of the wheel relative to the strut, and motor drive means, also carried on the steerable strut and coupled by rotary drive means to the wheel for driving the same.

3,433,319
FOUR-WHEEL DRIVEN GAS TURBINE VEHICLE WITH CLUTCH-CONTROLLED DRIVE TO FRONT AXLE
Arthur F. McLean, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,269
U.S. Cl. 180—44 **5 Claims**
Int. Cl. B60k *17/02, 3/04, 17/34*



A two/four-wheel drive arrangement for a motor vehicle driven by a gas turbine engine in which a conventional drive train connects the output shaft of a free power turbine type engine to one of the driving axles, the engine being connected to the other driving axle by a slippable clutch that, selectively, can: be fully engaged to provide engine braking for the vehicle; be completely disengaged to permit rapid acceleration of the gasifier section of the turbine engine; or the slip can be controlled automatically to maintain a predetermined operation of the gas turbine engine.

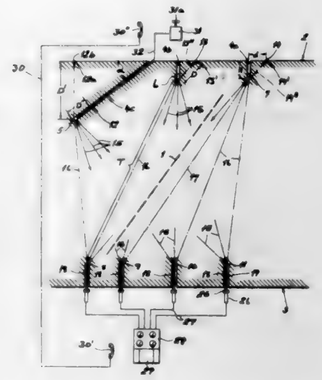
3,433,320
CHAIR BASE HAVING POROUS AIR DISCHARGE UNIT AND METHOD OF MAKING THE SAME
Robert A. Bresnahan, York, Pa., assignor to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,876
U.S. Cl. 180—124 **5 Claims**
Int. Cl. B60v *1/00*



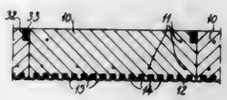
A self-leveling mobile supporting base for a chair seat of the type normally employed in the dental profession, barber shops, and beauty salons for purposes of moving the chair and person seated thereon along the floor, or elevating the chair and occupant to the most comfortable and efficient location for the operator and occupant.

3,433,321
METHOD OF AND APPARATUS FOR DETECTING FAULTS IN SUBSURFACE STRATA
Eberhard Borges, 78 Spillheide, 43 Essen-Heidhausen, Germany
Filed Jan. 19, 1967, Ser. No. 614,384
Claims priority, application Germany, Feb. 3, 1966, B 85,652
U.S. Cl. 181—.5 **9 Claims**
Int. Cl. G01v *1/13*

A system for the detection and evaluation of structural faults, inclusions, crevices, clefts and defect structures in subsurface strata (such as rock strata) in mountainous regions, coal and ore veins or seams and the like whereby one or more seismic-wave sources are arrayed along one side of the stratum to be evaluated and one or more seismic-wave receivers are disposed along an opposite side of the stratum with respect to the suspected fault, and analysis is carried out by detecting the energy of the direct seismic waves passing from the sources to the receivers. These direct waves are attenuated or blocked by the presence of fault or defect structures to an extent greater than the normal attenuation; the latter is measured to serve as a reference. An apparatus for detecting seismic waves of this type which includes a rod anchored via an expansion sleeve in a bore provided in the strata and clamped to a seismic-wave detector (e.g. a Geophone).

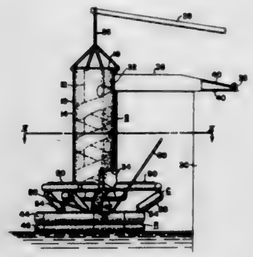


3,433,322
MONOLITHIC ACOUSTIC STRUCTURAL BUILDING ELEMENT
Karl Gustav Olsson, Solna, Sweden, assignor to Internationella Siporex Aktiebolaget, Stockholm, Sweden, a Swedish joint-stock company
Filed Apr. 14, 1965, Ser. No. 448,152
Claims priority, application Sweden, Apr. 23, 1964, 5,037/64
U.S. Cl. 181—33 **4 Claims**
Int. Cl. E04b *1/82*



This invention pertains to a monolithic structural building element in the form of a massive slab of reinforced cellular light weight concrete designed to form a load-supporting and room-enclosing body part of a building, especially a roof or floor spanning a workshop or factory hall and which has a surface presenting a plurality of substantially uniformly distributed, spaced, shallow recesses, preferably in the form of parallel grooves, cut out therein, said recesses containing frictionally retained masses of soft, porous and sound absorbent material which almost completely fills the recesses without projecting through the openings thereof.

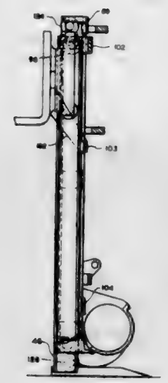
3,433,323
INFLATABLE ESCAPE SLIDEWAY APPARATUS
Akira Ukawa, Sagamihara, Kanagawa Prefecture, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Feb. 10, 1967, Ser. No. 615,122
Claims priority, application Japan, Feb. 15, 1966, 41/13,300
U.S. Cl. 182—48 **7 Claims**
Int. Cl. A62b *1/20;* **E04b** *1/34;* **E04g** *11/04*



The disclosed escape slideway apparatus is characterized by an enclosed inflatable spiral balloon providing, when inflated, an enclosed spiral slideway extending downwardly in the vertical direction. The slideway has its upper end adjacent to a boarding entrance and its lower end adjacent to an exit leading a landing composed of an inflated toroidal balloon attached to the lower end of the apparatus.

For use with a ship the apparatus further has an inflatable life raft of conventional construction connected to its lower end directly or through an articulated connection composed of an inflatable balloon.

3,433,324
METHOD AND MEANS FOR ADJUSTING AND ASSEMBLING LIFT TRUCK UPRIGHTS
Richard F. McIntosh, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Aug. 21, 1967, Ser. No. 662,170
U.S. Cl. 187—9 **26 Claims**
Int. Cl. B66b *9/20, 7/02*



A lift truck roller mounted extensible mast which includes one or more removable stop and/or connecting means operably located between two or more mast rail sections and/or a mast rail section and the lifting motor means. The mast or rail sections and stops or connecting means are manipulatable and constructed so as to provide an improved structure and method for assembling the mast sections with the guide rollers being mountable thereon subsequent to assembly of the mast sections, and an improved method for adjusting and/or replacing any or all of the guide rollers subsequent to assembly of the mast sections and without disassembling the mast sections one from the other.

3,433,325
METHOD AND MEANS FOR ADJUSTING AND ASSEMBLING LIFT TRUCK UPRIGHTS
Richard F. McIntosh, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Aug. 21, 1967, Ser. No. 662,171
U.S. Cl. 187—9 **15 Claims**
Int. Cl. B66b *9/20, 7/02*

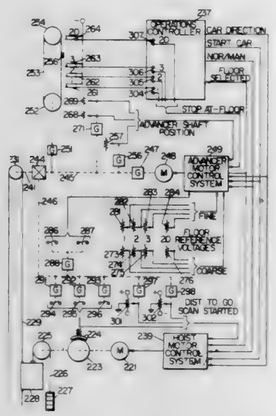


A lift truck roller mounted extensible mast which includes removable stop and/or connecting means operably located between outer and inner mast sections. One of the mast sections and the stop or connecting means are manipulatable and constructed so as to provide an improved structure and method for assembling the mast sections with the guide rollers being mountable thereon subsequent to assembly thereof, and an improved method for adjusting and/or replacing any or all of the guide rollers subsequent to assembly of the mast sections and without disassembling the mast sections one from the other.

3,433,326
ELEVATOR CONTROL SYSTEM
Otto Albert Krauer, Tuckahoe, Herbert Frederick Voigt, Flushing, and Harvey Ronald Schor, Rockaway Park, N.Y., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 495,446
U.S. Cl. 187—29 **19 Claims**
Int. Cl. B66b *1/36, 1/52*

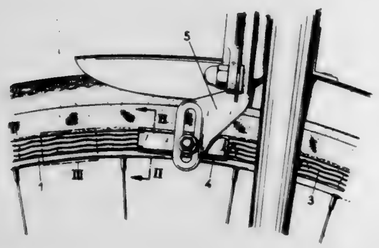
A landing selector arrangement used in an elevator system controls the car actuating and stopping mechanism. One member moveable in advance of the movement of the elevator car is aligned with a position corresponding to a selected landing by comparing a fixed signal representing the landing with a variable signal representing the position of the member. The error signal resulting from this comparison is applied through a servo amplifier to a motor which drives the member until it attains proper alignment. Once aligned, this one member co-acts through a differential mechanism with another member whose

position represents the position of the elevator car to produce throughout the deceleration of the car and until it stops at the selected landing a continuous signal indicative



of the distance of the car from that landing. This signal is suitable to control the car actuating and stopping mechanism to decelerate the car to stop it at the selected landing and to maintain it level with that landing.

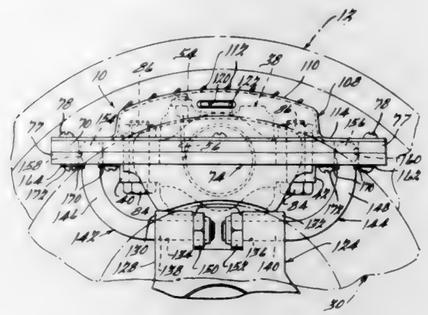
3,433,327
BRAKING SURFACE FOR THE RIMS OF BICYCLE WHEELS
Pierre A. Regis, Noyon, Oise, France, assignor to Societe Anonyme dite: Laminoirs A Froid De Thionville, Thionville, Moselle, France
Filed June 12, 1967, Ser. No. 645,153
Claims priority, application France, June 29, 1966, 67,537; Feb. 2, 1967, 94,604
U.S. Cl. 188—24 **4 Claims**
Int. Cl. B62l *1/00;* **F16d** *65/10*



A rim for a bicycle wheel having a braking surface formed with an undulating pattern of grooves positioned to be engaged by the braking surface on a brake shoe.

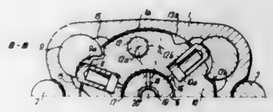
3,433,328
DISK BRAKE ASSEMBLY AND PIVOTAL SUPPORT MEANS THEREFOR
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Oct. 13, 1966, Ser. No. 586,562
U.S. Cl. 188—73 **5 Claims**
Int. Cl. F16d *55/00, 65/10*

A disk brake assembly embodying a light-weight fabricated caliper assembly comprised of a housing and a yoke member that is fixed to the housing. A supporting structure is also provided for supporting the caliper assembly



for sliding movement in a direction parallel to the axis of rotation of the associated brake disk and for absorbing braking torque.

3,433,329
REVERSING PAWL MECHANISM
Vladimir Koudelka, Krivoklat, Czechoslovakia, assignor to Naradi, narodni podnik, Prague, Czechoslovakia
Filed Apr. 5, 1967, Ser. No. 629,061
U.S. Cl. 188—82.2 **6 Claims**
Int. Cl. F16d *63/00;* **G05g** *5/06, 1/00*

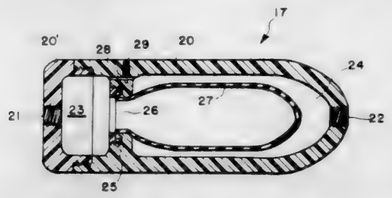


A body containing a rotatable ratchet and at least one partially cylindrical pawl which is partially rotatable and reversible in the body so that opposite longitudinal edges of the pawl may selectively engage the ratchet teeth, thus selectively arresting rotation of the ratchet in one direction or the other. An actuating disc coaxial with the ratchet carries a radially slidable pin which is yieldably biased outwardly against the pawl so that it partially rotates the pawl and reverses its setting when the disc is partially rotated relative to the body.

3,433,330
SAFETY DEVICE FOR HYDRAULIC BRAKE SYSTEMS
George W. Murray, Lowellville, Ohio, assignor of fifty percent to John L. Hinton, Youngstown, Ohio
Continuation-in-part of application Ser. No. 607,697, Jan. 6, 1967. This application Dec. 15, 1967, Ser. No. 690,907
U.S. Cl. 188—151 **1 Claim**
Int. Cl. B60t *11/10;* **F15b** *7/00*

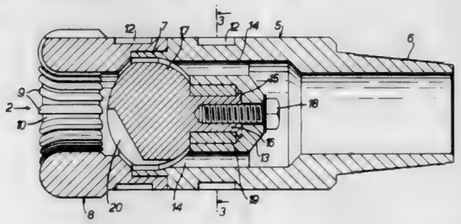
A tubular cartridge having two chambers separated by a flexible diaphragm is connected, in series, to the conduits of a hydraulic brake system of a motor vehicle. The first chamber is connected to the conduit leading from the master cylinder and the second chamber is connected to the conduit leading to the brake cylinder. Under normal conditions pressure is transmitted from the fluid in the first chamber to the fluid in the second chamber by the diaphragm. If a leak occurs in the conduit leading from the cartridge or in the brake cylinder, the

diaphragm is restrained by the cartridge walls and the remainder of the brake system remains operative. A



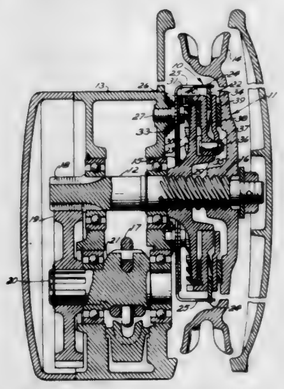
needle valve is provided for bypassing the diaphragm to permit air to be bled from the system.

3,433,331
DIAMOND DRILL BIT
Werner Heyberger, Talheim, Kreis Heilbronn, Germany, assignor to J. K. Smit & Sons, Diamond Tools Limited, London, England, a corporation of the United Kingdom
Filed May 22, 1967, Ser. No. 640,088
U.S. Cl. 175—330 **3 Claims**
Int. Cl. E21b *9/36, 9/00;* **E21c** *13/02*



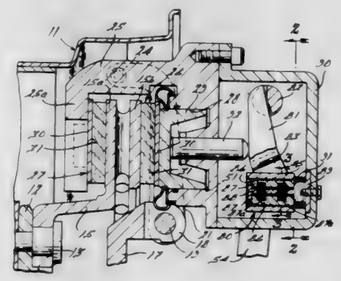
A diamond drill bit comprising a body portion, a crown portion in the form of an annulus presenting at least one cutting surface, and a centre portion arranged within said body portion to co-operate with said crown portion to present a further cutting surface. The centre portion also serving to control the flow of drilling fluid through the bit.

3,433,332
HOIST OVERLOAD PREVENTING DEVICE
Eugene R. Braun, Royal Oak, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 7, 1967, Ser. No. 629,210
U.S. Cl. 188—134 **14 Claims**
Int. Cl. B60t *7/12;* **F16d** *67/00, 57/10*



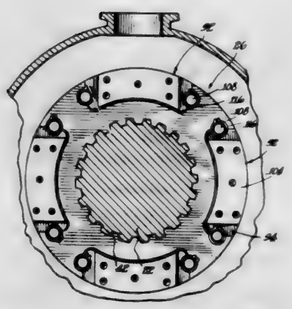
A ratchet disc acts in the usual way as a portion of a Weston brake mechanism on a hoist, but is formed in two parts that are assembled at opposed faces of a locking plate fixed to the hoist body. A Belleville spring acts between the ratchet parts and normally holds them in release relation to the locking plate. The spring will not accept excessive compressing forces, as when there is an overload on the hoist, and then will yield so that the ratchet parts will grip the locking plate, locking the hoist against movement.

3,433,333
ADJUSTING MEANS FOR DISK BRAKES
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Original application Feb. 17, 1966, Ser. No. 528,247, now Patent No. 3,365,029, dated Jan. 23, 1968. Divided and this application Dec. 15, 1967, Ser. No. 690,821
U.S. Cl. 188—196 **7 Claims**
Int. Cl. F16d *65/38, 55/00, 65/14*



A disk brake assembly incorporating an automatic adjusting device for taking up wear in the frictional linings of the brake pads. The automatic adjusting device is an extensible assembly that is interposed between the actuating piston of the brake assembly and a pivotally supported lever, which lever may also be used for manual operation of the brakes. The extensible assembly includes a serrated ratchet mechanism that permits elongation of the assembly upon excessive wear of the brake lining but which precludes compression or shortening of the member when it experiences a brake acutating force.

3,433,334
DISC BRAKE AND LINING DISC ASSEMBLY
Osborn A. Kershner, St. Joseph, Mich., assignor, by mesne assignments, to Lambert Brake Corporation, St. Joseph, Mich., a corporation of Michigan
Filed June 14, 1967, Ser. No. 646,027
U.S. Cl. 188—218 **3 Claims**
Int. Cl. F16d *65/10, 11/00, 13/60*



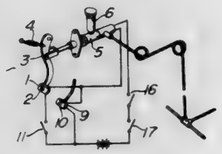
There is disclosed a disc brake having an annular friction disc with lining units or segments releasably retained in peripheral notches in an annular body of the disc for facilitating removal and replacement.

3,433,335
TRAVEL BAG FOR GARMENTS
Bernard Spitz, New Rochelle, N.Y., assignor to The Henry Hanger & Display Fixture Corporation of California, Los Angeles, Calif., a corporation of California
Filed Feb. 5, 1968, Ser. No. 703,114
U.S. Cl. 190—43 11 Claims
Int. Cl. A45c 7/00, 13/00; B65d 85/18



A generally flat bag, with or without gussets, for hanger-supported garments foldable transversely to dispose the hanger end in an external pocket of the bag with the hanger hook extending through an opening in the base of the pocket to act as a handle.

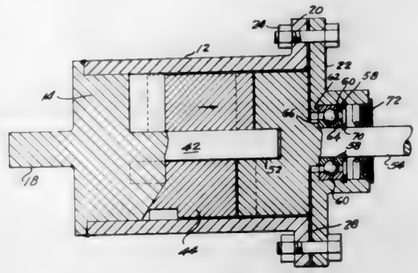
3,433,336
THROTTLE OPERATED BRAKE HOLDER
Akira Mizuno, 60 Shinmeicho, 7-chome, Kariya-shi, Japan
Filed Jan. 26, 1967, Ser. No. 612,022
Claims priority, application Japan, Mar. 11, 1966, 41/15,189
U.S. Cl. 192—3 6 Claims
Int. Cl. F16d 67/00, 23/00; B60t 11/10



A braking system for vehicle which is capable of automatically locking the wheels of a vehicle in a braked condition when the vehicle has been brought to rest but will not lock the wheel in the braked condition when it is actuated to reduce the speed of the vehicle during traveling, and which comprises an electromagnetic valve, a switch, a detecting switch, and a concealed switch.

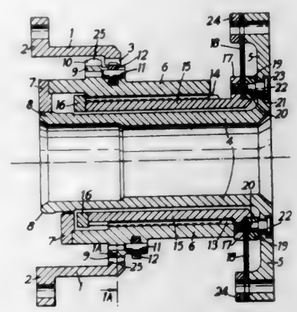
3,433,337
ONE-WAY FREEWHEELING CLUTCH
Horace R. Salter, Rte. 1, Box 40–D, Ringgold, La. 71068
Filed Dec. 16, 1966, Ser. No. 602,402
U.S. Cl. 192—46 1 Claim
Int. Cl. F16d 11/00, 13/04, 41/00

An over-running clutch assembly to form a freely rotating connection between driving and driven shafts, said cluch comprising: an open, rotatable shell having a closed end and means to connect said end to a driving shaft, said shell having a central interior dowel extending axially of said shell and a toothed base member surrounding said dowel and rotatable therewith; a member rotatable and slidable on said dowel, said member having teeth on each



of its axial faces; a driven member rotatably mounted on the free end of said dowel and having teeth to engage one face of said member; a closure plate for the open end of said shell, said plate providing a sealed bearing for a driven shaft protruding from said driven member.

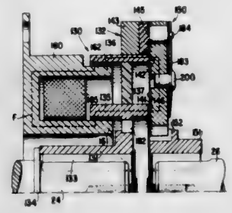
3,433,338
CLUTCH ARRANGEMENT
Herbert A. Clements, Weybridge, England, assignor to S.S.S. Patents Limited, London, England
Filed Feb. 6, 1967, Ser. No. 614,099
Claims priority, application Great Britain, Feb. 9, 1966, 5,744/66
U.S. Cl. 192—67 3 Claims
Int. Cl. F16d 11/04, 11/10, 13/22



The invention relates to synchronous self-shifting rotary toothed clutch arrangements of the type comprising two rotary clutch members arranged substantially coaxially, one of the rotary clutch members having clutch teeth, and an intermediate member provided with clutch teeth and constrained for helical movement relative to the other rotary clutch member, the clutch arrangement also including means, e.g. pawl and ratchet mechanism, for initiating clutch engagement upon passage of the two rotary clutch members through rotational synchronism in one direction of relative rotation. To enable the clutch arrangement to accommodate some misalignment of the axes of rotation of the two rotary clutch members, in accordance with the invention an auxiliary member is provided which is drivably connected, in the angular sense,

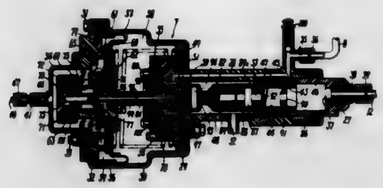
to the intermediate member and is drivably connected, in the angular sense, to the said other rotary clutch member via a flexible driving connection, e.g., a flexible diaphragm or driving teeth interengaged with clearance.

3,433,339
CLUTCH APPARATUS
Samuel R. Martin and John T. McKibbin, High Point, N.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 21, 1966, Ser. No. 581,069
U.S. Cl. 192—84 6 Claims
Int. Cl. F16d 27/07



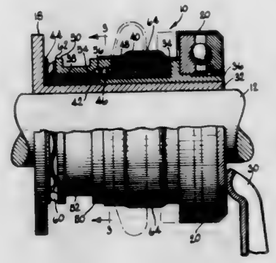
An electromagnetic clutch comprising a disk with first and second depth undercuts. The second depth undercuts are oil carrying grooves to break the fluid suction seal, upon release of the clutch, without reducing the electrical efficiency of the clutch.

3,433,340
CLUTCH SERVOCONTROL APPARATUS FOR AUTOMOTIVE VEHICLES
Kiyoharu Murakami, Neyagawa, Japan, assignor to Kabushiki Kaisha Daikin Seisakusho, Neyagawa, Osaka, Japan
Filed May 22, 1967, Ser. No. 640,087
Claims priority, application Japan, Aug. 3, 1966, 41/51,182
U.S. Cl. 192—91 3 Claims
Int. Cl. F16d 13/44, 25/00, 19/00



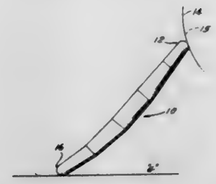
In hydraulic clutch operating system for automobiles, the hydraulic transmission line connecting a clutch master-cylinder to a clutch slave-cylinder is intermediately provided with two pistons fitted into subcylinder and movable cylinder. Said pistons are connected to move integrally. Said movable cylinder is fitted into main-cylinder, to which the oil pressure coming from master-cylinder is fed through movable cylinder. Piston and power piston rods connected to movable cylinders are disposed in pressure-air-operated servomotor chamber, a valve regulating pressure-air flowing to servomotor diaphragm is operated to change direction of flow by piston rod operated by pressure difference between said pistons, while pressure air imparted to diaphragm works on movable cylinder when clutch is disengaged, thereby reducing treadling force of clutch pedal.

3,433,341
SELF-ADJUSTING CLUTCH RELEASE BEARING ASSEMBLY
Martin C. Bohn, Highland Park, John F. Brady, Chicago, John O. Spinello, Blackhawk Heights, and Kenneth G. Rice, Evergreen Park, Ill., assignors to Chicago Clutch Manufacturing Co., Inc., Chicago, Ill., a corporation of Illinois
Filed May 11, 1967, Ser. No. 637,767
U.S. Cl. 192—111 4 Claims
Int. Cl. F16d 11/00, 13/60, 19/00



A self-adjusting clutch release bearing assembly for automatically repositioning the clutch release bearing as the clutch disc facing wears. A controlled collapsible or extendible clutch release bearing carrier with ball bearings retained in an angled cavity of a sleeve member surrounding one end of the carrier, permitting the assembly to controllably collapse or extend to reposition the release bearing with respect to the clutch; and also enabling the assembly to move in a unitary manner during disengagement of the clutch.

3,433,342
INFLATABLE EVACUATION SLIDE
Richard Switlik, Allentown, N.J., assignor to Switlik Parachute Company, Inc., Trenton, N.J.
Filed Feb. 1, 1968, Ser. No. 702,219
U.S. Cl. 193—25 9 Claims
Int. Cl. B65g 11/10; B64c 1/22; B64d 9/00

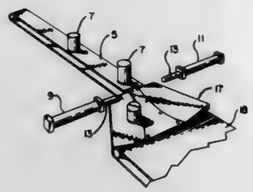


An inflatable evacuation slide for use with an aircraft, the slide having an inflatable support frame including longitudinal support members which have interior restrainers. The restrainers cause the depth of the support members along the extent of their major axis to be greater than the width along their minor axis, the increase depth increasing the support members resistance to deflection.

3,433,343
SEGREGATING DEVICE
Joe D. Giulie, Sunnyvale, Calif., assignor to Icore Industries, a corporation of California
Filed Apr. 4, 1967, Ser. No. 628,494
U.S. Cl. 193—31 2 Claims
Int. Cl. B65g 11/20, 47/52

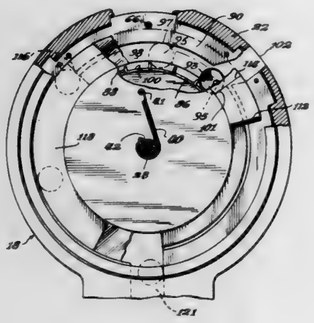
A mechanical amplifier for use in a segregating device where cans or similar articles are diverted into a plurality

of paths, comprising a path having a raised central portion in the form of a divergent slide so that articles can slide



over the central portion in one path or, when diverted slightly from the central path will be separated to a greater degree as they slide over the side paths.

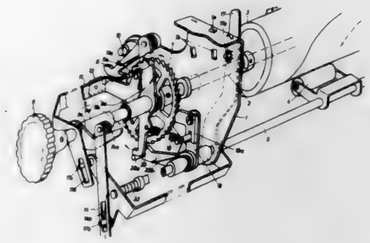
3,433,344
COIN-OPERATED TIME-INDICATING DEVICE
Theodore R. Peterson, 5945 N. Lakewood Ave., Chicago, Ill. 60626
Filed Sept. 20, 1967, Ser. No. 669,148
U.S. Cl. 194—84 **15 Claims**
Int. Cl. G07f *5/00, 3/02*



A parking meter in which the inserted coin is the intermediate component between a spring powered member and a maximum-speed regulated wheel having coin gauging projections extending therefrom. A coin of the proper size engages one of the projections and the force exerted against the opposite edge of the coin by the spring powered member drives the speed regulated wheel. There is provision for multiple coins of one denomination, and for coins of different denominations. In the illustrative embodiments, the coins are visible through a transparent window during operation of the device.

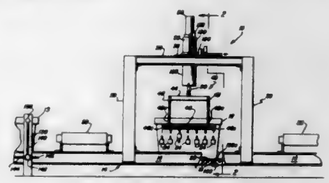
3,433,345
LINE-SPACING APPARATUS
Heinz Gaissert and Johannes Hiller, Pforzheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,605
Claims priority, application Germany, Apr. 22, 1965, St 23,719
U.S. Cl. 197—114 **6 Claims**
Int. Cl. B41j *19/80*

A line spacing apparatus is provided wherein the variation of the lever rotatably determining the degree of line spacing is linked to the adjustment of the feed pawl corresponding to the line traversing motion. This results in the feed pawl, in cooperation with a stationary catch pawl, establishing a positive locking connection between the



ratchet wheel and the stationary parts of the apparatus during the time of reversal.

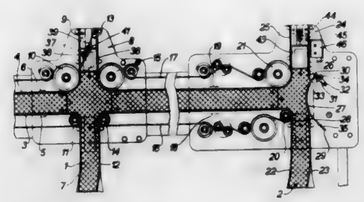
3,433,346
APPARATUS FOR ENGAGING AND RE-ORIENTING CONVEYED ARTICLES
Louie Millard McCaskill, 5812 Stewart St., Hanahan, S.C. 29403
Filed May 29, 1967, Ser. No. 643,308
U.S. Cl. 198—33 **10 Claims**
Int. Cl. B65g *47/24*



Automatic apparatus for re-orienting articles such as tote-boxes on conveyor means or for transferring articles from one conveyor means to another and comprising article engaging means mounted at the lower end of a vertical rod, pneumatic cylinder means having a reciprocable rod connected to the upper end of the vertical rod by swivel means permitting rotation of the vertical rod during axial movement thereof by the cylinder means, a helical cam disposed about said vertical rod, cam follower means mounted on said vertical rod and connected thereto by overriding clutch means whereby the cam and cam follower are operative to rotate the vertical rod and article engaging means in one direction only so that upon operation of said cylinder said vertical rod will be rotated while an article is lifted and will not rotate when an article is being lowered, and control means responsive to the article position or to indicator means on the article for actuating said cylinder means.

3,433,347
APPARATUS FOR FEEDING CIGARETTES
Desmond Walter Molins, Alan Keith McCombie, and Ronald Sidney Charles Barton, London, England, assignors to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Jan. 11, 1967, Ser. No. 608,586
Claims priority, application Great Britain, Jan. 14, 1966, 1,952/66
U.S. Cl. 198—69 **11 Claims**
Int. Cl. B65g *43/08*

The invention relates to a conveyor for supplying a continuous flow of articles such as cigarettes to one or more chutes. At least one reservoir is provided for receiving excess articles which back up when the conveyor feeds articles at a faster rate than the chute can receive them. The reservoir also serves to return articles to the conveyor when there is again room on it. A follower member in



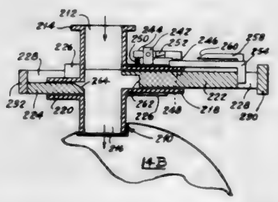
the reservoir responds to changes in the number of articles in the reservoir and is operatively connected to regulating means controlling the speed of the conveyor or to stop and start it. Mechanical means is provided for preventing changing of articles at the mouth of the chute.

3,433,348
MEANS FOR CONVEYING COAL IN MINES
Gordon Bertram Dawson, 140 Northwick Road, Worcester, England
Filed Apr. 14, 1967, Ser. No. 631,060
Claims priority, application Great Britain, Apr. 14, 1966, 16,323/66
U.S. Cl. 198—89 **2 Claims**
Int. Cl. B65g *37/00, 15/00, 17/00*



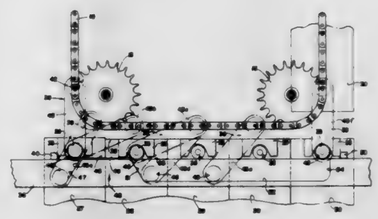
In a conveying system for coal in mine workings in which a feeder conveyor or stage loader of the scraper chain type comprises a horizontal section and a ramp section by which coal carried on the conveyor is elevated for delivery, the horizontal section extends through and is longitudinally movable with respect to the ramp section and coal elevated by the ramp section is delivered under gravity to a transverse conveyor passing through the ramp section and over the horizontal section of the stage loader.

3,433,349
MATERIAL HANDLING CONVEYORS
John M. Leach, P.O. Box 341, Port Jefferson, N.Y. 11777
Filed May 16, 1966, Ser. No. 550,558
U.S. Cl. 198—177 **8 Claims**
Int. Cl. F16k *3/14*



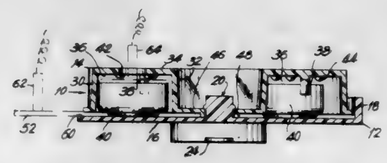
A dribble-free gate valve for use in a closed conveyor system which utilizes a chamber between the gate members to retain any leakage of material upon closing of the valve.

3,433,350
CONVEYOR
Edwin A. Hediger, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 19, 1967, Ser. No. 676,555
U.S. Cl. 198—177 **14 Claims**
Int. Cl. B65g *17/20, 37/00*



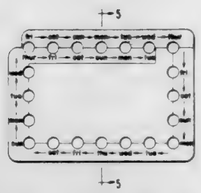
A conveyor is provided of the type in which a moving endless chain assembly or the like removes a carrier from a pick-up position at one end of a row of such carriers, transports it, deposits it at the other end of the row or at another location, and repeats the sequence after the row of carriers has been shifted to locate the succeeding carrier in the pick-up position. A simple mechanism for effecting this series of operations comprises a hook member movably supported by the chain assembly and cooperable with a cam member adjacent the row of carriers to move the hook member into and out of engagement with those carriers in a predetermined sequence as the hook member moves along the cam member.

3,433,351
CIRCULAR DISPENSING DEVICE FOR BATTERIES
John F. Zaborney, North Tarrytown, N.Y., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,948
U.S. Cl. 206—37 **4 Claims**
Int. Cl. A45c *11/00*



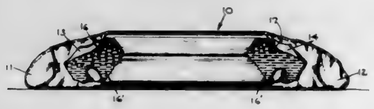
A flat, circular-shaped dispensing device for electric cells or batteries having two rotatably connected parts between which there are insulatedly supported a plurality of equidistantly spaced batteries. An opening, normally closed by a snap cap, is provided in one of the said parts through which batteries may be sequentially dispensed or reinserted. The two ends of the batteries constitute the respective terminals thereof, one of which is accessible through a small aperture in one of the parts of the device and the other of which may be brought into contact with a metallized surface of a card sandwiched between the two parts of the device. Thus, the voltage or other electrical characteristics of each battery can be checked without removing such battery from the dispensing device.

3,433,352
MEDICATION DISPENSING MEANS
Brian Haigh, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey
Filed Sept. 28, 1967, Ser. No. 671,461
Claims priority, application Netherlands, Oct. 4, 1966, 6613948
U.S. Cl. 206—42 3 Claims
Int. Cl. B65d *83/04*



The invention relates to a medication dispensing means consisting of a card or disc with packed dosage units, such as tablets, pills, coated tablets, capsules and suppositories each provided with a day indication to regulate and control the use of these units. These dispensing means are characterized in that all the doage units are positioned in the form of a ring and some of the units are provided with two day-of-week indications, arranged in such a manner that the end of the series of day indications overlap the beginning thereof.

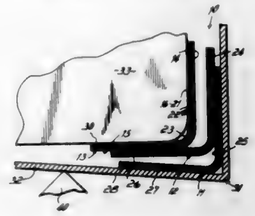
3,433,353
SHOCK ABSORBING CONTAINER
John M. Keillor, Brockton, Mass., and Oliver T. Smith, Warwick, R.I., assignors, by mesne assignments, to Union Camp Corporation, New York, N.Y., a corporation of Virginia
Filed Nov. 30, 1966, Ser. No. 598,007
U.S. Cl. 206—46 1 Claim
Int. Cl. B65d *59/00, 61/00, 63/00*



This invention pertains to a flexible plastic container for flowable materials having segregated internal compartments separated by seals. The materials within the container are confined within certain compartments and upon the application of external pressure the seals are adapted to give way to permit said materials to flow into adjacent compartments.

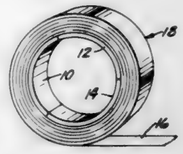
3,433,354
RESILIENT ANGLE MEMBER
Henry L. Liebel, Cincinnati, Ohio, assignor to Paper Extrusions Co., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 29, 1968, Ser. No. 701,166
U.S. Cl. 206—46 6 Claims
Int. Cl. B65d *57/00, 85/30, 5/50*

A resilient angle member for use in packaging; for example, to form the corner posts of a container. The composite angle member comprises three rigid angle elements which are nested together. Each angle element comprises a series of plies of paper glued together and bent into an angular configuration. One arm of the center angle element is glued to the corresponding arm of the outer angle element with the other two arms of these elements being spaced from one another. The second arm of the center angle element is glued to the corresponding arm of the innermost angle element with the second arm of the innermost angle element being spaced from the corresponding arm of the center angle element. The angle elements are rigid in a longitudinal direction and are resilient in a transverse direction so that as one of the arms is deflected, it tends to return to its original



position. The angle member functions as a corner protector, to provide stacking strength, to space the contents from the walls of the package, and as a shock absorber.

3,433,355
TAPE ROLL AND METHOD OF MAKING THE ROLL
Werter Pierce Smith, Richfield, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,485
U.S. Cl. 206—59 5 Claims
Int. Cl. B65h *75/02*; B65d *85/04, 85/66*



A roll of flexible, stretchy, polymeric film or tape, such as a pressure-sensitive adhesive tape, wound on an annular core formed from two or more distinct arcuate segments which are expandable radially outward, for example by an expandable collapsible mandrel for winding of film thereon, radial force of film causes a predetermined amount of collapse of core, thus relieving excessive tension in wound film.

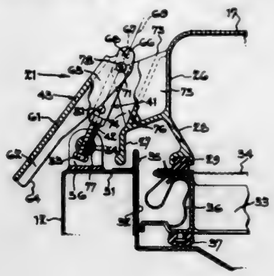
3,433,356
RECOVERY OF WIRE FROM PLASTIC INSULATION
Don A. Sommer, Edison, and Joseph F. Doerwang, Union, N.J., assignors, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Edison, N.J., a corporation of Delaware
No Drawing. Filed Aug. 11, 1966, Ser. No. 571,727
U.S. Cl. 209—164 9 Claims
Int. Cl. B03d *1/04*

Wire is separated from plastic in insulating scrap wire by a flotation process carried out in a quiescent pulp and utilizing air originally dissolved in a pulp of the ground insulated scrap. The plastic floats and the metal remains in the pulp.

3,433,357
COVER HOLD-DOWN CLAMP FOR SCREENING MACHINES
Arthur C. Nolte, Cincinnati, Ohio, assignor to The Orville Simpson Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 3, 1967, Ser. No. 606,886
U.S. Cl. 209—372 5 Claims
Int. Cl. B07b *1/28*

Clamp mechanism for securing the top cover of a screening machine in fixed position relative to the screen frame,

wherein a toggle is adjustably engageable between the screen frame and top cover and an operating handle pivotally connected to the toggle is swingable in an over-center

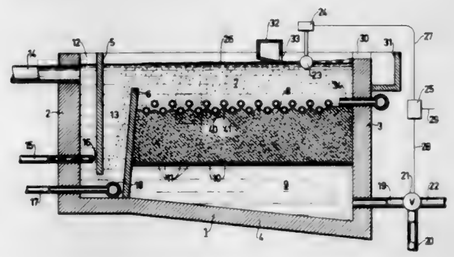


movement. The clamp construction limits the over-center throw of the handle to a given angle regardless of clamp adjustment, and in clamping position the handle encases and covers the toggle.

3,433,358
METHOD OF SEPARATING SUSPENDED UNSUPPORTED NOBLE METAL CATALYSTS FROM HYDROGENATED LIQUIDS
Hans Herzog, Bensheim-Auerbach, and Gerhard Kabisch, Rheinfelden, Baden, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Dec. 2, 1966, Ser. No. 598,591
Claims priority, application Germany, Dec. 4, 1965, D 48,828
U.S. Cl. 210—65 6 Claims
Int. Cl. B01d *27/04, 39/16*

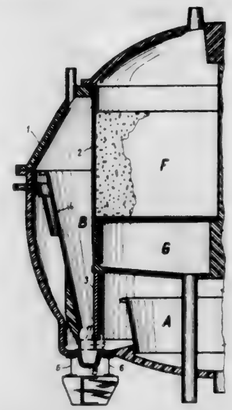
A method of separating suspended unsupported finely divided noble metal catalysts from organic liquids, especially, hydrogenated organic liquids, by filtration through a porous carbon filter.

3,433,359
INSTALLATIONS FOR THE PURIFICATION OF LIQUIDS
Eric Gustaf Lundin, Strangnas, and Ernst Arne Rubin, Lund, Sweden, assignors to AB Purac, Lund, Sweden, a corporation of Sweden
Filed Jan. 18, 1968, Ser. No. 698,944
U.S. Cl. 210—199 6 Claims
Int. Cl. B01d *23/24, 23/16, 23/02*



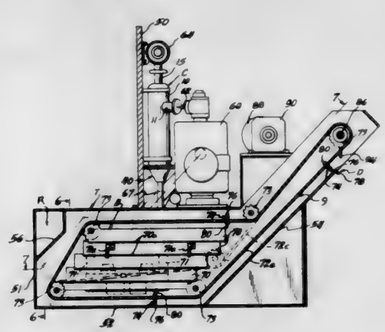
Apparatus for purifying liquids by a combination of flotation and filtration which includes a flotation basin disposed above a filtration bed of granular material. Means are provided for injecting a liquid containing dissolved gas into the flotation basin immediately adjacent the upper surface of the granular filtration bed so that sedimentation of impurities on the filtration bed is markedly reduced while providing effective flotation in said basin. Periodically the flow of liquid to be purified is reversed, so as to remove accumulated impurities from the filtration bed and to enable removal of impurities floating on the liquid in the flotation basin.

3,433,360
FILTERING APPARATUS
Ladislav Duchek and Jan Hasenohrl, Plzen, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia
Filed June 23, 1967, Ser. No. 648,284
U.S. Cl. 210—249 10 Claims
Int. Cl. B01d *25/06*



A housing having a wall provided with a bottom portion. Load-receiving support means engages the bottom portion from the outside of the housing. At least one relatively heavy vessel is received within the housing and so arranged that its weight is transferred through the bottom portion to the load-receiving support means.

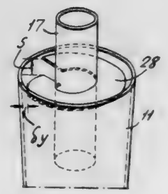
3,433,361
COOLANT FILTER COMBINATION
Lewis B. Ades, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 586,750, Oct. 14, 1966. This application May 31, 1967, Ser. No. 642,425
U.S. Cl. 210—258 1 Claim
Int. Cl. B01d *25/38, 21/26*



A coolant filter having a section with a plurality of centrifugal action separator units mounted in a casing having an outlet from the casing for contaminated coolant, a generally conically-shaped member at the outlet with

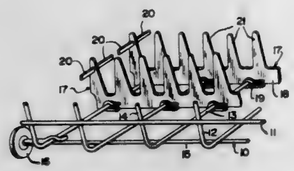
the large diameter end thereof adjacent the separator units to receive contaminants from all of the units and having a small opening at the opposite end from which the contaminants are free to discharge while maintaining a back pressure of coolant within said member, and a gravity separator prefiltering unit exterior of the casing to separate heavy contaminants from the coolant before it enters the casing.

3,433,362
CYCLONE PURIFIER
Robert William Robinson, Valhallavagen 16, Stockholm, Sweden
Continuation-in-part of application Ser. No. 538,493, Feb. 25, 1966. This application Dec. 20, 1967, Ser. No. 692,080
Claims priority, application Sweden, Nov. 1, 1965, 14,086/65
U.S. Cl. 210—512 **3 Claims**
Int. Cl. B04c *3/06, 3/00, 1/00*



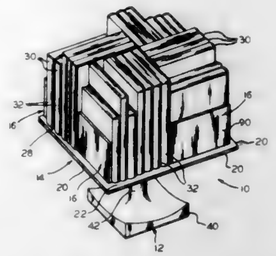
A cyclone separator for liquid suspensions comprising a conical container having a base portion and an apex portion at opposite ends thereof. A first outlet opening extends through the apex portion and a second outlet opening comprising a pipe positioned within the conical container extends axially outwardly through the base portion. A pressure chamber is mounted adjacent the base portion, which container is supplied with a pressurized liquid suspension. An opening between the base portion and the pressurized chamber is provided with a flow-directing element for imparting a tangential velocity component to the suspension as it flows from the pressure chamber into the conical container to impart a rapid whirling motion to the suspension.

3,433,363
DISH HOLDING RACK
Jack F. Clearman and Walter C. Barnard, White Bear Lake, Minn., assignors to Whirlpool Corporation, a Corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,827
U.S. Cl. 211—41 **7 Claims**
Int. Cl. A47g *19/08*



A dish holding rack having a bottom made of spaced wire members and transverse inserts attachable to the wire members to divide the rack into sections with the inserts having spaced dish supporting prongs.

3,433,364
REVOLVING FOLDABLE BOOKSTAND
Tsuan-Tong Chen, 319 Custer St., Evanston, Ill. 60202
Filed Jan. 19, 1967, Ser. No. 610,275
U.S. Cl. 211—42 **3 Claims**
Int. Cl. A47b *65/00*



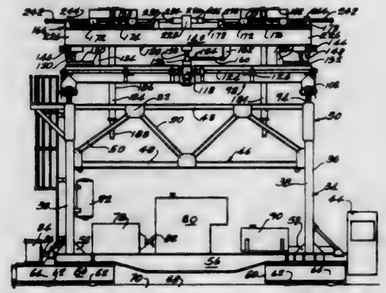
The disclosure relates to a revolving bookstand in the form of a square platform mounted on a base for rotational movement about its axial center and having hinged to each side thereof, adjacent one end of the respective sides, a leaf member that is proportioned to extend no further than about one-half the length of the respective platform sides, with the leaf members being hinged to move between an upright book supporting position and a retracted position lying on the face of the platform. The leaf members in their upright positions define between them book receiving quadrants on which books may be shelved in an upright side-to-side position with their backs facing outwardly of the respective quadrants. Two forms of the device are disclosed, one in which the platform and leaf members are in panel form, and the other in which the platform and leaf members are fabricated wire structures.

3,433,365
DISPOSABLE DISPLAY STAND
Richard J. Hodson, Deming, N. Mex., assignor to Auburn Rubber Company, Deming, N. Mex., a corporation of New Mexico
Filed June 29, 1967, Ser. No. 649,909
U.S. Cl. 211—59 **9 Claims**
Int. Cl. A47f *7/28, 5/11;* **A47c** *97/08*



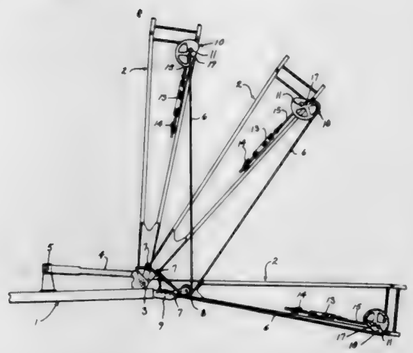
The invention provides a disposable display stand constructed of two identically formed and folded sheets of carboard which are fastened in interlocking assembly by display hooks to provide an inexpensive rigid structure upon which prepackaged merchandise may be mounted or carried for shipping and display.

3,433,366
GANTRY CRANES
James W. Brazell, Fulton County, near Atlanta, James T. Perkins, Jr., De Kalb County, near Chamblee, and Edwin L. White, Atlanta, Ga., assignors to Southern Iron and Equipment Company, Inc., Chamblee, Ga., a corporation of Georgia
Filed Oct. 22, 1965, Ser. No. 500,615
U.S. Cl. 212—14 **17 Claims**
Int. Cl. B66c *19/00*



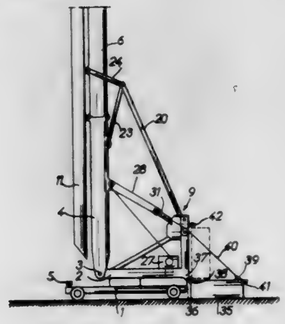
A gantry crane for lifting trailers from railroad cars and depositing same in another location and vice versa. The crane travels on a rail on a crane trolley and has a lifting frame with spaced lifting arms that rotate and which are adjustable and operated together across said gantry.

3,433,367
BOOM BACK-STOP APPARATUS
Carl F. Novotny, Milwaukee, and George W. Mork, South Milwaukee, Wis., assignors to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,527
U.S. Cl. 212—39 **2 Claims**
Int. Cl. B66c *13/48, 23/06*



A back-stop apparatus for a retractable boom footed on the revolving frame of a truck mounted crane includes a take-up sheave mounted on a rotatable shaft on the boom above the foot and a stop sheave on the frame forward of the boom foot. A stop cable is connected at its lower end to the boom near the foot, passes about the stop sheave and is connected at its upper end to a point on the circumference of the take-up sheave. A tension spring is connected at one end to the boom, and a tension cable leads from the other end of the spring and is wrapped around and connected to the take-up sheave shaft to rotationally spring bias the sheave so that it rotates to take up slack in the stop cable as the boom luffs and as it retracts. The take-up sheave has a semicircular shape to provide sufficient circumference to take up the required amount of cable in a single rotation, while being adapted to clear the ground and provide a short moment arm when the boom is in a horizontal position.

3,433,368
COLLAPSIBLE CRANE
Pierre Durand, Lyon, France, assignor to RICHIER, Paris, France, a company of France
Filed Dec. 26, 1967, Ser. No. 693,286
Claims priority, application France, Dec. 23, 1966, 88,737
U.S. Cl. 212—46 **6 Claims**
Int. Cl. B66b *23/68*



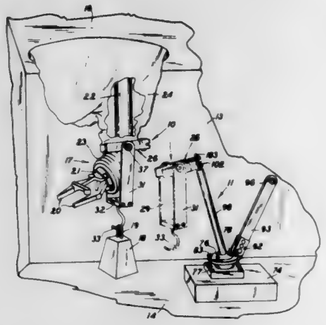
A collapsible crane including superposed pivotally interconnected tower sections and a jib wherein the raising of the tower sections into vertical alignment is ensured by a winch acting on a tackle block inserted between the lower tower section and the frame to which the latter is pivotally secured. Said tackle block can be disconnected with reference to the frame and be connected with an auxiliary cable removably connected with the cable controlling the raising of the jib into a horizontal position and a collapse of the crane structure. The winch may thus control last-mentioned operations without unduly stressing the tower girders.

3,433,369
RAILWAY CAR COUPLER ANTI-CREEP MECHANISM
William J. Metzger, East Cleveland, and Kenneth L. De Penti, Mayfield Heights, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 28, 1967, Ser. No. 634,705
U.S. Cl. 213—148 **5 Claims**
Int. Cl. B61g *3/00*



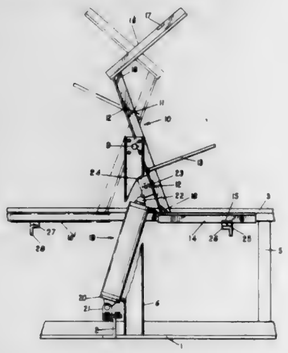
A knuckle-type car coupler wherein the lock includes a latch stored within the general control of the lock to pivot outwardly of such contour by gravity into a position for engaging the top wall of the coupler head during upsetting of the coupler. Movement of the lock is thus limited to prevent unlocking of the coupler.

3,433,370
CLAMP-ON LOAD HOOK
Gerald A. Eisert, Hastings, and Lester W. Haaker, Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
Filed Feb. 21, 1966, Ser. No. 528,849
U.S. Cl. 214—1 **11 Claims**
Int. Cl. B25j *3/00;* **B66f** *9/06*



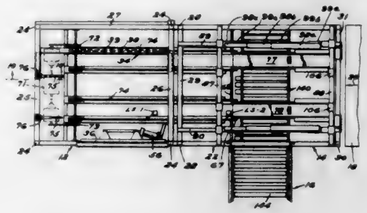
The hook assembly releasably attached to the slave arm of a master-slave manipulator with a pair of pivoted arcuate arms releasably locked on a ring assembly carried on the lower end of the slave arm. An overcenter toggle linkage holds the arms in locked positions on the ring assembly. A U-shaped frame pivotally mounted on the arms carries an upwardly open hook. The hook assembly is placed on a parking fixture used to store and hold the hook assembly in a selected park position. The parking fixture has a spherical lower end which cooperates with a clamp to hold the upright member of the parking fixture in a selected position.

3,433,371
TIPPLERS FOR TURNING OVER BEER KEGS AND LIKE CONTAINERS
Maurice Ruddick, Kent, England, assignor to Burnett & Rolfe Limited, Kent, England, a British company
Filed Feb. 2, 1968, Ser. No. 702,725
Claims priority, application Great Britain, Mar. 7, 1967, 10,706/67
U.S. Cl. 214—1 **3 Claims**
Int. Cl. B25j *3/00;* **B65g** *47/00*



A tippler for turning over metal kegs or like containers comprises a cradle formed by a carrier which is pivotally mounted to enable it to rock about a horizontal axis and two platforms extending one from each end of the carrier. The platforms diverge from each other at a substantial angle in a direction away from the carrier, preferably symmetrically so that there is an included angle of about 110° between each platform and the carrier, so that rocking of the carrier through an angle of substantially less than 180° moves the cradle from a position with one platform horizontal to a position with the other platform horizontal to turn over a container. The rocking of the carrier is brought about by a pivotally mounted fluid pressure-operated ram connected to the carrier so that the part of the carrier between its pivotal axis and the connection of the ram forms a crank which is rocked by the ram to rock the cradle between the two positions in which the platforms are horizontal.

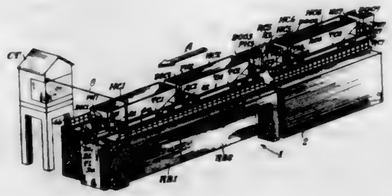
3,433,372
SHEET MATERIAL PALLETIZING APPARATUS
Victor A. Galloway, Grosse Pointe Woods, Mich., assignor to Equipment Manufacturing, Inc., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,295
U.S. Cl. 214—6 **15 Claims**
Int. Cl. B65g *57/03, 59/02*



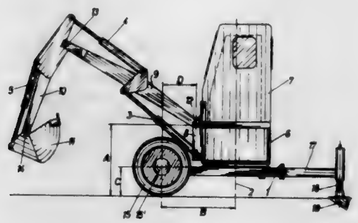
Apparatus having a storage station for a bank of empty pallets and a stack forming station where an empty pallet is raised into a loading area defined by guide members, to which loading area sheet metal blanks are delivered and stacked on the pallet, the pallet being lowered as the stack builds up. The guide members are relatively positionable to receive blanks of different sizes and shapes and cushioning devices are mounted on the guide members to absorb forward and reverse motion of a blank being delivered. Transfer of an empty pallet to the stack forming station from the storage station is accomplished by stripping the lowermost pallet of a bank out from beneath other pallets supported thereon after the lowermost pallet has been engaged and located in proper position for transfer.

3,433,373
AUTOMATIC VEHICLE DOOR CONTROL SYSTEM
Andrew J. Carey, West Mifflin, and Chalmers W. Gilbert, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Mar. 24, 1966, Ser. No. 537,201
U.S. Cl. 214—63 **37 Claims**
Int. Cl. B65g *67/24;* **B61d** *7/30;* **B60p** *1/56*

A system for automatically opening the doors of a moving vehicle having wayside apparatus operating in combination with vehicle-carried electropneumatic apparatus. The wayside apparatus is located in the vicinity of a preselected area for producing a signal within a space defined by first and second variable wayside points. The vehicle-carried apparatus is under supervisory control for being initially conditioned to be responsive to the reception of the wayside signal as the vehicle passes the first door opening operation and is responsive to the interruption of the wayside signal as the vehicle passes the second wayside point for causing a pneumatic door closing operation.



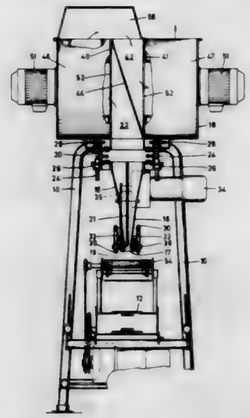
3,433,374
POWER SHOVEL
Ernst Menzi, Widnau, Landernaach, Switzerland, assignor to Ernst Menzi, Widnau, Landernaach, Switzerland, a sole proprietorship firm
Filed Aug. 25, 1966, Ser. No. 575,048
Claims priority, application Switzerland, Mar. 21, 1966, 4,046/66
U.S. Cl. 214—138 **2 Claims**
Int. Cl. E02f *3/50, 3/60*



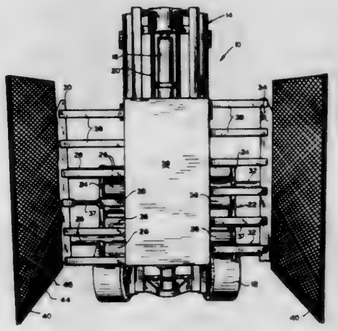
Bucket excavators of the type having a rotatable platform supported on a frame with the platform carrying an operator's cab and an overhang beam that supports a bucket and jib unit, the frame being in turn supported at one end by a pair of non-driven wheels and at the other end by horizontally swingable support legs, are improved by eliminating need for the usual counterbalance weights to avoid tipping of the excavator through critical dimensional relationship between platform pivot location, support wheel size and axle position and the overhang beam pivot location.

3,433,375
APPARATUS FOR REMOVING ARTICLES FROM CONTAINERS BY SUCTION
Donald Allen Jones, Ashburton, Victoria, Australia, assignor to Thermo Radiant Ovens Pty. Ltd., Springvale, Victoria, Australia
Filed June 19, 1967, Ser. No. 647,156
Claims priority, application Australia, June 23, 1966, 7,373/66
U.S. Cl. 214—309 **14 Claims**
Int. Cl. B65g *37/00, 47/57*

The invention relates to vacuum depanning apparatus, for bread loaves and other articles, of the kind having a suction chamber arranged longitudinally above a main conveyor and a further or upper conveyor at the bottom of the suction chamber which diverges upwardly and rearwardly from the main conveyor. According to the invention, the suction chamber is preferably of convergent-divergent shape in vertical cross-section and has a substantially unobstructed elongated inlet opening at its lower end and the upper conveyor comprises spaced conveyor members arranged on opposite sides of the inlet opening. The invention also provides a suction fan assembly for withdrawing air from the top of the suction chamber and side conveyors for positively moving suspended articles beyond the rear end of the inlet opening.



3,433,376
COMBINATION FACING FOR CLAMP DEVICE
Wayne W. Jordan, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 26, 1967, Ser. No. 633,968
U.S. Cl. 214—653 **5 Claims**
Int. Cl. B66f *9/18;* **B66c** *1/42*

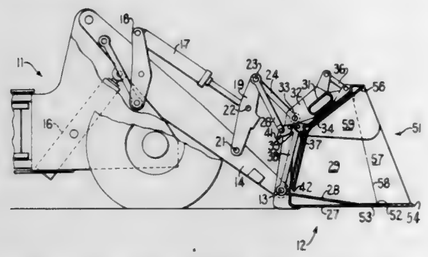


A carton clamp especially for lift trucks having secured to the clamping surfaces two different facing materials of different thickness and yieldability so arranged that clamping pressure is more equally distributed over the sides of a cartonized load, and any tendency of the load to slip or to pivot out of the clamp is minimized.

3,433,377
SWING AWAY CUTTING EDGE FOR EJECTOR BUCKETS
Trevor G. Campbell, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 29, 1967, Ser. No. 649,921
U.S. Cl. 214—767 **6 Claims**
Int. Cl. E02f *3/74, 3/81*

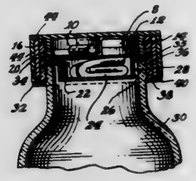
An ejector bucket having a cutting edge pivotally connected thereto by means of side extensions to permit use

of the ejector bucket with interchangeable cutting edges and varying bucket capacities while avoiding interference with normal operation of the bucket and ejector associated



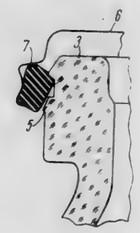
therewith. The pivotal cutting edge is connected to the ejector to be swung forwardly according to forward ejecting motion of the ejector.

3,433,378
MEDICAMENT CONTAINER CAP
Donald J. Ross, 5704 S. Katrine Ave., Downers Grove, Ill. 60515
Filed Feb. 20, 1967, Ser. No. 617,127
U.S. Cl. 215—6 **10 Claims**
Int. Cl. B65d *1/04, 55/02;* **A61j** *1/00*



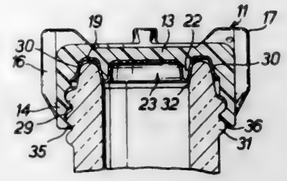
A container top especially suited for medicaments wherein provision is made in the cap to carry a sample of the medicament, the name thereof, along with a detailed brochure on the medicament, and wherein the bottle cap also carries on the external periphery thereof, indicia indicating prescription costs and the like information.

3,433,379
GLASS PRESERVING JARS
Felix Grigorievich Moldavsky, Proletarsky bulvar 41, kv. 21, and Anatoly Feofanovich, Kotelnikov, Voznesensky pereviok 14, kv. 6, both of Odessa, U.S.S.R.
Filed July 20, 1967, Ser. No. 654,893
U.S. Cl. 215—40 **2 Claims**
Int. Cl. B65d *1/02, 11/04, 23/00*



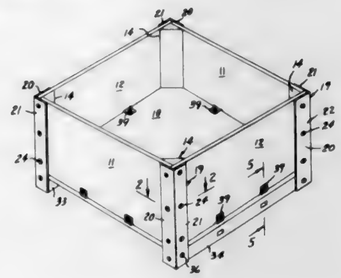
A jar neck having an annual bead at the top edge of the exterior thereof, and an annular shoulder below the said bead. The bead is interrupted at at least one point by a groove so that air and vapor may pass under a sealing ring that holds a closure cap in place during processing of material in the jar. The proportioning of the device being such that prior to processing the sealing ring seals the jar by pressing on the shoulder but, during processing, the cap and sealing ring being raised slightly by internal pressure in the jar, the sealing ring is raised from contact with the shoulder and the pressure from within the jar is relieved by escape through the groove in the bead.

3,433,380
CONTAINER CLOSURE
Claude Edward Kawchitch, Jolimont, Victoria, Australia, assignor to Loy Bros. Proprietary Limited, Burwood, Victoria, Australia, a corporation of Australia
Filed Oct. 23, 1967, Ser. No. 677,170
U.S. Cl. 215—40 **2 Claims**
Int. Cl. B65d *53/02, 23/02, 41/04*



A bottle closure comprising a disc with a depending peripheral skirt which screws onto the neck of a bottle, wherein the underside of the disc has a circular groove to engage the mouth rim of the bottle and is covered by a resilient sealing film.

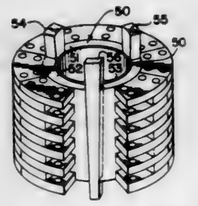
3,433,381
SHIPPING BIN STRUCTURE
Stanley E. Nagler, Carmichael, Calif. (1246 Cooper Drive, Manteca, Calif. 95336)
Filed Dec. 7, 1966, Ser. No. 599,775
U.S. Cl. 217—69 **4 Claims**
Int. Cl. B65d *9/34*



A knock-down shipping bin for fruits and vegetables adapted to be handled by a fork lift truck and constructed of plywood panels and assembled by threaded connecting elements to permit ready replacement of parts thereof and to simplify disassembly when shipped empty.

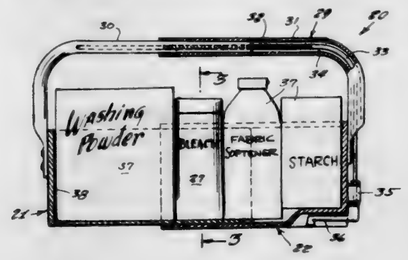
3,433,382
PRE-STRESSED SEGMENTED CONTAINERS OR PRESSURE VESSELS
F. George Boggio, Glen Rock, N.J., assignor to Barogenics, Inc., Mount Vernon, N.Y., a corporation of New York
Filed May 22, 1967, Ser. No. 640,311
U.S. Cl. 220—3 **8 Claims**
Int. Cl. F25j *5/00;* **B65d** *7/44;* **B23p** *11/02*

An improved pressure vessel structure which comprises an outer support cylinder formed from a plurality of discrete ring sectors. The cylinder has a generally cylindrical bore extending longitudinally therethrough and a sleeve-like member positioned within the bore. Means are positioned between the support cylinder and the



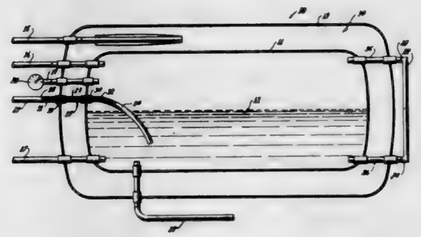
sleeve-like member for producing hoop tension in the support cylinder and hoop compression in the sleeve-like member prior to subjecting the vessel to fluid pressures.

3,433,383
LAUNDRY CARRYALL OR TOTEBASKET
Clifton E. Phibbs, Box 42, Fries, Va. 24330
Filed Feb. 5, 1968, Ser. No. 703,062
U.S. Cl. 220—8 **1 Claim**
Int. Cl. B65d *1/24, 25/28, 85/00*



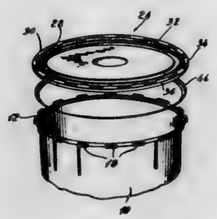
A carrier for laundromat patrons providing a means to carry their washing powder, bleach, starch and fabric softener in one convenient unit, the device comprising a holder for receiving conventional packages presently being marketed containing these products, the holder having a convenient carrying handle.

3,433,384
CRYOGENIC CONSTRUCTIONS AND METHODS FOR MAKING THE SAME
William H. Caruthers, Jr., and Louis E. Pennington, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,692
U.S. Cl. 220—14 **25 Claims**
Int. Cl. B65d *25/18*



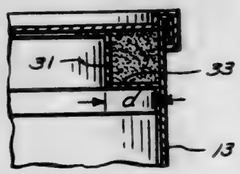
This disclosure relates to means for providing a cryogenic joint between an aluminum containing tubular length and a stainless steel tubular length by telescopically arranging portions of said lengths together and detonating an explosive charge adjacent the telescoping portions to metallurgically bond such telescoping portions together whereby the aluminum containing tubular length can be secured to an inner aluminum storage container and the stainless steel length will be spaced from the aluminum container by the aluminum containing tubular length so that a transition joint of metallic material having a relatively low coefficient of thermal conductivity will be provided between the aluminum storage container and another surrounding container that defines a chamber between the two containers, the stainless steel tubular length being adapted to be operatively interconnectetd to the other container so as to provide fluid flow conduit means between the outside of the outer container and the inside of the inner container.

3,433,385
BAYONET CLOSURE FOR CONTAINER
Joseph Emile Metivier, St-Damien, Bellechasse, Quebec, Canada
Filed Sept. 5, 1967, Ser. No. 665,341
U.S. Cl. 220—40 **4 Claims**
Int. Cl. B65d *41/06*



The combination of a container and a cover having their edges shaped to form a bayonet closure. The cover has an arc-shaped rim with inwardly pending L-shaped tongues and the container has an L-shaped rim with outwardly projecting L-shaped tongues adapted to grip the inward tongues. A sealing ring may be added between the cover and the container.

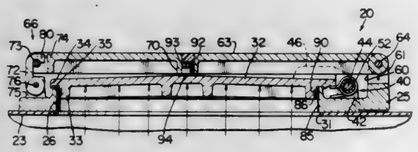
3,433,386
CONTAINER OPENING MEANS
George L. Ehman, 1601 Leneva, Pasadena, Tex. 77502
Filed Feb. 15, 1967, Ser. No. 624,639
U.S. Cl. 220—48 **8 Claims**
Int. Cl. B65d *17/00*



The invention is an improvement in container closure and/or content separating means. It consists of a flexible membrane-like coating across the internal ends of a metallic container. The membrane serves not only to prevent contact of the contents with a can opener, but also, in certain forms, precludes contamination should a puncture in the container end occur. Leakage from the container

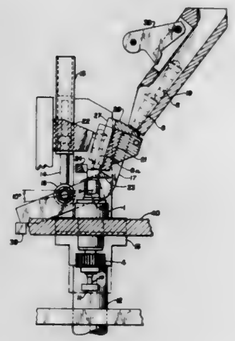
ends are likewise prevented in the preferred form. The membrane may be formed of any material having flexibility, strength, and long shelf life, and it may assume various configurations and positions, as shown in the drawings, depending upon its intended function.

3,433,387
BREAKABLE ATTACHING MEANS FOR A VENT CLOSURE
Fred A. Wilson, Erlanger, Ky., and Glenn E. Moore, Fairfield, Ohio, assignors to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 613,247
U.S. Cl. 220—89 **8 Claims**
Int. Cl. B65d *25/00*



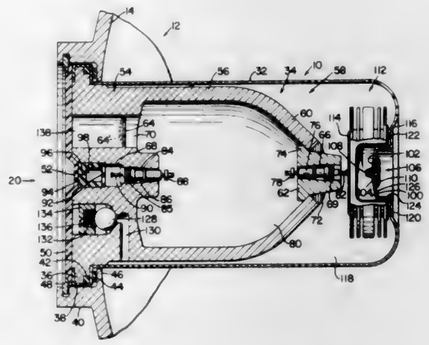
This disclosure relates to a fluid pressure operated emergency vent device for a fluid tank having a comparatively large area vent extending therethrough and cover means for normally sealing such vent under normal conditions and having substantially foolproof breakable attaching means for attaching such cover in its normally sealed position where such attaching means breaks to relieve such tank in the event of excessive pressure therewithin.

3,433,388
WORKPIECE FEEDER HAVING MAGAZINE ESCAPEMENT MEANS
Melvin M. Seeloff, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio
Filed July 12, 1967, Ser. No. 652,905
U.S. Cl. 221—274 **7 Claims**
Int. Cl. B65g *47/06*



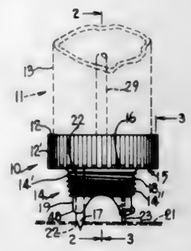
The present invention relates to an automatic feeder especially useful in processes for feeding, loading and processing irregularly shaped workpieces. The feeder involves an escapement mechanism for selectively moving the workpieces from a loading position to a free-falling position so as to be automatically fed into spaced work holding fixtures which may be mounted on a rotatable table.

3,433,389
LIQUID DISPENSER AND CHARGING GAS CONTAINER THEREFOR
Louis M. Puster, Knoxville, Tenn., assignor, by mesne assignments, to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation-in-part of applications Ser. No. 396,589, Sept. 15, 1964, Ser. No. 481,658, Aug. 23, 1965, and Ser. No. 558,718, June 20, 1966. This application Aug. 25, 1966, Ser. No. 575,079
U.S. Cl. 222—3 **1 Claim**
Int. Cl. B67d *1/04;* **F04f** *1/14*



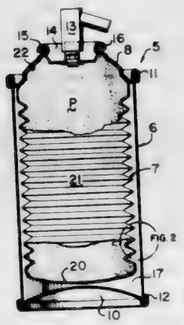
This application discloses a beverage dispenser which contains a gas charged beverage and a charging gas container. The charging gas container has a massive main body and an extruded chamber forming wall with an inward curled end. Tire inflation type valves are respectively located in the massive main body and in the curled inward end. One of the valves is used for charging gas into the gas container and the other valve is used for expanding the gas from the gas container into the beverage dispenser. A check valve is also included beyond one of the ends to prevent backward travel of the charging gas and charged liquid into the charging gas container.

3,433,390
CONTAINER-ENGAGING END FOR POWDER DISPENSERS
Joseph Woroble, 55 Morgan Place, North Arlington, N.J. 07032
Filed Mar. 14, 1967, Ser. No. 623,112
U.S. Cl. 222—83.5 **4 Claims**
Int. Cl. B67b *7/28*



This invention deals with an end for powder dispensers which is attached to containers made of sheet material and containing powdered soap, hand-cleaning powder, or the like. This end, which is the portion of the dispenser to be partly inserted into the container wall or top, has a hollow tubular neck on the inside of which, oppositely attached, are the piercing prong and the cutting wheel used for piercing into and cutting a hole into the sheet container wall or top. One novel feature involves a thread on the outside of the neck, which rides in the hole thus made, and which securely engages the end onto the container. Another feature is a shoulder abutting the carton adjacent the hole which tends to lock the base onto the container surface. Other features include a raised entry plate which allows a more rapid discharge of powder from the container into the dispenser, a combination of a piercing pin and a circle cutting wheel for making the hole in the contaainer, and a wall-mounting bracket for the dispenser end.

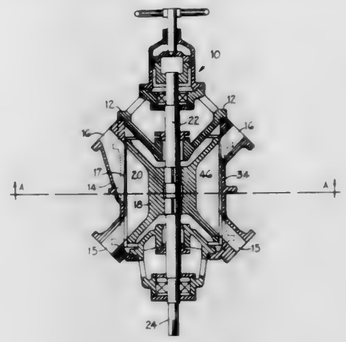
3,433,391
DISPENSING CONTAINER WITH COLLAPSIBLE COMPARTMENT
Jerry A. Krizka, Markham, and James F. Fox, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 7, 1966, Ser. No. 532,249
U.S. Cl. 222—95 **2 Claims**
Int. Cl. B65d *35/28, 35/08, 35/14*



A dispensing container having a collapsible bag of molded plastic material and defining with a body of the container a product compartment and a propellant compartment. A plurality of circumferential beads form a body of the bag and include first means for rigidifying the bag and second means radially outwardly of the first means for controllably regulating the folding of the bag under the influence of a propellant. The first and second means are wall portions defining the beads, and the wall portions of the first means progressively taper in wall thickness and distend toward the wall portion of the second means.

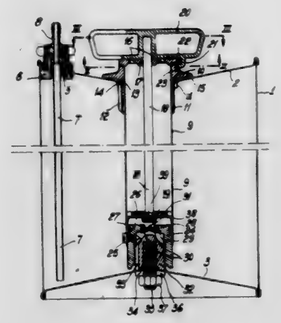
3,433,392
HIGH PRESSURE CHIP TRANSFER VALVE
Arnold J. Roerig, Beloit, Wis., and Kenton J. Brown, Rockford, Ill., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Nov. 20, 1967, Ser. No. 684,258
U.S. Cl. 222—189 **7 Claims**
Int. Cl. B67d *5/58, 5/54*

A device adapted to present particulate materials sequentially to a plurality of fluid medium having a member which contains at least six ports which are capable of transferring fluid, a second member within the first member and capable of rotation with respect to the first member, said second member containing a plurality of pockets arranged to sequentially communicate with each of the ports in the first member and drive means to rotate the second member with respect to the first member. The first port is adapted to charge a pocket with low pressure fluid, the second port charges the pocket with a high pressure fluid containing particulate materials in such a manner whereby a screen covers the outlet area of the port to permit collection of the particulate material without impeding the inlet flow of the high pressure fluid. The third port permits discharge of the fluid from the pocket as it passes into communication with the third port while prohibiting the release of the particulate material



by the use of a screen or other foraminous device. The fourth pocket receives a second fluid under low pressure to fill the pocket which contains the particulate materials. A fifth port is used to charge the pocket with high pressure quantities of the second fluid, thereby removing the particulate material from the pocket. Finally, a sixth pocket is adapted to discharge or drain out any fluid remaining in the pocket.

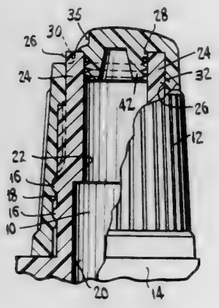
3,433,393
ATOMIZING OR SPRAYING APPARATUS
Vincent P. M. Ballu, Epernay, France, assignor to Tecnoma, Epernay, Marne, France, a company of France
Filed Aug. 11, 1967, Ser. No. 660,092
Claims priority, application France, Aug. 30, 1966, 74,637
U.S. Cl. 222—402 **4 Claims**
Int. Cl. B05b *9/04*



The invention involves a spraying or atomizing apparatus into which a pump pressurizing a reservoir extends between opposed walls of the reservoir to form a brace reducing the pressure stress in those walls. The walls may be concave towards each other and the pump removably mounted through an aperture in the center of one such

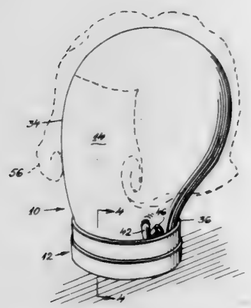
concavity so that when it is removed, the concavity and aperture together provide a liquid filling funnel for the reservoir.

3,433,394
DISPENSING CLOSURE CAP
Morton B. Stull, Boonton, N.J. (% Stull Engraving Co., 221–223 Banta Ave., Garfield, N.J. 07026)
Filed Dec. 15, 1966, Ser. No. 602,004
U.S. Cl. 222—519 **10 Claims**
Int. Cl. B67d *5/06;* **B65d** *47/00*



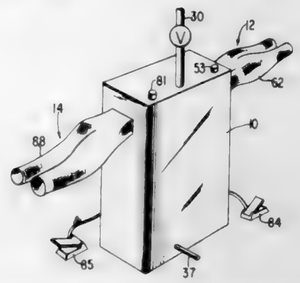
A dispensing closure cap having a tubular body (through which the product passes) and an annular top edge portion or mouth, and a cap axially movable on the body, having a plug for entry in said mouth to seal the body. The cap has in its top an eccentric opening normally closed by the top edge portion and which communicates with the space around the plug to constitute therewith a discharge orifice.

3,433,395
INFLATABLE WIG SUPPORT
Stanley W. Ochtera, 33 George St., Roslyn Heights, N.Y. 11577
Filed Nov. 14, 1966, Ser. No. 593,888
U.S. Cl. 223—67 **2 Claims**
Int. Cl. A41h *5/02;* **A45c** *11/02*



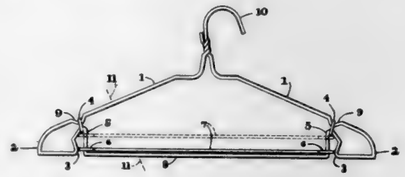
A wig stand comprising a shallow container having a self contained resilient inflatable head model therein. The container serves as a support for the head model when the model is inflated. The container also serves as a housing for storing the head model when in deflated condition. The container and deflated model therein are readily transported. The head model can very easily be erected and collapsed.

3,433,396
GARMENT PRESSING APPARATUS AND METHOD
Herbert M. Swartz, Athens, Ga., assignor to Thomas Textile Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 3, 1966, Ser. No. 531,521
U.S. Cl. 223—73 **5 Claims**
Int. Cl. D06c *15/00*



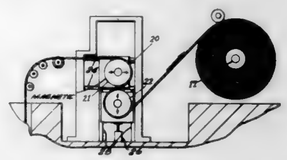
An apparatus and method for finishing garments.—The apparatus shapes and removes wrinkles from an entire garment having tubular portions in one operation. As an additional option, starch may be carried to the garment. Moreover, additional blowers are utilized to scavenge residual steam in the apparatus.

3,433,397
CLOTHES HANGERS
Anthony Miele, 45—26 44th St., Sunnyside, N.Y. 11104
Filed Mar. 24, 1966, Ser. No. 538,189
U.S. Cl. 223—91 **3 Claims**
Int. Cl. A47j *51/091*



Clothes hangers of triangular configuration having resilient end portions and a fixed crossbar with a slide bar releasably engaging the resilient end portions to secure a garment placed over the fixed cross bar.

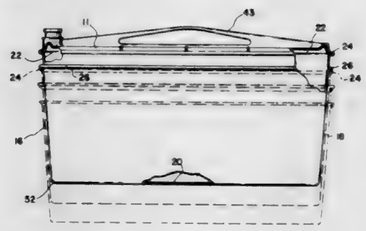
3,433,398
MAGNETIC BRIDLE UNIT FOR WINDING STEEL STRIP
James P. Fadden, South Point, Ohio, and Frederick L. Moore, Huntington, W. Va., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Apr. 10, 1967, Ser. No. 629,591
U.S. Cl. 226—93 **8 Claims**
Int. Cl. B65h *17/18*



Apparatus for the control of tension in the winding of steel strip. More specifically, apparatus utilizing a bridle unit having an electromagnetic roll about which

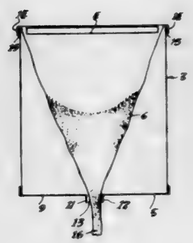
the single strip or multiplicity of strands pass prior to coiling on a take-up reel. The adjustable magnetic force of the bridle unit is sufficient to control and maintain a predetermined tension in each of the strands being wound on the take-up reel.

3,433,399
CONTAINER
Harry J. Gunnink, 12643 N. 30th Drive, Phoenix, Ariz. 85029
Filed Nov. 14, 1966, Ser. No. 599,660
U.S. Cl. 229—5.6 **5 Claims**
Int. Cl. B65d *3/10, 43/12, 25/28*



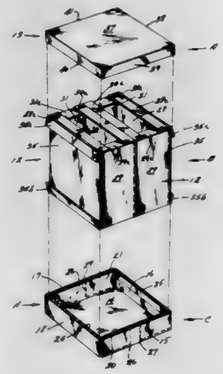
A container and cover comprising a container having outwardly extending peripheral flange portions and being generally rectangular; the flange portions being at the upper open area of the container and the cover having conforming channel portions which are slidable onto the flange of the container at three sides and fit over and below the flanges of the container, and an outwardly extending flange on the fourth side of the cover adapted to fit over a conforming or respective flange of the container, and to be heat sealed in connection therewith.

3,433,400
TRANSPORTABLE CONTAINER
Mervyn Roy Hawkins, Redland, Bristol, England, assignor, by mesne assignments, to Ashton Containers Limited, Bristol, England
Filed June 21, 1966, Ser. No. 559,180
Claims priority, application Great Britain, June 24, 1965, 26,895/65
U.S. Cl. 229—14 **3 Claims**
Int. Cl. B65d *5/58;* **B67d** *5/64*



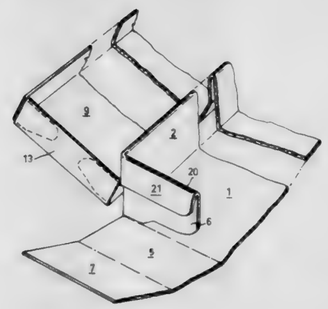
A collapsible container is described for use in the transporting and handling of flowable substances in place of the more expensive rigidly constructed intermediate bulk containers commonly in use. Such containers are described as being made of cardboad and provided with openings through which the contents of the containers can readily be dispensed from the lower side wall or from the bottom, the containers having flexible linings to protect the contents. The modifications described show the use of pallets with the containers and the adaptation of the top of the containers to allow for settling of the contained material.

3,433,401
BULK CARRIER
Edgar A. Swift, Paxton, Mass., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 19, 1967, Ser. No. 646,851
U.S. Cl. 229—15 **7 Claims**
Int. Cl. B65d *5/48, 81/00, 5/02*



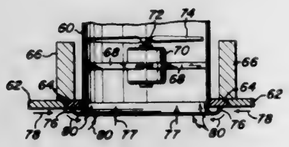
A twin cell package for bulk products having two rectangular cells nested in an interlocking base; each of these cells is formed from a five panel sheet and the cells are positioned side by side in the base so as to form three double thickness vertical walls for increased stacking strength.

3,433,402
CARTON BOX AND BLANK THEREFOR
Karl Rune Persson, Halmstad, Sweden, assignor to Sprinter-Pack AB, Halmstad, Sweden
Filed Apr. 14, 1966, Ser. No. 542,504
Claims priority, application Sweden, Apr. 23, 1965, 5,346/65
U.S. Cl. 229—33 **2 Claims**
Int. Cl. B65d *5/22, 5/02, 5/66*



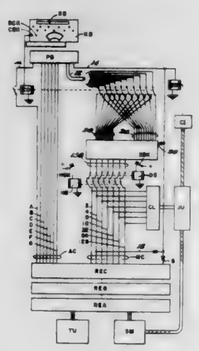
A single carton blank is provided for erecting a box which has a bottom portion and an integral lid portion which, when formed, provides a box having an integral rim and the appearance of having a separate lid; with the hinge panel between the box portion and the adjacent side wall of the lid portion having integral locking flaps which provide for erection and locking of the blank into erected position by a single pass through a forming machine because the locking flaps need to be glued on only one side.

3,433,403
FAN INLET SHROUD
Reuben A. Gerlitz, Springfield, Ohio, assignor, by mesne assignments, to Lau Blower Company, Dayton, Ohio, a corporation of Ohio
Filed Dec. 16, 1966, Ser. No. 602,263
U.S. Cl. 230—132 2 Claims
Int. Cl. F04d *29/66, 19/00*



This invention relates to an inlet shroud for use with fan structure. The invention relates more particularly to an inlet shroud which reduces turbulence and which increases fan efficiency and thus also reduces noise created by air which is moved by operation of the fan.

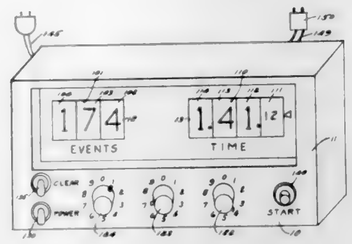
3,433,404
TYPE COMPOSING APPARATUS
Rene A. Higonnet, Cambridge, and Louis M. Moyroud, West Medford, Mass. (both % Photon Inc., 355 Middlesex Ave., Wilmington, Mass. 01887)
Application June 9, 1958, Ser. No. 741,209, now Patent No. 3,332,617, which is a continuation of application Ser. No. 500,397, Apr. 11, 1955, and a continuation-in-part of application Ser. No. 770,320, Aug. 23, 1947, now Patent No. 2,790,362. Divided and this application Nov. 8, 1966, Ser. No. 592,910
Claims priority, application Great Britain, Apr. 21, 1954, 11,539/54
U.S. Cl. 234—5 4 Claims
Int. Cl. G06k *15/00*



A character selection device for composing typographic characters that vary in width is disclosed. This device contains width cards or plugs that effectively store the width associated with each selectable character. The width cards or plugs generate a signal indicative of the character width each time a character is selected.

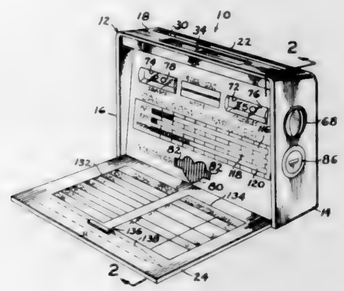
3,433,405
COMBINATION COUNTER-TIMER
Frederick W. Pfleger, 1152 Barbara Drive, Cherry Hill, N.J. 08034
Filed Nov. 21, 1966, Ser. No. 595,724
U.S. Cl. 235—91 8 Claims
Int. Cl. G06m *1/24, 1/28*

Signal means for signaling the occurrence of events, motive means for driving an indicator or the like, and operating means connected between the signal and motive



means for actuating and deactuating the latter responsive to the former.

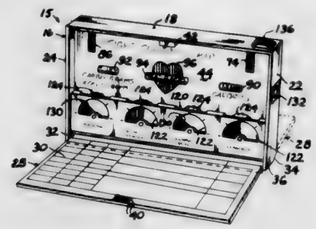
3,433,406
CALORIE-GRAM INDICATOR AND ALARM
William L. Carter, 2801 S. Air Depot, Midwest City, Okla. 73110
Continuation-in-part of application Ser. No. 494,557, Oct. 11, 1965. This application Apr. 25, 1966, Ser. No. 544,949
U.S. Cl. 235—128 5 Claims
Int. Cl. G07g *3/00*



1. An indicating device, comprising: a housing having a top, bottom and end walls joined to a back wall defining an open front; a partition wall in said housing inwardly of the plane defining the open front, said partition wall having an aperture; an axle mounted within said housing in parallel relation with respect to said top wall; a second axle journaled in said end walls adjacent said bottom wall; a first drum axially connected with said first axle; at least one roller journaled on said second axle in alignment with said first drum; at least one endless band entrained around said first drum and said roller adjacent said aperture in said partition wall; means for rotating said endless band; and signal means within said housing actuated at predetermined times by the movement of said endless band.

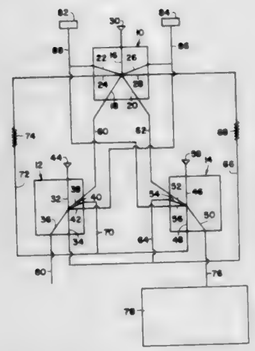
3,433,407
WEIGHT CONTROL AID
William L. Carter, 2801 S. Air Depot, Midwest City, Okla. 73110
Continuation-in-part of application Ser. No. 544,949, Apr. 25, 1966. This application Mar. 19, 1968, Ser. No. 714,314
U.S. Cl. 235—128 5 Claims
Int. Cl. G07g *3/00*

A rectangular housing journals interconnected pairs of axles having an elongated flexible strip with data printed thereon connected with and windable from one axle to the other by means of control wheels projecting through a partition wall in the housing. Openings in the wall visibly expose data on the sheets as the latter is moved. A bat-



tery operated lamp is periodically lighted to expose other data on one sheet. Manually movable serrated wheels, journaled by the partition wall record quantities of daily allowable foods consumed by the user.

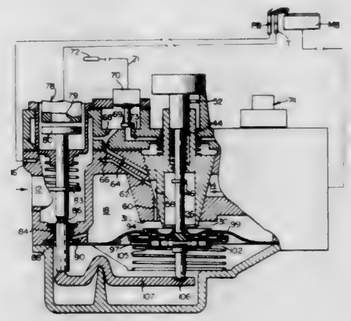
3,433,408
BINARY COUNTER
Robert H. Bellman, Horseheads, and Thomas W. Bermel, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 15, 1967, Ser. No. 683,368
U.S. Cl. 235—201 7 Claims
Int. Cl. G06d *1/00*



A high recovery rate binary counter having high pressure sensitivity and independence to output loading. The counter embodies a bistable fluid amplifier and two NOR gates with one outlet of the fluid amplifier being connected to a control nozzle of one of the NOR gates and the other outlet being connected to a control nozzle of the other NOR gate. The NOR outlet of said one NOR gate is connected to another control nozzle of the other NOR gate and to the opposing control nozzle of the fluid amplifier through a restricted bypass passage. The NOR outlet of said other NOR gate is connected to another control nozzle of said one NOR gate and to the other control nozzle of the fluid amplifier through a second restricted bypass passage.

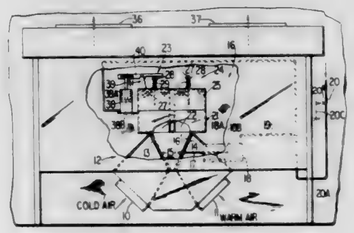
3,433,409
COMBINED TEMPERATURE AND PRESSURE CONTROLLED VALVE
Wilbur F. Jackson, Rolling Hills, and John W. Wright, Long Beach, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 580,004
U.S. Cl. 236—9 11 Claims
Int. Cl. F23n *1/00*; F23d *13/46*; F23q *9/12*

A combination control device for main and pilot burner apparatus, wherein a pressure responsive modulating valve includes a diaphragm assembly having two concentric valves on a single diaphragm; the two valves operate independently but limit the pressure drop to a single passage whereby the capacity of the control device may be



increased. The main diaphragm valve cooperates with the bottom opening of a manually rotatable plug valve and a larger concentric seat on the main diaphragm cooperates with the casing to control a bleed flow and pilot flow porting.

3,433,410
REGULATOR
Robert M. Warren, Jr., Lincroft, N.J., assignor to Buensod-Stacey Corporation, New York, N.Y., a corporation of Ohio
Filed Oct. 24, 1965, Ser. No. 504,921
U.S. Cl. 236—13 10 Claims
Int. Cl. G05d *23/00, 27/00*

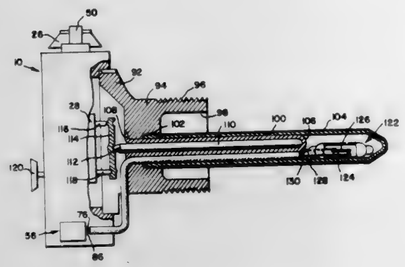


An air conditioning arrangement having two constant volume air flow control means, one of which will furnish a preset minimum amount of air and the other of which is thermostatically controlled so as to provide additional air from the preset minimum to a preset maximum.

3,433,411
UNITARY THERMOSTATIC CONTROL DEVICE WITH DUAL TEMPERATURE SENSORS
Wilbur F. Jackson, Rolling Hills, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,311
U.S. Cl. 236—21 6 Claims
Int. Cl. F22b *37/42*; F23n *5/24*

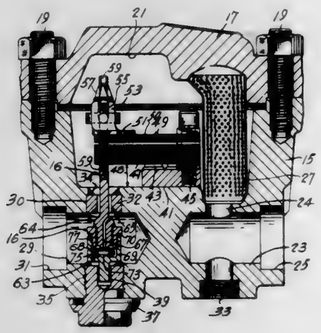
A dual thermostat assembly having a normal tempera-

ture sensor in the form of a rod and tube thermostat and an abnormal temperature sensor in the form of a bimetal



switch; both the normal and abnormal temperature sensor are housed in a sheath of heat conductive material.

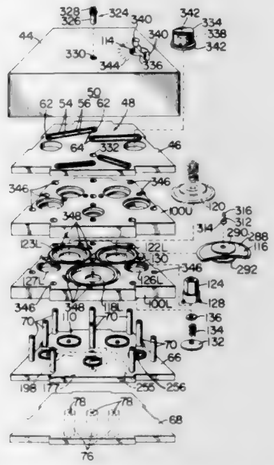
3,433,412
STEAM TRAP WITH RELIEF VALVE
Guy Breton, Montreal, Quebec, Canada, assignor to Velan Engineering Ltd., Montreal, Quebec, Canada
Filed Apr. 25, 1967, Ser. No. 633,600
Claims priority, application Canada, Apr. 22, 1967, 988,623
U.S. Cl. 236—59 **8 Claims**
Int. Cl. F16t *1/02, 1/04, 1/08*



A steam trap having a main valve and temperature-actuated mechanism responsive to steam temperature to close this valve and to condensate temperature to open it and a pressure-actuated relief valve operating according to the Bernouilli effect, the main valve is closed to trap steam or open to pass condensate, as the case may be, so that condensate can start to escape before the temperature-actuated mechanism has had time to react to the change from steam to condensate.

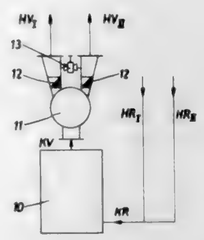
3,433,413
SMALL PNEUMATIC THERMOSTAT
Walter J. Berleyoung, Kenneth G. Kreuter, and Klaus P. Mueller, Goshen, Ind., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 5, 1967, Ser. No. 628,767
U.S. Cl. 236—82 **44 Claims**
Int. Cl. G05d *23/00*

This application discloses the sonic or ultrasonic welding of two plates having a channel on one side of the plates with ridges surrounding the channel so that the crests of the ridges are heated, melted and then solidified on each side of the channel to seal the channel between the plates. Openings are provided in one or both plates which connect the interior of the channel to the exterior of the plates. One or both plates may have tubes aligned with such openings so that the channel between the plates may be connected to other structures by such tubes. This application also discloses a fluid pressure control system enclosed within a unit made of thermoplastic plates sonically welded together to encompass channels, passageways,



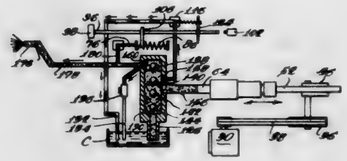
diaphragms, cams and the like between the plates. This application also discloses the welding of two identical plates with one of the plates rotated at 180°, the plates having a diaphragm cavity facing another diaphragm cavity on the other plate and with sonic ridges adjacent such cavity on only one half of one plate, so that such ridges on said one plate will then engage a flat surface without ridges on the other plate, to promote efficient sonic welding of the plates.

3,433,414
HEATING SYSTEM
Gunther Boes, Munstermannskamp 16, Luneburg, Germany
Filed Mar. 1, 1966, Ser. No. 530,947
Claims priority, application Germany, Sept. 17, 1965, L 51,658
U.S. Cl. 237—8 **4 Claims**
Int. Cl. F24d *3/02, 3/00, 1/00*



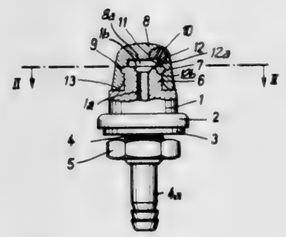
A pump for feeding several heating circuits from a single boiler includes a single casing connected with the boiler and driving rotors located within the casing, each rotor being driven independently and being connected by a separate pipe joint with the inlet of a separate heating circuit.

3,433,415
HYDRAULIC SYSTEMS
Bruno Eugen Enssle, Boulder, Colo., assignor to Binks Research and Development Corporation, Boulder, Colo., a corporation of Colorado
Filed Mar. 18, 1966, Ser. No. 535,424
U.S. Cl. 239—126 **11 Claims**
Int. Cl. B05b *9/00*



A hydraulic system for airless spraying of liquids at high pressure including by-pass means for by-passing the fluid at low pressure while maintaining a predetermined high pressure available at a spray gun member and including improved control apparatus for controlling the starting and stopping of the system and for regulating the pressures developed therein.

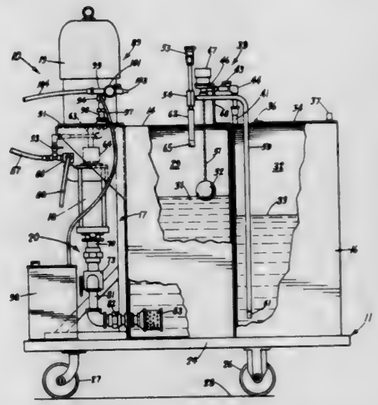
3,433,416
WINDSHIELD SPRAY ASSEMBLY HAVING AN ADJUSTABLE SPHERICAL NOZZLE MEMBER
Kurt Bauer, Kleiningersheim, and Alfred Kohler, Bietigheim, Germany, assignors to SWF-Spezialfabrik fur Autozubehor Gustav Rau, G.m.b.H., Bietigheim-Wurttemberg, Germany
Filed May 13, 1966, Ser. No. 549,868
Claims priority, application Germany, Dec. 2, 1965, S 100,764
U.S. Cl. 239—284 **4 Claims**
Int. Cl. B05b *1/10, 15/06*



A nozzle includes a body portion having a bore defined therethrough for the flow of liquid and one end having means for connecting the body to a hose. The opposite end includes a central projecting portion which defines an annular head or shoulder at a spaced location from the opposite end. A substantially cylindrical cap is snap-fitted over the central projecting portion and it carries a spherical nozzle with a discharge passage for the liquid.

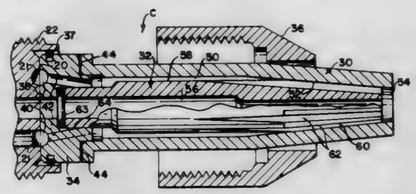
3,433,417
PORTABLE CLEANING APPARATUS
Harold A. Poppitz, Chaska, Minn., assignor to Chaska Chemical Company, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 23, 1967, Ser. No. 617,996
U.S. Cl. 239—304 **10 Claims**
Int. Cl. B05b *7/26, 7/16*

A portable liquid cleaning apparatus comprising two pairs of tanks mounted on a truck carrying an air operated motor and a reciprocating piston pump. One pair of tanks used to store an acid cleaning liquid solution has a first tank storing a concentrate acid solution and a second tank storing a diluted acid solution connected to the inlet of the pump. The other pair of tanks stores alkaline cleaning liquid solutions with one tank storing a concentrated alkaline liquid and the other tank storing a diluted alkaline solution connected to the inlet of the pump. Separate liquid filling and proportioning units are used to mix the concentrate solutions and to maintain the levels of the liquids in the second or pump reservoir tanks so that a supply of cleaning liquid is always available to the pump.



A valving system connected to the inlet of the pump is used to selectively connect the pump to a source of alkaline cleaning liquid, acid cleaning liquid, or water from a source of supply. On operation of the motor, the pump discharges one or more of the cleaning liquids at high pressures through hoses connected to manually operated nozzles. A foaming unit operated with air pressure and liquid discharged by the pump is used to impart a foaming agent to the cleaning fluid whereby the cleaning fluid is discharged as a foam which clings to surfaces being cleaned.

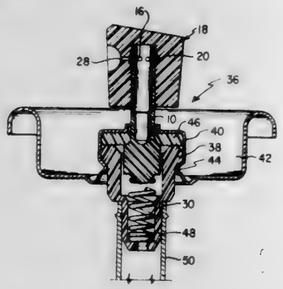
3,433,418
CUTTING TORCH TIP ASSEMBLY
Frank Hach, Jr., Euclid, Cuyahoga, Ohio, assignor to The Harris Calorific Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 3, 1966, Ser. No. 591,754
U.S. Cl. 239—422 **1 Claim**
Int. Cl. B05b *7/06;* **F23d** *11/00*



A torch tip assembly for connection to a torch head comprising a generally cylindrical distribution member having a first end face and a second end face. A circular opening of uniform diameter is formed axially of the member in the first end face. A second opening of smaller diameter than the first opening extends axially through the member from the bottom of the first opening to the second end face with the juncture between the first and second openings defining a circular shoulder. A resilient annular ring member is positioned in the first opening

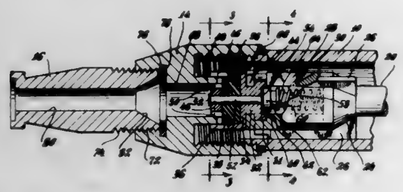
and is in engagement with the shoulder. An elongated tip insert member of generally circular cross-section having an axial bore extending therethrough and a first end portion terminating in an end wall and a uniformly tapered second end portion is axially slidably received in the first opening with the end wall being in engagement with the ring member. A tip shell member is positioned about the tip insert member and has its outlet end tapered to generally conform to the taper of the insert member. The shell member has its inlet end releasably engaged with the distribution member and functions in cooperation with the distribution member to support the insert at its opposite ends. The fact that the tip insert is supported entirely by the cooperation of these two members and the addition of the resilient annular ring member eliminate the need for holding close tolerances in the manufacture of the insert.

3,433,419
AEROSOL VALVE HAVING SWIRL CHAMBER
Roger A. Evesque, Cary, Ill., assignor to Seaquist Valve Company, a division of Pittsburgh Railways Co., Cary, Ill., a corporation of Pennsylvania
Filed Sept. 13, 1965, Ser. No. 486,980
U.S. Cl. 239—470 **2 Claims**
Int. Cl. B05b *1/34, 1/30*



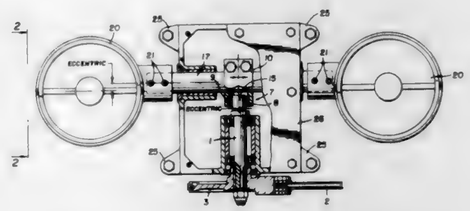
A mechanical breakup aerosol valve including a valve button with a swirl chamber about the upper end of the valve stem which extends from the valve into the button and a terminal orifice leading from the swirl chamber to the outside. The top of the valve stem is blocked. At least one hole or slot is formed in the valve stem and is directed so that the product impinges against the walls of the swirl chamber where it is mechanically broken up, caused to swirl about the swirl chamber, and out the terminal orifice.

3,433,420
SPRAY NOZZLE AND VALVE
Leeman F. Strout, 93 Rock Ledge Drive, Stamford, Conn. 06902; Ella H. Strout, executrix of said Leeman F. Strout, deceased
Filed Sept. 20, 1966, Ser. No. 580,751
U.S. Cl. 239—476 **6 Claims**
Int. Cl. B05b *1/32, 1/22*



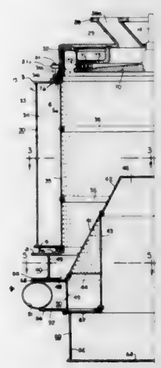
The disclosure relates to a spray nozzle and valve for a spray gun, including a stationary valve seat, a reciprocable resilient valve washer secured within a cup-shaped housing with its exposed face positioned behind the lip of the housing. Fluid whirl generating slots are defined in the lip to whirl the fluid over the face of the resilient valve washer as the fluid passes through the open valve. A whirl plate is mounted upon the face of the resilient washer to direct the fluid out of the nozzle in a spiral spray.

3,433,421
VIBRATORY MILL AND ITS OPERATION
Frank D. Moore, Tallmadge, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed July 25, 1966, Ser. No. 567,727
U.S. Cl. 241—30 **4 Claims**
Int. Cl. B02c *2/04, 17/08;* **F16h** *21/40*



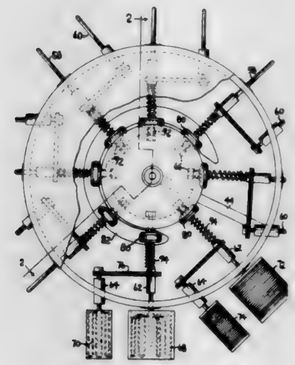
A vibratory mill and method of operation wherein a drum is mounted on a shaft by an eccentric operating in a ball joint secured to the shaft, driving the shaft through an orbit described by oscillative movement along and about the major axis of the shaft.

3,433,422
METHOD AND APPARATUS FOR ROTARY PROCESSING AND CLASSIFICATION
Wolfgang Peter Guenther, Cheshire, Conn., assignor to Entoleter, Inc., Hamden, Conn., a corporation of Delaware
Filed July 14, 1965, Ser. No. 471,951
U.S. Cl. 241—61 **20 Claims**
Int. Cl. B02c *19/00;* **B04c** *5/04, 5/06*



A centrifugal impact mill is mounted toward the top of a generally cylindrical body having angled perforations therein. Particulate material milled by the impact mill falls downward and is subjected to an inwardly spiralling flow of air coming in through said apertures causing the heavier particles to be thrown outwardly by centrifugal force. Toward the lower part of the cylindrical body a second, rising and inwardly spiralling flow of air is produced by air being deflected inward and upward around a generally conical member. This second flow tends to move any remaining fine particles inward and upwardly toward the conical member for removal by suction thereat.

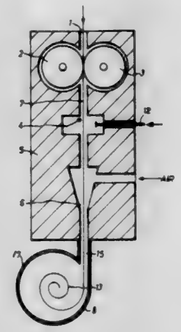
3,433,423
MACHINE FOR END FINDING OF STRAND
John Kallenborn, Murrysville, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1967, Ser. No. 662,505
U.S. Cl. 242—35.5 **6 Claims**
Int. Cl. B65h *54/02*



Before stand on a forming package is placed on a twist and ply frame or the like for twisting and plying or other operation, it is customary to locate or find a good end of the strand on the forming package. This entails transferring a relatively small quantity of strand from the forming package to another tube or package making sure that the strand integrity is satisfactory for at least a few yards on the forming package. To assist in this operation, a machine having a rotatable table is provided with a plurality of pairs of spindles extending therefrom around the periphery. Each pair of spindles is rotatable and each spindle is adapted to receive a tube, either the forming tube or a tube for receiving a few yards of the strand from a forming tube. The tubes may be of different diameters, so that the spindles are drivingly connected such that the peripheral speeds of the tubes are substantially equal. A slip clutch is generally provided in one spindle drive.

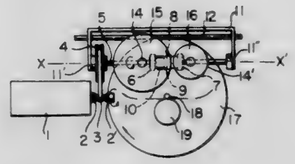
3,433,424
APPARATUS FOR SUCCESSIVELY DRAWING OFF, MEASURING, BALLING AND SEPARATING A THREAD
Martin Röver and Erwin Lüth, Dormagen, Lambert Schmitz, Hackenbroich, and Friedrich Linsert, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 21, 1966, Ser. No. 522,323
Claims priority, application Germany, Jan. 23, 1965, F 45,045
U.S. Cl. 242—47 **8 Claims**
Int. Cl. B65h *51/00*

Apparatus for successively drawing off, measuring, balling and separating a thread by means of suction nozzles adapted to draw off threads, including a closed housing containing a suction path with an entrance nozzle and a discharge nozzle, a friction driven roller adapted to be pressed against a measuring roller to deliver a measured length of thread, and thread cutting means, and including



a balling attachment near the discharge nozzle, wherein the housing closely surrounds the two rollers, thereby subjecting the space thereat to the attendant suction and preventing thread from becoming entangled in the rollers.

3,433,425
TAPE DRIVING DEVICE
Shoichi Saito, Tokyo, Japan, assignor to Olympus Optical Co., Inc., Tokyo, Japan
Filed Nov. 3, 1966, Ser. No. 591,826
Claims priority, application Japan, Nov. 11, 1965, 40/91,145; Nov. 15, 1965, 40/92,414, 40/92,415
U.S. Cl. 242—55.12 **4 Claims**
Int. Cl. G11b *15/44*

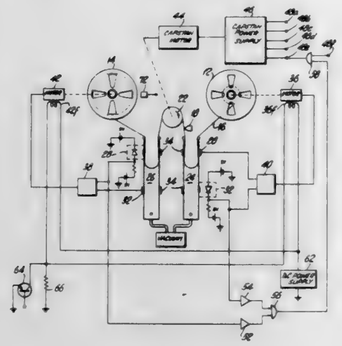


In miniature tape recording devices, an improved compact device for driving the tape including a driven counter shaft having rewinding, quick feeding and winding friction wheels mounted thereon, the counter shaft being axially shiftable for selective engagement of the rewinding wheel with the supply reel supporting disc, or either the quick feeding wheel or the winding wheel with the take-up reel supporting disc to frictionally drive the respective disc to effect accurate winding up, quick rewinding or quick feeding of the tape with low power consumption, by avoiding conventional transmitting driving power through the conventional fly wheel during each of the operations.

3,433,426
REWIND CONTROL CIRCUIT
George C. Brown, Syosset, and Daniel M. Klang, Huntington Station, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed June 8, 1967, Ser. No. 644,508
U.S. Cl. 242—55.12 **7 Claims**
Int. Cl. G11b *15/44*

A rewind system for a single capstan magnetic tape

transport in which the lower file reel vacuum buffer sensor and the upper machine reel vacuum buffer sensor control the rotational speed of the capstan during rewind.



3,433,427
REWIND CONTROL CIRCUIT

George C. Brown, Syosset, and Frederick G. Moritz, Hauppauge, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed June 8, 1967, Ser. No. 644,555
U.S. Cl. 242—55.12 4 Claims
Int. Cl. G11b *15/44*; B65h *23/32, 17/28*

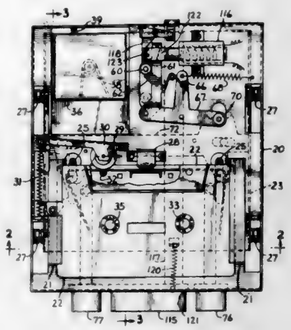
In a single capstan magnetic tape transport, the reel servos during rewind are controlled by the lower machine reel sensor and the upper file reel sensor while the speed of the capstan is controlled by the upper machine reel sensor and the lower file reel sensor.

3,433,428
STOP SYSTEM FOR TAPE DECKS

Etienne Arthur Marie Schatteman, Wemmel, Belgium, assignors to Staar, S.A., Brussels, Belgium, a corporation of Belgium

Filed Oct. 31, 1966, Ser. No. 590,613
Claims priority, application Belgium, July 8, 1966, 30,628
U.S. Cl. 242—55.13 11 Claims
Int. Cl. G11b *15/32*

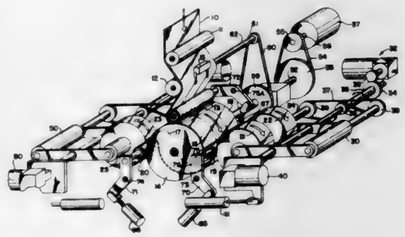
A stop system particularly useful with tape cartridge recorder-players and designed automatically to disengage the drive elements of a tape deck from the tape whenever tape motion is stopped. The system is responsoive to stoppage due not only to the complete unreeling of the tape from the supply reel, as well as to breakage of the tape but to stoppage due to the interruption of electric power to the player-recorder as well.



3,433,429
FILM WINDING APPARATUS

Emil Schnitzspahn, Green Brook, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 10, 1967, Ser. No. 629,750
U.S. Cl. 242—65 8 Claims
Int. Cl. B65h *17/08*



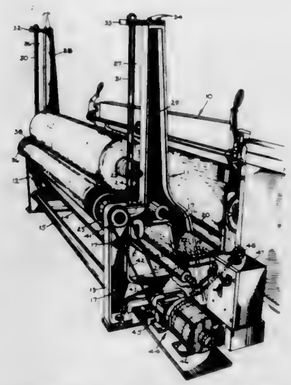
In winding up sheet or film coming from an orienting apparatus on a plurality of cores or on a single core, the high initial tension must be reduced. Reduction of this tension is effected by passing the film over rubberized nip rolls. The films initially received by a rubber surfaced roll and the winding drum then pass about the drum to a second rubberized nip roll. In this area the film is absolutely controlled. When released by the second nip roll sufficient tension is relieved so that the film is then wound into a desired firm package.

3,433,430
FABRIC WINDUP MECHANISM

Frederick L. Sprague, Hopedale, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, as Trustees of The Carolina Patent Development Trust

Continuation of application Ser. No. 470,525, July 8, 1965. This application May 17, 1968, Ser. No. 731,678
U.S. Cl. 242—66 1 Claim
Int. Cl. B65h *17/08*; D03d *49/06, 49/20*

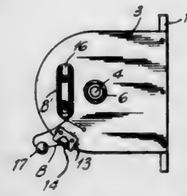
Apparatus independent of a loom for driving fabric winding rolls at variable speeds to maintain automatically, predetermined even fabric tension. A motor drive control unit utilizes changes in motor loading to continuously sense and control the motor speed, down to and including stalling, to maintain a preset fabric tension level.



3,433,431
AUTOMATIC LINE REWINDER

Gaylord E. Holcomb, Rte. 1, Shelbyville, Mich. 49344

Filed Apr. 12, 1967, Ser. No. 630,232
U.S. Cl. 242—107 1 Claim
Int. Cl. B65h *75/48*

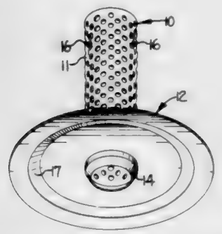


As an adjunct to the equipment of ice spearing sportsmen, a reel from which the line attached to a spear will unwind when the spear is thrown and automatically rewind when the spear is retrieved. The spring rewind reel is adapted to have a portion of a line wound thereon, ball and strap means prevent the line from being fully rewound on the reel, and a cleat mounted on the reel support removably receives the terminal end of the line.

3,433,432
YARN PACKAGE SUPPORT

David M. Willis, Spartanburg, S.C., assignor to Butte Knitting Mills, a division of Jonathan Logan, Inc., Spartanburg, S.C., a corporation of Delaware

Filed July 20, 1967, Ser. No. 654,855
U.S. Cl. 242—118.1 4 Claims
Int. Cl. B65h *75/02*; D06f *17/00*

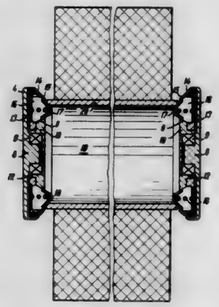


A yarn package support wherein a longitudinally rigid and foraminous elongate tubular portion includes male and female terminal extremities for mating engagement with adjacent like supports and a package abutment means carried by the tubular portion aids in limiting compression of a yarn package supported on the support.

3,433,433
CLAMPING DEVICE FOR BOBBINS AND THE LIKE

František Pospíšil, Usti nad Orlici, and Jiří Eliáš, Brandys nad Orlici, Czechoslovakia, assignors to Vyzkumny Ustav Bavlnarsky, Usti nad Orlici, Czechoslovakia

Filed Dec. 1, 1966, Ser. No. 598,356
Claims priority, application Czechoslovakia, Dec. 1, 1965, 7,189/65
U.S. Cl. 242—129.51 10 Claims
Int. Cl. B65h *49/00, 19/00, 17/02*



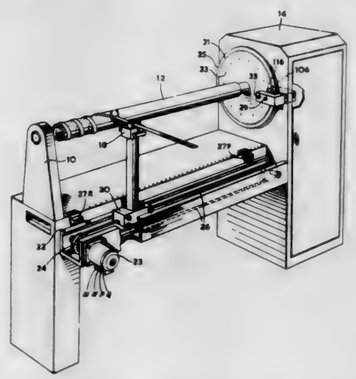
A clamping device, particularly for supporting bobbins in a textile machine, in which a support structure defines a gap and carries two projections extending across the gap toward one another.

At least one of these projections is movable toward and away from the other and is permanently biased in the direction toward the other so that a bobbin tube, whose length exceeds the smallest distance between the projections, can be inserted into the gap transversely of the direction of movement of the movable projection and thus be secured to the support structure by a snap action.

3,433,434
FILAMENT WINDING MACHINE

Charles F. Latter, Brampton, Ontario, Canada, assignor to Philip D. Rosengarten, Montreal, Quebec, Canada

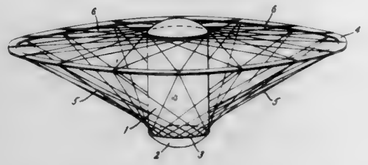
Continuation of application Ser. No. 470,262, June 4, 1965. This application Jan. 26, 1967, Ser. No. 612,030
U.S. Cl. 242—158 5 Claims
Int. Cl. B65h *54/28*



A filament winding machine wherein a filament is wound to a predetermined form on a mandrel and means are provided for simultaneously rotating the mandrel and

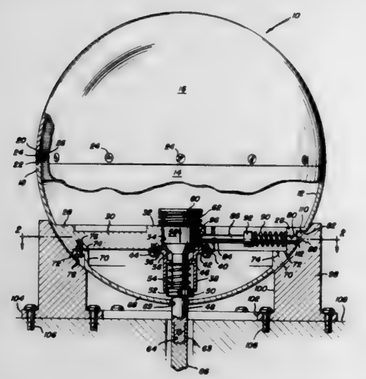
carrying the filament across the mandrel in a filament winder head, in which the means for controlling the movement of the filament winder head in traverse and dwell with respect to the rotation of the mandrel is achieved by means of a pulse motor that moves a predetermined positive amount for each pulse of power applied thereto and the supply of power pulses for the motor is keyed to the rotation of the mandrel.

3,433,435
TENSION STRING DRAG STRUCTURES FOR PLANETARY ENTRY VEHICLE
John A. Alai, Willingboro, N.J., assignor to General Electric Company, a corporation of New York
Filed July 25, 1966, Ser. No. 567,608
U.S. Cl. 244—1 **25 Claims**
Int. Cl. B64d *1/02, 17/00, 19/00*



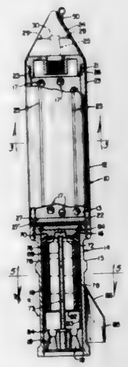
A strong, lightweight, planetary entry drag structure comprises, as the primary load-bearing component, a plurality of filamentary elements under tension suspended between fore and aft structural members. A second plurality of such elements may be used to support the aft structural member. In a specific embodiment, the two termini or support points of each of the suspended filamentary elements are located in different meridional planes, i.e., the support points of each element are angularly displaced from one another, so as to enhance aerodynamic performance.

3,433,436
BALL RELEASE MECHANISM
Robert A. Mattey, Glen Burnie, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 20, 1967, Ser. No. 624,615
U.S. Cl. 244—1 **7 Claims**
Int. Cl. B64g *1/10;* **F16b** *7/10*



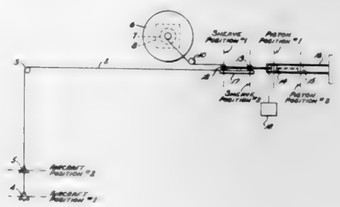
The invention relates to a satellite stabilizer and means for releasably latching the stabilizer to a satellite. According to the invention, a spherical weight is attached to the end of a generally cylindrical actuating shaft which is secured to the end of a retractable boom. With the boom in a retracted position, the weight is received in a cup-like support on the wall of the satellite. A plurality of slidable latch plungers protrude radially from the weight and releasably latch the weight to said support. Upon movement of the boom toward an extended position, the latch plungers slidably disengage from the cup-like support, thereby unlatching the weight to permit its extension with the boom.

3,433,437
ROCKET PROJECTILE
Leonard E. Bates, Aurora, Colo., assignor to John E. Reilly
Filed Jan. 18, 1967, Ser. No. 610,094
U.S. Cl. 244—3.23 **13 Claims**
Int. Cl. F42b *25/14, 13/14, 13/32*



The rocket projectile of the present invention contains a gelled, pyrophoric composition which can be fired or launched over distances on the order of one thousand yards with accuracy approaching a rifle bullet. The projectile is propelled by a solid propellant reaction motor to impart a relatively high muzzle velocity with no recoil; and upon impact the pyrophoric gel is released to undergo highly intense controlled burning over a relatively wire area.

3,433,438
AIRCRAFT LAUNCHING DEVICE
Robert W. Cruger, Springfield, William E. Petransky, Lansdowne, and Melvin I. Weiss, Broomall, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,958
U.S. Cl. 244—63 **7 Claims**
Int. Cl. B64f *1/04*



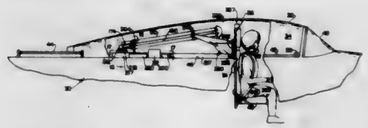
An aircraft launching device includes a wind-up mechanism for a purchase tape connected with an aircraft. The wind-up mechanism is connected to a motor through a clutch. To reduce clutch slippage in the wind-up mechanism when imparting movement to a stationary aircraft, an initial velocity is imparted to the aircraft by a prelaunch accelerator. Once the aircraft is brought up to an initial velocity by the prelaunch accelerator, the clutch of the wind-up mechanism is engaged to bring the aircraft up to launching speed.

3,433,439
SECTIONAL ARTICULATED FUSELAGE FOREBODY FOR HIGH-SPEED AIRCRAFT
Frank H. Brame, Redmond, and Charles B. Fisher, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,269
U.S. Cl. 244—120 **14 Claims**
Int. Cl. B64c *1/00, 1/28;* **B64d** *11/00*



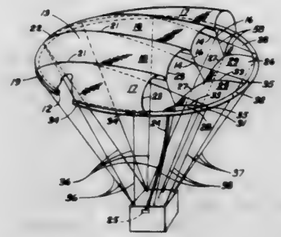
The fuselage nose or forebody of a high-speed aircraft according to this invention is of sectional articulated construction, in the cruise condition of which the nose sections combine with the fuselage proper so as to minimize wave and trim drag, whereas in the subsonic flight, landing and takeoff condition the nose is depressed below its cruise position and changed in configuration by relative movement of the sections in order primarily to increase the pilot's clear field of vision in the critical section lying below and ahead of the aircraft. With linkage mechanism coordinating relative angular movements of the nose sections the tip section is maintained substantially parallel at all times to its position in cruise, so that direction-referenced instrumentation such as pitot-static devices, radar, etc. carried by the tip section remain operative in the same manner during landing and takeoff phases as in cruise, without necessity for enlarged radar windows, expanded-range radar base stabilization systems, or means to convert instrument data so as to allow for change of attitude. Such paralleling movement of the tip section also minimizes disturbance of aircraft trim during nose conversion movements and reduces the required height of the front landing gear carriage in order for the nose when depressed to safely clear ground objects such as fences snow banks and service vehicles.

3,433,440
ERECTOR AND POSITIONING DEVICES FOR AIR CREW ESCAPE SYSTEM ROCKET
Robert M. Stanley, Denver, Colo., assignor to Stanley Aviation Corporation, Aurora, Colo., a corporation of New York
Continuation-in-part of application Ser. No. 390,709, Aug. 19, 1964. This application Dec. 9, 1966, Ser. No. 600,487
U.S. Cl. 244—137 **41 Claims**
Int. Cl. B64d *25/08;* **B64c** *1/32*



A rocket escape apparatus for removing an occupant from an air or space vehicle or the like wherein an escape rocket is stowed in the vehicle in a prone position and is erected to a launching position to initiate the escape. The rocket is connected by a flexible pendant line to the occupant to be removed. Launching of the rocket from its erected position and ignition of the rocket propellant tensions the rocket pendant line to extract the occupant from the vehicle.

3,433,441
FLEXIBLE AERODYNAMIC BODY
Alan F. Cummings, Downey, Calif., assignor to North American Rockwell Corporation
Filed May 16, 1966, Ser. No. 550,448
U.S. Cl. 244—138 **35 Claims**
Int. Cl. B64d *17/34, 17/18, 17/14*



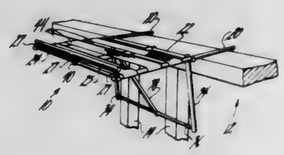
A flexible gliding vehicle is described having an inflatable circular rim from which a payload is suspended somewhat in the manner of a parachute. A fabric airfoil sail extends across the forward portion of the rim to form a lifting surface, and a fabric airfoil flap extends across the aft portion of the rim for providing aerodynamic stability. The effective angle of attack of the flap is no greater than the angle of attack of the sail for stability. An open slot extends substantially across the rim transverse to the normal flight direction. Control of gliding flight is obtained by variations of flap position with control of flap position with control lines from the payload. Rigging, deployment and flight procedures are also described.

3,433,442
PARACHUTE DEREEFING SYSTEM
Hector R. Durocher and James A. Wentworth, Nashua, and Ralph H. Baer, Manchester, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,016
U.S. Cl. 244—152 **3 Claims**
Int. Cl. B64d *17/00, 17/52*



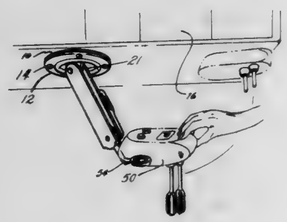
Apparatus is herein described for accurate, reliable and undamaged delivery of cargo by parachute from an aircraft. The cargo is fastened to a "reefed" parachute; dropped; and permitted to substantially "free-fall" for the major portion of the descent. At a set time during this descent, a switch is lowered a predetermined distance below the cargo. Once the switch impacts with the ground, it actuates an electric circuit, dereefing the parachute, thus permitting it to brake the cargo descent.

3,433,443
COLLAPSIBLE SHELF FOR USE WITH A RAILING OR THE LIKE
Richard E. Mangan, 50 Natick St., Hartford, Conn. 06106, and William Law Beeson, 566 Nott St., Wethersfield, Conn. 06109
Filed May 8, 1967, Ser. No. 636,821
U.S. Cl. 248—214 **6 Claims**
Int. Cl. A47f *5/10, 7/00*



This invention relates generally to collapsible shelves, and deals particularly with a shelf which can be quickly erected or collapsed, and is especially well suited for use on a porch railing or other upright structures.

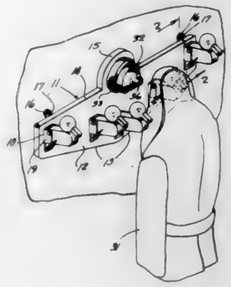
3,433,444
COUNTERPOISED SUPPORTING DEVICE
Thomas F. Smith, 19940 Stahelin Ave., Detroit, Mich. 48219
Filed Jan. 4, 1967, Ser. No. 607,327
U.S. Cl. 248—279 **12 Claims**
Int. Cl. A47f *5/10*



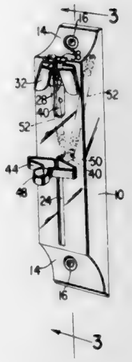
A supporting device having a counterpoised, elongated arm assembly with an upper end mounted to a downward facing supporting surface and a lower suspended end adapted to hold a tool and movable between raised and lowered positions. A spring member is arranged at the upper end of the arm assembly to provide a balancing force so that the tool holding end is normally in the raised position. The arm assembly is mounted for movement about an axis perpendicular to the supporting surface and has a clamping device to lock the arm in a selected position relative to the perpendicular axis. A second clamping device is operable to lock the tool in a selected orientation relative to the supporting surface.

3,433,445
CHILD'S CLOTHES RACK
Hubert S. Downing, P.O. Box 627, Fayetteville, N.C. 28032
Filed Mar. 17, 1967, Ser. No. 624,075
U.S. Cl. 248—291 **5 Claims**
Int. Cl. A47f *5/00*

A child's clothes rack including a plurality of pivoted clothes-supporting bars normally supported in elevated positions by downwardly and inwardly-directed snap leaf springs of the type emitting a loud snapping sound when flexed beyond a "dead-center" condition, the bars causing the springs to flex to this condition in response to the weight of garments placed on the bars.



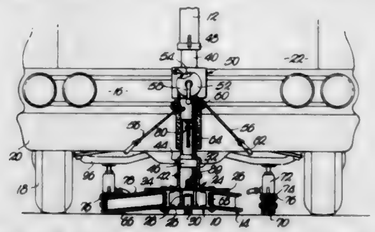
3,433,446
FISHING REEL DISPLAY BRACKET
George A. Meder, 37 Sunnyridge Road, Easton, Conn. 06425
Filed Nov. 15, 1966, Ser. No. 594,512
U.S. Cl. 248—316 **7 Claims**
Int. Cl. A47h *1/10;* **A47f** *5/00*



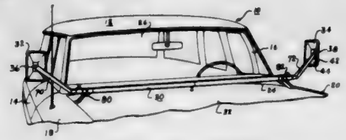
A bracket for mounting fishing rod reels on a display panel or wall including an elongated substantially flat slotted base, with a reel base plate tongue keeper adjustably attached to one end thereof and a second keeper mounted in said slot. A spring is attached at one end to one end of the base and at its opposing end to the second keeper for resiliently urging the latter toward the first keeper to retain the reel base plate tongues in clamped position on the base.

3,433,447
STABILIZING ASSEMBLY FOR HOIST
Arley Gene Carroll, 5616 Long, Shawnee, Kans. 66216
Filed Feb. 16, 1967, Ser. No. 616,676
U.S. Cl. 248—352 **8 Claims**
Int. Cl. F16m *13/00*

A dolly for stabilizing a hoist for lifting parts from a vehicle engine compartment and having a mount for supporting the hoist alongside the vehicle. A support is secured to the mount for extending beneath the vehicle and includes a pair of jacks adapted to engage the undercarriage. A winch assembly is connected to the mount for securing the latter to the bumper of the vehicle to the end that the jack and winch couplings act to prevent tipping of the hoist during use.

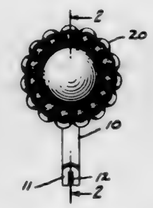


3,433,448
REARVIEW MIRROR SUPPORTING DEVICE
Charles A. Weber, 3431 Homer Ave., Elkhart, Ind. 46514
Filed Feb. 10, 1967, Ser. No. 615,155
U.S. Cl. 248—476 **9 Claims**
Int. Cl. B60r *1/02*



A rearview mirror supporting device for automobiles and pickup trucks, which extends across the hood of the vehicle and engages the sides of the hood to secure it firmly in place on the hood, and which supports a mirror on an arm at one or both sides of the vehicle.

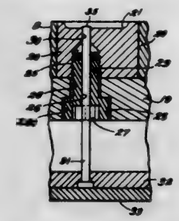
3,433,449
DECORATIVE SUPPORTING HOOK ASSEMBLY
Thomas J. Musante, Newark, N.J., assignor to Necessa Products Company, East Orange, N.J., a partnership
Filed May 10, 1967, Ser. No. 637,592
U.S. Cl. 248—497 **3 Claims**
Int. Cl. A47g *1/16*



A decorative supporting hook assembly including a hook member of strip material having a hook on one end thereof and a fold near the opposite end thereof, a decorative cover piece overlaying said hook member while exposing said hook, and said cover piece having a tapered cavity for frictionally receiving said fold.

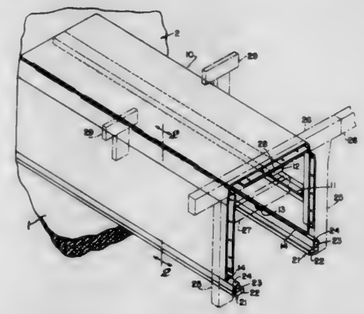
3,433,450
EJECTOR AND MOLD PLATE ATTACHMENT FOR PLASTIC MOLDING MACHINES
Robert F. Brunner, 1624 1st Ave. and Wayne O. Garrett, 4346 Cappel Drive, both of Cincinnati, Ohio 45205
Filed Dec. 12, 1966, Ser. No. 601,109
U.S. Cl. 249—67 **4 Claims**
Int. Cl. B29f *1/14*

1. An attachment for clamping a cavity die block to the platen of a molding machine having a relatively movable ejector pin associated therewith; the combination of a bolt receiving hole formed in the platen in line with a cavity in the die block, a tapped bore formed in the die block coaxially with the bolt receiving hole, a hole formed in the die block coaxially with the tapped bore and creating open communication between the bottom of the cavity and the tapped bore, a clamping bolt having a head and a shank, said head engaging the platen, said shank having external threads on its end portion and



receivable in the hole in the platen with the threaded end thereof in threaded clamping engagement with the tapped bore in the die block, said shank and a portion of the head having a coaxially disposed bearing hole formed therethrough and said head having an irregular, tool engaging recess therein in communication with said bearing hole, said ejector pin freely passing through the tool recess and slidable in the bearing hole in the bolt, and the upper end of said pin extending through the hole in the die block.

3,433,451
CRYPT FORM
Robert Hitttel, 960 NW. 53rd St., Fort Lauderdale, Fla. 33309
Filed Apr. 11, 1966, Ser. No. 541,662
U.S. Cl. 249—183 **1 Claim**
Int. Cl. B29c *1/12*

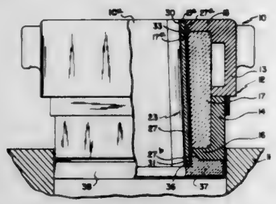


A form for the pouring of concrete crypts including a bent pan portion supported on removable base members and having internally disposed bails for engagement of removal hooks.

3,433,452
HOT TOP PANEL INSERT UNIT
Walter M. Charman, Jr., Shaker Heights, and James H. Borden, Cleveland, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 398,664, Sept. 23, 1964. This application Oct. 7, 1966, Ser. No. 598,554
U.S. Cl. 249—201 **6 Claims**
Int. Cl. B28b *7/34;* **B22d** *7/10*

A panel insert unit for use in hot topping, said unit having a front side and a rear side remote therefrom and comprising a plurality of heat destructible panel sections having front faces for forming adjacent interior faces of

a hot top opening, said panel sections having a side edge surface facing each adjacent panel section, material extending between and interconnecting said panel sections adjacent the rear side of the unit and providing for relative angular movement of said panel sections from an



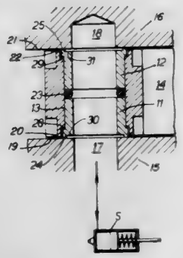
opened-out shipping position where facing edge surfaces of adjacent panels sections are spaced to a position where the spaced edge surfaces of adjacent panels are in substantial contact to position the panels to form interior faces of the hot top and to block leakage of molten metal between the panels.

3,433,453

FLUID SEALS

John C. E. Flint, Chalford, England, assignor, by mesne assignments, to Dowty Hydraulic Units Limited, Cheltenham, England

Filed Nov. 19, 1965, Ser. No. 508,648
Claims priority, application Great Britain, Nov. 21, 1964, 47,475/64; Apr. 23, 1965, 17,162/65
The portion of the term of the patent subsequent to Feb. 27, 1985, has been disclaimed
U.S. Cl. 251—282 **3 Claims**
Int. Cl. F16k *39/00;* **F16j** *15/14*



A fluid seal assembly, suitable for positioning in a slider movable between adjacent casing components, is positioned in an aperture in the slider and comprises two hollow members urged into sealing engagement with the casing components by a resilient member common to both, each hollow member being stepped upon its external surface to provide such relative pressure distribution on the end faces of the members as to reduce friction between the members and the faces of the adjacent components with which they engage.

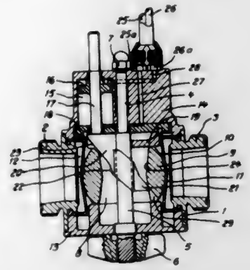
3,433,454

PLUG-TYPE VALVE

Nils Tore Falkenblad, Lund, and Claes Bertil Sjöholm, Malmo, Sweden, assignors to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden

Filed Aug. 24, 1965, Ser. No. 482,055
Claims priority, application Sweden, Sept. 3, 1964, 10,570/64
U.S. Cl. 251—331 **11 Claims**
Int. Cl. F16k *51/00*

The valve housing contains a valve plug mounted for movements in a plane common to the inlet and outlet of the housing, and this plug is surrounded by a sleeve-shaped membrane secured in the housing to define therewith an annular channel through which the inlet communicates with the outlet, the plug being movable in said plane to a closing position for causing the membrane to seal the inlet or outlet. The housing also contains a



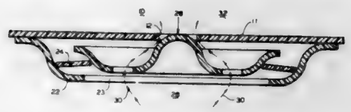
member supporting a cam for movements in a direction substantially perpendicular to the aforesaid plane, and the cam is actuated in said perpendicular direction from outside the housing to move the plug in said plane by sliding abutment of the plug against a surface of the cam inclined to its direction of movement.

3,433,455

SPRING BIASED VALVE

Charles J. Cook, Newaygo, Mich., assignor to Clark Equipment Company, a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 668,093
U.S. Cl. 251—321 **3 Claims**
Int. Cl. F16k *15/18, 1/32*



A valve having a closure member with a portion thereof normally passed against a seat member, the seat member having a circular opening through which a projection on the closure member projects and provides a seal with the edge of the circular opening in the valve closed position. A retainer member is secured to the seat member and a spring is located between the retainer member and the closure member to hold the latter normally in closed or sealing position.

3,433,456

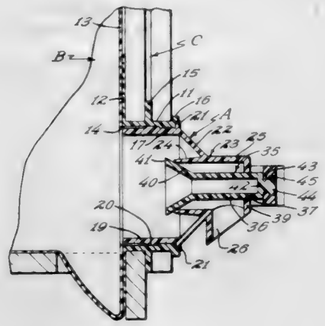
DISPENSER VALVES

Oscar G. Mueller, Grand Island, Nebr., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed Oct. 19, 1965, Ser. No. 497,812
U.S. Cl. 251—339 **10 Claims**
Int. Cl. F16k *21/04, 31/12*

The invention relates to a simple plastic valve which is made in two main parts. The valve body includes a sleeve having a closed end through which a hollow valve member may slide. A pair of opposed arms are provided on the outer end of the sleeve which are connected by a strap extending across the axis of the sleeve. The

strap and valve member are inter-connected, the strap acting to pull the valve member closed. A valve outlet



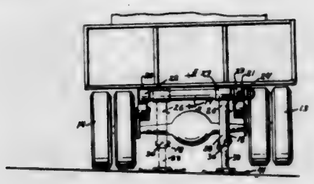
is provided in the sleeve through which liquid may flow when the strap is flexed to open the valve.

3,433,457

HOIST DEVICE FOR DUMP TRUCKS

Entje T. Van der Ende, Box 221, Sprague, Wash. 99032

Filed Sept. 7, 1967, Ser. No. 666,078
U.S. Cl. 254—86 **2 Claims**
Int. Cl. B60s *9/02*



A hoist device is described for use in conjunction with the hydraulic dump system of a truck bed for lifting one or both of the rear wheels from the ground. The hoist device includes a shaft that is transversely mounted across the back of the truck bed and an adjustable support leg that is pivotally and slidably mounted on the shaft for positioning at various transverse locations to support the rear of the bed as the bed is pivoted to lift one or both of the rear wheels depending upon the position of the leg.

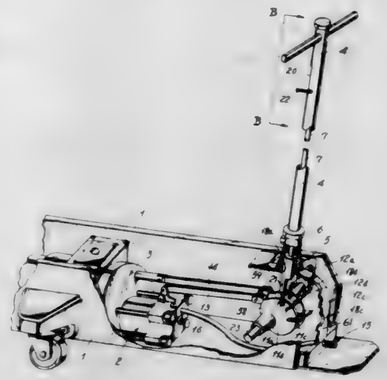
3,433,458

PNEUMATIC AND HYDRAULIC JACK FOR GARAGE USE

Norimasa Sano, Tokyo, Japan, assignor to Yasui Sangyo Company, Ltd., Tokyo, Japan

Filed Jan. 25, 1967, Ser. No. 611,699
U.S. Cl. 254—93 **7 Claims**
Int. Cl. B66f *3/24*

The pneumatic and hydraulic jack of the present invention comprises generally a horizontally disposed cylinder body, an air piston, an oil pressure means including an oil pump connected to one end of the air piston rod, an elongated rod for controlling an air valve to the air piston, an elongated rod for controlling a needle valve for releasing oil pressure, an operating arm for mounting a load plate, and an operating lever for controlling the air valve and the needle valve, disposed on an elongated



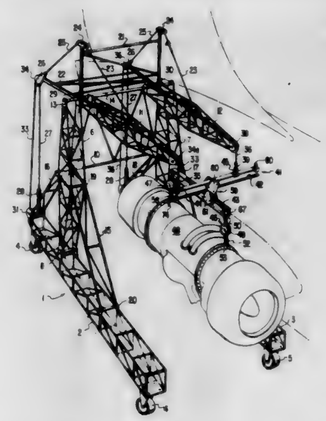
tubular member which serves as a remote control means for the jack.

3,433,459

LOAD HANDLING APPARATUS

Richard W. Logan, Dade County, Fla., assignor, by mesne assignments, to Federal Sign and Signal Corporation, Blue Island, Ill., a corporation of New York

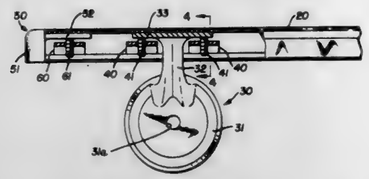
Filed May 2, 1967, Ser. No. 635,621
U.S. Cl. 254—139.1 **12 Claims**
Int. Cl. B66c *5/00, 1/28;* **B66f** *9/00*



A portable jet engine hoist having a pair of horizontally spaced base units, each supporting an upright mast. A boom extends horizontally from an upper portion of each mast. In one embodiment of the invention, the two booms jointly carry a load supporting mechanism. This load supporting mechanism includes a pair of spaced, load lifting points and a force transmitting connection which is shiftable between the load lifting points. In this embodiment of the invention the article may be selectively shifted transversely of the booms.

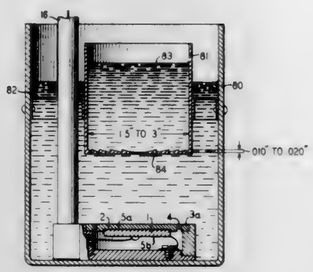
In another embodiment of the invention each boom individually supports an article supporting mechanism. This article supporting mechanism includes a pair of spaced article engaging or load lifting points and a force transmitting connection shiftable between these two points.

3,433,460
HANDRAIL MOUNTING MEANS
Edward J. Kusel, 2343 Ridgewood Road, and Robert S. Mankin, 1954 Stockbridge Road, both of Akron, Ohio 44313
Filed Dec. 5, 1966, Ser. No. 599,307
U.S. Cl. 256—65 4 Claims
Int. Cl. E04h 17/14; A47h 1/14



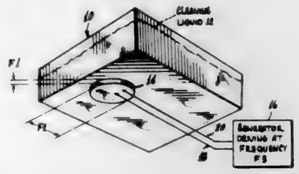
A mounting bracket for securing a U-shaped handrail to a supporting wall. One end of the mounting bracket is secured to the wall and the other end is disposed between the legs of the handrail. A pair of arcuate mounting elements are seated on flanges on the inside of the rail beneath the end of the brackets and extend from one leg to the other. A set screw is then inserted through the mounting elements with one end bearing against the end of the bracket and then tightened to deform the mounting elements and lock the handrail to the mounting bracket. End closures are secured similarly for aesthetic purposes.

3,433,461
HIGH-FREQUENCY ULTRASONIC GENERATORS
Thomas J. Scarpa, Metuchen, N.J., assignor to Edison Instruments, Inc., Rahway, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 395,475, Sept. 10, 1964. This application May 22, 1967, Ser. No. 640,247
U.S. Cl. 259—1 15 Claims
Int. Cl. B01f 13/08; B05b 17/06, 3/14



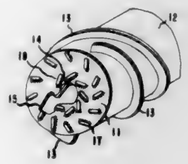
A composite generator designed for a thickness of substantially one wavelength at a desired frequency of thickness mode vibration, which both generates and focuses the ultrasonic beam. One type includes a piezoelectric bowl or trough of ceramic to the interior of which is bonded a supporting element of matching curvature comprising metal or the like. A further variation of this type is a ceramic piezoelectric tube to the interior of which is bonded a supporting tube of metal or the like. An alternative focusing type includes a supporting disk of which the external face is formed to include slight variations in topography which serve to focus the generated beam by differential refraction. In an ultrasonic nebulizer system, the refracting element is included in the bottom of a vessel containing liquid to the nebulized, which is disposed in the path of the ultrasonic beam.

3,433,462
METHOD AND APPARATUS FOR RESONATING SMALL PIEZOELECTRIC CRYSTALS AT LOW FREQUENCIES
Edward G. Cook, Yardley, Pa., assignor to Crest Ultrasonics Corp., Trenton, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 467,319, June 28, 1965. This application Jan. 19, 1968, Ser. No. 699,127
U.S. Cl. 259—1 6 Claims
Int. Cl. B01f 9/00, 13/08; H02n 9/00



A method of obtaining low frequency resonance of a piezoelectric crystal physically small in all dimensions. The crystal is excited by one or more frequencies, and at least one of those is determined according to either one or a family of secondary fundamental modes or resonances, found to occur in a crystal of this type. Excitation is at a frequency or frequencies at least one of which either corresponds to a secondary fundamental mode or modes, or alternatively, occurs in a family of such modes. In the latter event, the crystal resonates in a plurality of modes alternatively. The crystal may be either a natural (e.g. quartz) or a manufactured polycrystalline material, such as a ceramic.

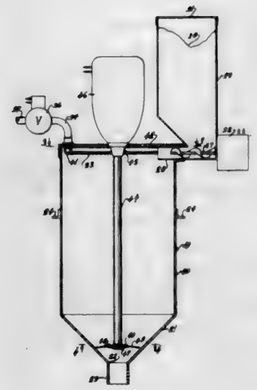
3,433,463
APPARATUS FOR MIXING VISCOUS FLUIDS DISCHARGING FROM A SCREW PUMP
Baden McDowall Pinney, Collins Bay, Ontario, Canada, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 16, 1967, Ser. No. 661,082
Claims priority, application Canada, Sept. 7, 1966, 969,767
U.S. Cl. 259—7 3 Claims
Int. Cl. B01f 15/02, 7/24; A21c 11/16



A method and apparatus for mixing viscous material discharging from one end of a screw pump into an outlet that includes dividing the viscous material into a plurality of streams and rotating the streams by means of a plurality of deflector blades attached to the discharge end of the screw.

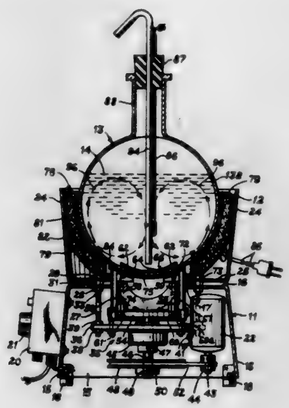
3,433,464
MIXING APPARATUS
Kenneth L. Swafford, 500 W. Main St., and Doyal P. Duke, Rte. 1, both of Hartselle, Ala. 35640, and Roy E. Hazelwood, Rte. 1, Faulkville, Ala. 35622
Filed Sept. 21, 1967, Ser. No. 669,565
U.S. Cl. 259—8 8 Claims
Int. Cl. B01f 15/02, 7/18

Mixing apparatus embodying a chamber having a downwardly converging bottom communicating at its lower end with a discharge passageway. Predetermined amounts of powdered materials and liquid are introduced substantially simultaneously into the upper portion of the chamber and a mixer element rotates within the chamber inwardly of



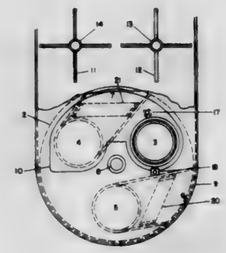
and in spaced relation to the bottom at a speed to impart outward and upward movement to the powdered material and liquid and to draw air into the chamber through the discharge passageway.

3,433,465
MAGNETIC MIXING AND STIRRING DEVICE
Roman Szpur, 2685 Culver Ave., Dayton, Ohio 45429
Filed May 29, 1967, Ser. No. 642,102
U.S. Cl. 259—111 14 Claims
Int. Cl. B01f 7/00



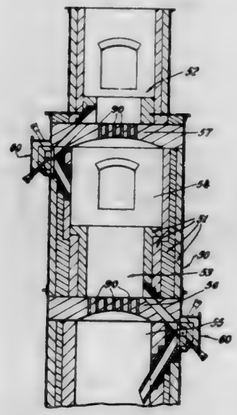
A mixing and stirring device wherein a rotor is placed into a conventional container and caused to rotate by a magnet positioned adjacent the outside of the container and rotated at a desired speed. The device can be a small compact unit, a table mounted unit, or a portable floor unit. Heat may be applied to the container through the use of a jacket surrounding the container, and the rotating magnet assembly is adjustable to position the magnet within a very close distance from the container to maximize the magnet couple with the rotor. The magnet has spherical shoes on its end to also insure that there is maximum coupling with the rotor.

3,433,466
VALVE FOR SEMIFLUID MATERIAL
Reggie M. Bolt, 342 Camillo St., Sierra Madre, Calif. 91024
Filed Jan. 23, 1968, Ser. No. 700,329
U.S. Cl. 259—153 7 Claims
Int. Cl. B28c 1/22



A valve to provide a straight-line material flow without pattern change from two or more pumping cylinders through the valve and into a placement conductor; to aerate the material and force it into the pumping cylinder to charge it for pumping and to force air or any other gas under pressure as a spray into the material as it enters the placement conductor; also, to place a thin film of lubricant around a material column as it leaves the valve.

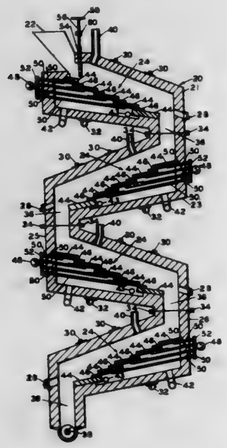
3,433,467
TRANSFER VALVES
Edward G. S. Thyer, Kent, England, assignor to Fawkham Developments Limited, Borough Green, Kent, England
Filed Mar. 8, 1967, Ser. No. 621,643
Claims priority, application Great Britain, May 16, 1966, 21,711/66
U.S. Cl. 263—21 7 Claims
Int. Cl. F27d 3/10; F27b 15/08, 15/18



This invention relates to a transfer valve for the transfer of a flowable particulate material from an upper level to a lower level. The valve comprises a horizontally disposed longitudinal body member, having an inlet at one end and an outlet at the other. The body member is provided at the inlet end with gas means to subject material in the body member to a stream of compressed gas. In use, the particulate material enters the inlet, and ac-

cumulates therein to obstruct the inlet and the inlet end of the body member and on activating the gas means, the particles of solid material are caused to flow along said body member and the outlet thereto to be discharged from the valve. On deactivating the gas means, the material again accumulates in the inlet to create a seal between said upper level and said lower level.

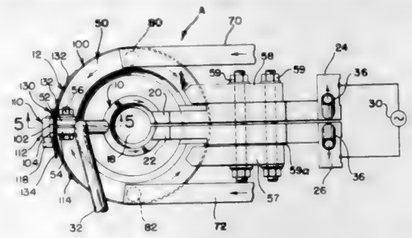
3,433,468
FURNACE APPARATUS WITH A SERIES OF HEARTHS
Robert A. Schoenlaub, Columbus, Ohio, assignor to Harrop Ceramic Service Company, Columbus, Ohio, a corporation of Ohio
Continuation of application Ser. No. 504,283, Oct. 25, 1965. This application Apr. 9, 1968, Ser. No. 726,272
U.S. Cl. 263—21 **19 Claims**
Int. Cl. F27d *3/04*; **F27b** *9/22*; **F26b** *9/00*



An apparatus for calcining ores that includes a housing for a series of hearths. Each hearth includes a plurality of hearth plates disposed in vertically spaced overlapping relationship. Between each adjacent pair of hearth plates, a reciprocating plate is movably mounted to push the load from one hearth plate to the next. The reciprocating plates are preferably formed of metal, such as stainless steel and when retracted each is covered by the hearth plate, composed of a refractory material, immediately above. In one preferred embodiment of the invention the hearth plates and reciprocating plates are inclined with respect to the horizontal such that the angle formed by the edges of the hearth plates and the horizontal is between minus fifteen degrees to the horizontal with an optimum angle for most materials being approximately plus fifteen degrees to the horizontal. In addition the hearth means are preferably disposed in separate housings joined to one another by appropriate passages and each housing includes separately controlled burners and flues.

3,433,469
QUENCHING DEVICE FOR AN INDUCTION HEATING APPARATUS
John R. Langhlin, Brecksville, and David R. Soworowski, Parma, Ohio, assignors to Park-Ohio Industries, Inc., a corporation of Ohio
Filed Sept. 15, 1964, Ser. No. 396,639
U.S. Cl. 266—4 **3 Claims**
Int. Cl. C21d *1/66*; **B05b** *15/02, 1/18*

An induction heating device including an inductor and an annular quenching device wherein the quenching device has an outwardly facing clean-out opening covered by



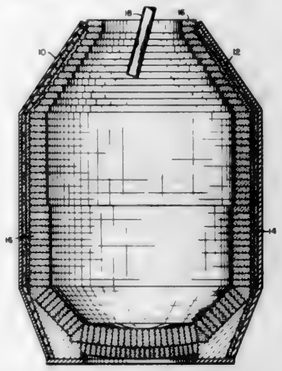
a flexible band which may be removed to clean the interior of the quenching device.

3,433,470
ENCLOSURE FOR A FLATBED TRAILER OR TRUCK BODY
Frederick C. Erke, 706 Perkinswood SE., Warren, Ohio 44483
Filed Apr. 4, 1967, Ser. No. 628,349
U.S. Cl. 296—28 **5 Claims**
Int. Cl. B62d *33/04, 33/08, 23/00*



A flexible, collapsible, inflatable side wall and roof structure for a truck or trailer body formed of air-tight double walled interconnected sections with valved communication ports therebetween, for progressive inflation and extension from a collapsed retracted position on one end of said truck or trailer body to an inflated extended covering position enclosing all of said truck or trailer body.

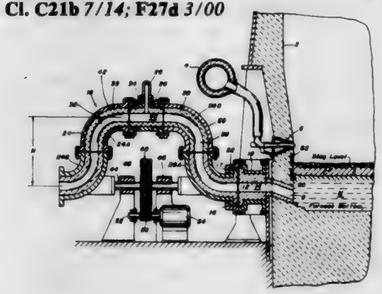
3,433,471
METALLURGICAL FURNACE
Allen M. Alper, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 8, 1965, Ser. No. 512,313
U.S. Cl. 266—35 **10 Claims**
Int. Cl. C21c *5/44, 7/06*; **C22c** *29/00*



Basic oxygen steelmaking vessels (e.g., L. D. or Linzdonawitz and Kaldo or Stora-Kaldo vessels) having a refractory lining therein comprised, either wholly or in part, of crystalline refractory that consists essentially of material, which forms the major constituent of the crystalline refractory, selected from the group consisting of carbides, borides and nitrides of titanium and zirconium,

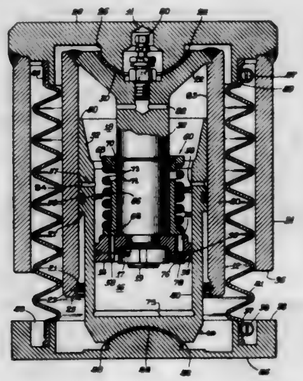
boron carbide, and solid solutions and mixtures thereof, a silicon carbide content limited to 0–25 wt. percent, and the balance, if any other than incidental impurities, being free or uncombined carbon (graphite) and/or one or more of carbides, borides and nitrides of Hf, V, Nb, Ta, Cr, Mo, W, Mn and Fe and/or 0–5 wt. percent of oxides of the aforesaid metals and boron.

3,433,472
APPARATUS FOR CONTROLLING FLOW OF LIQUID FROM A CONTAINER
Yi-Chung Chang, Franklin Township, Westmoreland County, and Hendrik Colijn, Monroeville Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,346
U.S. Cl. 266—38 **5 Claims**
Int. Cl. C21b *7/14*; **F27d** *3/00*



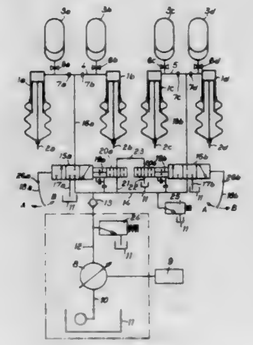
Apparatus for maintaining and controlling the rate of flow of liquid from a container, such as molten iron from a blast furnace, including a flow control member having an entry end in communication with a tap opening in the blast furnace. The control member is preferably of inverted U-shape so that a head of molten iron is provided from the top of the control member to its entry end. It is necessary that a vent be provided in this top portion of the control member to prevent siphoning of the molten iron from the furnace.

3,433,473
PNEUMATIC SPRING
Loyal J. Rodgers, Kenilworth, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Dec. 12, 1966, Ser. No. 600,909
U.S. Cl. 267—64 **6 Claims**
Int. Cl. B60g *11/26*; **F16f** *5/00, 13/00*



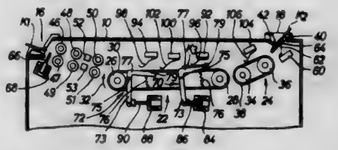
1. A pneumatic spring comprising an enclosed end cylinder, a cup-shaped piston open at its upper end and engaging the inner surface of said cylinder, an inner piston secured to said enclosed end cylinder and engaging the inner surface of said cup-shaped piston, a first chamber defined by said pistons and cylinder, a second chamber defined by said cup-shaped piston and said inner piston, hydraulic fluid within said second chamber and a portion of said first chamber, a charge of pneumatic fluid within the remaining portion of said first chamber, one-way communication means in said inner piston from said second chamber into said first chamber, and restricted two-way communication means in said inner piston between said chambers.

3,433,474
HYDROPNEUMATIC SUSPENSIONS FOR MOTOR VEHICLES
Jean Piret, Bougival, France, assignor to Societe Anonyme Societe des Automobiles Simca, Paris, France
Filed Aug. 9, 1966, Ser. No. 571,247
U.S. Cl. 267—65 **4 Claims**
Int. Cl. B60g *11/30*; **F16f** *9/14*



A hydropneumatic suspension for a motor vehicle comprising a pump having its output selectively communicated to hydropneumatic suspension members or returned to a supply tank by two trim-correcting slide valve distributors controlled by wheel suspension members. The slide valve distributors being cooperatively associated with two series connector closure members which selectively control the passage of fluid in a bypass conduit connected to the pump and supply tank in dependance upon the position of the slide valves.

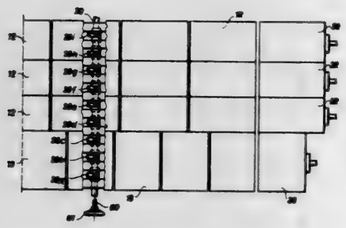
3,433,475
AUTOMATIC TICKET GATE
Takeo Asada, 22–5 Taikoyama, Okukaiinji, Nagaoka-cho, Otokuni-gun, Kyoto, Japan
Filed Oct. 3, 1967, Ser. No. 672,586
Claims priority, application Japan, Oct. 11, 1966, 41/67,076
U.S. Cl. 271—57 **4 Claims**
Int. Cl. G07b *11/02*



A device for an automatic ticket gate having ticket conveying means between an inlet and outlet. A means between the inlet and outlet for checking the validity of

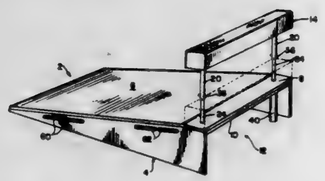
the ticket. A stopper means movable into the path of travel of the ticket to stop the movement of a sequent ticket until the preceding ticket has been removed from the outlet.

3,433,476
APPARATUS FOR ELIMINATION OF SHEETS IN CROSS CUTTING AND SIMILAR MACHINES
Horst Baucke, Solingen-Ohligs, Germany, assignor to Jagenberg-Werke AG, Dusseldorf, Germany
Filed Jan. 13, 1967, Ser. No. 609,114
Claims priority, application Germany, Jan. 13, 1966, J 29,818
U.S. Cl. 271—64 10 Claims
Int. Cl. B65h *29/62*



Generally, this invention is directed to an apparatus for the elimination of sheets in cross cutting machines of the type in which the sheets are moved in a forward direction between endless conveying means and means movable into operative relation to the conveying means serves to deflect the sheets from their forward direction of movement, the movable means comprising individual deflecting fingers arranged in side-by-side relationship and means cooperable with the fingers for selectively combining the fingers in determinable operable groups.

3,433,477
CONVERTIBLE VAULTING PIECE AND INCLINED PLANE
Rodman P. Roberts, Glen Cove, N.Y.
(6315 Brightlea Drive, Lanham, Md. 20801)
Filed Feb. 27, 1967, Ser. No. 618,587
U.S. Cl. 272—64 5 Claims
Int. Cl. A63b *5/12, 23/00*



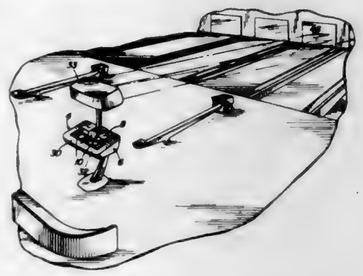
A convertible gymnastic training aid which can serve in one position as an aid in forward and backward roll, roundoff, back extension roll and back handspring training in a second position as an aid in head and hand spring, front and back somersault training and in a third position as an aid for vaults such as the flank vault, the squat stand and vault, the straddle stand and vault and many other vaults. The invention in a preferred embodiment comprises an inclined padded plane at the top of which is provided a padded horizontal vaulting piece affixed to the inclined plane by a height adjustable and removable assembly. Thus the apparatus can be converted to an inclined plane, to an inclined plane provided with a padded vaulting piece at its higher end in abutting relationship with the inclined plane and to an inclined plane provided with a raised vaulting piece at its higher end. The various positions are dictated by the stunt or exercise being taught or performed.

3,433,478
MAGNETIC GAMEBOARD HAVING AN INTEGRAL, ROUGHLY GRANULATED UPPER SURFACE
Samuel Span, Teaneck, and Walter Thum, Fairlawn, N.J. (both of 93 Belmont Ave., Paterson, N.J. 07509)
Filed Feb. 10, 1967, Ser. No. 619,505
U.S. Cl. 273—1 12 Claims
Int. Cl. A63f *9/14, 9/00*



A game of skill, rather than of chance, substantially consisting of a game board having a roughly granulated surface provided with an obstacle, small magnetic pieces movable around or through the obstacle, the pieces being moved by a larger manually operated magnet held underneath the board.

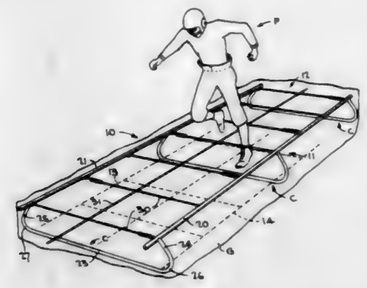
3,433,479
BOWLING SCORING APPARATUS
William F. Huck, Forest Hills, and Joseph Urban, Pleasantville, N.Y., assignors to Brunswick Corporation, a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,188
U.S. Cl. 273—54 23 Claims
Int. Cl. A63d *5/04*



A bowling scoring device for scoring bowling games of a plurality of players including a plurality of bowler memories, one for each bowler, mounted on a turret and each having printing means associated therewith; score computing means for utilizing information contained in the bowler memories for computing cumulative score values for each of the bowlers; means for indexing the turret to associate a particular one of the memories with the computing mechanism; and scoresheet supporting means including means for causing relative movement of a scoresheet supported thereby and the printing means on a particular bowler memory towards each other to cause each computed cumulative score to be printed on the scoresheet.

3,433,480
PORTABLE RUNNING ROPES
James T. Coleman and James William Fox, Paducah, Ky., assignors to Coleman-Fox, Inc., Paducah, Ky., a corporation of Kentucky
Filed Sept. 15, 1966, Ser. No. 579,535
U.S. Cl. 273—55 15 Claims
Int. Cl. A63b *69/00, 23/04*

A portable runway for practice running is disclosed having a framework for supporting a plurality of cross lines and an intersecting center line to define spaces in which the runner is to place his feet during use. The cross lines are resilient to prevent tripping and injury to the runner and may include a rope and a spring or alternatively



elastic rope. Cross members of the framework are generally U-shaped, the sides extending inwardly at an acute angle for stability and further safety. Attachments for the cross lines are positioned underneath the side members also to prevent possible injury. The framework may be pivoted or sectionized for ease of transporting and storage.

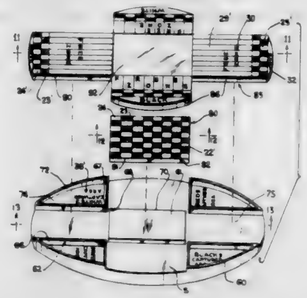
3,433,481
BASEBALL BAT WRAPPINGS
Raymond J. Tanguay, Eugene, Oreg., assignor to Emerald Pacific Enterprises, Inc., Eugene, Oreg., a corporation of Oregon
Filed June 25, 1965, Ser. No. 466,955
U.S. Cl. 273—72 4 Claims
Int. Cl. A63b *59/06*



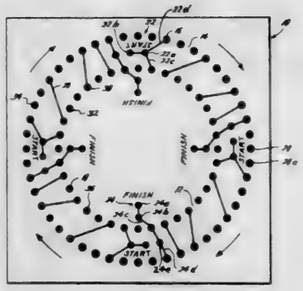
Pressure sensitive tapes **20** and **22** reinforced by high tensile strength strands are wrapped side by side on the upper portion of a bat handle, wrapping of the tape **20** is continued, a thick layer **24** of latex and walnut shell grit is applied to the tapes, and the tape **22** then is wrapped over the rest of the handle. In FIGS. 5–8, a thin neoprene layer **52** is applied to the handle, a tape **54** is overlappingly wound on the layer, and a thicker outer grip layer **56** of neoprene and walnut shell grit is applied to the tape **54**.

3,433,482
CHESS GAME APPARATUS WITH CHANGEABLE BOARD
Thomas A. Castellano, 59 Beatrice Road, Dalkeith, Perth, Western Australia 6009, Australia
Substitute for abandoned application Ser. No. 345,745, Feb, 18, 1964. This application May 24, 1967, Ser. No. 657,436
U.S. Cl. 273—131 6 Claims
Int. Cl. A63f *3/02, 3/00*

A chess game apparatus having a disk-shaped playing board with a central elevated platform, an overlay member with an open side superimposed on the platform, a sheet of transparent plastic material in the form of a cross on the board, the sheet having four radiating arms with blocks mounted on the free ends of the arms, leaving a central clear space for exposing the platform, and each block having a checkered player's zone thereon visible through the sheet, the overlay member and the sheet of transparent material being anchored by the platform.



3,433,483
GAME APPARATUS WITH COLOR CODED BOARD AND CHANCE MEANS
Lonnie T. Ellis, Rte. 4, Box 32A, Orange, Tex. 77630
Continuation-in-part of application Ser. No. 491,964, Oct. 1, 1965. This application Jan. 10, 1966, Ser. No. 519,569
U.S. Cl. 273—134 1 Claim
Int. Cl. A63f *3/02*

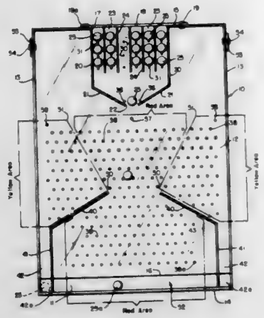


A game board having inner and outer closed playing paths including relatively large and unequal numbers of playing positions. The inner and outer paths are color-coded in different colors. Paths connect the inner and outer paths at spaced intervals. A pair of playing markers is provided for each player and the game board includes separate start and finish positions for each player. A die having conventional dot indicia on its faces is provided for determining the movement of the playing markers. Half of the die faces are color-coded to correspond to the inner path, while the other half are color-coded to correspond to the outer path.

3,433,484
GAME APPARATUS WITH REMOVABLE PEG PLAYING PIECE ADVANCING MEANS
Delmar E. Wallenmeyer, 7119 Dolan Way, Citrus Heights, Calif. 95610
Filed June 29, 1967, Ser. No. 649,965
U.S. Cl. 273—134 11 Claims
Int. Cl. A63f *3/02, 7/10;* A63d *3/02*

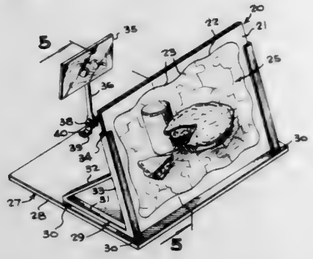
An inclined game board including a lower surface having baffles thereon defining ball cages at the upper end of the board and ball directiors, different colored balls in

the cages, and an upper transparent surface having a multiplicity of openings arranged in a predetermined pattern of rows, a removable peg extending through each opening to the lower surface, the pegs being spaced apart a distance less than the diameter of a ball, and a die, the



number appearing on which designates the number of pegs which may be removed by a player, removal of a peg permitting a selected ball resting thereagainst to advance one row of pegs, the object of the game being to permit by selective removal of pegs, all balls of the same color to reach a goal at the bottom of the board.

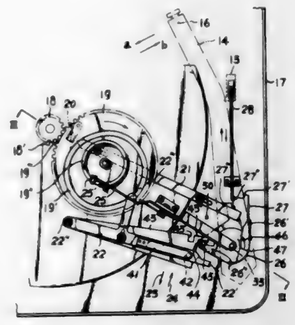
3,433,485
PUZZLE
Madeline S. Renn and Neil R. Renn, both of 3200 Old Gettysburg Road, Camp Hill, Pa. 17011
Filed Feb. 11, 1966, Ser. No. 526,906
U.S. Cl. 273—157 **1 Claim**
Int. Cl. A63f *9/10*



A jigsaw puzzle having a pair of frames with a transparent member arranged therebetween, and a plurality of picture pieces adapted to be assembled to form a composite picture scene. A bracket maintains the frame in an upright position, and a mirror is positioned such that the person assembling the puzzle can view indicia on the back of said pieces.

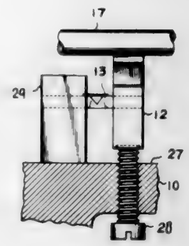
3,433,486
PICKUP ARM CONTROL MECHANISM IN AN AUTOMATIC RECORD PLAYER
Yoichi Kawaharazaki, Kamakura, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed May 16, 1966, Ser. No. 550,375
Claims priority, application Japan, May 20, 1965, 40/29,316
U.S. Cl. 274—15 **4 Claims**
Int. Cl. G11b *17/06*

A pickup arm control mechanism in an automatic record player wherein the rotation of the pickup arm in the direction from the turntable to the rest position is obtained when the arm lever and the positioning plate are pushed by a horizontal pivoting lever. The rotation of the pickup arm in the direction from the rest position to the turntable being obtained through the pushing of the



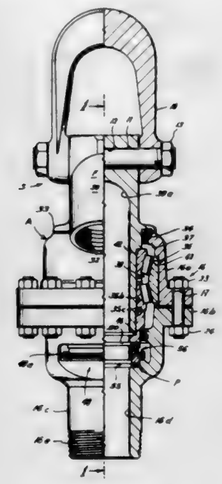
positioning plate and the arm lever by a follower lever in engagement with the horizontal pivoting lever. The rotation of the positioning plate in the direction from the rest position to the turntable being limited according to the size of records.

3,433,487
PIEZOELECTRO-ACOUSTIC STEREOPHONIC PICKUP
Toshihiko Kawaguchi, Kawasaki, and Mamoru Inami, Yokohama, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan
Filed Sept. 5, 1967, Ser. No. 665,361
Claims priority, application Japan, Sept. 5, 1966, 41/58,187; Sept. 5, 1966 (utility models), 41/83,693, 41/83,694, 41/83,695
U.S. Cl. 274—37 **10 Claims**
Int. Cl. G11b *3/02, 3/44*



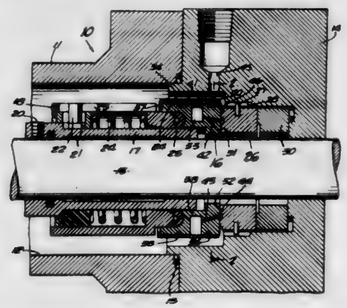
A piezoelectro-acoustic stereophonic pickup comprising a pair of transducer elements each including an electromechanical transducer member attached to an opening of a V-shaped groove formed on a cantilever, an armature which receives a free end of said cantilever and is formed to provide a V-shaped groove on surfaces thereof, and a pickup stylus assembly resting in said V-shaped groove of said armature and mounting a stylus therein in such a manner that the moment of rotation about the axis of a stylus arm is substantially nil when the forward end of said stylus is driven by a recording medium. The armature has a smaller thickness portion below the bottom of said V-shaped groove, and the surfaces thereof opposite to the surfaces on which said V-shaped groove is formed are abutted by screws.

3,433,488
SELF-ADJUSTING PACKING ASSEMBLY
Charles A. Grantom, Houston, Tex., assignor to King Oil Tools, a corporation of Texas
Continuation-in-part of application Ser. No. 527,176, Feb. 14, 1966. This application May 23, 1968, Ser. No. 731,566
U.S. Cl. 277—9 **9 Claims**
Int. Cl. F16j *15/34, 15/54;* **F16l** *21/00*



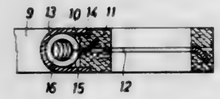
A self-adjusting packing assembly for a swivel having a packing assembly which automatically compensates for wear on the packing rings thereof and which is readily removable from the swivel without disassembly of the swivel.

3,433,489
MECHANICAL SEAL WITH FLOW CONTROL
Winfred J. Wiese, Whittier, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 347,719, Feb. 27, 1964. This application Dec. 27, 1966, Ser. No. 605,084
U.S. Cl. 277—74 **3 Claims**
Int. Cl. F16j *15/38, 15/40*



1. An assembly for sealing a rotating shaft within a housing comprising seal means adapted to be disposed within said housing to prevent the flow of fluid along the shaft outwardly of the housing, said seal means including a part adapted to rotate with the shaft and a part adapted to be stationary in the housing, said parts having opposing generally annular sealing faces which permit some fluid to flow therebetween to cool and lubricate said faces, and means responsive to the pressure of said fluid to control the amount of fluid flowing between said sealing faces, said last mentioned means comprising, in one of said parts, a unitary sealing ring having a front portion providing one of said annular sealing faces and defining inner and outer peripheries thereof, said portion further providing an area extending generally radially outwardly from said one sealing face, said area being adapted to be exposed to the fluid in said housing, a back portion axially spaced from said front portion, and a neck of smaller diameter than said front portion joining said front portion to said back portion, a closure ring spaced radially outwardly from said neck and sealed to said front portion and said back portion to provide, with said back portion and said neck, a pressure chamber, said front portion being free to deflect with respect to said unitary sealing ring in response to variations in the fluid pressure in said pressure chamber and variations in fluid pressure acting on said one sealing face and on said generally radially outwardly extending area to thereby distort said sealing face, and means defining at least one bore in said front portion of said unitary sealing ring, said bore having an open end at said pressure chamber and an end open at said sealing face of said ring intermediate said inner and outer periphery thereof to establish fluid communication between said pressure chamber and said sealing faces.

3,433,490
FLAT GASKET
Siegfried Teucher, Burscheid, and Hans Kling, Cologne-Lindenthal, Germany, assignors to Goetzewerke Friedrich Goetze A.G., Burscheid, Germany
Filed Nov. 14, 1967, Ser. No. 682,849
Claims priority, application Germany, Nov. 14, 1966, G 48,440
U.S. Cl. 277—164 **7 Claims**
Int. Cl. F16j *15/00, 9/06;* **F02f** *5/00*

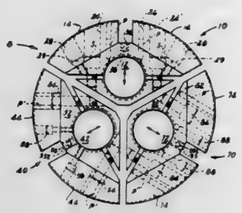


A flat gasket such as a cylinder head gasket having a design which increases the compressive pressure on the gasket material without necessitating an increase in the total compressive force. The cylinder head gasket embodiment of the present invention includes narrow strips of gasket material surrounding the engine cylinder openings as well as the coolant and/or lubricant openings. No material is present, however, in the immediate neighborhood of the openings for receiving the cylinder head bolts. The gasket material around the cylinder openings preferably comprises a metallic sheath having a C-shaped cross-sectional configuration and a spring member within the sheath which renders it resilient. The gasket material surrounding the coolant and/or lubricant channel openings is preferably made of a relatively soft resilient material such as asbestos and is preferably attached to the metallic sheath or sheaths to form a one-piece gasket.

3,433,491
CHUCK JAWS
Robert N. Longuski and Robert E. Zaske, Garden City, Mich., assignors to Round Tool Co., Inc., Detroit, Mich.
Filed Mar. 1, 1966, Ser. No. 538,463
U.S. Cl. 279—2 **10 Claims**
Int. Cl. B23b *31/40, 5/34, 31/14*

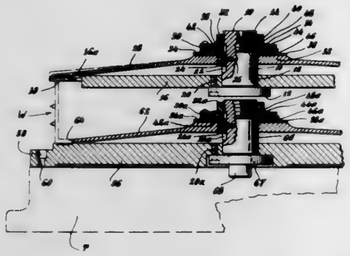
The chuck jaws about to be described are interchangeable with other similar chuck jaws, each of which can be

quickly and easily put on, or removed from without complete dis-assembly of the chuck on which they are installed. This is accomplished by the provision of a chuck jaw adapter which is accurately positioned about a flange



on the chuck grip or clamping member, whereafter the chuck jaws are accurately secured to one of the chuck jaw adapters, each of the grip members having chuck jaws secured thereto.

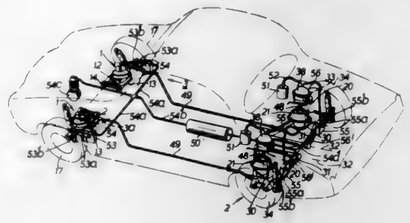
3,433,492
CHUCK
Frank Edward Holroyd, R.F.D. 1, Sandy Hook, Conn. 06482, and Theodore J. Stepanski, 42 Otis St., Manchester, Conn. 06040
Filed Feb. 24, 1966, Ser. No. 529,724
U.S. Cl. 279—2 **7 Claims**
Int. Cl. B23b *31/40*



A work-holding chuck of particular value in holding a round workpiece of thin gauge material where concentricity is important. The chuck is in the form of a resilient metal cone having a large diameter end defining a continuous work-holding edge. A reaction member causes the cone to stretch to increase the diameter of the work-holding edge.

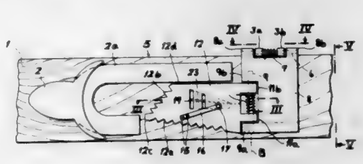
3,433,493
VEHICLE SUSPENSION SYSTEMS
Archie John Hirst, Leicester, England, assignor to Metalstik Limited, Leicester, England, a British company
Filed Jan. 4, 1967, Ser. No. 607,253
Claims priority, application Great Britain, Jan. 5, 1966, 431/66
U.S. Cl. 280—6 **9 Claims**
Int. Cl. B60g *17/04, 21/06*

A road vehicle suspension system has interconnected front and rear fluid springs which maintain a given vehicle body attitude regardless of differing dynamic deflections of the front and rear suspensions. Static self levelling of the vehicle body with change of load and/or load distribution on the vehicle, high stability against fore and aft pitching, and low pitching frequency are obtained, with a conventional vehicle layout, by the addition of a rear, secondary fluid spring which is maintained at an individual pressure and which is mounted in series with the rear, primary fluid spring. To achieve the desired objects a front primary spring is selected the effective area of which remains constant with deflection and a rear primary spring the effective area of which increases with deflection. One



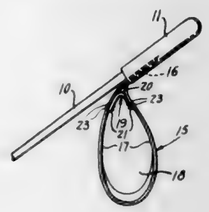
levelling valve means is associated with the primary springs and is operable in dependence upon changes in level of the front of the vehicle and a separate levelling valve means is associated with the secondary fluid spring and is operable in dependence upon changes in level of the rear of the vehicle.

3,433,494
BRAKE ATTACHMENT FOR SKI
Hans Hinterholzer, Saalbach 35, Land Salzburg, Austria
Filed Sept. 6, 1967, Ser. No. 665,926
Claims priority, application Austria, Sept. 7, 1966, A 8,435/66
U.S. Cl. 280—11.13 **10 Claims**
Int. Cl. A63c *5/00, 11/00*



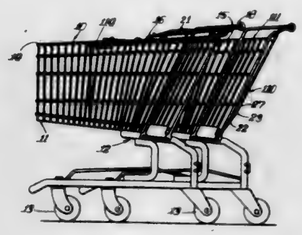
Attachment for a ski which, upon removal of the skier's boot from the runner, flips sideways from a normal position on the upper surface of the runner into an off-normal position in which a preferably serrated tongue projects downwardly below the runner to dig into the underlying terrain and arrest a runaway ski.

3,433,495
SKI POLE WRIST STRAP
Conrad L. Christensen, 11 Millbrook Ave., Hurley, N.Y. 12443
Filed Dec. 14, 1966, Ser. No. 601,676
U.S. Cl. 280—11.37 **5 Claims**
Int. Cl. A63c *11/24*



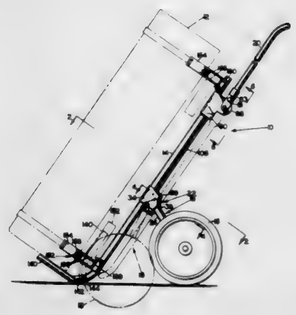
A ski pole wrist strap construction in which the wrist strap is attached to the ski pole in the form of an ever open loop for the reception of the gloved hand of the skier.

3,433,496
CART CONSTRUCTION
William C. Kampf, Jackson, Mich., assignor to Tote-Cart Company, a corporation of Illinois
Filed Dec. 30, 1966, Ser. No. 606,390
U.S. Cl. 280—33.99 **8 Claims**
Int. Cl. B62b *5/00, 11/00*



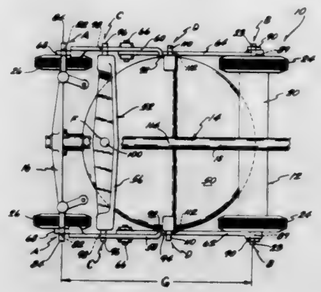
An improved gate construction for use in a shopping cart wherein an offset end portion of the gate is provided to prevent accidentally locking a second such cart telescoped into the cart by inadvertent dropping of one corner of the gate into the basket of the telescoped cart.

3,433,497
ENCLOSED LEG GOLF CART SUSPENSION
Ammon M. Leitzel, Portland, Oreg., assignor to Jarman-Williamson Company, Portland, Oreg., a partnership
Filed Oct. 10, 1966, Ser. No. 585,559
U.S. Cl. 280—40 **19 Claims**
Int. Cl. B62b *3/02*



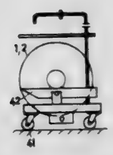
A golf cart includes hollow legs carrying wheels and foldable by rods slidable in the legs and connected to the wheels. Linkages are slidable between a block mounting the legs and the body and are connected to the handle for actuating the rods to extend or fold the legs. Strap brackets are movable between folded and extended positions. A tubular bag support is mounted for movement to an extended position projecting outwardly from the bottom of the body from a latched, folded position extending upwardly along the body.

3,433,498
LAWN MOWER
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,162
U.S. Cl. 280—47.11 **12 Claims**
Int. Cl. A01d *35/26;* **B62b** *11/00*



Disclosed herein is a lawn mower having a blade housing universally connected to and supported by a linkage pivotally connected to the main frame.

3,433,499
CARRIAGE FOR TRANSPORTING WARPS
Hugo Meierhofer, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland
Filed Mar. 30, 1967, Ser. No. 627,171
Claims priority, application Switzerland, Mar. 8, 1966, 3,382/66
U.S. Cl. 280—79.1 **6 Claims**
Int. Cl. B62b *3/02*

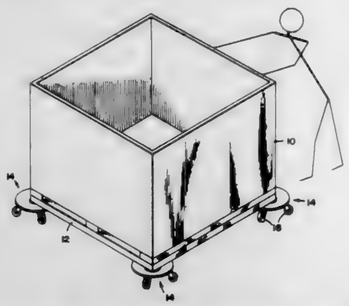


This specification discloses a carriage for sectional warp beams having a central support mounted on caster wheels, which support has a removable section including one caster wheel capable of remote operation for facilitating the transfer of the warp beams to the weaving machine.

3,433,500
UNIVERSAL CASTER
Carl O. Christensen, Alamo, Calif., assignor to Roll-Rite Corporation, Oakland, Calif., a corporation of California
Filed Aug. 28, 1967, Ser. No. 663,895
U.S. Cl. 280—79.2 **8 Claims**
Int. Cl. B60b *33/00*

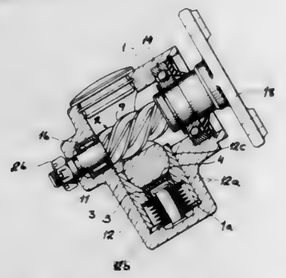
A three-wheel universal caster in which the three wheels

are mounted on a base for individual swiveling movement, and the base is arranged so that it can itself swivel



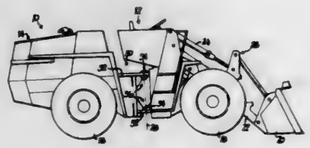
with respect to the load support and also tilt to a limited degree with respect to the load support.

3,433,501
VEHICULAR STEERING DEVICE
Karl Hertel, Ingolstadt (Danube), Germany, assignor to Auto Union G.m.b.H., Ingolstadt (Danube), Germany, a corporation of Germany
Filed Sept. 15, 1966, Ser. No. 579,764
Claims priority, application Germany, Sept. 18, 1965, A 50,292
U.S. Cl. 280—96 **8 Claims**
Int. Cl. B62d *3/10*



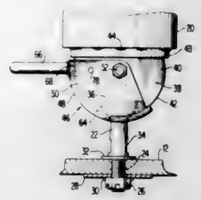
To control the dirigible wheels of a vehicle from a steering column while insulating the column against impacts due to road irregularities, the wheel-orienting tie rods are coupled to the column via a rack in mesh with a pinion mounted on the column, the pinion having a barrel-shaped profile and helicoidal teeth which allow the rack to rotate about its own axis in response to severe thrusts from the tie rods; such rotation is limited by a spring-biased pressure member bearing upon a flat face of the rack, the stroke of the pressure member being limited by a surrounding housing so that the rack is jammed in an off-normal rotary position and can no longer transmit any torque to the pinion.

3,433,502
ARTICULATED VEHICLE
Gene L. Omon, Wauwatosa, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 20, 1967, Ser. No. 632,294
U.S. Cl. 280—400 **4 Claims**
Int. Cl. B62d *53/02;* **F16c** *23/00*



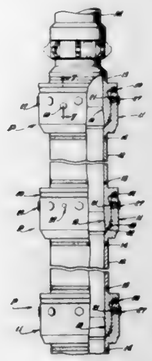
An articulated vehicle having an improved hinge means for pivotally interconnecting the articulated sections of the vehicle, such as a self-propelled bucket loader.

3,433,503
TRAILER COUPLER
Earl C. Davis, 2018 S. 3rd St., Waco, Tex. 76706
Filed Oct. 30, 1967, Ser. No. 678,866
U.S. Cl. 280—512 **8 Claims**
Int. Cl. B52d *53/06;* **B60d** *1/06, 1/12*



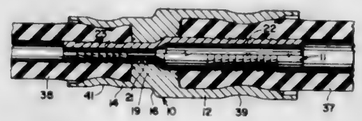
An upstanding shank is carried by a part of a truck or tractor and adapted for connection with a socket at the forward end of a gooseneck carried by the trailer. The socket includes a body of semicircular cross-section having a hemispherical ball-receiving recess. A locking member having a plate provided with a keyhole slot is pivoted concentrically to the body for swinging movement from a ball-receiving to a ball-locking position to hold the ball in the socket to connect the trailer to the tractor or truck.

3,433,504
FLEXIBLE CONNECTORS
James W. E. Hanes, Ventura, Calif., assignor to Ventura Tool Company, Ventura, Calif., a corporation of California
Filed July 5, 1966, Ser. No. 562,638
U.S. Cl. 285—93 **20 Claims**
Int. Cl. F16l *27/00*



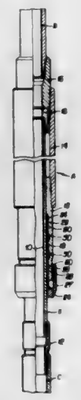
Flexible connectors for marine conductor pipe, and the like, a pin member having an external spherical portion held in a companion spherical portion of a box member by forcing and holding a lock ring carried by the box member inwardly against the external spherical portion. A pliant, elastic ring is held axially compressed between the members by the lock ring, the elastic ring permitting limited pivotal movement between the members. An offset pin fits within an offset hole in the lock ring to prevent inverted mounting of the lock ring in the box member. An indicator pin on the box member fits in a companion slot in the pin member to indicate appropriate assembly of the pin member in the box member while permitting universal pivoting movement between the pin and box members.

3,433,505
HOSE FITTING FOR CONNECTING HOSES OF DIFFERENT SIZES
Albert J. Weatherhead III, Shaker Heights, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 8, 1965, Ser. No. 494,146
U.S. Cl. 285—177 **1 Claim**
Int. Cl. F16l *33/00*



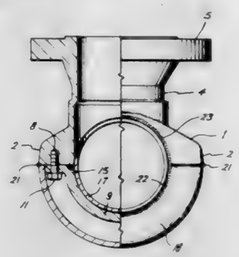
A hose fitting adapted to couple two flexible hoses of different size. The hose fitting comprises a tubular metallic body formed with opposing radially deformable tubular skirts wherein one skirt has a larger diameter than the other. The central portion of the body is provided with an inwardly extending wall having a tubular nipple extending through an aperture formed therein. One end of the nipple is formed with a reduced diameter which coacts with the smaller diameter to permit gripping of the smaller diameter hose end. The other end of the nipple has a larger diameter and coacts with the larger diameter skirt to permit gripping of the larger diameter hose end. The entire exterior of the tubular metallic body has an axially extending grain structure and is work hardened to substantially uniform hardness greater than the hardness of the substantially unworker inwardly extending wall.

3,433,506
HIGH TEMPERATURE EXTENSION JOINT
Talmadge L. Crowe, Houston, Tex., assignor to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed Oct. 21, 1966, Ser. No. 588,601
U.S. Cl. 285—187 **9 Claims**
Int. Cl. F16l *15/02, 55/00*



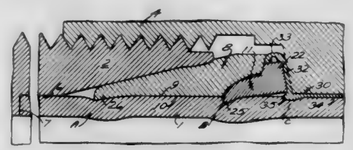
An expansion joint useful in well bores, in which an inner member is telescoped in an outer member, a tubular seal member of tetrafluoroethylene, or the like, on the outer member sealingly engaging the inner member. The outer member has longitudinally spaced grooves into which the seal member can expand upon increase in its temperature, subsequent contraction of the seal member upon its cooling causing the seal member to engage tapered sides of the grooves and be forced inwardly thereby against the inner member.

3,433,507
SPLIT T
Burton Ver Nooy, Broken Arrow, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.
Filed Feb. 24, 1966, Ser. No. 529,822
U.S. Cl. 285—197 **2 Claims**
Int. Cl. F16l *41/00, 5/00, 13/02, 47/02*



A bolted on split T adapted to be mounted on a pipeline and including first and second run sections and a branch section extending from about an opening in the first run section to provide external connection. The run sections are bolted together along corresponding longitudinal edges by a plurality of bolts to form the T. Tapped holes for receiving each bolt extend into but not through the longitudinal edges of said first run section and corresponding bolt holes extend through the longitudinal edges of the second run section. The longitudinal edges of the first run section preferably extend beyond the longitudinal edges of the second run section, and a hood which completely encloses and seals the second run section and the bolt holes therein is welded to the longitudinal edges of the first run section. The hood and the ends of the first run section are welded to the pipeline to complete the seal.

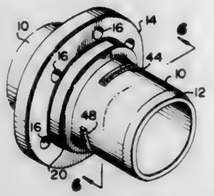
3,433,508
PIPE COUPLING
Wilbur O. Teeters, Norwood, N.J., assignor to Hoke Manufacturing Company, Inc., Cresskill, N.J., a corporation of New Jersey
Filed Apr. 17, 1967, Ser. No. 631,298
U.S. Cl. 285—341 **4 Claims**
Int. Cl. F16l *19/06, 19/08*



A compression-type tube or pipe coupling having a front and a rear ferrule wherein a tail element is provided with a flared end which is lightly crimped over the rear portion of the rear ferrule and with a sleeve or shank portion extending about the pipe beyond the outer end of the coupling nut. As the nut is tightened the tail rotates as a bearing on the rear ferrule reducing the tendency of the ferrules to twist and gall the pipe. Further tightening causes the tail to be deformed causing its neck to grip the pipe behind the bite of the rear ferrule thereby reducing the destructive effects of vibration. The flared portion is also deformed about the rear portion of the rear ferrule preventing the ferrule from rolling excessively during extreme tightening of the nut. The crushed neck of the tail element also extends inwardly and acts as an adapter in compensating for various differences in the sizes of the pipes which may be coupled. The addition of

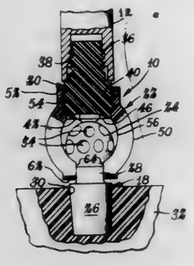
this tail to the coupling also prevents the rear ferrule from being inadvertently reversed on the pipe when the fitting is being assembled.

3,433,509
PIPE COUPLING
Warren C. Jeffery and Sidney P. Teague, Birmingham, Ala., assignors to McWane Cast Iron Pipe Company, Birmingham, Ala., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,702
U.S. Cl. 285—374 10 Claims
Int. Cl. F16l *21/02, 23/00*



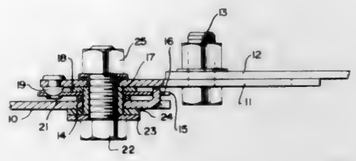
This disclosure relates to a bell and spigot type joint wherein a welded bead on the spigot limits the extent of insertion thereof into the bell, the bead being contacted by an annular flange slidably carried by the spigot and a portion of the bell, and means connecting the annular flange to the bell and maintaining the bell in contact with the bead whereby a downward component of force through the bead created by internal pressure tending to axially separate the bell and spigot automatically counteracts increased internal pressure.

3,433,510
SWIVEL JOINT STRUCTURE
Harold D. Hulterstrum, Baraboo, Wis., assignor to Flambeau Plastics Corporation, a corporation of Wisconsin
Continuation-in-part of application Ser. No. 489,505, Sept. 23, 1965. This application Sept. 26, 1966, Ser. No. 581,811
U.S. Cl. 287—12 3 Claims
Int. Cl. F16c *11/06;* F16l *27/02;* B25g *3/38;* F16b *7/00*



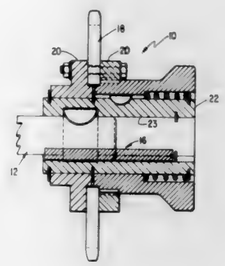
A swivel structure for rigidly joining first and second parts together. A first member is connected to the first part and a second member is connected to the second part. An intermediate hollow member interconnects the first and second members together. An enlarged outer end portion is provided on the first member and includes a plurality of locking means thereon. Means are provided on the second member for engaging one of the locking means. Means are provided for threadably joining the hollow member and the second member together. A slot is provided in the hollow member and includes an enlarged entrance which passes the enlarged outer end portion and which also includes a restricted opening opposite the threaded joining of the hollow member and the second member together. The portion surrounding the restricted opening opposes the forces imparted against the outer end portion as the second member is threadably joined to the hollow portion and bears against the outer end portion.

3,433,511
JOINT FOR OUTSIDE REAR VIEW MIRRORS
Samuel H. Frankel, Skokie, Ill., assignor to Allen Electric and Equipment Company, Kalamazoo, Mich.
Filed Nov. 21, 1966, Ser. No. 595,877
U.S. Cl. 287—14 6 Claims
Int. Cl. F16c *11/00;* B25g *3/38*



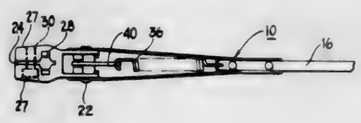
A hinged joint is provided for an outside rear view mirror for an automotive-type vehicle. The joint is provided with a preselected dwell position which holds the mirror at a preselected attitude. Means are provided to hold the mirror in out-of-use positions but with lesser resistance than in the dwell position. A simplified construction is obtained by using a spring plate that defines therein the dwell position and serves as a bias means when the mirror is in the out-of-use positions.

3,433,512
SHAFT MOUNTING
Derald Henry Kraft, Canton, Ohio, assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,586
U.S. Cl. 287—52.05 2 Claims
Int. Cl. F16d *1/06;* B60b *27/06;* F16l *59/16, 21/00, 55/00*



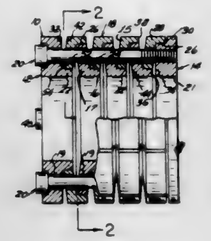
This disclosure pertains to a coupling between a shaft and collar or other part or parts employing an arrangement of keys and keyways to prevent both relative rotational and axial movement. The shaft is provided with an axially extending keyway and also a slot circumferentially spaced therefrom. A cylindrical bore in the other part adapted to receive the shaft is likewise provided with an axially extending keyway adapted to register with the keyway in the shaft and an arcuate groove extending circumferentially from the keyway for a distance at least equal to the number of degrees which separate the keyway and slot of the shaft. The arrangement permits assembly of the part and shaft with the keyway of the former initially aligned with the slot in the shaft. In the proper relative longitudinal position, a key member positioned in the slot on the shaft is rotatable in the arcuate groove of the part. The part and shaft can then be rotated relative to each other until the keyway in the part is aligned with the keyway in the shaft. A second key member is then received in the aligned keyways locking the assembly against further rotational movement.

3,433,513
WINDSHIELD WIPER ARM
Wesley G. Hambly, Buffalo, and Vitmar von Langendorff, Tonawanda, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed Apr. 10, 1967, Ser. No. 629,509
U.S. Cl. 287—53 4 Claims
Int. Cl. F16l *59/16, 21/00, 55/00, 11/12*



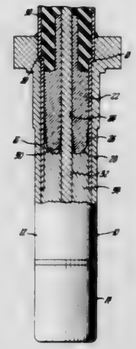
A windshield wiper arm having an overcenter biasing spring and linkage assembly between an outer arm blade carrying section and mounting head section. The mounting head section includes hardened steel jaw inserts in resilient bifurcated legs for gripping a pivot shaft.

3,433,514
EXPANSIBLE CONNECTOR
Hans Feighofen, Herdringen, Germany, assignor to John Haller, Northville, Mich.
Filed Oct. 13, 1966, Ser. No. 586,512
U.S. Cl. 287—124 3 Claims
Int. Cl. F16b *7/00;* F16d *1/00;* F16l *21/00*



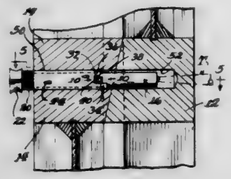
A double-acting expansible connector possessing a combined tilting and wedging action consists of an expanding device and an expanded device disposed adjacent one another and having aligned holes through which an elongated axial-force-exerting contrivance extends. These devices have interengaging wedging surfaces inclined relatively to said contrivance and responsive to the imposition of axial force thereon by said contrivance for expanding the expanded device in a direction transverse to the axis of the axial-force-exerting contrivance. The expanded device has a web portion containing its respective hole and inclined relatively to the axis of the axial-force-exerting contrivance and also has at one edge thereof a flange projecting axially from the web portion at an obtuse angle thereto.

3,433,515
HIGH TEMPERATURE-PRESSURE METAL-TO-GLASS SEAL CONSTRUCTIONS
Gustav F. Rademacher, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,524
U.S. Cl. 287—189.365 2 Claims
Int. Cl. F16b *11/00*



A metal-to-glass seal construction suitable for use under pressure at high temperatures as electrical lead-in equipment. The construction consists of an outer tubular metal member which is resistant to environmental conditions, such as stainless steel. Positioned inside the outer metal member is a cylindrical metal member which has a coefficient of thermal expansion similar to glass, such as Kovar, having one end brazed to the outer tubular metal member. The other end of the inner cylindrical member contains a fused mass of glass therein which hermetically seals the inside of the inner cylindrical member. A conducting rod which has a coefficient of thermal expansion similar to glass passes through the glass mass in spaced relationship to the cylindrical member.

3,433,516
LOCK FOR LOCKING WINDOW SASHES AND THE LIKE
William R. Morgan, Jr., P.O. Box 106G, Long Grove, Ill. 60047
Filed Dec. 23, 1966, Ser. No. 604,438
U.S. Cl. 292—62 4 Claims
Int. Cl. E05c *5/02*

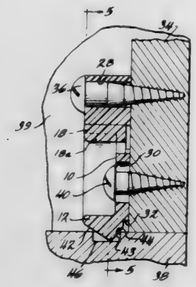


This invention relates to a lock for use with a window sash. It consists of a spring retracted sliding pin positioned within a sleeve and arranged to cam the sleeve outward so as to embed projections on the sleeve into the window sash and thereby retain the lock in place.

3,433,517
ADJUSTABLE CATCH
David H. Humphrey, P.O. Box 1742, Hato Rey, Puerto Rico 00903
Filed July 21, 1967, Ser. No. 655,178
U.S. Cl. 292—74 5 Claims
Int. Cl. E05c *19/02*

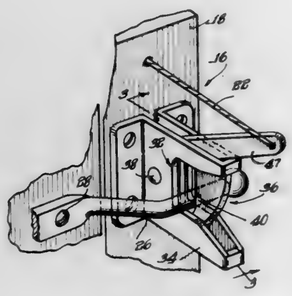
An adjustable catch comprising a catch member and a cam for adjusting spring tension in the catch. The two

are integrally formed for initial mounting on a door or the like, being connected by a portion which can be cut through after mounting whereupon the catch member



and cam are independently mounted so that the catch member can slide on the door during latching and unlatching, and the cam can be rotated for adjusting the spring tension in the catch.

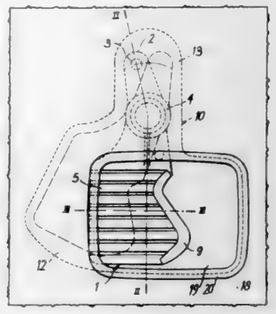
3,433,518
LATCH ASSEMBLY
Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Mar. 16, 1967, Ser. No. 623,681
U.S. Cl. 292—238 **3 Claims**
Int. Cl. E05c *3/14*



This invention relates to a gate latch assembly. More particularly this invention relates to a gate latch assembly including a latch bar which is received into a slot in a latch frame, the slot in the latch frame having a width which is substantially larger than a transverse dimension of said latch bar to enable the latch bar to readily engage the slot in the event of sagging of the gate.

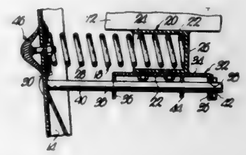
3,433,519
AUTOMOBILE DOOR INTERNAL HANDLE ASSEMBLY
Jacques Marc Brasseur, St. Germain en Laye, France, assignor to Societe Anonyem des Automobiles Simca, a French society
Filed Feb. 28, 1967, Ser. No. 619,281
Claims priority, application France, Mar. 8, 1966, 52,436/66
U.S. Cl. 292—336.3 **6 Claims**
Int. Cl. E05b *3/04*

An automobile door internal handle assembly in which the operating member lies wholly below the trim panel of the door. The operating member is accommodated in a recess stamped in the internal skin of the door, this recess



including a housing for a boss of the operating member about which the latter pivots. The boss is located in the housing by for example a resilient fastener.

3,433,520
SPRING BIASED SHOCK ABSORBING BUMPER
Norvan O. Kearns, 8349 Locust, Kansas City, Mo. 64131, and Rolland J. Steinmetz, Rte. 2, Box 38, Slater, Mo. 65349
Filed Oct. 11, 1967, Ser. No. 674,511
U.S. Cl. 293—85 **3 Claims**
Int. Cl. B60r *19/06, 21/14;* **B61f** *19/04*

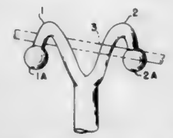


Resilient mounts for an automobile bumper comprising a tubular housing closed at one end and mounted directly on the automobile frame. A coil spring is received in the tubular housing and extends to the bumper. A U-shaped guide member is mounted on the side of the housing opposite the frame and has an elongated rod secured to the bumper and shiftably received through aligned apertures in each of the projecting legs of the guide member with the longitudinal axis of the rod disposed in parallelism with the longitudinal axis of the spring. A pin carried by the rod and engageable with one leg of the member holds the spring in a partially compressed condition and a shear pin on the rod limits relative shifting of the rod in the opposite direction to a predetermined distance until a force of predetermined magnitude is applied to the bumper.

3,433,521
TELESCOPIC POLES WITH LOCKING MEANS FOR PICKING UP LINE
George A. Lasko, 1367 Vulcan St., El Cajon, Calif. 92021
Filed Aug. 17, 1967, Ser. No. 661,412
U.S. Cl. 294—19 **4 Claims**
Int. Cl. A47f *13/06*

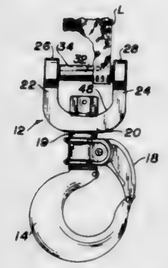
This invention provides a line grasping device such as a boathook for picking up and holding a line without direct manual contact with the line. The device includes a

pole and a means for securing a hook assembly to the said pole. The hook assembly includes a pair of substantially rigid, spirally looped hooks having base ends connected to a common shaft. The hooks extend from the common shaft in divergent directions with respect to each



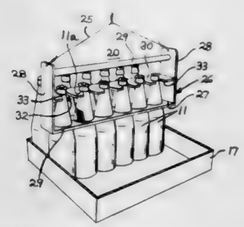
other and are therefore substantially spaced apart to provide free movement of the line therebetween. The hooks have an arcuate configuration and free ends that are disposed in opposite directions with respect to each other. An enlarged portion is located on each of the said free ends. The pole means may be adjustable in length.

3,433,522
PIVOTALLY MOUNTED SLING STIRRUP BAIL
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Feb. 20, 1967, Ser. No. 617,384
U.S. Cl. 294—82 **1 Claim**
Int. Cl. B66c *1/36*



A generally U-shaped bail for affording attachment of a fabric sling to a load. A removable pin spanning the legs of the bail for affording removable attachment of a sling to the bail. A U-shaped bail adapted for pivotal attachment to a hook or like load engaging member.

3,433,523
APPARATUS FOR HANDLING BEVERAGE BOTTLES
James G. Drennan, San Mateo, Calif., assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application Sept. 2, 1965, Ser. No. 484,678. Divided and this application May 15, 1968, Ser. No. 729,177
U.S. Cl. 294—872 **4 Claims**
Int. Cl. B65 *71/00;* **B66c** *1/10*

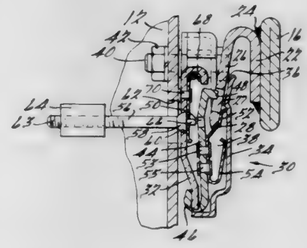


A filled container transfer device wherein a plurality of filled containers are intermittently conveyed to a transfer location where they are picked up in groups of six and moved to a packing location, thus providing an arrangement wherein a six-pack of soft drink containers may be assembled with each of the six being of different color and/or flavor.

ERRATUM

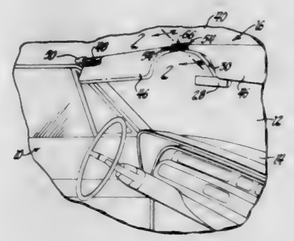
For Class 296—28 see:
Patent No. 3,433,470

3,433,524
SEAT BACK LATCH MECHANISM
Albert R. Close, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 2, 1967, Ser. No. 635,492
U.S. Cl. 296—65 **9 Claims**
Int. Cl. B60n *1/02;* **A47c** *3/00, 7/60*



A mechanism for latching a pivotally mounted vehicle seat back relative to a horizontal seat member. A first embodiment of latch mechanism includes primary inertia retaining means that prohibit sudden seat back movement as occurs during rapid vehicle deceleration, while permitting normal manually activated movement. A second embodiment includes weight sensitive retaining means preventing seat back movement while the seat is occupied by a passenger. Both embodiments include secondary retaining means preventing relative seat back movement during periods of change in vehicle velocity.

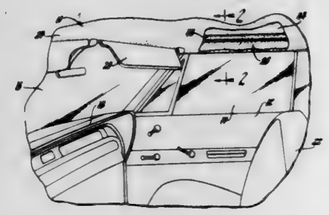
3,433,525
VEHICLE SUNSHADE FASTENING MEANS
Algis G. Augunas, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 613,030
U.S. Cl. 296—97 **3 Claims**
Int. Cl. B60j *3/02*



A sunshade is pivotally mounted at one end of the vehicle header. The other, or free end, of the sunshade is provided with a fastening element including a plurality of flexible loops. A header-mounted fastening element in-

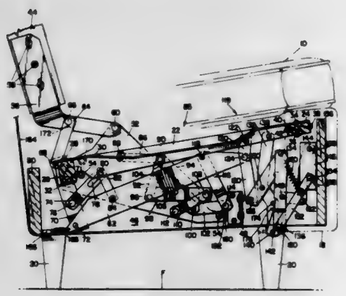
cludes a plurality of flexible hooks which are engageable with the loops to secure the free end to the header. A force applied to the free end deforms the hooks sufficiently to disengage the loops and hooks and free the sunshade for movement relative to the header about its pivoted end.

3,433,526
HEADLINING RETAINER
Robert O. Field, Bloomfield Hills, and Clyde H. Schamel, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,529
U.S. Cl. 296—137 3 Claims
Int. Cl. B62d *25/06*



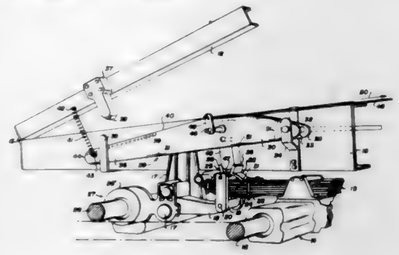
The invention relates to a continuously formed vehicle headliner retainer clip made of flexible material such as plastic, or the like, which clip incorporates a continuous head and groove arrangement for retaining the headliner and, in addition, includes a means of retaining padding material within the interior of the vehicle as a safety feature.

3,433,527
RECLINING MECHANISM FOR T-CUSHION CHAIR
Frank M. Ré, Holyoke, Mass., assignor to Dual Manufacturing & Engineering, Incorporated, Holyoke, Mass., a corporation
Filed Apr. 17, 1967, Ser. No. 631,490
U.S. Cl. 297—85 2 Claims
Int. Cl. A47c *1/035*



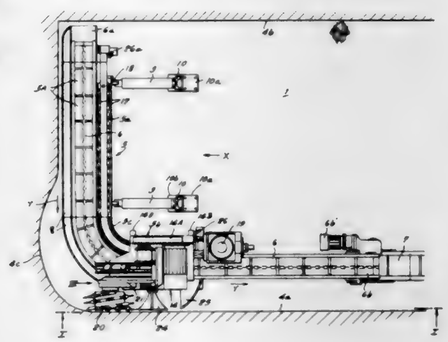
Mechanism for effecting automatic synchronized reclining movement of a seat and back rest relative to the fixed chassis of a chain coincident to the extension of a foot stool relative to the chassis, without the use of external handle and lever means, the seat being of the T-cushion type and the mechanism moving it forwardly relative to the fixed chassis during reclining movements to preclude binding of the T-cushion relative to the chair arms.

3,433,528
ELEVATING DEVICE FOR TRAILING WHEEL ASSEMBLIES OF DUMP TRUCKS
Jacob Murray, 117 19th St. N., Lethbridge, Alberta, Canada
U.S. Cl. 298—17 12 Claims
Int. Cl. B60p *1/04*; B62d *61/12*



The device consists of a pivotal member engageable by the dump body when lowered which pivots and forces a snubber into engagement with one end of the member mounting the trailing axle assembly to the frame thus forcing this end down and elevating the other end and hence the trailing axle assembly, clear of the ground.

3,433,529
LONGWALL MINER HAVING CUTTER GUIDED ALONG MINE FACE, CURVED CORNER SECTION AND SIDE FACE
Walter Mueller, Kamp-Lintfort, Hugo Alfs, Bochum, and Robert von der Lippe, Witten (Ruhr), Germany, assignors to Maschinenfabrik Moenninghoff, Bochum, Germany
Filed July 31, 1967, Ser. No. 657,281
Claims priority, application Germany, Aug. 1, 1966, M 70,418
U.S. Cl. 299—1 25 Claims
Int. Cl. E21c *35/20, 41/04, 29/00*

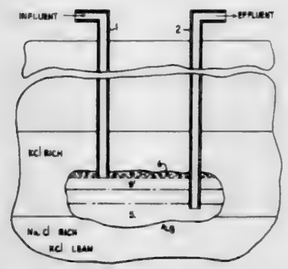


The L-shaped frame of a coal mining apparatus has a longer leg which is parallel to and extends along the mine face of an underground excavation, a shorter leg which is adjacent to one side face of the excavation, and an arcuate part between the two legs. The cutter which travels back and forth along the frame between the free ends of the legs has a single drum-shaped radial tool whose axis is horizontal and respectively extends at right angles to the mine face and side face when the cutter respectively travels along the longer and shorter legs of the frame. An L-shaped conveyor is supported by the frame to transport material which is removed by the cutter, the material being transported in a direction from the free end of the longer leg toward the free end of the

shorter leg. The tool is adjustable vertically and cuts the frame free when it completes one or more cycles between the free ends of the legs so that the frame can be shifted forwardly by a system of props and double-acting cylinders.

The frame carries a ramp which steers material resting on the mine floor onto the conveyor in response to forward movement of the frame, and the teeth of the tool are preferably arranged in helical formation to resemble a feed screw which transports fragments of material toward the ramp.

3,433,530
METHOD OF SOLUTION MINING POTASSIUM CHLORIDE
James Bowen Dahms, New Martinsville, W. Va., and Byron Priestly Edmonds, Regina, Saskatchewan, Canada, assignors to PPG Industries, Inc., a corporation of Pennsylvania
Continuation of applications Ser. No. 446,370, Apr. 7, 1965, and Ser. No. 646,431, June 15, 1967. This application Mar. 6, 1968, Ser. No. 711,116
U.S. Cl. 299—4 23 Claims
Int. Cl. E21c *41/08*



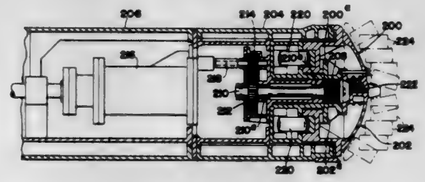
Potassium chloride is recovered from a subterranean deposit by solution mining techniques. The solution mining cavity contacts at least one KCl-rich stratum. The cavity floor contacts a KCl-lean stratum. A concentrated zone of cavity solution is maintained adjacent the floor of the cavity. The ratio of KCl to NaCl in this concentrated zone is maintained higher than the ratio of KCl to NaCl in the KCl-lean stratum. Cavity effluent is withdrawn from the lower portion of the cavity. The ratio of KCl to NaCl in the effluent is greater than the corresponding average ratio in the deposit being mined. Often the ratio of KCl to NaCl in the effluent is greater than the corresponding ratio in the KCl-rich stratum.

3,433,531
METHOD AND APPARATUS FOR UNDERSEA MINING
Nick Koot, South Laguna, and Robert W. Nold, Garden Grove, Calif., assignors to Global Marine, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,692
U.S. Cl. 299—8 14 Claims
Int. Cl. E02f *3/92, 7/02, 5/28*



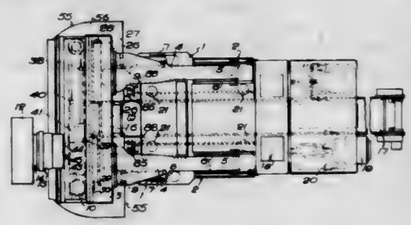
At least one substantially horizontal arm is carried by a hub supported on a bearing plate. A propeller mounted on the arm is used to rotate the arm about the bearing plate. The arm carries means to gather ore deposits on the ocean floor. The gathering means may be a plurality of blades disposed to sweep ore toward a conveyor at the hub or an ore harvesting assembly capable of moving back and forth along the length of the arm to gather ore as the arm rotates. Gathered ore is cleansed of silt and sediment by water under pressure. In one embodiment activated crushers are provided to crush the ore after it is cleansed. An ore conduit and an airlift pump transport the gathered ore to the ocean's surface.

3,433,532
APPARATUS FOR EXCAVATING TUNNELS
Robert W. Enz, 714 Juniper Circle, Los Banos, Calif. 93635
Continuation-in-part of application Ser. No. 418,676, Dec. 16, 1964. This application June 12, 1967, Ser. No. 665,940
U.S. Cl. 299—31 2 Claims
Int. Cl. E21c *29/00, 1/00, 13/00*



Apparatus for excavating tunnels, and particularly cylindrically shaped tunnels which includes a circular disc carrying a plurality of rock cutters thereon and adapted to be turned while being forced against the surface to be cut. The apparatus supports itself in the bore as it is cut, and provides a means for removing a cylindrical core of the material being excavated, and where the circular disc actually is comprised of two concentric portions which rotate in opposite directions to each other to provide an improved cutting action. The circular disc is mounted to a tubular frame which is telescopically carried by a second tubular frame relative to the second frame to provide flexibility and maneuverability to the circular disc.

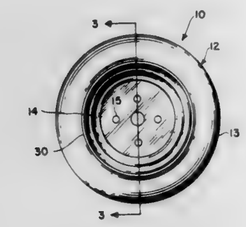
3,433,533
MINING MACHINE HAVING ROTARY CUTTER MOUNTED FOR INCREASED VERTICAL AND LATERAL RANGE OF CUTTING
Frederick Webster, Sheffield, England, assignor, by mesne assignments, to Mining Progress Inc., Highland Mills, N.Y., a corporation of New York
Filed Nov. 8, 1966, Ser. No. 592,787
Claims priority, application Great Britain, Nov. 10, 1965, 47,608/65
U.S. Cl. 299—56 11 Claims
Int. Cl. E21c *1/02, 25/08, 29/00*

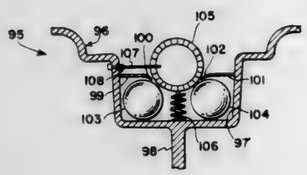


Mining machine having a base, a forwardly extending arm pivoted at its rear end to the base, means for moving such arm to any desired location between limits of maximum swing of its forward end with respect to its pivoted end, a guide bar secured to the forward end of such arm

and extending parallel to the arm pivot, such that the guide bar serves as a slideway, an extension bar mounted on and slidable lengthwise of the guide bar, a carrier mounted on and slidable lengthwise of the extension bar and carrying a cutting head rotatably thereon for rotation about an axis extending forwardly from the extension bar, and means for rotating the cutting head and for moving the extension bar lengthwise of the guide bar whereby the extension bar may extend beyond a given end of the guide bar, and means for moving the carrier for the cutting head lengthwise of the extension bar.

3,433,534
AUTOMATIC BALANCER
Gordon E. Mercer, 148 E. Mercury Blvd., Hampton, Va. 23369
Filed Feb. 10, 1967, Ser. No. 616,429
U.S. Cl. 301—5 **2 Claims**
Int. Cl. B60b *13/00, 1/00, 27/00*

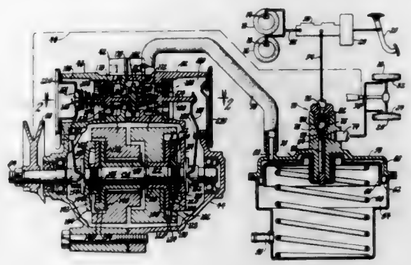




An apparatus and method for dynamically balancing rotating masses such as space vehicle components, space stations, automobile wheels, shafting, etc. The rotating mass having retainer means which surrounds the mass and houses spherical weight means movable in the retainer means. The retainer means being designed such that the weight means is positioned on opposite sides of the geometrical center of the rotatable mass. Mechanism associated with the retainer and weights for fixing them in a balancing position at all rotational speeds of the rotatable mass. Structure for releasing the spherical weights to provide for rebalancing when necessary.

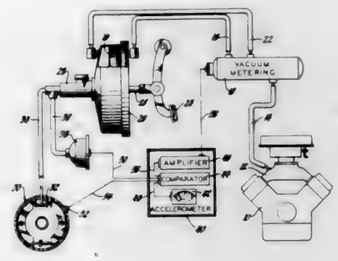
3,433,535
DUAL FLYWHEEL ANTI-LOCK SENSING UNIT
Robert A. Horvath, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,389
U.S. Cl. 303—21 **4 Claims**
Int. Cl. B60t *7/16, 13/10, 8/10*

A vehicle wheel brake system utilizes two wheel acceleration sensors to develop control signals from wheel accelerations and decelerations to control a brake apply pressure modulator so as to cycle the pressures provided at the wheel brake to obtain a maximum braking effect without permitting the wheel slip to approach a full lock condition. One sensor is actuated, upon braking of the wheel which is sufficient to cause substantially increasing wheel slip, to develop a control signal causing the modulator to release the brake pressure applied to the wheel brake to permit the wheel to accelerate toward a rolling condition, with consequent decreasing wheel slip. The other sensor is actuated by this wheel acceleration to develop a control signal causing the modulator to retain the apply pressure at a value which still exerts a braking effort while permitting



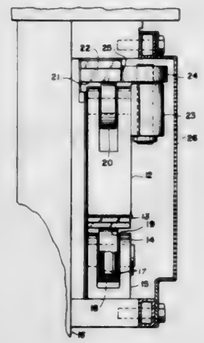
wheel acceleration to continue, and therefore wheel slip to continue to decrease, until wheel acceleration substantially ceases by reason of the wheel returning approximately to a true rolling condition. Meanwhile the one sensor establishes a condition upon the wheel acceleration which will permit the full available brake pressure to again be applied upon further action of the other sensor. When the wheel acceleration substantially ceases, the other sensor further acts to condition the modulator, and the full available brake pressure is again permitted to be applied to the wheel brake to cause wheel deceleration. The cycle is repeated as necessary so long as the wheel acceleration and deceleration require that action.

3,433,536
REGULATED ANTI-LOCK BRAKING SYSTEM
Kenneth R. Skinner, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,418
U.S. Cl. 303—21 **8 Claims**
Int. Cl. B60t *8/02, 13/10*



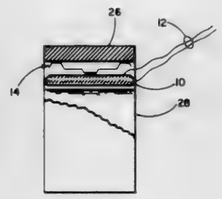
A vehicle wheel brake anti-lock system sensing vehicle deceleration and brake line pressure and generating control signals from the sensed conditions which ultimately control the brake apply pressure to prevent vehicle wheel lock and permit a high level of controlled braking force. Brake temperature is also sensed in the system when consideration is to be given to changes in brake lining coefficient of friction due to change in brake temperature.

3,433,537
PARTICLE-FREE BEARING ASSEMBLY
Melvin M. Seeloff and Joseph H. Cooper, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio
Filed Mar. 22, 1967, Ser. No. 625,089
U.S. Cl. 308—6 **5 Claims**
Int. Cl. F16c *17/00, 21/00, 19/00*



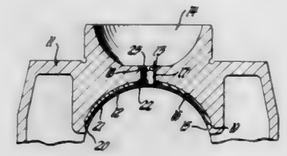
Broadly stated, this invention relates to a roller bearing construction especially suitable for a large, dirt generating machine, such as an electric resistance flash-butt welder, which roller bearing construction is used on the four corners of a large slide assembly and is devoid of any slide surfaces which point upwardly on which dirt particles could settle by gravity and result in malfunction when a roller rolls thereon. Instead, the slide surfaces are all vertical and horizontal, but the horizontal (or angular) being on the underside of a machine part or slide element.

3,433,538
DYNAMIC GAS FILM BEARING STRUCTURE
Leonard C. Blanding, Hans J. Meyer, and Kenneth A. Liebler, Grand Rapids, Mich., assignors to Lear Siegler, Inc.
Filed Feb. 24, 1966, Ser. No. 529,714
U.S. Cl. 308—9 **8 Claims**
Int. Cl. F16c *7/04, 35/00, 27/00*



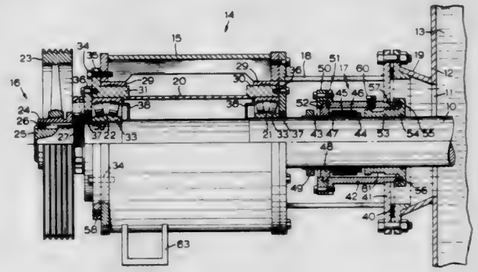
The instant invention comprises a structure for supporting and retaining the transducer element of a gas film bearing within a housing. The support and retaining structure comprises a resilient ring-like member which is mounted between the housing and the transducer elements to hold them in spaced relation. The ring-like member is constructed such that, when operably positioned, it is resistive to linear and torsional stress yet readily yields to radial stresses.

3,433,539
BEARING RETAINER
Carl L. Nigh, Brownsburg, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,576
U.S. Cl. 308—22 **6 Claims**
Int. Cl. F16c *9/00, 13/00, 35/00*



A bearing retainer for half shell bearing insert including a retaining sleeve or hollow stepped pin located in aligned apertures in the bearing carrier and the the bearing insert. The bearing retainer maintains only the axial position of bearing insert relative to the carrier while the circumferential position of the bearing is established by contact between the bearing insert and the carrier.

3,433,540
FLUID-TIGHT SHAFT SEAL ASSEMBLY
John C. Schneider, 177 Balmoral Drive, Brampton, Ontario, Canada
Filed Sept. 9, 1966, Ser. No. 578,221
Claims priority, application Canada, Nov. 27, 1965, 946,419
U.S. Cl. 308—36.1 **5 Claims**
Int. Cl. F16j *15/50, 15/54;* **F16c** *35/04*

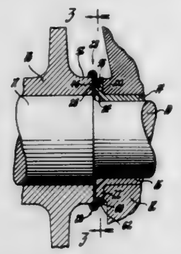


A seal and support assembly for a unitary rotatable shaft projecting into a container for fluids having a first sealing means encircling the shaft to prevent fluid leakage during operation of the shaft and a second sealing means encircling the shaft out of sealing engagement during operation of the shaft but movable to sealing engagement when the shaft is not in operation. The assembly has a bearing retaining spool for the shaft which is removable together with the bearings, as is the first sealing means, without container drainage or disassemblage or removal of the shaft supporting assembly.

3,433,541
TRACTION MOTOR AXLE BEARING DUST GUARD
Walter Drabik, Downers Grove, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,381
U.S. Cl. 308—36.1 **4 Claims**
Int. Cl. F16c *33/74;* **F16j** *15/16, 15/32*

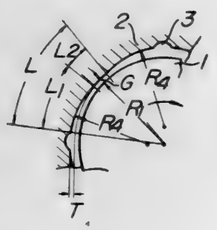
A molded one-piece elastomeric dust guard for sealing between the thrust bearings and the wheels of a locomo-

tive traction motor wherein the dust guard is initially wrapped around the outer surface of the thrust flange and prepositioned thereon by integrally formed locating studs that are received within complementary locating holes formed in the thrust flange. The studs and holes are



relatively sized to permit limited axial and circumferential shifting of the dust guard about the thrust flanges to an accurately aligned position. An adjustable steel band, retained in a semi-dovetail groove formed in the dust guard, is contracted to sealingly clamp the dust guard to the thrust flange.

3,433,542
MULTIFACE CYLINDRICAL BEARINGS FOR GUIDING ROTATION OF VERTICAL SHAFTS
Hidenori Tonooka and Kinpei Okano, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan
Filed June 7, 1965, Ser. No. 461,631
Claims priority, application Japan, June 8, 1964, 39/32,211
U.S. Cl. 308—121 **2 Claims**
Int. Cl. F16c *1/24, 33/66, 13/02*



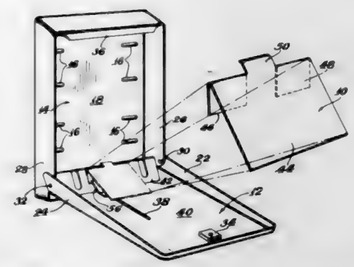
1. In a multiface cylindrical bearing having an inner surface receiving therein and rotationally guiding about a central axis a vertical cylindrical shaft, comprising: a plurality of first cylindrical surfaces being spaced along the circumference of the bearing inner surface, having a first radius of curvature, and being concentric with respect to said central axis; a plurality of second cylindrical surfaces being concave with respect to said central axis, each of said surfaces extending between and adjoining two adjacent ones of said first cylindrical surfaces, having a second radius of curvature shorter than said first radius of curvature, and each being completely radially outward of said first radius of curvature with respect to said central axis; a plurality of oil grooves, each of the grooves being along the radially outermost portion of said second cylindrical surfaces with respect to said central axis wherein the improvement comprises the ratio of the radially measured depth T of said second cylindrical surfaces with respect to said first cylindrical surfaces to the radially measured clearance G between said first cylindrical surfaces and said shaft, that is, T/G is in the range 2 to 7 whereby the distribution of oil pressure generated about the shaft within the inner surface will exhibit optimum load carrying capacity.

3,433,543
AXIAL THRUST BEARING HAVING ROTATABLE NEEDLE CAGE
Gerhard Eck, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter, Haftung, Ottobrunn, near Munich, Germany
Filed Jan. 5, 1967, Ser. No. 607,568
Claims priority, application Germany, Jan. 14, 1966, B 85,406
U.S. Cl. 308—235 **4 Claims**
Int. Cl. F16c *33/46*



A single embodiment of a new and useful axial antifriction bearing is shown in the drawings and described herein. The antifriction bearing is particularly adaptable for constructions which require small swinging movements under high axial load. In accordance with the invention, the bearing consists of inner and outer races with a ring cage disposed therebetween having needle bearing members which are mounted for rotation about axes which extend substantially radially. The central ring cage is provided with a separating joint or opening which extends substantially in a radial direction in the preferred form. By this arrangement, the needle cage is forced to rotate and thus insures that the bearing surfaces will not become pivoted in a relatively short time because the needles are permitted overall and swinging movements or rotation by more than 360°.

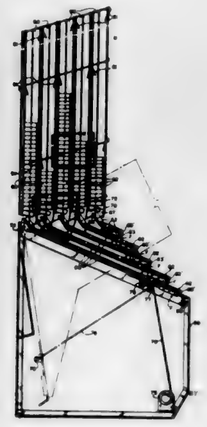
3,433,544
ADAPTER TO PROVIDE MULTIPLE SIZE CAPABILITY FOR PAPER TOWEL CABINET
Donald C. Monyette and Dean L. Wolske, Green Bay, Wis., assignors to Fort Howard Paper Company, a corporation of Delaware
Filed June 12, 1967, Ser. No. 645,289
U.S. Cl. 312—39 **4 Claims**
Int. Cl. B65h *19/00, 1/06;* **A47k** *10/42*



An adapter which provides for the dispensing of any of a number of various sizes of folded paper towels from a cabinet made to dispense a single size of folded paper towels. The adapter is comprised of a single rigid sheet folded in a V-shape with a lip extending outwardly from

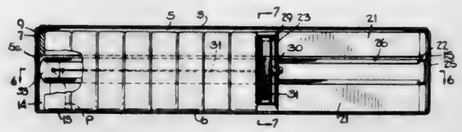
the vertex of the V. The lip fits into the dispensing slot at the bottom of the cabinet. One side of the V defines an inclined surface on the interior of the cabinet to guide paper towels into the dispensing slot. The other side of the V is fastened at the front bottom inside of the cabinet. The lip prevents smaller towels from falling through the dispenser slot, yet does not inhibit dispensing of the larger towels. The inclined surface keeps the smaller towels aligned and toward the back of the cabinet.

3,433,545
DISPLAY AND VENDING APPARATUS
Don E. Rainey, 456 S. Dixie Highway, East Pompano Beach, Fla. 33060
Filed Jan. 18, 1967, Ser. No. 614,768
U.S. Cl. 312—42 **12 Claims**
Int. Cl. G65g *1/16, 59/00;* **A47f** *1/00*



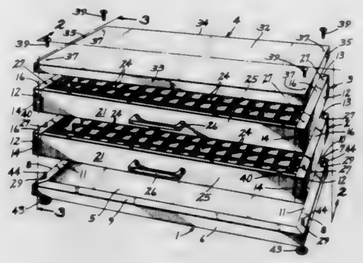
Display and vending apparatus having rearward vertical storage chutes for receiving articles in stacked horizontal position and forward inclined display and dispensing trackways for sliding movement of the article, a stop device at the outer ends of the trackways to limit the sliding movement of the articles and transposer means pivotally supported at the lower end of each chute to shift the lowermost article in the chute to downwardly inclined position in the trackways.

3,433,546
DISPENSING CONTAINER
Samuel L. Cohen, 1102 Briar Way, Palisades, N.J. 07024
Filed Oct. 12, 1966, Ser. No. 586,064
U.S. Cl. 312—71 **14 Claims**
Int. Cl. A47f *1/12;* **B65g** *1/12*



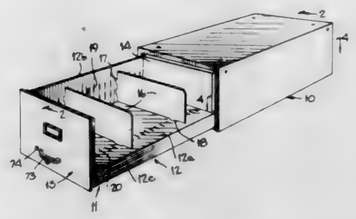
The present invention comprises a carton for articles in which the enclosure has side walls and rear walls and a dispensing mouth at the front. A channel member is mounted within the enclosure. The channel member has a base mounted adjacent the rear of the enclosure and a pair of arms extending from each end of said base toward the dispensing mouth. Pressure means are mounted within the channel member and are movable away from the base and toward the dispensing mouth to urge articles mounted within the enclosure toward the dispensing mouth.

3,433,547
ADD-A-DRAWER FILING CABINET
Paul A. Hoaglund, Hopkins, Minn., assignor, by mesne assignments, to International Computer Appliances Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 12, 1966, Ser. No. 549,515
U.S. Cl. 312—111 **4 Claims**
Int. Cl. A47b *47/00*



A cabinet of superposed cabinet sections each comprising a rectangular U-shaped frame having laterally spaced side portions, a connecting back portion, and an open front, the side and back portions defining inwardly opening channels each having vertical outer walls and inturned upper and lower horizontal flanges. Reinforcing ribs extending longitudinally in the channels of said side portions slidably support a drawer in each of the cabinet sections. A rectangular cover element and a rectangular base are connected to the top of the uppermost frame and bottom of the lowermost frame, respectively.

3,433,548
FILING CABINET
George E. Moore, Jamestown, N.Y., assignor to Watson Manufacturing Company, Inc., Jamestown, N.Y., a corporation of New York
Filed May 25, 1967, Ser. No. 641,363
U.S. Cl. 312—184 **5 Claims**
Int. Cl. B42f *15/00, 17/00;* **A47b** *63/00*



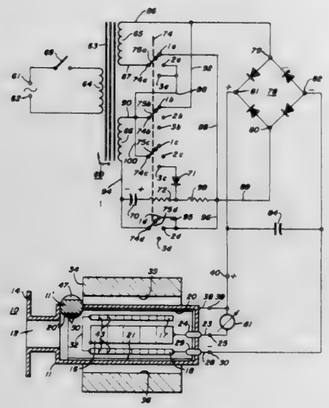
The file drawer is mounted on a slide extension for rolling in and out of a casing. The drawer has the top and one side open. The other side has a wall. Removable partitions fit in the bottom and side wall. The file can be set at or above eye level and papers may be easily inserted or removed through the open side.

3,433,549
UNIT WALL CLOSET
Raymond A. Magnuson, Hinsdale, and Donald L. Brorson, Western Springs, Ill., assignors to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois
Filed July 18, 1967, Ser. No. 654,196
U.S. Cl. 312—245 5 Claims
Int. Cl. A47f *5/08*; A47b *97/00, 81/00*



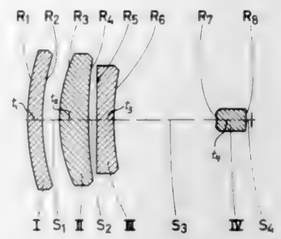
A wall mounted wardrobe wherein a pair of side panels and a set of shelves which extend between them are supported on a common set of brackets which extend from the wall. Each bracket is formed with flanges which extend between the end of a shelf and the side panel next to that end with the side panels being secured to said flanges. Fingers on the brackets are received in apertures in the shelf to establish an exact dimension between the side panels and prevent relative movement between them.

3,433,550
POWER SUPPLY FOR IONIC VACUUM DEVICE
Allen R. Hamilton, Rochester, N.Y., assignor, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,347
U.S. Cl. 316—28 9 Claims
Int. Cl. H01j *9/00*



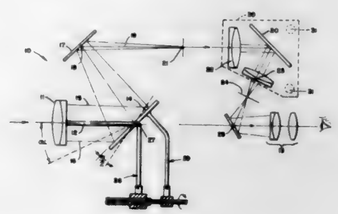
A vacuum system comprising power supply means, power storage means, and switching means for selectively charging the power storage means from the power supply means and applying the power supply means and the charged storage means in a voltage-additive relationship to the ionic vacuum device to remove physical imperfections from electrodes thereof.

3,433,551
TELESCOPIC OBJECTIVE FOR INFRARED RADIATION
Franz Schlegel, Munich, Germany, assignor to Optische Werke G. Rodenstock, Munich, Germany
Filed May 23, 1966, Ser. No. 551,986
Claims priority, application Germany, May 22, 1965, O 10,878
U.S. Cl. 350—2 5 Claims
Int. Cl. G02b *3/00*



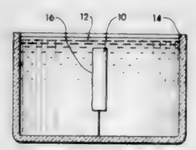
A telescopic objective for infrared photography having an aperture of better than 1:3 and a short working length consists of silicon and germanium lenses of which the first is a silicon meniscus lens substantially without refractive power followed by a divergent component including a convergent silicon meniscus lens and a divergent germanium meniscus lens. The last component is a single divergent germanium meniscus lens whose concave front surface spacedly faces a concave rear surface of the germanium lens in the preceding component.

3,433,552
TELESCOPIC BOW SIGHTING DEVICE
James R. Benford, Irondequoit, and Herbert D. Korones, Brighton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,319
U.S. Cl. 350—10 5 Claims
Int. Cl. G02b *27/36*



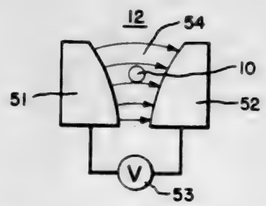
A telescopic bow sighting device is disclosed in which the advantages of a long telescope are obtained in a short length by folding the optical axis in a vertical plane to form an offset portion which results in a sturdy and compact design. Elevation adjustment capability is provided by horizontally pivoting a plane mirror located adjacent to the objective, the mirror directing the optical axis into the vertically folded section of the optical axis. A series of three additional plane mirrors, an erecting lens system, and an eyepiece bring the properly oriented image to the archer's eye.

3,433,553
LIGHT DEPOLARIZER
Charles Jack Peters, Wayland, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,810
U.S. Cl. 350—157 6 Claims
Int. Cl. G02f *1/24*; G02b *5/30, 27/28*



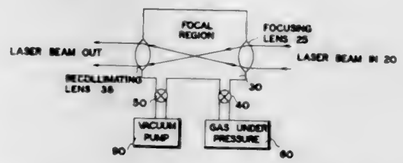
A light depolarizer employs a plate of birefringent material having a surface with a random roughness related to the difference between the refractive indices of said material.

3,433,554
ELECTRO-OPTICAL MODULATION OF RADIATION PATTERN USING CURVED ELECTRODES
Sergio T. Ribeiro and Gabor K. Ujhelyi, Urbana, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 1, 1964, Ser. No. 364,345
U.S. Cl. 350—160 5 Claims
Int. Cl. G02f *1/28*



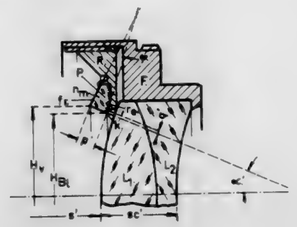
The invention disclosed herein deals primarily with a unique and novel system for deflecting coherent light beams and utilizes a particular configuration of electrodes, therein placement and structure to accomplish this end. It is primarily the unique distribution and control of the electrostatic fields that supply this control.

3,433,555
OPTICAL FUSE
Richard G. Tomlinson, Columbus, Ohio, assignor to The Ohio State University Research Foundation
Filed Mar. 4, 1965, Ser. No. 437,106
U.S. Cl. 350—160 4 Claims
Int. Cl. H01s *3/10*; G02f *1/28*



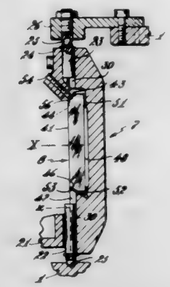
This invention relates to the regulation and control of the power output of a laser beam and specifically an optical switch is accomplished by abruptly terminating the beam when a selected power is reached. The breakdown occurs when the laser beam is brought to a focus in a variable pressure gas chamber. A recollimating lens permits the beam to pass through the chamber unattenuated in the absence of a breakdown.

3,433,556
INSERTABLE DIAPHRAGM RINGS FOR OPTICAL, CONVERGING LENS SYSTEMS TO REDUCE DIFFRACTION VIGNETTING
Henry A. Giesecke, Valley Stream, N.Y., assignor to Apromat, Inc., Barrington, Ill., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,114
U.S. Cl. 350—162 11 Claims
Int. Cl. G02b *5/00, 7/00*



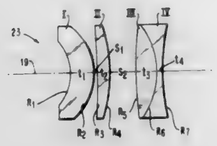
In an image-forming optical system, vignetting edge means carried by a transparent toroidal member which illuminates the edge means with the green-blue-violet range of the spectrum so as to eliminate longer wave lengths and thereby improve the contrast-resolution.

3,433,557
MOUNTING FOR INTERCHANGEABLE GRATINGS
Paul M. McPherson, Acton, Mass., assignor, by mesne assignments, to McPherson Instrument Corporation, a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,915
U.S. Cl. 350—162 8 Claims
Int. Cl. G02b *5/18*; G01j *3/12*



A mounting arrangement for mounting interchangeable gratings in an optical spectrometer to provide for manual insertion of the interchangeable gratings without losing the precise orientation required for proper operation of the instrument. The grating is formed with a straightedge at a fixed angle to the axis of the rulings. The grating also includes a positioning plane surface at a fixed angle to the plane of the rulings. The mount includes a guide slot for receiving the straightedge and three contact pads defining a reference plane, both the guide means and the reference plane being precisely oriented with respect to the principal optical path of the instrument. The relationship between the reference plane formed by the contact pads and the guide means is the same as the relationship between the plane positioning surface and the straightedge on the grating. A spring loaded pressure member holds the mounted grating firmly in place and the planes and straightedge ensure precise reproducible positioning.

3,433,558
LENS GROUP EMPLOYED IN LASER CAVITIES
Raymond E. Tibbetts, Mahopac, and Janusz S. Wilczynski, Ossining, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,775
U.S. Cl. 350—225 1 Claim
Int. Cl. G02b 9/12



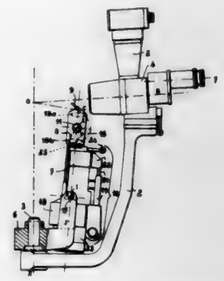
A four element lens group suitable for use in laser cavities. The lens group consists of a first meniscus lens, a second meniscus lens, a double convex lens and a double concave lens. An application of the lens group is the positioning of a pair of such groups in an angularly degenerate laser cavity to convert the angularly degenerate modes of oscillation into parallel modes of oscillation.

3,433,559
VARIABLE FOCAL LENGTH OPTICAL SYSTEM
Karl Vockenhuber, Potzleinsdorferstrasse 118, Vienna XVIII, Austria, and Karl Bystricky, Wiener Neudorf, Austria; said Bystricky assignor to said Vockenhuber
Filed Feb. 25, 1964, Ser. No. 347,309
Claims priority, application Austria, Mar. 1, 1963, A 1,626/63
U.S. Cl. 350—42 8 Claims
Int. Cl. G02b 7/04, 7/10, 9/00



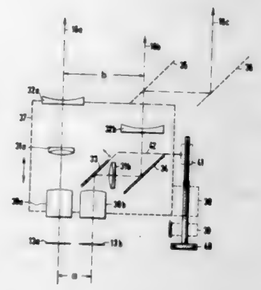
An optical system for photographic or cinematographic apparatus, which comprises an objective of variable focal length comprising at least two members defining an optical axis. At least one objective member is arranged for movement along the optical axis for varying the focal length. The objective forms a real intermediate image. The position of the latter is variable in dependence on a variation of the focal length of the objective. At least one inverting system is arranged on the optical axis in series with the objective forming a real image of the intermediate image. At least one member of the inverting system is arranged for continuous movement along the optical axis for continuously varying the magnification factor of the inverting system. The movable member of the inverting system is displaced along the optical axis simultaneously with the movable member of the objective in such manner, that the plane of the image formed by the inverting system is invariable, when varying the focal length of the total system. An aperture diaphragm is provided between the movable member of the inverting system and the locus of the image formed by the inverting system. An image of the aperture diaphragm is being formed within the objective, and the inverting system forming the image of the diaphragm on the optical axis so that the movable member will move through the image of the diaphragm.

3,433,560
OPHTHALMOLOGICAL SLIT LAMP
Paul Frédéric Marie Gambs, 140–142 Rue Mazenod, Lyon, France
Continuation of application Ser. No. 219,910, Aug. 28, 1962. This application Sept. 21, 1967, Ser. No. 669,654
Claims priority, application France, Oct. 6, 1961, 41,911
U.S. Cl. 351—14 2 Claims
Int. Cl. A61b 3/10



An ophthalmological slit lamp structure wherein the angle of incidence of the slit imaging beam at the eye may be varied or the magnification of the image may be changed without disturbing the focusing of the image of the slit upon the eye. The slit lamp structure comprises a slit with its lamp and condenser lens and an objective lens which focuses a real image of the slit on a particular portion of the eye, the image and the particular portion of the eye on which it is formed being observed by means of a microscope.

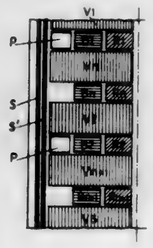
3,433,561
STEREO MOVING PICTURE CAMERA
Jan Louis Wulff Jacobsen, Copenhagen, Denmark, assignor to CCT Cinema Camera Technik AG, Zurich, Switzerland
Filed Oct. 11, 1966, Ser. No. 585,867
Claims priority, application Germany, Oct. 21, 1965, J 29,224
U.S. Cl. 352—60 5 Claims
Int. Cl. G03b 35/10



1. Optical system for a stereo moving picture camera for simultaneously taking two pictures by means of two objectives on a film at a predetermined center to center

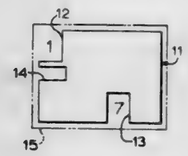
image distance from one another, said system comprising two objectives arranged with their optical axes at a distance from one another corresponding generally to said image distance on the film and deflecting mirror means for increasing the spacing between the optical axes for taking pictures to a distance corresponding generally to the spacing between the human eyes, said mirror means for increasing the spacing between the optical axes being associated with only one of said objectives and comprising a pair of deflecting mirrors, while said other objective has its optical axis coinciding with the axis of light rays entering from the object photographed.

3,433,562
COLOR CINEMATOGRAPHIC FILM
Charles Michelson, Paris, France, assignor to Teverama S.A.
Filed Jan. 19, 1967, Ser. No. 610,405
Claims priority, application France Jan. 20, 1966, 46,654; Apr. 5, 1966, 56,517
U.S. Cl. 352—234 6 Claims
Int. Cl. G03b 1/76



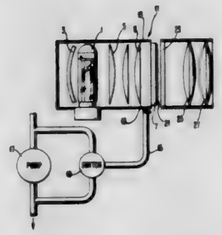
A color cinematographic film applying the three-color additive process and bearing groups of three conjugate, elementary, black-and-white images corresponding to a single, projected, color, composite image, characterized in that: (i) the elementary images of the same group are of different size, the "green" one being the largest, (ii) the large "green" images project laterally into the space between successive perforations and are longitudinally spaced from each other to leave an interval therebetween, and (iii) the smaller "blue" and "red" images are positioned side-by-side in the interval between the green images.

3,433,563
PHOTOGRAPHIC PRINTING MASK
Saul Beckerman, 90 Rose Hill Place, Irvington, N.J. 07111
Filed Sept. 28, 1966, Ser. No. 582,695
U.S. Cl. 355—54 1 Claim
Int. Cl. G03b 27/44



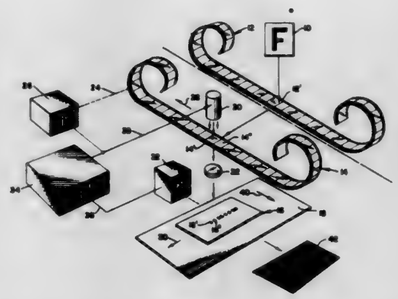
A photographic mask with only two apertures, adjustable to four different positions, to accomplish eight different exposures with only one mask.

3,433,564
VACUUM TRANSPARENCY HOLDER AND OPTICS
Roy J. Lahr, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 15, 1966, Ser. No. 557,713
U.S. Cl. 355—76 3 Claims
Int. Cl. G03b 27/64



A transparency is held in place for optical viewing at the object plane of the viewing apparatus by providing a porous, fritted glass plate having one side located at the object plane and forming one wall of a closed chamber. A vacuum pump is provided which is connected to the chamber so that a pressure differential between the two sides of the plate can be created. When the pressure on the object plane side is made greater than that in the closed chamber by partially evacuating the air from the chamber, the transparency will be held and supported in place on the glass plate by air pressure. When it is desired to remove the transparency, the pressure in the closed chamber is increased by the pump to permit the transparency to be removed and also to force air through the pores of the plate to blow out any dirt and impurities from the plate which were brought in during the application of the vacuum to the closed chamber.

3,433,565
MICRO-FILMING PROCESS
Leslie M. Roush, Westbury, N.Y., assignor, by mesne assignments, to Microform Data Systems, Inc., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,553
U.S. Cl. 355—77 2 Claims
Int. Cl. G03b 21/64, 27/32



A method for producing a matrix of microimages comprises the steps of preparing a serial record of the images preferably on thirty-five mm. film, thereafter incrementally stepping the film while continually moving a flat sheet of photosensitive material in a first direction, and ener-

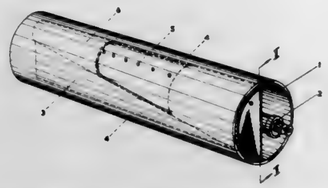
gizing a lamp to expose successive portions of the photosensitive material in a first row in order to reproduce consecutively the serially recorded images on the thirty-five mm. film. At the end of a row the sheet is stepped in a direction transverse to the first direction and the process repeated to provide successive rows.

3,433,566

COOLING MEANS FOR AN EXPOSURE CYLINDER OF PHOTOPRINTING APPARATUS

Franciscus Petrus Albertus Blatter, Venlo, Limburg, Netherlands, assignor to Chemische Fabriek L. van-der Griten N.V., Venlo, Netherlands, a corporation of the Netherlands

Filed July 27, 1966, Ser. No. 568,241
Claims priority, application Netherlands, Aug. 2, 1965, 6510002
U.S. Cl. 355—110 **9 Claims**
Int. Cl. G03b *27/10*



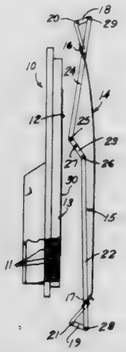
A photoprint exposure cylinder enclosing one or more tubular lamps is cooled evenly, with little noise, by air blown into one end, passed out of the other end, and distributed inside the cylinder, at least in part, through a long conical duct diminishing in width toward the outlet end of the cylinder and provided with orifices distributed evenly along and opening laterally into the region occupied by the lamps. Tangentially directed orifices cause whirling of the air in that region; air can flow from it over and under a partition forming part of the conical duct.

3,433,567

CONTACT SCREEN APPLICATION TO VACUUM FILM HOLDER

Paul A. MacPhee, Barrington, Walter Wanielista, Westchester, and Richard R. Jeschke, Niles, Ill., assignors to Robertson Photo-Mechanix, Inc., Des Plaines, Ill., a corporation of Illinois

Filed June 6, 1966, Ser. No. 555,440
U.S. Cl. 355—76 **10 Claims**
Int. Cl. G03b *21/00, 27/20*



A graphic arts camera having apparatus for applying a flexible contact type half-tone screen to the face of a vacuum film support without wrinkles or air bubbles thereby assuring a smooth overlay of the screen relative to a film sheet and to a means for supplying various size flexible contact type half-tone screens interchangeably to a position for being applied selectively to the vacuum film holder.

ERRATUM

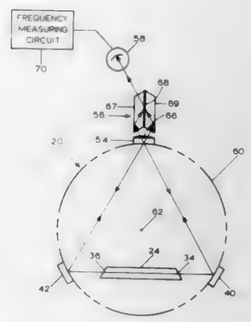
For Class 355—79 see:
Patent No. 3,434,078

3,433,568

MOTION SENSING APPARATUS

Clement A. Skalski, Cambridge, Mass., and John C. Stiles, Mountain Lakes, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware

Filed Jan. 21, 1964, Ser. No. 339,132
U.S. Cl. 356—106 **3 Claims**
Int. Cl. H01s *3/00*



1. Motion sensing apparatus comprising three spherical mirrors fixed about a common center in equally spaced relation about the equator of the sphere defined by the mirrors to form an equilateral trangular optical circuit, means for generating counter-rotating light beams in said equilateral triangular optical circuit each having the same wave length, one of said mirrors transmitting a fraction of the light beams therethrough, said one mirror having a planar rear surface, a plano-convex lens behind said one mirror having its planar surface facing the planar rear surface of said one mirror, the confronting flat faces of said mirror and lens defining a wedge angle to eliminate the effect of reflections, the convex surface of said plano-convex lens having the same radius of curvature as said one mirror for straightening the wave fronts of the light beams transmitted through said one mirror, combining circuit means for combining the light beams from said convex lens into one beam, a photo-detector energized by said one beam, and frequency measuring means for measuring any beat frequency in the output of said photo-detector resulting from rotation of the apparatus.

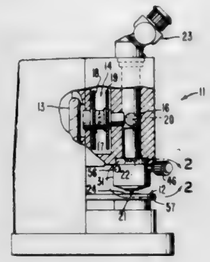
3,433,569

HOLDER AND POSITIONING MECHANISM FOR THE PLATES OF A MULTIPLE BEAM INTERFEROMETER

Arthur B. Francis, Los Altos Hills, Calif., assignor to Varian Associates, Palto Alto, Calif., a corporation of California

Filed Jan. 14, 1966, Ser. No. 536,240
U.S. Cl. 356—109 **7 Claims**
Int. Cl. G01b *9/02;* **G02b** *21/24*

The present invention relates to a plate positioning mechanism wherein the air wedge angle between the specimen and an optically flat plate is adjusted by pivoting one of the plates about the centricity of its surface facing the other plate. It comprises a pair of columnar mem-



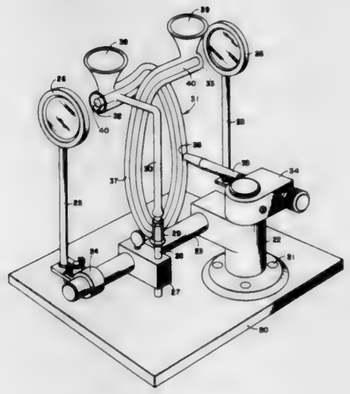
bers, one received within the other and having spherically contoured surfaces at their periphery interface whereby the center of curvature of the spherical surfaces coincides with the center of the surface of plate.

3,433,570

MULTIPLE ATTENUATED TOTAL REFLECTION APPARATUS AND METHOD

Wilford N. Hansen, Thousand Oaks, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed July 15, 1963, Ser. No. 295,153
U.S. Cl. 356—128 **5 Claims**
Int. Cl. G01n *21/46;* **G01j** *3/00*



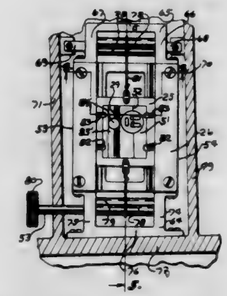
This disclosure relates to spectrophotometric techniques and a light-pipe cell for use in studying homogeneous phases or surfaces and related phenomena. The cell comprises a light-pipe surrounded by an absorbing phase of smaller refractive index than the pipe and in optical contact. Light is passed down the light-pipe suffering numerous near-total reflections at the phase boundary. At each reflection the electromagnetic energy penetrates the absorbing phase to a small extent and interacts therewith to provide a resulting spectrum of the phase at the boundary.

3,433,571

FOCAL PLANE MICROMETER FOR READING THE SCALES OF ENGINEERING INSTRUMENTS

Amber N. Brunson, Kansas City, Mo., assignor to Brunson Instrument Company, Kansas City, Mo., a corporation of Missouri

Filed Oct. 18, 1965, Ser. No. 497,054
U.S. Cl. 356—139 **10 Claims**
Int. Cl. G01c *1/06;* **G02b** *17/04, 27/02*



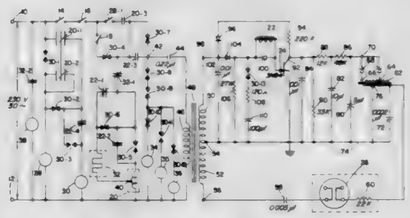
The invention depicts a focal plane micrometer for reading the scales of an engineering instrument, such as a theodolite. The micrometer comprises a fiducial line located on a transparent plate which is slideable along an axis at an acute angle to the line. As the plate slides along its axis the line traverses a path along the divisions of the scale being read. Indicia are provided to indicate the position of the fiducial line.

3,433,572

ELECTRICAL CONTROL CIRCUITRY FOR USE IN COMBUSTION SUPERVISION SYSTEMS

Philip Giuffrida, North Andover, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts

Filed June 22, 1967, Ser. No. 647,980
U.S. Cl. 431—31 **12 Claims**
Int. Cl. F23n *5/08, 5/20*



A combustion supervision system includes a control relay which energizes flame scanner electronics, a blower motor and a timer motor in response to a call for heat. The scanner electronics include a Geiger-Müller ultraviolet radiation detector which in response to flame applies pulse signals to the input circuit of a Type 3N84 silicon controlled rectifier (SCR). The SCR is energized from an AC source, so that it normally becomes nonconducting during alternate half cycles. During a prepurge cycle controlled by the timer motor that timer closes contacts to connect an RC circuit across the SCR which circuit, so connected, prevents the SCR from ceasing conduction during those alternate half cycles. Should the SCR become conductive while the RC circuit is connected, a safety lockout switch will operate which must be manually reset in order to restart the system. If the SCR does not become conductive, the timer opens the connection between the RC circuit and the SCR prior to the ignition cycle and controls that cycle and the subsequent combustion cycle to establish flame in the combustion chamber which is supervised by the radiation detector.

CHEMICAL

3,433,573

ETHYLENE/VINYL ACETATE POLYBLENDS WITH POLYMERS OF 1-OLEFINS

Harry P. Holladay and Ival O. Salyer, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 27, 1960, Ser. No. 24,872

U.S. Cl. 8—55 17 Claims
Int. Cl. C08f *29/12, 37/18*

Compositions are disclosed comprising blends of 5 to 95% by weight of a propylene polymer containing a major amount of propylene and 95 to 5% by weight of a copolymer of ethylene with a polar monomer such as vinyl acetate, methyl methacrylate, vinylene carbonate, alkyl acrylates, vinyl halides and vinylidene halides. Suitable blends contain crystalline polypropylene and an ethylene-vinyl acetate copolymer. The compositions may be formed into fibers, films and molded articles of improved dyeability and low temperature characteristics.

3,433,574

DYE LEVELLER CONTAINING AN ANIONIC OR NON-IONIC DETERGENT WITH A FOAM DEPRESSANT MIXTURE OF AN ALKYL ESTER OF AN ALKANOIC ACID, AN ALKYL PHOSPHATE, AND A FATTY ACID OR SOAP

Walter Dürsch and Franz Landauer, Frankfurt am Main, Martin Reuter, Kronberg, Taunus, and Gerhard Weckler, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,224

Claims priority, application Germany, Oct. 23, 1964, F 44,291

U.S. Cl. 8—89 4 Claims
Int. Cl. D06m *13/20;* D06p *1/68*

The invention depresses foaming of non-ionic and anionic detergents in a reactive dye or vat dye bath by adding .05 to 4 parts of an alkyl ester of an alkanoic acid wherein at least one of the alkyl radicals of the ester shows at least one ramification of 1 to 4 carbon atoms, .05 to 2 parts of a 4–8 carbon alkyl phosphate, .05 to 1 part of a fatty acid or soap per 10 parts of the non-ionic and/or anionic detergent. Ethylene and/or propylene oxide condensates of fatty alcohols and 4–9 carbon alkyl substituted phenol, fatty alcohol sulfates, sulfonate condensation products of fatty acids with taurines and hydroxyethane sulfonic acid including urethane sulfonates, and other alkyl and aryl sulfonates. An example of the detergent of suppressed foaming tendencies shows a mixture of 5.7% condensate of 8 moles of ethylene oxide and iso-tri-decyl alcohol, 2.8%

$$C_8H_{17}O—CON—(C_8H_{17})C_2H_4SO_3Na$$

16.8% sodium salt of hexa-decylsulfonic acid, 1.7% stearic acid, .8% NaOH (33% strength), 1% tri-isobutyl phosphate, .5% sodium hexametaphosphate, 6.7 2-ethyl-caproic-2 ethyl butyl ester and 64% H_2O. 20 parts per liter or a vat dye, C.I. No. 71,000, were mixed with 10 parts per liter of the above detergent mixture, padded on tent cloth, dried and vatted.

3,433,575

POLYURETHANE ASSOCIATED WITH FIBROUS SUBSTRATE THROUGH REACTION WITH POLYAMIDE

Robert E. Whitfield, Pleasant Hill, Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application May 28, 1964, Ser. No. 371,150, now Patent No. 3,372,978, dated Mar. 12, 1968. Divided and this application May 12, 1967, Ser. No. 655,692

U.S. Cl. 8—115.5 2 Claims
Int. Cl. D06m *15/42*

1. Fibrous material carrying a deposit of

a pre-formed polyurethane having a molecular weight of at least 1000 and containing *n* free isocyanate groups,

cross-linked in situ on the fibrous material through reaction with a polyamine containing *m* amino groups,

n and *m* each having a value of at least 2, the sum of *n* and *m* being at least 5,

said product being prepared by serially impregnating fibrous material with two solutions, one solution containing in a first solvent the said pre-formed polyurethane, the other solution containing in a second solvent the said polyamine, the said first and second solvents being substantially mutually immiscible, the said pre-formed polyurethane directly cross-linking with the polyamine under said conditions to form a three-dimensional polymer on the fibrous material.

3,433,576

MODIFICATION OF PROTEINACEOUS POLYMERS WITH CARBOXYLIC-CARBONIC ANHYDRIDES

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,207

U.S. Cl. 8—127.5 18 Claims
Int. Cl. D06m *3/02, 13/20*

1. A method for the chemical modification of proteinaceous polymers which comprises reacting said polymers with a carboxylic-carbonic anhydride represented by the structural formula:

R—COOCOOR′

wherein R is selected from the group consisting of alkyl, aryl, aralkyl, R′ is an alkyl group containing from 1 to 4 carbon atoms and wherein R+R′ taken together may be a divalent cyclic organic group.

3,433,577

VAPOR PHASE CORROSION INHIBITION

Philip E. Shick, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Aug. 19, 1964, Ser. No. 391,077

U.S. Cl. 21—2.5 9 Claims
Int. Cl. B65d *85/00;* C23f *15/00*

A method of protecting metal articles of manufacture from atmospheric corrosion which comprises packaging the articles in a packaging material which has been treated with a vapor phase corrosion inhibitor composition consisting essentially of sodium nitrite and sodium phosphate.

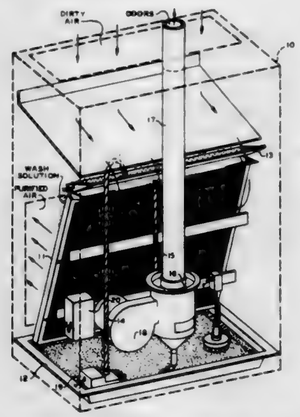
3,433,578

BIOCIDAL WASHING COMPOSITION AND METHOD

James A. Reid, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 8, 1963, Ser. No. 314,667

U.S. Cl. 21—53 8 Claims
Int. Cl. A61l *9/00;* A61k *27/00*



A biocidal composition, and a method for washing filters and air purification systems utilizing said composition, consisting of a major portion of water and a minor portion of a blend of a polyhydroxy alcohol and a glycol ether.

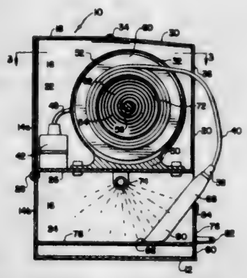
3,433,579

STERILIZER CABINET

Ace M. Runnion, 1395 S. Milwaukee St., Denver, Colo. 10210

Filed Mar. 29, 1965, Ser. No. 443,602

U.S. Cl. 21—83 5 Claims
Int. Cl. A61l *3/00*



Sterilizer cabinet having a superimposed compartment above the sterilization compartment containing a plurality of reaved power cords adapted to pass out of the compartment through suitably located openings onto the outside of the cabinet where they remain permanently attached to an appliance, and immediately beneath the cord-reel compartment is an opening communicating the interior of the sterilization compartment through which the functional portions of the appliances are passed to receive ultraviolet radiation.

3,433,580

OZONE SCAVENGER

Rudolf Deuringer, El Toro, Calif., assignor to Beckman Instruments, Inc., a corporation of California

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,123

U.S. Cl. 23—2 7 Claims
Int. Cl. C01b *13/00*

The specification discloses an azone scavenger and a method for producing the scavenger. The scavenger comprises a silver body which has been treated by coating the body with silver sulfide and then heating the body in an oxygen containing atmosphere to oxidize the silver sulfide coating so as to produce a dull white surface thereon. The scavenger removes azone from a gas stream but does not affect SO_2 therein.

3,433,581

OXIDATION CATALYSTS

Ruth E. Stephens, Detroit, Daniel A. Hirschler, Jr., Birmingham, and Frances W. Lamb, Orchard Lake, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Mar. 30, 1961, Ser. No. 99,381, now Patent No. 3,226,340, dated Dec. 28, 1965. Divided and this application Oct. 21, 1965, Ser. No. 500,331

U.S. Cl. 23—2 8 Claims
Int. Cl. B01j *11/00;* B01d *53/00*

Exhaust gas hydrocarbon and carbon monoxide are reduced by contact with an alumina supported laminar catalyst in which an inner lamina is an oxide of a First Transitional Series or Lanthanide Series Element and the outermost lamina is a copper oxide.

3,433,582

PROCESS FOR PRODUCING HYDROGEN PEROXIDE AND AN ALKALI METAL PERBORATE

John Stewart Campbell, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 2, 1964, Ser. No. 380,051

Claims priority, application Great Britain, July 23, 1963, 29,127/63

U.S. Cl. 23—60 17 Claims
Int. Cl. C01b *15/12, 15/02*

A process for production of hydrogen peroxide is disclosed, wherein hydrogen and oxygen are contacted with a solid catalyst in a liquid medium containing water and dissolved boric acid. An alkali metal perborate may be produced by adding alkali metal borate, boric acid and alkaline compound of alkali metal to the hydrogen peroxide solution to convert the peroxide to the perborate.

3,433,583

PROCESS FOR REMOVAL OF SALTS FROM AQUEOUS SOLUTIONS WITH SOLID METHYLENEDIANILINE

Howard V. Hess, Glenham, and Frederic C. McCoy, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed June 28, 1967, Ser. No. 649,535

U.S. Cl. 23—89 7 Claims
Int. Cl. C01d *3/12, 3/10, 3/04*



A process for removing certain sodium and lithium salts from concentrated aqueous solutions in the form of insoluble precipitates by reacting said salts with solid 4,4′-methylenedianiline.

3,433,584
PRODUCTION OF POTASSIUM NITRATE FROM CALCIUM NITRATE

Thomas W. Segar, Minneapolis, and Ting Sin Go, Rosemount, Minn., assignors to St. Paul Ammonia Products, Inc., St. Paul, Minn., a corporation of Minnesota

Filed Mar. 7, 1966, Ser. No. 532,169
U.S. Cl. 23—102 7 Claims
Int. Cl. C01d 9/12

A process is provided for producing potassium nitrate from the reaction mixture of potassium chloride and calcium nitrate in aqueous solution by subjecting the remaining liquid following potassium nitrate precipitation to liquid-liquid extraction with a solvent for calcium nitrate to recover the nitrate values for reuse while avoiding any problem of coprecipitation of potassium chloride with potassium nitrate, thereby greatly increasing the effective yield of potassium nitrate in the process.

3,433,585
PROCESS FOR THE MANUFACTURE OF CONDENSED ALKALI METAL PHOSPHATES

Wolfgang Brockmüller, Dortmund-Syburg, and Gerhard Hartlapp and Horst-Heinrich Weizenkorn, Hermulheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed July 20, 1965, Ser. No. 473,507
Claims priority, application Germany, July 22, 1964, K 53,530
U.S. Cl. 23—106 7 Claims
Int. Cl. C01b 25/30

A single step process for producing substantially pure condensed alkali metal polyphosphates by utilizing the corresponding impure neutralized phosphate alkali salt solution containing up to 5000 p.p.m. fluorine based on P_2O_5, comprising spraying substantially neutralized alkali phosphate salt solution in a tower under temperature and moisture conditions to effect issuance of off-gas at not less than 300° C. and containing 150–400 gm. water per kg. gas said phosphate solution containing about 40–70% solids.

3,433,586
PROCESS FOR THE MANUFACTURE OF MAGNESIUM HYDROGEN-PHOSPHATE TRIHYDRATE

Heinz Harnisch, Lovenich, near Cologne, Joseph Cremer, Hermulheim, near Cologne, and Friedrich Schulte, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,082
Claims priority, application Germany, Jan. 29, 1965, K 55,137
U.S. Cl. 23—109 11 Claims
Int. Cl. C01b 25/32

Production of secondary magnesium hydrogen-phosphate trihydrate by simultaneously introducing (a) phosphoric acid and/or a solution of an alkali metal monophosphate, (b) a solution of a magnesium salt and (c) a solution of an alkali metal oxide and/or carbonate into a reactor rapidly and intimately mixing (a), (b) and (c) and recovering the reaction product by filtration.

3,433,587
METHOD FOR PREPARING CRYSTALLINE ZEOLITE CATALYST

Walter L. Haden, Jr., Metuchen, and Frank J. Dzierzanowski, Somerset, N.J., assignors, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Menlo Park, Edison, N.J., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,357
U.S. Cl. 23—112 10 Claims
Int. Cl. C01b 33/28

In the preparation of a microspherical crystalline zeolitic cracking catalyst from a reaction mixture including calcined kaolin clay and sodium hydroxide solution, the reactants are spray dried while controlling the proportion of carbon dioxide in the atmosphere relative to the oxides of sodium in the particles. The particles are crystallized after formation by spray drying.

3,433,588
METHOD FOR THE PREPARATION OF 4 ANGSTROM UNIT ZEOLITES

Max Michel, Sarcelles-les-Rosiers, and Denis Papee, Paris, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,626
Claims priority, application France, Mar. 20, 1964, 968,128
U.S. Cl. 23—113 6 Claims
Int. Cl. C01b 33/28

The invention relates to the preparation of an improved synthetic sodium zeolite and to the process for the preparation of same comprising gradually adding a sodium silicate liquor to a sodium aluminate liquor to form a precipitate and in which the sodium silicate liquor has a ratio of Na_2O/SiO_2 within the range of .5 to 10 and a ratio of H_2O/Na_2O within the range of 5 to 50, and in which the sodium aluminate liquor has a ratio of Na_2O/Al_2O_3 within the range of 1.2 to 2 and a ratio of H_2O/Na_2O within the range of 20 to 50, agitating the mixture during the addition of the sodium aluminate liquor and in which the sodium silicate liquor is added to the sodium aluminate liquor in an amount and rate to maintain the concentration of Na_2O in the liquid phase relatively constant during the precipitation while constantly removing silica for substantially complete removal of silica from the resulting liquid phase and to remove not more than 80% of the alumina present in the sodium aluminate liquor, and aging the precipitate at a temperature within the range of 60–90° C. for a period of time which may range from 1 to 3 hours.

3,433,589
METHOD OF PREPARING FAUJASITE-TYPE CRYSTALLINE ZEOLITES

Julius Ciric, Pitman, and Luther J. Reid, Jr., Audubon, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,813
U.S. Cl. 23—113 12 Claims
Int. Cl. C01b 33/28

Preparing crystalline aluminosilicate material having a faujasitic crystal structure by preparing an initial reaction mixture of M_2O wherein M is an alkali metal cation or a quaternary alkyl ammonium cation, alumina, silica and water and wherein the molar M_2O/SiO_2 ratio is above 0.7, heating this mixture at a temperature below 212° F. for a time less than 192 hours, adjusting the composition to form a second reaction mixture having a molar M_2O/SiO_2 ratio below 0.7 and digesting said mixture at a temperature below 300° F. until faujasitic type crystals form.

3,433,590
DRY STABILIZED ALKALI METAL DITHIONITE COMPOSITIONS

Marina Adriana van Damme-van Weele, Hengelo, and Dirk Cornelis de Groot, Delden, Netherlands, assignors to N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo, Netherlands, a corporation of the Netherlands

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,388
Claims priority, application Netherlands, Apr. 14, 1964, 6404003
U.S. Cl. 23—116 4 Claims
Int. Cl. C01b 17/98

Dry alkali metal dithionite compositions stabilized with respect to decomposition by exposure to air or moisture

are produced by reacting the dithionite with a compound selected from the group consisting of propionaldehyde, butyraldehyde, valeraldehyde and benzaldehyde.

3,433,591
PROCESS FOR THE PRODUCTION OF CHLORINE AND POTASSIUM SULFATE

Pietro Saccardo, Milan, and Franco Smai, Novate Milanese, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed May 3, 1966, Ser. No. 547,150
Claims priority, application Italy, May 17, 1965, 11,087/65
U.S. Cl. 23—121 7 Claims
Int. Cl. C01d 5/02; C01b 7/02

The preparation of neutral potassium sulfate and chlorine gas by continuously reacting potassium chloride with a mixture of sulfuric, nitrosylsulfuric and nitric acids, whereby there are formed solid potassium sulfate and a gaseous mixture of chlorine and nitrosyl chloride. The nitrosyl chloride is oxidized to chlorine and nitrogen dioxide, which nitrogen dioxide is then treated with sulfuric acid to regenerate the reactant acid mixture. In said reactant mixture the acids are present in substantially equimolar ratios and the same is preheated to elevated temperatures.

3,433,592
METHOD OF PURIFYING PHOSPHORIC ACID

Avraham Baniel, 20 Horeb St.; Ruth Blumberg, 25 Vitrkin St.; and Alexander Alon, 16a Tel-Maneh St., all of Haifa, Israel

Continuation-in-part of application Ser. No. 279,182, May 9, 1963. This application Apr. 7, 1966, Ser. No. 540,968
U.S. Cl. 23—165 5 Claims
Int. Cl. C01b 25/22; B01j 9/22

Wet process phosphoric acid produced by decomposing phosphate rock with either sulphuric or hydrochloric acid is extracted from the aqueous phase with an organic substantially water immiscible solvent. The degree of extraction and the purity of produced phosphoric acid is enhanced by controlling the calcium chloride content with respect to the P_2O_5 concentration in the aqueous medium prior to the extraction with the organic solvent.

3,433,593
PROCESS FOR PRODUCING FINELY-DIVIDED PRECIPITATED SILICA

Helmut Reinhardt, Frankfurt am Main, and Peter Nauroth, Wesseling Bezirk Cologne, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany a corporation of Germany

No Drawing. Filed June 24, 1966, Ser. No. 560,114
Claims priority, application Germany, July 2, 1965, D 47,633
U.S. Cl. 23—182 5 Claims
Int. Cl. C01b 33/18

Finally divided precipitated silica produced from water glass with mineral acid having a large specific surface area, low iron content, slight sedimentation and low viscosity is provided by precipitation at an acidic pH below 5 in the presence of substances which form soluble complex compounds with iron such as the combination of an inorganic fluoride and an organic acid, alcohol or the amides and amines thereof. Because of their unique combination of properties and especially their low iron content, such silicas are especially useful in coatings for reproduction papers. Favorable viscosity characteristics are obtained by grinding the silicas in a gas or jet mill subsequent to precipitation.

3,433,594
PROCESS FOR PREPARING PIGMENTARY TITANIUM DIOXIDE

William L. Wilson, Barberton, Harry Lott, Jr., Akron, and Albert Dietz, Wadsworth, Ohio, assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,317
U.S. Cl. 23—202 8 Claims
Int. Cl. C01g 23/04; C09c 1/36

Pigmentary titanium dioxide prepared by vapor phase oxidation of titanium tetrahalide is improved by contacting titanium dioxide entrained in gaseous effluent withdrawn from the vapor phase oxidation reaction zone with a source of at least one Group I metal, Group II metal and silicon.

3,433,595
METHOD OF PREPARING DIFLUORAMINE AND PREPARING TETRAFLUOROHYDRAZINE THEREFROM

Emil A. Lawton, Woodland Hills, and John Q. Weber, Topanga, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Original application Sept. 15, 1959, Ser. No. 804,066, now Patent No. 3,294,495. Divided and this application Aug. 29, 1963, Ser. No. 308,614
U.S. Cl. 23—205 2 Claims
Int. Cl. C01b 21/18

A fluorinating process for preparing difluoramine and a catalytic process for preparing tetrafluorohydrazine from the difluoramine.

3,433,596
PROCESS FOR OBTAINING PURE SELENIUM

Rolf Wagenmann, Helbra, and Günther Wehle, Eisleben, Germany, assignors to VEB Mansfeld Kombinat "W. Pieck," Eisleben, Germany

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,735
U.S. Cl. 23—209 2 Claims
Int. Cl. C01b 19/00

A process for obtaining selenium by precipitation from selenite solutions, comprising the steps of acidifying a selenium-containing aqueous solution, precipitating from the acidified solution magnesium selenite by the addition of a magnesium- and an ammonium salt with subsequent addition of ammonia until a pH of 7.5 to 8.5 is reached, filtering the precipitate and dissolving it once more in an acid solution, and finally recovering pure selenium from said solution by introducing SO_2 into the same.

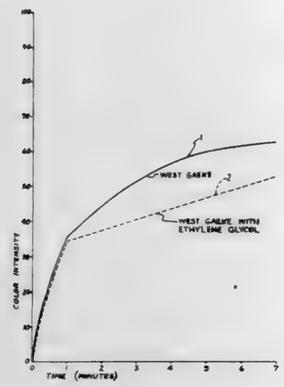
3,433,597
COLORIMETRIC REAGENT FOR ANALYSIS OF SULFUR DIOXIDE IN AIR

Norman A. Lyshkow, Chicago, Ill., assignor to Precision Scientific Company, Chicago, Ill., a corporation of Delaware

Filed June 21, 1965, Ser. No. 465,300
U.S. Cl. 23—232 9 Claims
Int. Cl. G01n 31/22, 31/00

A colorimetric reagent for detecting sulfur dioxide in

air including concentrated hydrochloric acid as the bleach-

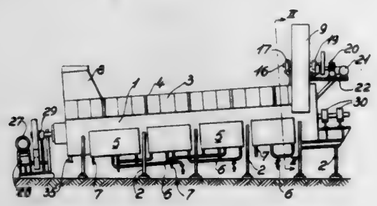


ing agent, p-rosaniline hydrochloride as the dyestuff, formaldehyde and ethylene glycol.

3,433,598
LIXIVIATING APPARATUS

Axel Valdemar Faaborg-Andersen, Rungsted Kyst, and Poul Jensen, Hellerup, Denmark, assignors to Aktieselskabet de Danske Sukkerfabrikker, Copenhagen, Denmark

Filed Nov. 4, 1965, Ser. No. 506,338
Claims priority, application Denmark, Nov. 10, 1964, 5,539/64
U.S. Cl. 23—270 **3 Claims**
Int. Cl. B01d *11/02*

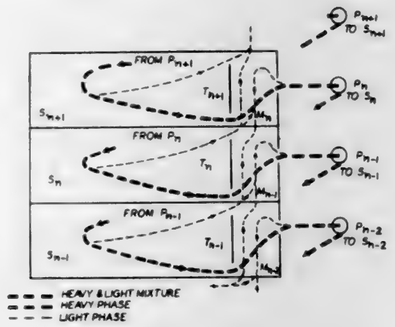


1. A continuous lixiviating apparatus of the type comprising a trough inclined from the horizontal, at least two intermeshing helical screw conveyors having oppositely winding direction mounted side by side in said trough for rotation about mutually parallel axes extending longitudinally of said trough, a discharge apparatus mounted near the upper end of said trough, each of said conveyors having a principal helical screw portion extending from the lower end of said trough to adjacent said discharge apparatus, said principal screw portions being adapted to convey disintegrated material supplied to the lower end of said trough in a principal direction of transportation toward said discharge apparatus countercurrent to the downward flow of lixiviating liquid, each of said conveyors having an auxiliary helical screw portion in the upper end of said trough spaced from the principal screw portion and having a direction of transportation which is opposite to the principal direction of transportation of disintegrated matter through said trough, said discharge apparatus comprising a further conveyor having its operative portion above and moving transversely to the axis of rotation of said screw conveyors and being mounted such that the path of movement of said further conveyor passes through the space between the principal screw portion and the auxiliary screw portion of said conveyors.

3,433,599
LIQUID-LIQUID EXTRACTOR

Wolf Mehner, Konigstein, Taunus, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed May 16, 1966, Ser. No. 550,471
Claims priority, application Germany, Oct. 12, 1965, M 66,916
U.S. Cl. 23—270.5 **7 Claims**
Int. Cl. B01d *11/04*



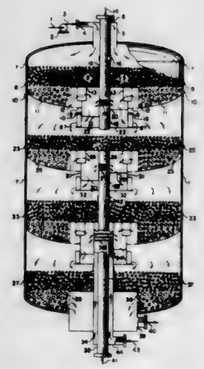
1. In a multi-stage liquid-liquid extractor comprising:
(a) a vertically disposed vessel having a plurality of vertically spaced, transverse plates dividing said column into a plurality of stages, a vertically extending divider disposed between adjacent plates, said dividers forming a plurality of overlying separator chambers and a plurality of overlying mixing chambers with a mixing chamber disposed laterally of each separating chamber,
(b) said dividers being spaced from the lower plates of each stage to provide means for communicating each separating chamber with the mixing chamber disposed laterally thereof for passage of heavier phase from the separating chamber to the laterally disposed mixing chamber,
(c) outlet conduit means communicating each mixing chamber with the next lower separating chamber, means for mixing the liquid passing through said outlet conduit means,
(d) lighter phase transfer means communicating each separating chamber with the first higher and the second higher mixing chambers for delivering a portion of lighter phase from a separator chamber to the first higher mixing chamber for recycle of said portion to said separating chamber and delivering another portion thereof to the second higher mixing chamber for advancing said other portion to the next higher separating chamber,
(e) a light liquid inlet and a heavy liquid outlet in the bottom portion of said vessel, and a light liquid outlet and a heavy liquid inlet in the top portion of said vessel,

the improvement in said lighter phase transfer means which comprises:
(f) a cover plate for each of said mixing chambers extending horizontally from the divider thereof to the wall of the vessel, two risers extending vertically upward from each of said transverse plates to within the next overlying mixing chamber and terminating short of the cover plate of said next overlying mixing chamber, the risers of the respective transverse plates being vertically aligned forming a first set and a second set of vertically spaced risers, said risers defining in conjunction with the wall portions of the vessel the lighter phase transfer means communicating each separating chamber with the next higher mixing chamber, means defining a passageway for transfer of a portion of the light phase passing upwardly through a riser to provide the lighter phase transfer means communicating each separating chamber with the second higher mixing chamber.

3,433,600
APPARATUS FOR EXOTHERMIC CATALYTIC REACTIONS

Axel Christensen, Stamford, Conn., and Chi Sheng Kuo, Mount Kisco, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,872
U.S. Cl. 23—288 **15 Claims**
Int. Cl. B01j *9/04;* **C01c** *1/04*



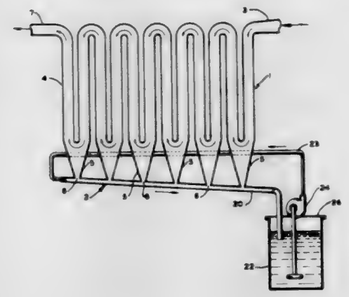
An apparatus is provided for carrying out exothermic catalytic reactions, in which the main process fluid stream is passed downwards through a plurality of catalyst beds arranged in vertical series in a container. The hot process fluid stream is quenched to a lower temperature by injection of a cold quench fluid between beds, by means of apparatus elements and structure including whirl vanes and baffles or curved whirl conduits which provide a circular motion during mixing and also divide the fluid streams into portions during mixing, so as to provide rapid mixing and uniform quench of the hot process fluid stream between catalyst beds.

3,433,601
CONDENSED PHOSPHORUS TRANSFER BY RECYCLED TURBULENT PHOSPHOROUS STREAM

Harry M. Stevens, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 7, 1965, Ser. No. 493,848
U.S. Cl. 23—293 **2 Claims**
Int. Cl. C01b *25/04*

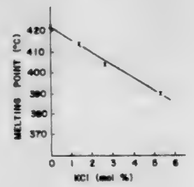
Phosphorus is recovered from a stream containing gaseous phosphorus and impurities by passing the stream to a condensing zone and indirectly cooling the stream in that zone to condense liquid phosphorus. The liquid phosphorus is exited to a collecting zone into a stream of recycled liquid phosphorus moving under turbulent flow conditions.



3,433,602
METHOD FOR GROWING SINGLE CRYSTALS

Toshio Inoguchi, Sakai-shi, Ichihiko Niwa, Osaka-shi, and Katsuro Nakazawa, Sakai-shi, Japan, assignors to Hayakawa Denki Kogyo Kabushiki Kaisha, Osaka, Japan

Filed Apr. 22, 1966, Ser. No. 544,605
Claims priority, application Japan, Jan. 29, 1966, 41/5,079; Feb. 16, 1966, 41/9,190
U.S. Cl. 23—300 **8 Claims**
Int. Cl. C01f *1/00;* **B01j** *17/00*



A method for obtaining single crystals of inorganic metal salts that have a transition point in crystallographic structure in substantially strain-free state, in which a relatively small amount of melting point depressant is added to lower the melting point of the mixture below the transition point of the particular metal salt crystal desired and a melt of the mixture is then cooled. The metal salt can be cuprous chloride and the depressant can be any one of the chlorides of sodium, potassium, calcium, barium, strontium, cadmium, lead, rubidium and silver.

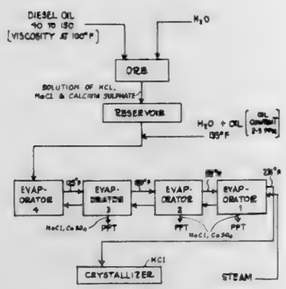
3,433,603
PREVENTION OF SULFATE SCALE FORMATION

Walter S. Jeffery, Regina, Saskatchewan, Canada, assignor to Kalium Chemicals Limited, Regina, Saskatchewan, Canada, a corporation of Canada

Filed July 8, 1966, Ser. No. 563,659
U.S. Cl. 23—300 **7 Claims**
Int. Cl. B01d *1/10*

Disclosed is a method of preventing sulfate scale on heat exchange surfaces in equipment used to concentrate aqueous KCl solutions containing NaCl and sulfates. Mineral oils and petroleum oils are disclosed for use as additive to the KCl solution being evaporated to inhibit sulfate scale on the heat exchange surfaces. Amounts

range from small quantities, i.e., 1 part oil per million parts of aqueous solution up to larger quantities. Oils



may be added in any quantity so long as it does not interfere with the evaporation process.

3,433,604

CALCIUM CHLORIDE AND BORIC ACID EXTRACTION FROM MAGNESIUM CHLORIDE BRINES USING DIOLS AND CATECHOLS

Robert R. Grinstead, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,414
U.S. Cl. 23—312 **12 Claims**
Int. Cl. B01j *9/20;* **C01f** *5/32, 11/22*

This invention relates to a process for separating calcium and boron values from relatively concentrated $MgCl_2$ brines. According to this process, magnesium chloride brines containing at least 30 weight percent $MgCl_2$ in addition to relatively small proportions of calcium and boron salts are extracted with an aliphatic vicinal diol having 8 to 20 carbon atoms or a 4-substituted catechol wherein the substituent is an alkyl or alkoxy group containing from 3 to 12 carbon atoms or a halogen. During the extraction, the pH is controlled such that the effluent calcium and boron depleted brine has a pH of between 2 and 6. The organic and aqueous phases are then separated and the calcium and boron values are separated from the organic phase.

3,433,605

PRODUCTION OF ALKALI METAL BOROHYDRIDES

Helmut Knorre, Hainstadt (Main), Günther Bretschneider, Gelnhausen, Heinrich Sauer, Grossauheim, and Karl Stephan, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed July 12, 1965, Ser. No. 471,297
Claims priority, application Germany, July 10, 1964, D 44,905
U.S. Cl. 23—361 **6 Claims**
Int. Cl. C01b *6/14*

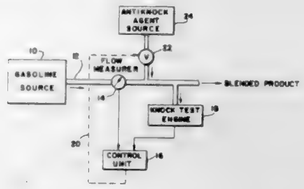
A method of producing alkali metal borohydride wherein an intimate finely divided mixture of (1) alkali metal and/or alkali earth metal borate, (2) Na_2O and (3) reducing metal is permitted to fall down freely through an elongated upright reaction chamber containing hydrogen while supplying heat from an external source only to a limited portion of the upper end of the reaction chamber just sufficient to ignite the mixture falling therethrough, permitting the heat of reaction of the falling ignited mixture to dissipate as it freely falls through the lower unheated portion of the reaction chamber so that the temperature of such falling mixture does not exceed 550° C. and collecting the reacted material at the lower end of the reaction chamber.

3,433,606

BLENDING METHOD AND APPARATUS

Ralph W. Moore and William R. Brennan, Stamford, Conn., assignors to Mobil Oil Corporation, a corporation of New York

Filed Nov. 12, 1963, Ser. No. 322,959
U.S. Cl. 44—2 **9 Claims**
Int. Cl. G01n *33/22;* **B67d** *5/04*



A method and means for blending gasoline wherein the addition of an antiknock agent to a base gasoline is controlled in accordance with the flow rate and knocking propensity of the gasoline. An embodiment includes a cam follower which is positioned in accordance with the flow rate of the base gasoline, a cam which is driven at a speed responsive to the knocking propensity of the gasoline; actuation of the cam follower by the cam controls the addition of the antiknock agent to the base product. Circuitry is disclosed whereby a signal from a knock test engine periodically changes the speed at which the cam is driven.

3,433,607

QUATERNARY AMMONIUM SALTS OF ESTERS OF SALICYLIC ACID AS RUST INHIBITORS

Elizabeth L. Fareri, Pittsburgh, Robert J. McGuire, Monroeville, and Harold O. Strange, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,717
U.S. Cl. 44—63 **8 Claims**
Int. Cl. C10l *1/22*

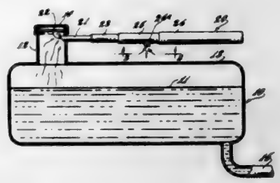
Quaternary ammonium salts of esters of salicyclic acid are used as rust inhibitors in hydrocarbon oil.

3,433,608

FUEL-LINE SYSTEM FOR AN INTERNAL-COMBUSTION ENGINE

Joseph Epifanio, Sr., Box 70, Paulsboro, N.J. 08066

Filed Oct. 21, 1965, Ser. No. 499,803
U.S. Cl. 48—180 **2 Claims**
Int. Cl. F02m *21/04*



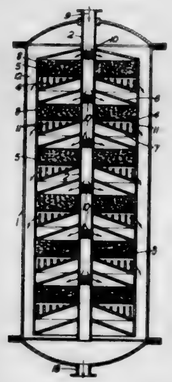
1. A fuel-line system for an internal-combustion engine and a liquid-fuel-holding tank having an upstanding fill neck, said system comprising a conduit having one end adapted for connection to the intake manifold of an internal-ocmbustion engine, the other end of said conduit passing laterally into said filler neck for communication with the interior thereof, a venturi orifice in said conduit to produce a relatively low-pressure region downstream of said orifice, and an auxiliary inlet carried by said conduit communicating between the ambient atmosphere and the low-pressure conduit region for drawing the air into said conduit in intimate mixture with said vapor, said conduit being telescopic for extension of said other conduit end a selected distance into said neck.

3,433,609

PROCESS FOR THE PRODUCTION OF GASES CONTAINING METHANE FROM HYDROCARBONS

George Percival and Thomas Alan Yarwood, Solihull, England, assignors to The Gas Council, London, England, a British body corporate

Filed Mar. 20, 1964, Ser. No. 353,381
U.S. Cl. 48—214 **15 Claims**
Int. Cl. C07c *3/42;* **C10l** *3/00;* **B01j** *9/04*



This invention is directed to a process for the production of gases containing methane by preparing a mixture of paraffinic hydrocarbons containing an average of 4–15 carbon atoms and steam, preheating the mixture to at least 350° C. and passing the mixture at a pressure of at least one atmosphere, at a linear velocity not exceeding 0.3 foot per second and a space velocity of at least 400 volumes per volume per hour through a bed of nickel-alumina catalyst maintained at temperatures of from 400° C. to 600° C. whereby substantially no carbon is deposited on the catalyst. Optionally, the catalyst may contain an oxide, hydroxide or carbonate of an alkali metal or alkaline earth metal or of magnesium.

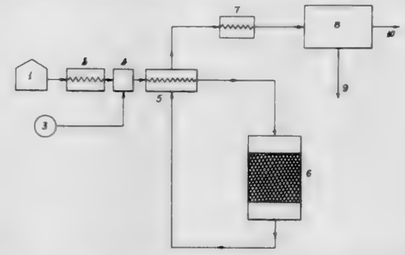
3,433,610

STEAM-REFORMING OF HYDROCARBONS FOR PRODUCTION OF HIGH METHANE CONTENT GAS

Harlan L. Feldkirchner, Chicago, Henry R. Linden, Hinsdale, and Amanullah R. Khan, Chicago, Ill., and Flaminio Todesca, Milan, Italy; said Feldkirchner, Linden, and Kahn assignors to Institute of Gas Technology, a corporation of Illinois

Filed June 1, 1965, Ser. No. 470,658
U.S. Cl. 48—214 **7 Claims**
Int. Cl. C10g *11/28, 11/02;* **B01j** *11/26*

A method of steam reforming gaseous hydrocarbons or liquid hydrocarbons or mixtures thereof which can be fed into a reactor in vapor form at operating conditions to produce a high methane content gas useful as a peak shaving pipeline gas partially or completely interchangeable with natural gas. The steam reforming is run in the presence of a nickel-alumina-aluminum catalyst at superatmospheric pressures in the range of between above about 5 to 30 atmospheres and at temperatures ranging from about 650° to 1,050° F. Typical hydrocarbon feed stocks are liquefied petroleum gases, petroleum naphthas, natural gasoline, kerosene and the like. For such feedstocks, the product gas after removal of carbon dioxide and water contains an excess of 70 mole percent methane. The steam-to-hydrocarbon weight ratio of feed material is maximally about 4.5:1, and minimally 2.6:1.

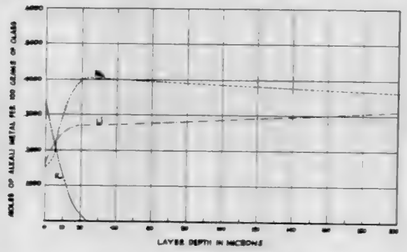


3,433,611

STRENGTHENING GLASS BY MULTIPLE ALKALI ION EXCHANGE

Arnold E. Saunders, Saxonburg, and Robert E. Kubichan, Tarentum, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania

Filed Sept. 9, 1965, Ser. No. 486,126
U.S. Cl. 65—30 **10 Claims**
Int. Cl. C03c *21/00*



The present invention relates to a method of preparing strengthened glass articles by ion exchange of an alkali metal containing glass with two or more different ions of greater ionic diameter than an alkali metal ion present in the glass. More particularly, the present invention relates to a method of strengthening lithium-containing glasses by contacting said glasses with a mixture of potassium and sodium salts below the strain point of said glass. The invention especially pertains to ion exchange strengthening of a lithium-containing glass by simultaneous exchange of potassium and sodium ions wherein the potassium ions are present in greater quantity than the sodium ions.

3,433,612

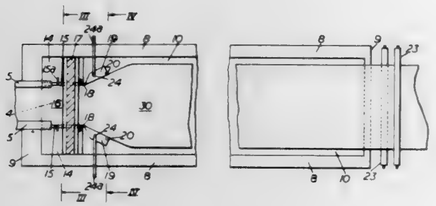
APPARATUS AND METHOD FOR MANUFACTURE OF FLOAT GLASS WITH RESTRICTED LATERAL SPREAD

George Alfred Dickinson, St. Helens, John Henry Morgan, Liverpool, and James Edward Celfyn Thomas, and Brian William Oxley, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Feb. 8, 1966, Ser. No. 525,976
Claims priority, application Great Britain, Feb. 25, 1965, 8,191/65
U.S. Cl. 65—99 **8 Claims**
Int. Cl. C03c *15/02*

Molten glass is delivered to a bath of molten metal, is

initially laterally contained on the bath and is then permitted restricted lateral spread controlled by surfaces of



a material wetted by the molten glass as a ribbon of float glass is developed.

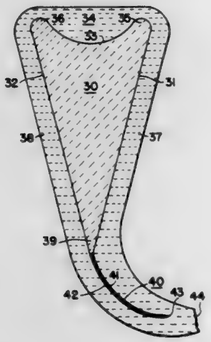
3,433,613

SHEET GLASS FORMING APPARATUS WITH MEANS TO TRANSFORM VERTICAL FLOWS INTO A HORIZONTAL FLOW

Stuart M. Dockerty, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 26, 1966, Ser. No. 523,119

U.S. Cl. 65—145 **3 Claims**
Int. Cl. C03 *17/00*



In the formation of sheet glass by the downdraw process, the downdraw flow of molten glass is transformed into a substantially horizontal draw by providing an arcuate or curvilinear internal support path for the molten glass, to thus facilitate the horizontal draw of newly formed sheet glass without contacting external surface portions thereof.

3,433,614

APPARATUS FOR MANUFACTURING FLAT GLASS

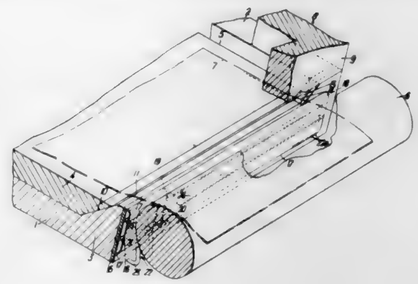
George Alfred Dickinson, St. Helens, and Anthony Preston, Ormskirk, England, assignors to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain

Filed July 19, 1965, Ser. No. 472,936

Claims priority, application Great Britain, Aug. 31, 1964, 35,568/64

U.S. Cl. 65—182 **3 Claims**
Int. Cl. C03b *18/02*

The outlet end wall of a tank structure containing a bath of molten metal, in the float process for the manufacture of flat glass, is faced with a metal plate forming one wall of a cooling box.



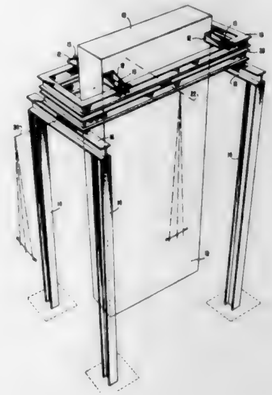
3,433,615

MACHINERY SUPPORT

John Martin, Monterrey, Nuevo Leon, Mexico, assignor to Fabricacion de Maquinas, Monterrey, Nuevo Leon, Mexico, a corporation of Mexico

Filed June 16, 1965, Ser. No. 464,428

U.S. Cl. 65—193 **6 Claims**
Int. Cl. C03b *15/02, 15/12*



A sheet glass forming and annealing machine of the so-called vertical draw type is supported by a gimbal mounting adjacent the uppermost portion of the machine. The gimbal mount is supported by a framework which surrounds the machine and extends upwardly from the floor on which the machine base would otherwise rest.

3,433,616

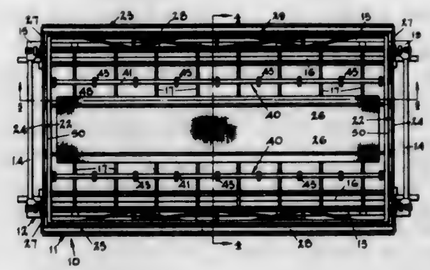
APPARATUS FOR BENDING GLASS SHEETS

David M. Wampler and Herbert A. Leflet, Jr., Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Dec. 3, 1965, Ser. No. 511,373

U.S. Cl. 65—289 **2 Claims**
Int. Cl. C03b *23/02*

A gravity mold for bending a glass sheet having a large, flat central area with oppositely disposed flat wing areas projecting at sharp angles from the central area to form a one-piece "bay window." The sectionalized mold in-



cludes support members which maintain the large central area of the sheet flat as the wing sections bend.

3,433,617

PROCESS FOR PREPARING AN AMMONIATED PHOSPHATE SLURRY FERTILIZER

Casimer C. Legal, Jr., and Alvin Richmond, Baltimore, Md., and Anthony J. Bruno, Jr., New Canaan, Conn., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of applications Ser. No. 330,242, Dec. 13, 1963, Ser. No. 412,243, Nov. 18, 1964, and Ser. No. 505,447, Oct. 28, 1965. This application Dec. 29 1966, Ser. No. 605,594

U.S. Cl. 71—43 **2 Claims**
Int. Cl. C05b *11/04*

A method for preparing a slurry fertilizer is disclosed which comprises acidulating phosphate rock with a mineral acid to convert the phosphorus in the phosphate rock to a plant available form and neutralizing the acidulate with ammonia under adiabatic reaction conditions such that the exothermic reaction of the ammonia and acidulate is sufficient to raise the temperature of the reaction mixture to at least 190° F. The resulting reaction mixture, at a pH of about 6.0–6.5, is thereafter cooled to below 120° F. in about 30 minutes to 1 hour after the completion of the ammoniation.

3,433,618

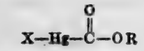
METHOD OF DEFOLIATING PLANTS WITH ORGANOMERCURIALS

John C. Wollensak, Royal Oak, David W. Zutaut, Pleasant Ridge, and Kenneth M. Christenson, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,866

U.S. Cl. 71—70 **2 Claims**
Int. Cl. A01n *9/38, 5/00;* **C07f** *3/10*

Defoliation and desiccation of plants by a method which comprises contacting the plants with a composition containing, as an active ingredient, organomercury compounds having the formula



wherein X is a halogen and R is an alkyl group.

3,433,619

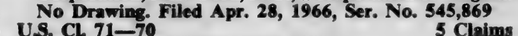
METHOD OF DEFOLIATING PLANTS WITH ORGANOMERCURIALS

Larry Plonsker, Baton Rouge, La., and Norman R. Wright, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,867

U.S. Cl. 71—70 **2 Claims**
Int. Cl. A01n *9/38, 5/00;* **C07f** *3/10*

Defoliation and desiccation of plants by a method which comprises contacting the plants with a composition containing, as an active ingredient, organomercury compounds having the formula



wherein X is a halogen and R is an alkyl group or hydrogen.

3,433,620

METHOD OF DEFOLIATING PLANTS WITH ORGANOMERCURIALS

Larry Plonsker, Baton Rouge, La., and Norman R. Wright, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,868

U.S. Cl. 71—70 **2 Claims**
Int. Cl. A01n *9/38, 5/00;* **C07f** *3/10*

Defoliation of plants by a method which comprises contacting the plants with a composition containing, as an active ingredient, organomercury compounds having the formula X—Hg—CH=CH—X wherein X is halogen.

3,433,621

HALOVINYL MERCURIALS AS PLANT DEFOLIANTS

Henry G. Braxton, Jr., Franklin Village, Mich., and Evelyn J. Lajiness, Mentor, Ohio, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,869

U.S. Cl. 71—70 **5 Claims**
Int. Cl. A01n *9/38, 5/00;* **C07f** *3/10*

Halovinylmercury compounds, such as bis(trichlorovinyl)mercury and trichlorovinyl mercuric chloride, have defoliating and/or phytotoxic properties.

3,433,622

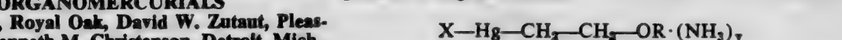
METHOD OF DEFOLIATING PLANTS WITH ORGANOMERCURIALS

Larry Plonsker, Baton Rouge, La., and Norman R. Wright, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,870

U.S. Cl. 71—70 **2 Claims**
Int. Cl. A01n *9/38, 5/00;* **C07f** *3/10*

Defoliation and desiccation of plants by a method which comprises contacting the plants with a composition containing, as an active ingredient, organomercury compounds having the formula



wherein X is a halogen and R is hydrogen or an alkyl group having up to 12 carbon atoms, and y is any number between 0.1 and 2.0.

3,433,623

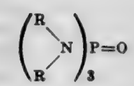
PHOSPHORIC TRIAMIDE DERIVATIVES AS HERBICIDES

Horst O. Bayer, Levittown, and Victor H. Unger, Willow Grove, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,058

U.S. Cl. 71—86 **3 Claims**
Int. Cl. A01n *9/36, 5/00*

Phosphoric triamide derivatives of the formula



wherein the R's represent alkyl and alkenyl of 2 to 6 carbon atoms are useful for controlling weeds and particularly useful for the postemergence control of a variety of monocotyledonous and dicotyledonous weeds.

3,433,624

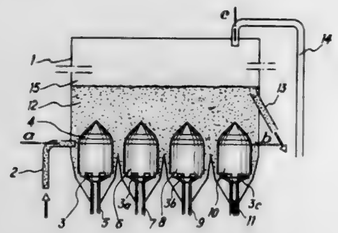
TREATMENT OF PULVERULENT MATERIALS

Michel Boucraut, Metz, Moselle, and Imre Toth, Hy-Metz, Moselle, France, assignors to Institut de Recherches de la Siderurgie Francais, Saint-Germain-en-Laye, Yvelines, France

Continuation of application Ser. No. 456,689, May 18, 1965. This application Mar. 11, 1968, Ser. No. 712,303

Claims priority, application France, Dec. 17, 1964, 999,050

U.S. Cl. 75—1 9 Claims
Int. Cl. C22b *1/10*; C21b *1/02*



Pulverulent materials are fluidized and subjected to heat treatment by passing the material in an even flow along a predetermined path through an enclosed space forming a single fluidizing bed while introducing the treating gases into the enclosed space at a plurality of sets of inlets spaced along said path, the gases emanating from said sets of inlets having from set to set differing physical and chemical characteristics.

An example is the roasting and fluidizing of iron ore wherein the preheated ore is passed along the path forming the fluidizing bed and a neutral gas is supplied to the first stage, an oxidizing gas is supplied at a second stage and a relatively slightly reducing gas is supplied at a third stage and a relatively strongly reducing gas is supplied at a fourth stage of the travel of the ore along said path. Each stage may comprise a plurality of inlets for a combustion gas obtained from a fuel and varying amounts of preheated air.

3,433,625

PROCESS OF PRODUCING HIGH-STRENGTH ORE PELLETS

Hermann Schenck, Intzestrasse 1, and Werner Wenzel, Prinz-Heinrich-Strasse 29, both of Aachen, Germany

No Drawing. Continuation of application Ser. No. 475,015, July 26, 1965. This application Sept. 14, 1967, Ser. No. 667,867

Claims priority, application Germany, Aug. 1, 1964, Sch 35,572; Mar. 22, 1965, Sch 36,747

U.S. Cl. 75—5 12 Claims
Int. Cl. C21b *1/10*

There is disclosed a method for the production of high-strength iron ore pellets by oxidizing-hard firing at a temperature in the sintering temperature range of ore in which connection prefired ore is added to the unfired ore, the prefired ore being present in amounts of 10 to 50% based on the dry weight of the resulting pellet and the sintering of this mixture carried out so as to produce individual hard strength ore pellets free from any sign of caking. The invention also includes the novel pellet thus produced.

3,433,626

METHOD OF ADDING OXYGEN TO TITANIUM AND TITANIUM ALLOYS

Howard B. Bomberger, Jr., East Liverpool, Ohio, assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,893

U.S. Cl. 75—10 9 Claims
Int. Cl. C22d *7/06*; C22c *15/00*

This invention relates to a method for strengthening reactive metals, such as titanium alloys, by the addition of interstitial strengthening additions, such as oxygen and nitrogen. In accordance with the invention, this is preferably achieved by adding to the reactive metal a metal oxide having a melting point below that of the reactive metal to which it is added.

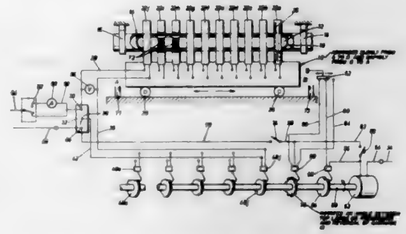
3,433,627

ZONE REFINING

Shou Chu Liang, Rossland, British Columbia, and George Shaw, Trail, British Columbia, Canada, assignors to Cominco Ltd., Montreal, Quebec, Canada

Filed Dec. 29, 1965, Ser. No. 517,352

U.S. Cl. 75—65 10 Claims
Int. Cl. C22b *9/00*



1. In a method of treating an elongated body of fusible solid material which comprises forming a plurality of discrete, linearly equi-spaced molten zones in said body with a plurality of correspondingly numbered spaced heaters forming heating stages, advancing said molten zones slowly at a uniform rate through said body from one end to the other end by reciprocating the plurality of energized heating stages at the said uniform rate in the direction of advance and a relatively rapid rate in the direction of return, the distance of reciprocation not exceeding the distance between the adjacent heaters, the improvement which comprises sequentially de-energizing said heating stages one at a time substantially concurrently with the rapid return of said heating stages for continuously advancing each molten zone to the finishing end.

3,433,628

PROCESS FOR THE MANUFACTURE OF FERROMANGANESE

David Urane, Birmingham Gardens, New South Wales, Australia, assignor to The Broken Hill Proprietary Company Limited, Newcastle, New South Wales, Australia, a corporation of Australia

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,195

Claims priority, application Australia, Sept. 15, 1965, 64,066/65

U.S. Cl. 75—80 8 Claims
Int. Cl. C22c *1/02, 35/00, 31/00*

1. A process for the manufacture of ferromanganese which comprises charging manganese ore, steel scrap and a material selected from the group consisting of limestone and burnt lime to a fuel fired rotary furnace, preheating the furnace and the contents thereof to a temperature within the range of from 1,300° to 1,600° C., adding molten manganese silicide to the preheated furnace, rotating the furnace for a period of time sufficient to enable the reaction to be completed, and thereafter tapping the ferromanganese produced from the furnace.

3,433,629

PROCESS OF RECOVERING MANGANESE FROM MANGANESE ORES

Kazutami Imai and Tatsuo Tano, Okayama-shi, and Hiroo Noro, Akashi-shi, Japan, assignors to Tomoji Murata, Akashi-shi, Japan

No Drawing. Filed Sept. 9, 1965, Ser. No. 486,230

Claims priority, application Japan, Jan. 30, 1965, 40/5,234; Mar. 31, 1965, 40/10,060; May 7, 1965, 40/26,759

U.S. Cl. 75—101 6 Claims
Int. Cl. C01g *1/10*; C12d *1/00, 3/00*

A microbiological process for dissolving and recovering manganese in the form of water soluble salts from manganese ores, characterized by converting manganese in manganese ores in powder form into water soluble manganese sulfate by the action of *Thiobacillus thiooxidans*, a member of the Thiobacillus genus, which has been cultured in a suitable culture medium containing sulfur under shaking or aeration, the action taking place during continued culturing either with added manganese ores crushed into powders with hydrogen sulfide or sulfur dioxide gas introduced into the culture medium, or with an added mixture of the manganese ore powder and a metal sulfide.

3,433,630

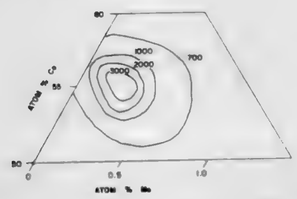
MAGNETIC PERMEABILITY MATERIAL

Hozumi Hirota, Osaka-fu, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Oct. 13, 1966, Ser. No. 586,402

Claims priority, application Japan, Oct. 15, 1965, 40/63,606

U.S. Cl. 75—170 6 Claims
Int. Cl. C22c *5/00*; H01f *1/04*



1. A ferromagnetic material with a $Cr_{23}C_6$ type of crystal structure comprising essentially

	Atomic percent
Cobalt	51.0–59.0
Molybdenum	0.02–0.8
Aluminium	6.5–11.2
Boron	17.0–25.9
Iron	Balance

said crystal structure having such an atom arrangement that point positions "*f*" and "*h*" of F*m*3*m* are occupied by cobalt atoms, iron and molybdenum atoms, point positions "*a*" and "*c*" of F*m*3*m* are occupied by aluminium atoms, and point position "*e*" of F*m*3*m* is occupied by boron atoms.

3,433,631

HIGH TEMPERATURE ALLOY

Robert G. Frank and John W. Semmel, Jr., Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 12, 1967, Ser. No. 630,223

U.S. Cl. 75—171 6 Claims
Int. Cl. C22c *19/04, 19/00*

Cobalt-based alloys, which have good high temperature strength and oxidation-resistance and which are not subject to embrittlement upon high temperature aging comprise, in addition to cobalt, 15–20% chromium, 8–12% nickel, 3–7% molybdenum, less than 7% tungsten, less than 0.07% carbon, and small amounts of iron, manganese, and silicon, with a trace of sulfur. The preferred composition is 20% chromium, 10% nickel, 6.5% molybdenum, less than 0.07% carbon, and balance cobalt.

3,433,632

PROCESS FOR PRODUCING POROUS METAL BODIES

Raymond J. Elbert, Middleburg Heights, and Ernest G. Farrier, Parma, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 484,123, Aug. 31, 1965. This application June 30, 1967, Ser. No. 650,250

U.S. Cl. 75—222 9 Claims
Int. Cl. B22f *3/10, 7/04*

This disclosure describes a process for producing porous metal bodies comprising the steps of: (A) preparing a fluid mixture containing metal powder, an organic thickening agent, an organic plasticizer, and a volatile solvent; (B) depositing this mixture on a backing sheet; (C) evaporating the volatile solvent; (D) heating the resulting solvent-free mix to a temperature sufficiently elevated to volatilize, decompose and/or oxidize the thickening agent and plasticizer; and (E) heating the resulting material at a temperature sufficiently elevated to cause sintering of the metal powder particles.

3,433,633

PHOTOGRAPHIC PRODUCTS AND PROCESSES

Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 447,070, Apr. 9, 1965. This application Mar. 15, 1967, Ser. No. 623,243

U.S. Cl. 96—3 15 Claims
Int. Cl. G03c *7/30*

The present invention relates to photography, particularly to photographic products specifically adapted for employment in photographic diffusion transfer color processes and, more particularly, to photographic image-receiving elements for diffusion transfer photographic processes which comprises a laminate containing a plurality of essential layers, including, in sequence, a support layer, a polymeric acid layer, a polymeric layer comprising hydroxypropyl cellulose, and a permeable and dyeable polymeric layer.

3,433,634

DIFFUSION TRANSFER PROCESS

Louis Maria De Haes, Edegem, Belgium, assignor to Gevaert Photo-Producten N.V. Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,778

U.S. Cl. 96—29 7 Claims
Int. Cl. G03c *5/54*

1. A process for obtaining photographic images according to the silver halide diffusion transfer process, which comprises:

image-wise exposing a light-sensitive material, (a) comprising a support, a light-sensitive silver halide emulsion layer and a layer of a swellable colloid on top of said light-sensitive layer, and (b) containing hydroquinone and a 3-pyrazolidone developing compound,

contacting said light-sensitive material, in the presence of an alkaline treating liquid which is substantially free of developing agents, with an image-receiving material containing hydroquinone and a member

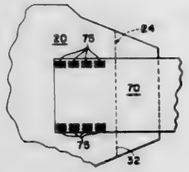
selected from the group consisting of development nuclei and substances capable of forming such nuclei in situ, and

separating the contacted materials from each other.

3,433,635
PHOTOGRAPHIC PROCESS AND PRODUCT
Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 112,509, May 25, 1961. This application Jan. 25, 1966, Ser. No. 522,815
U.S. Cl. 96—29 **13 Claims**
Int. Cl. G03c *5/54, 1/64*

Photographic processes and products for forming color images wherein a ferric salt is employed as the light-sensitive material, color image formation being predicted upon one of the following two systems: (1) reduction of a reducible color-providing material, e.g., an azo dye, by ferrous ions formed as a function of exposure; or (2) oxidation of an oxidizable silver halide developing agent by ferric ions remaining after exposure.

3,433,636
PHOTOGRAPHIC FILM ASSEMBLAGE
Joel A. Hamilton, New York, N.Y., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 112,940, May 26, 1961. This application Feb. 14, 1964, Ser. No. 344,917
U.S. Cl. 96—76 **4 Claims**
Int. Cl. G03c *1/48*



1. In a photographic film unit adapted to be drawn between a pair of juxtaposed members, in combination:

a first leader for drawing said film unit between said juxtaposed members and having a leading end section adapted to be moved between said members; and

an elongated second leader coupled at one end with said first leader and adapted to be drawn to one side of said juxtaposed members for moving said first leader between said juxtaposed members, said second leader having a tensile strength which is substantially uniform throughout the length of said second leader;

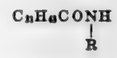
said second leader being coupled with said first leader at a position thereon spaced from the leading edge of said first leader toward the opposite end thereof, said second leader including discrete areas at said one end at which said second leader is coupled with said first leader by adhesive bonds having an aggregate shear strength at least approximately equal to said tensile strength of said second leader and tensile strengths less than said shear strength of said second leader imparting to said second leader a tendency to separate from said first leader in the region of said areas in response to the application of tension to said second leader in a direction divergent from the direction of movement of said first leader between said juxtaposed members.

3,433,637
PHOTOGRAPHIC FILM ROLL
Albert J. Bachelder, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,145
U.S. Cl. 96—78 **9 Claims**
Int. Cl. G03c *3/02*

A photographic roll film assembly having an elongated slot in its outermost convolution and a tab in its next inner convolution. In the film's rolled condition, the tab protrudes through the slot thereby limiting the maximum diameter of the film roll and releasably retaining the film in a rolled condition.

3,433,638
PHOTOGRAPHIC LIGHT-SENSITIVE FILMS
Reiichi Ohi, Teppei Ikeda and Choji Hibino, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,816
Claims priority, application Japan, Apr. 20, 1965, 40/22,915
U.S. Cl. 96—84 **10 Claims**
Int. Cl. G03c *1/84*

1. A photographic light-sensitive film comprising a support having thereon at least one photographic light-sensitive emulsion layer and an anti-halation layer composed of an alkali-soluble resin and a member selected from the group consisting of carbon black and an anti-halation dye on the surface of the support opposite to the emulsion side, said anti-halation layer having incorporated therein an N-alkyl behenamide shown by the following formula:



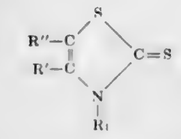
wherein R is a member selected from the group consisting of CH_3 and C_2H_5.

3,433,639
PHOTOGRAPHIC EMULSION CONTAINING A BLOCK POLYMER SENSITIZED WITH SAPONIN
Charles Allen Goffe, Brockport, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 7, 1966, Ser. No. 596,043
Continuation-in-part of application Ser. No. 331,141, Dec. 17, 1963. This application Nov. 7, 1966, Ser. No. 596,043
U.S. Cl. 96—107 **9 Claims**
Int. Cl. G03c *1/28*

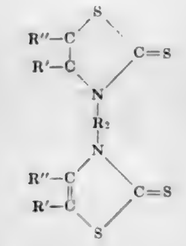
1. In a light-sensitive photographic element comprising a support coated with at least one hydrophilic colloid layer containing a silver halide emulsion in which the halide comprises at least 60 mole percent chloride and at least one hydrophilic colloid layer containing a water soluble block polymer consisting essentially of polyoxypropylene units and polyoxyethylene units in which the polyoxypropylene units have an average molecular weight of between 800–3,000 and the polyoxyethylene units constitute from about 10–70 percent by weight of said polymer, such that the said block polymer is contiguous to the said silver halide; the improvement wherein saponin is present in the hydrophilic colloid layer containing said water soluble block polymer in an amount sufficient to substantially increase photographic speed of said silver halide emulsion over the speed of said emulsion without presence of saponin.

3,433,640
PHOTOGRAPHIC SILVER HALIDE LIGHT-SENSITIVE MATERIAL
Fumihiko Nishio, Yoshiyuki Nakazawa, and Kintaro Nasu, Kanagawa, Japan, assignors to Fujishashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Nov. 8, 1965, Ser. No. 506,842
Claims priority, application Japan, Nov. 13, 1964, 39/63,973
U.S. Cl. 96—107 **10 Claims**
Int. Cl. G03c *1/28*

1. A photographic silver halide sensitive material comprising a support and a silver halide emulsion layer, said layer containing at least one compound selected from the group consisting of compounds represented by the general formula:



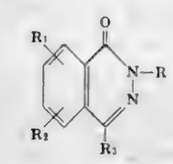
and, a compound represented by the general formula:



wherein R_1 represents a member selected from the class consisting of an alkyl group, a cycloalkyl group, an aryl group, and a pyrimidylmethyl group; R_2 represents an alkylene group, and R′ and R″ each represents a member selected from the class consisting of a hydrogen atom, a lower alkyl group, a hydroxylalkyl group, and an aryl group; and said R′ and R″ may be linked to each other.

3,433,641
ANIMAL FEEDS CONTAINING PHTHALAZINONE DERIVATIVES AS GROWTH PROMOTERS
Alfred Margot, Basel, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 16, 1965, Ser. No. 448,877
Claims priority, application Switzerland, Apr. 22, 1964, 5,192/64
U.S. Cl. 99—2 **6 Claims**
Int. Cl. A23k *1/00*

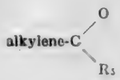
Phthalazinone derivatives of the formula



in which R is hydrogen, lower alkyl, the group



(R_4 being alkoxy or alkenyloxy), or the group



(alkylene having 1 to 3 carbon atoms and R_5 being amino, lower alkyl amino, di-lower alkyl amino, or the group OX wherein X is hydrogen or the non-toxic cation of a base); R_1 and R_2 independently are hydrogen, halogen, nitro or lower alkyl; and R_3 is lower alkyl, halogen or the group OY wherein Y is hydrogen or the non-toxic cation of a base. These derivatives are useful as growth-promoting additives for animal feeds.

3,433,642
FRONTAL CHROMATOGRAPHIC SEPARATION AND ISOMERIZATION OF HUMULONE
Tommy Nakayama, Milwaukee, and Donald H. Westermann, Brookfield, Wis., assignors to Miller Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 1, 1966, Ser. No. 554,546
U.S. Cl. 99—50.5 **12 Claims**
Int. Cl. C12c *9/02;* **B01d** *15/08*

A process of separating humulone which comprises preparing a hops extract by use of a solvent, flowing the hops extract through a body of inert alkaline granular adsorbent material of a type which rejects lupulone and has a high affinity for humulone, such as, natural or synthetic calcium silicate, magnesium silicate, alumina, and a mixture of calcium oxide and diatomaceous earth to carry out a frontal chromatographic separation and cause retention of the humulone on the absorbent material while the other hops extractives passes through and thereafter removing solvent.

3,433,643
ACID FLAVORED VEGETABLE POWDER
Charles W. Tatter, Homewood, and Peter P. Noznick, Evanston, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed July 12, 1965, Ser. No. 471,419
U.S. Cl. 99—59 **12 Claims**
Int. Cl. A23c *11/00, 13/02, 23/00*

An acid flavored vegetable product is prepared by culturing with a sour cream organism an aqueous mixture of a vegetable fat and a calcium source.

3,433,644
INSTANT DRINK MIX
Warren L. Ganske, Osseo, Jolyon A. Stein, Minneapolis, Rolf G. Gidlow, North St. Paul, and Fred H. McCarron, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,113
U.S. Cl. 99—78 **14 Claims**
Int. Cl. A23l *1/34, 1/26*

Agglomerated drink mixes are prepared from an admixture of particulates primarily comprised of citric acid and an artificial sweetening agent and coloring agent particles as a minor ingredient thereof. A majority of the admixture particles are less than 105 microns with a majority of the citric acid particles being less than 62 microns. In the agglomeration process, the particles are moistened by subjecting the particulates to a humid atmosphere and imparting thereto by condensation from 0.5 percent to 3.5 percent additional moisture, the moistened particles are then commingled to provide random aggregates and subsequently dried. The resultant porous, free-flowing aglomerates are readily soluble in cold water and have a uniform color with the citric acid particles primarily providing the structure therefor.

3,433,645
ETHOXYLATED MONOGLYCERIDES IN BAKED GOODS
Richard Raymond Egan, Edina, and Sidney Bruce Lampson, Minnetonka, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,747
U.S. Cl. 99—90 **8 Claims**
Int. Cl. A21d *2/16;* **C11c** *3/08*

Ethoxylated derivatives of a partial glycerol ester of a higher fatty acid comprise a class of dough forming adjuvants whose presence in the dough lead to the preparation of yeast-raised baked goods of improved properties.

3,433,646
CULINARY BATTERS
Graydon N. Savre and Lloyd C. Wernecke, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Nov. 25, 1964, Ser. No. 414,012
U.S. Cl. 99—92 **16 Claims**
Int. Cl. A21d *13/08*

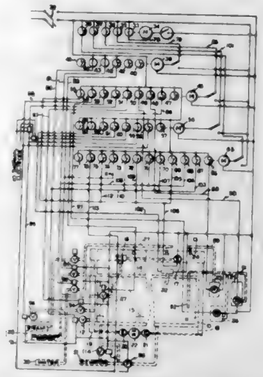
Preparation of a culinary batter which can be stored for an extended period of time without liberating CO_2 wherein a premix is formed by combining chemical leavening ingredients, natural acid containing ingredients, if any, and water, and permitting the ingredients to react with each other in the presence of the water until a portion of the available CO_2 is liberated. The pre-mix when combined with the other batter ingredients forms a batter which can be stored without additional CO_2 being released.

3,433,647
PROCESS FOR PRODUCING FISH STEAKS
Donald S. Johnston, 10141 SE. 8th St., Bellevue, Wash. 98004
Original application Oct. 8, 1962, Ser. No. 229,020, now Patent No. 3,230,579, dated Jan. 25, 1966. Divided and this application July 14, 1965, Ser. No. 471,966
U.S. Cl. 99—111 **5 Claims**
Int. Cl. A22c *25/06, 25/00*

A novel fish steak and a method of forming the same are disclosed. The fish steak comprises an eatable body consisting essentially of fresh chunks of fish fayed together in a tightly formed mass of the same which is integrally fused so as to be form-sustaining. In making the steak, whole chunks of the fish are charged into a cavity in the face of a mold while a flat-surfaced, sharp-edged shear plate is relatively moved across the mouth of the cavity, so as to fill the cavity with a tight mass of the chunks having a flattened surface at the mouth thereof. In addition, the mold and the shear plate are relatively shifted in a path crosswise of their course of relative movement, so as to plane the surface of the plate over the surface of the mass while the chunks are fusing into an integral body, for discharge from the mold.

3,433,648
AUTOMATIC MEANS AND METHOD FOR PRODUCING CHEESE CURD
Lowell J. Collins, Oakland, Calif., assignor, by direct and mesne assignments, to Grace Machinery Corporation, Oakland, Calif., a corporation of California
Continuation of application Ser. No. 192,727, May 7, 1962. This application Aug. 21, 1967, Ser. No. 662,188
The portion of the term of the patent subsequent to Sept. 3, 1980, has been disclaimed and dedicated to the Public
U.S. Cl. 99—116 **6 Claims**
Int. Cl. A23c *19/02*

A method and automatic control apparatus is presented for processing milk culture contained in a sealed and sterilized vat having purified air applied thereto under a pressure slightly above atmospheric and maintained



throughout the process to produce a high-quality cheese curd less susceptible to spoilage.

3,433,649
COCOA-FLAVORED LIQUID OIL COMPOSITIONS
Robert R. Cooke, Evendale, and Richard M. Roudebush, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,362
U.S. Cl. 99—118 **6 Claims**
Int. Cl. A23d *5/02*

A pourable storage-stable composition comprising edible oil and cocoa. The cocoa is present in an amount of from about 10% to about 30% and has an average particle size of less than about 40 microns. In a particular application, the composition is packaged as a discrete unit with a dry culinary mix.

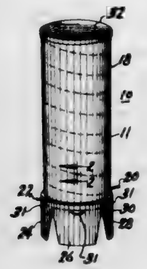
3,433,650
DRY SOUP MIX
Harry W. Block, East Orange, N.J., and Paul B. Touher, Chicago, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 488,713, Sept. 20, 1965, which is a continuation-in-part of application Ser. No. 374,241, June 11, 1964, which is in turn a continuation-in-part of application Ser. No. 211,851, July 23, 1962. This application Jan. 12, 1967, Ser. No. 608,744
U.S. Cl. 99—124 **3 Claims**
Int. Cl. A23l *1/40*

An instant dry soup mix having 5 to 35% fat-coated raw starch for thickening said soup to a cream-like consistency on reconstitution with hot water. The starch, preferably potato starch, has a gelatinization range of between 135° to 165° F. and a particle size of less than 200 mesh while the remaining soup solids have a particle size wherein at least 50% are between 40 to 100 mesh.

3,433,651
FROZEN DESSERT AND METHOD OF MAKING THE SAME
Holton W. Diamond, 300 Depew Ave., Buffalo, N.Y. 14214
No Drawing. Filed Jan. 15, 1965, Ser. No. 425,952
U.S. Cl. 99—136 **5 Claims**
Int. Cl. A23g *5/00*

Preparation of an ice cream type frozen dessert by whipping an emulsion of dairy fat, emulsifier, foaming stabilizer and water; separately whipping a frappe containing sweetener, foaming stabilizer and water, blending the emulsion and frappe and subsequently freezing.

3,433,652
PACKAGE FOR FOODSTUFFS
Gerard Wouter van Leer, 1850 N. Fremont Ave., Chicago, Ill. 60614
Filed Mar. 29, 1966, Ser. No. 538,303
Claims priority, application Netherlands, Mar. 31, 1965, 6504094
U.S. Cl. 99—171 **10 Claims**
Int. Cl. B65b *25/22*



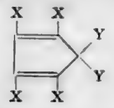
Self-heating food package including a sealed enclosure with an outer combustible layer and an inner noncombustible liner. The combustible layer may be ignited by a wick which is attached to the combustible layer. A support member is secured to one end of the package and a food retaining member is mounted on the support member and is disposed within the enclosure.

3,433,653
TRANSPARENT PLASTIC ANTIFOGGING VIEWING GLASS CONTAINING A PLASTICIZER WHICH BECOMES A WETTING AGENT BY BEING HYDROLYZED WHEN CONTACTED WITH WATER
Carl Ernst van der Smissen, Bad Schwartau, Germany, assignor to Otto Heinrich Drager, Lubeck, Germany
No Drawing. Filed Aug. 21, 1967, Ser. No. 661,815
Claims priority, application Germany, Aug. 31, 1966, D 50,987
U.S. Cl. 106—13 **1 Claim**
Int. Cl. C08b *29/30;* **C08f** *45/22;* **C09k** *3/18*

For antifogging, a viewing glass, such as for a face mask, is made of a transparent cellulose acetate, cellulose butyrate or polyvinyl chloride plastic containing a vinyl sulfonic acid ester as a plasticizer which plasticizer, when contacted with water, is hydrolyzed and becomes a wetting agent.

3,433,654
FIRE RETARDANT BITUMINOUS COMPOSITIONS
Charles S. Ilardo, Tonawanda, and Raymond R. Hindersinn, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,744
U.S. Cl. 106—15 **18 Claims**
Int. Cl. C09d *5/18, 3/24*

Bituminous compositions can be rendered fire retardant by the addition thereto of a Diels-Adler adduct of a nonconjugated unsaturated fatty ester and a polyhalogenated cyclopentadiene having the formula:



wherein X is selected from the group consisting of fluorine, chlorine and bromine, and Y is selected from the group consisting of fluorine, chlorine, bromine and an alkoxy radical, said Diels-Adler adduct containing about 10 to 50 weight percent halogen.

3,433,655
SEALER AND METHOD OF SEALING LIQUID SYSTEMS
Arthur Nugent, Chicago, Ill., assignor of one-half to Edison Muse, Jr., Chicago, Ill.
No Drawing. Filed Apr. 27, 1966, Ser. No. 545,581
U.S. Cl. 106—33 **4 Claims**
Int. Cl. C09k *3/12*

A sealer and method of sealing a liquid system wherein a sealer mixture of ground red cayenne pepper, white pepper and/or paprika in a liquid including water, alcohol or ethylene glycol is circulated through the liquid system for 5 to 20 minutes while maintaining the system liquid between 120° F. and 200° F.

3,433,656
DENSE REFRACTORY ZIRCONIUM BORIDE BODIES
Walter C. Allen, Stanhope, and Wilbert A. Taebel, Towaco, N.J., assignors to National Beryllia Corp., Haskel, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 20, 1967, Ser. No. 610,493
U.S. Cl. 106—57 **3 Claims**
Int. Cl. C04b *35/02;* **H01b** *1/02*

Tungsten metal 1–6%, is added to zirconium diboride powder, 94% or more, whereby dense molded zirconium diboride products are obtained by hot pressing at 1950–2200° C. and at relatively low pressures of 3000 p.s.i. or more.

3,433,657
PREVENTION OF ALKALI-AGGREGATE REACTIONS IN CONCRETE
Ritha Edva Pickering, No. 107 Grenaavej, Aarhus-Risskov, Denmark
No Drawing. Filed Nov. 19, 1964, Ser. No. 412,342
Claims priority, application Denmark, Nov. 21, 1963, 5,466/63
U.S. Cl. 106—97 **7 Claims**
Int. Cl. C04b *7/32, 7/02*

Concrete is protected from alkali-aggregate reactions by soaking the concrete with water, and applying to the surface of the concrete structure an aqueous slurry containing an inorganic cement, an acid, for example, an organic hydroxy carboxylic acid such as glyceric acid, which forms complexes with calcium ions or aluminum ions, or a salt of such an acid, and a base such as sodium aluminate, potassium orthosilicate, or borax, which forms an insoluble salt with calcium ions or aluminum ions.

3,433,658
WARM WATER-DILUTABLE PASTE ROSIN SIZE AND PROCESS FOR THE MANUFACTURE THEREOF
Michael Joseph D'Errico, Stamford, Conn., and Russell Joseph Kulick, Lee, Mass., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Continuation-in-part of applications Ser. No. 413,603, Nov. 24, 1964, and Ser. No. 584,194, Oct. 4, 1966. This application Jan. 17, 1968, Ser. No. 698,655
U.S. Cl. 106—123 **8 Claims**
Int. Cl. D21c *3/00;* **C11d** *15/04;* **C09f** *1/04*

A fluid rosin size consisting of an aqueous dispersion of a rosin saponified at least 85% with an alkali metal of which at least about 75 mol percent of the metal cations are potassium, and 9–20% of an anti-gel agent selected from the group consisting of ethanol and iso-propanol, the rosin size solids content of said size being between about 65% and 80% by weight.

3,433,659
PASTE ROSIN SIZE CONTAINING FORTIFYING AGENT

Michael Joseph D'Errico, Stamford, and Frank Larkin Wagner, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,486
U.S. Cl. 106—238 8 Claims
Int. Cl. C08h *17/24*

It has been discovered that the effectiveness of paste rosin size as an agent which renders paper water-resistant is greatly increased when the size has a dissolved content, up to 15% of the solids thereof, of a phosphate salt. The phosphate salt thus acts as fortifying agent for the size.

3,433,660
SPRAY DRYING CARBON BLACK

Merrill E. Jordan, Walpole, and John F. Hardy, Andover, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed June 24, 1965, Ser. No. 466,823
U.S. Cl. 106—307 2 Claims
Int. Cl. C09c *1/58*

A process for converting a special nitric acid oxidized, high color carbon black to an agglomerated state having a bulk density even higher than normal pellets but composed of very fine aggregates much smaller than normal pellets, which fine aggregates are readily dispersible in liquid vehicles on conventional equipment such as three roll mills which are normally used for producing inks and enamels. The key step in this process is the spray drying of a liquid slurry of such a black made with an anionic dispersing agent in appropriate concentrations.

3,433,661
PLASTICIZER COMPOSITIONS CONSISTING OF POLYNUCLEAR AROMATIC COMPOUNDS

Ronald C. Maggart, Scotch Plains, and Don H. Rotenberg, Elizabeth, N.J., and Raymond L. Heinrich, Baytown, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 374,187, June 10, 1964. This application Apr. 9, 1965, Ser. No. 447,077
U.S. Cl. 106—316 8 Claims
Int. Cl. C08f *45/28, 45/36*

Hydrocarbons and ester products of the reaction of aromatic hydrocarbons, formaldehyde and a monocarboxylic acid serve as stain-resistant primary and secondary plasticizers for rigid resins such as polyvinylchloride.

3,433,662
PROCESS FOR PRODUCING A STERILIZED INSTRUMENT

James E. Webb, Sierra Madre, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Lawrence C. Montgomery, and Frank A. Morelli, West Covina, Calif.

No Drawing. Original application Mar. 15, 1965, Ser. No. 440,033, now Patent No. 3,305,415, dated Feb. 21, 1967. Divided and this application Oct. 12, 1966, Ser. No. 600,682
U.S. Cl. 117—6 2 Claims
Int. Cl. A61l *13/00*; B44d *1/36*; B32b *15/08*

A process for producing a sterilized instrument comprising surrounding said instrument with a thin liquid film comprising an uncured polymer and ethylene oxide, and curing said polymer whereby ethylene oxide gas is generated and a solid encapsulating film which surrounds said instrument is formed.

3,433,663
IMPREGNATED POROUS PAPER WEBS AND METHOD OF OBTAINING SAME

William F. Underwood, Oak Park, Ill., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 4, 1964, Ser. No. 364,771
The portion of the term of the patent subsequent to June 2, 1981, has been disclaimed
U.S. Cl. 117—62.1 7 Claims
Int. Cl. D21h *1/42*

A viscose bonding agent comprising a dilute aqueous viscose solution prepared from a cellulose having an alpha cellulose content of at least 93% by weight and a degree of polymerization as measured by cupriethylene diamine (CED) viscosity in excess of 4.2 centipoises can be utilized in the preparttion of porous paper webs which can then be impregnated with cellulose and regenerated to obtain fibrous cellulose casings.

3,433,664
BONDING TEXTILES TO RUBBERS

Alan P. Osborne, Wood End, near Atherstone, England, assignor to The Dunlop Company Limited, London, England, a British company

No Drawing. Filed July 26, 1965, Ser. No. 475,017
Claims priority, application Great Britain, Aug. 20, 1964, 33,997/64
U.S. Cl. 117—76 15 Claims
Int. Cl. B44d *1/12, 1/22*; C08d *13/16*

A textile material is bonded to a curable rubber composition based on a mono-olefine rubber, a diolefine rubber, or mixtures thereof, employing as an adhesive an admixture of an aqueous dispersion of an incompletely condensed phenolic resin and an aqueous polymer dispersion of a diene monomer and acrylonitrile, the amount of the acrylonitrile being 1–15% by weight based on the total polymer content of the dispersion.

3,433,665
METHOD OF COATING FIBROUS MATERIALS WITH WAX

Wildon T. Harvey, Hockessin, Del., and Ralph Zuyenga, West Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,282
U.S. Cl. 117—120 4 Claims
Int. Cl. B44d *1/02*

Fibrous sheet material is impregnated with paraffin wax and surface coated with microcrystalline wax by first surface coating the sheet material with a blend of paraffin and microcrystalline waxes having a difference in melting points of at least 15° F., and then heating the blend to a temperature intermediate the melting points to allow the paraffin to melt and soak into the sheet material while the microcrystalline wax remains on the surface.

3,433,666
TREATMENT OF CARPETS AND PILE FABRICS

James Albert Moyse and Harold Sagar, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 4, 1965, Ser. No. 506,394
Claims priority, application Great Britain, Nov. 16, 1964, 46,586/64
U.S. Cl. 117—139.5 3 Claims
Int. Cl. C08d *13/16*; C09d *5/00*

A treatment for imparting soil resistant properties to textile fibers selected from the group consisting of natural and synthetic fibers and their blends which includes applying to the textile fibers an aqueous dispersion of polymer of the methyl and/or ethyl ester of methacrylic acid

in amounts up to about 4.0% of the weight of the fibers. Thereafter the fibers are dried at a temperature up to 100° C.

3,433,667
POLISHING CLOTH

Richard C. Gergle and James A. Merricks, Greensboro, N.C., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

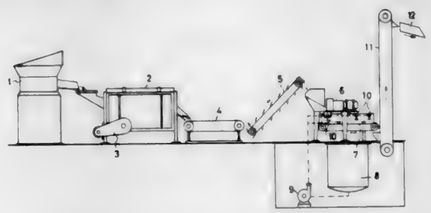
No Drawing. Filed Jan. 22, 1964, Ser. No. 339,325
U.S. Cl. 117—161 2 Claims
Int. Cl. C09d *3/48*; C08g *47/04*

A polish cloth containing a partially cured methyl or ethylmethylpolysiloxane which possesses the combination of good polishing activity and resistance to repeated laundering. For example, cotton flannelette is impregnated with 33% by weight of a methylpolysiloxane fluid cured to such an extent that from 85 to 95% by weight of the fluid is extracted from the fabric by immersing the fabric in benzene at room temperature for two days.

3,433,668
METHOD OF RECOVERING STARCH FROM PLANT MATERIALS

Erhard Armin Hein, Gartenstrasse 85, Tubingen, Germany

Filed May 17, 1966, Ser. No. 550,687
Claims priority, application Germany, May 18, 1965, H 56,087
U.S. Cl. 127—67 13 Claims
Int. Cl. C13l *1/00*

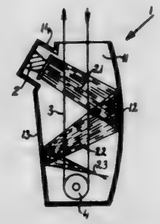


1. A method of recovering a product mainly consisting of starch from a peel-bearing plant material, mainly consisting of unitary bodies having a surface area-to-volume ratio substantially smaller than one square centimeter per cubic centimeter, said bodies essentially consisting of approximately 3 to 48 percent of said starch, 35 to 95 percent water, constituents colloidally dispersed in said water to form therewith a plant juice, and fibrous constituents, which method comprises:
(a) cutting said bodies of peel-bearing plant material into pieces having a surface area-to-volume ratio between twelve square centimeters and one square centimeter per cubic centimeter;
(b) rapidly drying the material of said pieces to an ultimate water content of approximately 8 to 12 percent;
(c) comminuting said pieces to a particle size substantially between 0.17 micron and 15 millimeters after they are at least partly dried toward said ultimate water content, whereby said starch is set free in the form of grains; and
(d) mechanically separating the dried and comminuted pieces according to size into two fractions, repectively containing substantially no starch and containing substantially the entire starch of said plant material.

3,433,669
ULTRASONIC TREATING METHOD AND APPARATUS

Jaroslav Kouřil, Nove Mesto nad Vahom, Czechoslovakia, assignor to Vyzkumny ustav mechanizacie a automatizacie, Nove Mesto nad Vahom, Czechoslovakia

Filed Oct. 20, 1965, Ser. No. 498,956
Claims priority, application Czechoslovakia, Jan. 6, 1965, 102/65
U.S. Cl. 134—1 6 Claims
Int. Cl. B08b *3/10, 3/00*

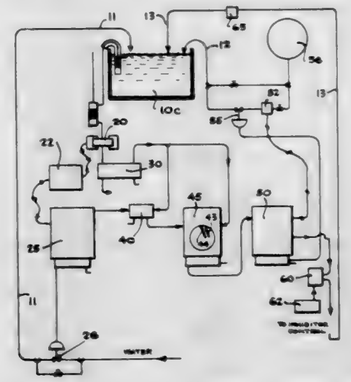


An ultrasonic treating device includes a container, a plurality of reflector means within the container, arranged in two spaced rows extending in a common direction, a source of a beam of ultrasonic radiation, the beam to be angularly and sequentially reflected between the two rows of reflector means, and means for guiding an object to be exposed to ultrasonic radiation along a path between said two rows, which intersect the reflected beam portions. A method of exposing an object to ultrasonic radiation provides angularly directing a beam of ultrasonic radiation against a first wall, angularly reflecting the beam toward a second wall and again against said first wall, and so on, the two walls being spaced from each other and extending in a common direction, and passing said object through the reflected beam portions.

3,433,670
PICKLING BATH CONTROL APPARATUS AND METHOD

Uno T. Hill, Gary, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,671
The portion of the term of the patent subsequent to Jan. 22, 1980, has been disclaimed
U.S. Cl. 134—10 7 Claims
Int. Cl. B08b *3/10*



1. In a ferrous metal treating process using a pickling solution containing an acid selected from the group con-

sisting of hydrochloric, hydrofluoric, nitric, phosphoric, and perchloric acids and wherein the said acid is consumed by reaction with the metal in aqueous solution, and wherein makeup pickling acid is added to said solution during the pickling process, an improved method of controlling the addition of pickling acid to said pickling solution which comprises; photometrically measuring the concentration of the ferrous ion concentration in said pickling solution containing said pickling acid to obtain a first signal which is a measure of the concentration of said ferrous ion of said pickling solution, measuring the specific gravity of said pickling solution to obtain a second signal, combining the said first and second signals to obtain a corrected signal which is a measure of only the acid concentration of the said solution, and feeding said corrected signal to an acid valve flow control means which effects addition of acid to said solution when the acid concentration drops to a predetermined value.

3,433,671

STORAGE BATTERY HAVING POSITIVE AND NEGATIVE ELECTRODE IN DIRECT CONTACT

Karl Scholzel, Bad Soden, Taunus, Germany, assignor to Werner Greutert, Baden, Switzerland

Filed June 22, 1966, Ser. No. 559,517

Claims priority, application Switzerland, June 23, 1965, 8,836/65

U.S. Cl. 136—6 **12 Claims**

Int. Cl. H01m *43/00*

1. A storage battery for the storage of electrical energy comprising at least one negative and at least one positive electrode and an electrolyte absorbed in the electrodes, at least one of said electrodes including a metallic supporting framework containing active mass, and a coating of said active mass on a side of said framework facing the other electrode of opposite polarity, said coating being of sufficient thickness to be in direct contact without any separating layer with said other electrode with at least a portion of its surface.

3,433,672

ELECTRICAL BATTERY

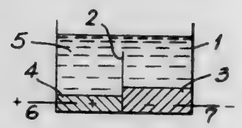
Karl Scholzel, Bad Soden, Taunus, Germany, assignor to Werner Greutert, Baden, Switzerland

Filed July 5, 1966, Ser. No. 562,760

Claims priority, application Switzerland, July 8, 1965, 9,768/65

U.S. Cl. 136—6 **23 Claims**

Int. Cl. H01m *35/02*



A rechargeable electrical battery cell having at least one metallic positive electrode and an electrolyte containing anions which are capable of reacting, during charging of the battery, with the metal of the positive electrode and with the primary reaction products formed thereat during charging, to produce negatively charged complex ions which are soluble in the electrolyte. The battery also contains a negative electrode which in the charged condition of the battery contains an amalgam of at least one metal selected from the group consisting of alkali and alkaline earth metals.

3,433,673

BATTERY ELECTRODE HAVING THIN DEPOSIT OF META-DINITROBENZENE ON GRAPHITE FABRIC AND A METHOD FOR MAKING IT

Joseph C. Duddy, Trevose, Pa., assignor to ESB Incorporated, a corporation of Delaware

No Drawing. Filed Aug. 29, 1967, Ser. No. 663,974

U.S. Cl. 136—22 **4 Claims**

Int. Cl. H01m *13/02, 13/04*

A solution containing meta-dinitrobenzene (MDB) is applied to a graphite fabric. The solvent is then removed, leaving a thin MDB deposit on the fabric. The resultant product may be used as a battery electrode.

3,433,674

STORAGE BATTERY PLATES AND METHOD OF MANUFACTURE

Giles S. Lello, Milwaukee, Wis., assignor to Globe Union Inc., Milwaukee, Wis., a corporation of Delaware

No Drawing. Filed May 23, 1967, Ser. No. 640,474

U.S. Cl. 136—26 **9 Claims**

Int. Cl. H01m *39/04*

A dry activated negative plate for a dry charge battery of the lead-acid type comprising a spongy particulate lead mass, the individual particles of which are coated with a composition of liquid poly-α-methylstyrene and polybutene, and a method of manufacturing the same.

3,433,675

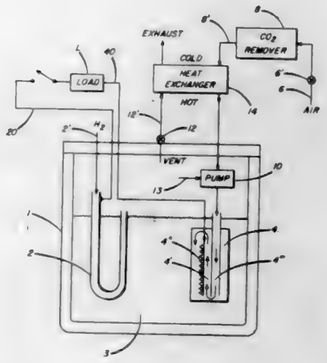
AIR-OPERATED ELECTROLYTIC CELL

David McLeod Moulton, Scituate, Mass., assignor to Prototech Incorporated, Cambridge, Mass., a corporation of Massachusettts

Filed Feb. 25, 1965, Ser. No. 435,130

U.S. Cl. 136—86 **6 Claims**

Int. Cl. H01m *27/02*



The disclosed electrolytic cell employs an oxidant electrode disposed within an electrolytic medium sensitive to CO_2 and which forms peroxide when air is introduced therein. After removal of its CO_2 content, air is introduced into the electrolytic medium near the electrode, is circulated and recirculated in the vicinity of the electrode to accelerate and insure adequate peroxide formation thereat, and is then vented. The quantity of introduced and vented air is limited to substantially stoichiometric proportions to limit the quantity of CO_2 that must be removed.

3,433,676

THERMOPHOTOVOLTAIC ENERGY CONVERTOR WITH PHOTOCELL MOUNT

Frank S. Stein, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 21, 1964, Ser. No. 405,365

U.S. Cl. 136—89 **3 Claims**

Int. Cl. H01m *3/04, 15/00*



Mounting structure for flat cells in radiant energy convertors including a hollow polygonal mounting member having parallel rows of flat steps for receiving the cells in facial contact therewith through an insulative adhesive. Flat steps may be formed on member or on inserts held by member.

3,433,677

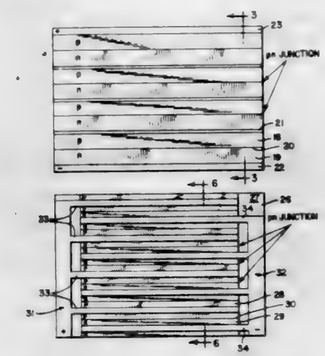
FLEXIBLE SHEET THIN-FILM PHOTOVOLTAIC GENERATOR

Thomas L. Robinson, Buffalo, N.Y., assignor to Cornell Aeronautical Laboratory Inc., Buffalo, N.Y., a corporation of New York

Continuation of application Ser. No. 246,909, Dec. 26, 1962. This application Apr. 5, 1967, Ser. No. 628,784

U.S. Cl. 136—89 **3 Claims**

Int. Cl. H01l *15/02*



1. A flexible sheet thin-film photovoltaic generator, comprising a substrate about one-half mil thick having an insulative surface, a plurality of p-type and n-type semiconductive elements alternately arranged on said surface in abutting relation to provide p-n junctions separated by only one of such elements, the thickness of said elements falling in the range from about one to five microns, a first electrode terminal including a plurality of conductive strips electrically connecting and overlying said p-type elements, and a second electrode terminal including a plurality of conductive strips electrically connecting and overlying said n-type elements, whereby said p-n junctions are connected in parallel.

2. A flexible sheet thin-film photovoltaic generator, comprising a substrate about one-half mil thick having an insulative surface, a plurality of pairs of abutting p-type and n-type semiconductor elements on said surface to provide a corresponding number of p-n junctions, the thickness of said elements falling in the range from about one to five microns, and means electrically connecting said pairs in series and comprising ohmic terminations including a plurality of conductive strips interposed between and directly contacting the p-type and n-type elements of adjacent pairs.

3,433,678

SEAWATER BATTERY HAVING MAGNESIUM OR ZINC ANODE AND MANGANESE DIOXIDE CATHODE

John B. Ockerman, St. Paul, Minn., assignor to ESB Incorporated, a corporation of Delaware

No Drawing. Filed Aug. 29, 1967, Ser. No. 663,976

U.S. Cl. 136—100 **2 Claims**

Int. Cl. H01m *11/00, 13/06*

A battery having an anode of magnesium or zinc, a cathode of manganese dioxide, and seawater electrolyte.

3,433,679

PRIMARY ALKALINE CELL

Martin H. Johnson, Verona, and Patrick J. Spellman, Madison, Wis., assignors, by mesne assignments, to E&B Incorporated, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 20, 1966, Ser. No. 566,478

U.S. Cl. 136—102 **12 Claims**

Int. Cl. H01m *43/02*

A primary alkaline cell having improved initial capacity and stability during storage or shelf life provided by the presence of lithium ions in the alkaline electrolyte. These alkaline cells comprise a positive active material, a zinc negative active material, a separator between the positive and negative active materials and a sodium or potassium hydroxide electrolyte solution contained substantially wholly within the separator and the positive and negative electrodes. The higher initial capacity and improved stability during storage are provided by the presence of a lithium additive in amounts ranging from at least about 0.01% by weight up to saturation of lithium ions in the alkaline electrolyte. The lithium additive can be added to any one or more of the cell components so long as it forms an effective concentration of lithium ions in the alkaline electrolyte.

3,433,680

PLATINUM TYPE ELECTRODE FOR A SOLID ELECTROLYTE FUEL CELL

David H. Archer and Albert D. Glasser, Pittsburgh, Edward F. Sverdrup, Jeannette, and Herbert L. Taylor, Murrysville, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Jan. 31, 1967, Ser. No. 613,056

U.S. Cl. 136—120 **9 Claims**

Int. Cl. H01m *27/10*

Platinum is fused to a solid electrolyte in a reducing atmosphere to form fuel electrode.

3,433,681

LEAKPROOF ELECTROCHEMICAL CELL AND METHOD OF MAKING SAME

Jean Firmin Jammet, Poitiers, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a French company

Filed May 10, 1967, Ser. No. 637,552

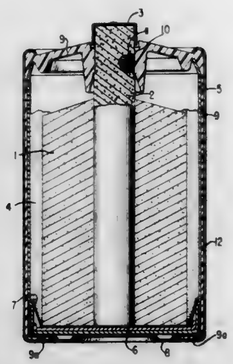
Claims priority, application France, May 18, 1966, 62,098

U.S. Cl. 136—133 **15 Claims**

Int. Cl. H01m *1/02*

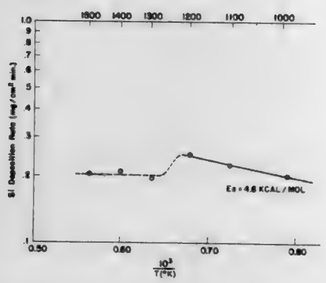
An electrochemical cell wherein a sealing cup is compressed about the bottom of the metal cup constituting the outer electrode, the inner electrode being a carbon rod with surrounding depolarizing mix contained within

the outer electrode, a plastic casing with a relatively thin lateral wall having a castellated lower end turned inward over the bottom of the sealing cup without thickening and a metallic casing covering the plastic casing and



also engaging the upper and lower ends of the cell, the latter metal casing confining the plastic casing and preventing its swelling under action of gases developed during use of the cell.

3,433,682
SILICON COATED GRAPHITE
Ilmar L. Kalnin, Millington, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed July 6, 1965, Ser. No. 469,377
U.S. Cl. 148—6.3 **13 Claims**
Int. Cl. C23f *7/00*

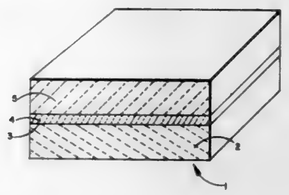


A process for coating graphite with silicon in which a preliminary coating is made of a material capable of forming a eutectic alloy with silicon and then the silicon coating is deposited at a temperature above the melting point of the eutectic alloy.

3,433,683
HEAT TREATING METHOD
Harry B. Osborn, Jr., Pepper Pike, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 6, 1967, Ser. No. 607,620
U.S. Cl. 148—13.2 **9 Claims**
Int. Cl. C21d *1/56;* **C22f** *1/08*

A process of producing heat treated, quenched copper and copper-base alloys having bright, substantially oxide free surfaces by quenching the metal with a quenching medium containing methyl alcohol.

3,433,684
MULTILAYER SEMICONDUCTOR HETERO-EPITAXIAL STRUCTURE
Richard L. Zanowick, Orange, Jesse E. Coker, Anaheim, and Fred L. Morritz, Fullerton, Calif., assignors to North American Rockwell Corporation
Filed Sept. 29, 1966, Ser. No. 582,955
U.S. Cl. 148—33.4 **12 Claims**
Int. Cl. H01l *7/36, 3/12*

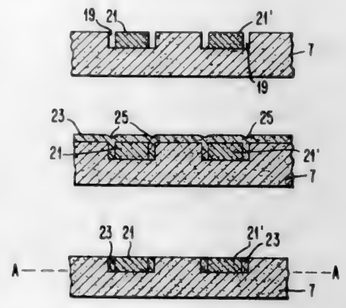


A multilayer heteroepitaxial structure comprising a monocrystalline electrically insulating substrate, a monocrystalline semiconductor thin film epitaxially disposed on at least part of the substrate, and a monocrystalline III–V compound epitaxially disposed atop the thin film.

3,433,685
HIGH MAGNETIC PERMEABILITY CAST ALLOY
Roy R. Albertzart, Jr., Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed May 20, 1966, Ser. No. 551,528
U.S. Cl. 148—35 **3 Claims**
Int. Cl. C22c *37/00*

A ferritic cast iron having a high magnetic permeability is disclosed. In a preferred form the composition contains 2.2–2.7% carbon, 1.2–2.0% silicon, 0.01–0.10% titanium and the balance substantially all iron, and has been subjected to a malleabilizing heat treatment so as to be substantially free of flake graphite and matrix pearlite.

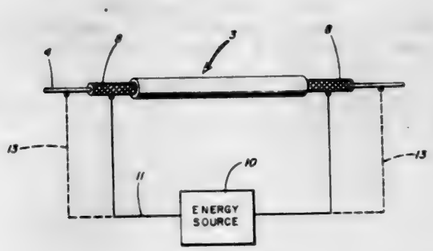
3,433,686
PROCESS OF BONDING CHIPS IN A SUBSTRATE RECESS BY EPITAXIAL GROWTH OF THE BONDING MATERIAL
John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 6, 1966, Ser. No. 519,075
U.S. Cl. 148—175 **17 Claims**
Int. Cl. H01l *7/40, 3/00*



Planar substrate assemblies are formed in a substrate having a plurality of recesses into each of which one device chip is placed. The substrate is, for example, formed

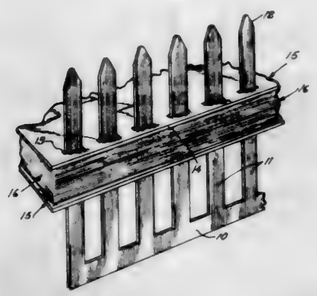
of an insulating material such as sapphire, and the device chips of a semiconductor material such as germanium. The chips are bonded to the substrate by epitaxially growing germanium in the spaces in the recesses between the chips and the sapphire. In this way a monocrystalline bond is formed between the chips and the substrate. The assembly is then subjected to appropriate polishing to obtain a planar surface which is suitable for further processing.

3,433,687
METHOD OF REPAIRING LOW-NOISE TRANSMISSION CABLE
Robert S. Price, Burtonsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 17, 1966, Ser. No. 559,052
U.S. Cl. 156—47 **3 Claims**
Int. Cl. H01b *13/00*



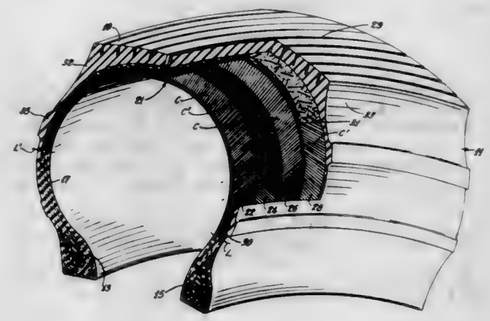
A method of making low-noise coaxial cable wherein the coaxial cable is heated by passing a large pulse of energy through a braided copper shield or through a central conductor so that adjacent dielectric material is partially melted to form a more intimate bond with the shield or conductor.

3,433,688
METHOD OF BINDING A PLURALITY OF SHEETS
Henry N. Staats, Deerfield, and John F. Winkelmann, Mundelein, Ill., assignors to General Binding Corporation, Northbrook, Ill., a corporation of Illinois
Filed Feb. 7, 1966, Ser. No. 525,547
U.S. Cl. 156—85 **6 Claims**
Int. Cl. B29c *29/00;* **B32b** *7/02*



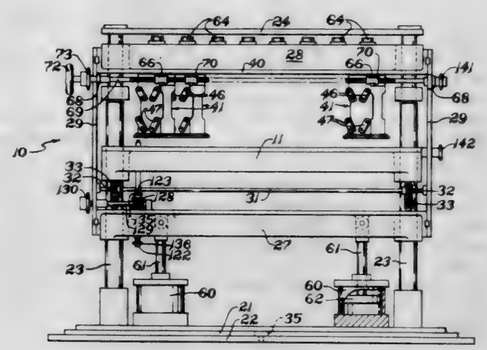
A binding element and method of binding perforated sheets wherein the binding element comprises a backbone having fingers transversely extending therefrom which are curled from flattened shape into the final curled, paper-binding configuration, by a change in the environment surrounding the binding element, without the application of physical forming or bending forces to the binding element.

3,433,689
METHOD OF BUILDING REINFORCED TIRE CONSTRUCTION
Alfred Marzocchi, Cumberland, and Alfred Winsor Brown, Woonsocket, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original application Apr. 26, 1965, Ser. No. 450,790, now Patent No. 3,315,722, dated Apr. 25, 1967. Divided and this application Mar. 13, 1967, Ser. No. 622,588
U.S. Cl. 156—96 **30 Claims**
Int. Cl. B29h *17/10, 17/37*



Tire building process, including retreading operations, wherein a reinforcement in the form of an elastomeric band containing chopped glass or a continuous cord composed of a plurality of gathered together filaments of glass is wrapped about the carcass before the application of the tread. The cord may additionally include other fibrous materials.

3,433,690
BUTT SPLICER FOR SHEET MATERIAL
Fred K. Barns, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 458,708
U.S. Cl. 156—157 **14 Claims**
Int. Cl. B65h *69/06*

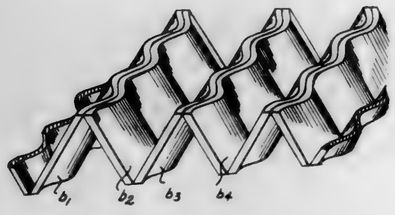


Butt splicing of adjoining edges of fabric by alternately clamping upper and lower marginal edges of respective edges by a plurality of oppositely disposed intermeshing splicing shoes, thence moving the edges linearly toward each other into abutting engagement while maintaining such direct pressure and cooperative with a plurality of spaced stripping means operable in timed relations to the movement of the splicing shoes.

3,433,691
BORATED DEXTRIN-SILICATE ADHESIVES
William D. Reese, Perry, Ohio, assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 386,424, July 30, 1964. This application Apr. 3, 1968, Ser. No. 724,674
U.S. Cl. 156—195 5 Claims
Int. Cl. C09j; B31c *3/00, 1/02*

An adhesive composition useful in the manufacture of laminated paper goods consists essentially of a mixture of 80–90% of an aqueous alkali metal silicate, 4–10% borated dextrin and the balance water.

3,433,692
METHOD FOR FORMING HERRINGBONE CONFIGURATIONS FOR SANDWICH STRUCTURES
Lucien-Victor Gewiss, Ville-d'Avray, Hauts-de-Seine, France, assignor to Marc Wood Materials Societe Anonyme Pour la Promotion des Echanges Techniques Internationsux, Paris, France, a company of France
Filed Aug. 8, 1962, Ser. No. 215,591
Claims priority, application France, Aug. 9, 1961, 870,498
U.S. Cl. 156—197 22 Claims
Int. Cl. B31d *3/00;* B32b *31/00, 3/12*



1. A method of forming sandwich structures constituted by a plurality of spaced skins connected by a central cellular core, said core abutting and being bonded to each of said skins at a plurality of spaced points, comprising: rendering the abutting surfaces of a continuous sheet of core material and a pair of skins adhesive relative to one another solely at said plurality of said spaced points; sandwiching said skins about and in contact with said sheet of core material so that the plane of the latter is parallel to the plane of said skins and so that said skins contact said core both at said spaced points and at points therebetween, said core material being extensible under a first condition and rigid under a second condition; adhering each of said skins to the side of said sheet with which it is in contact solely at said plurality of said spaced points by means of the relatively adhesive property of said abutting surfaces; moving said skins apart into a predetermined spaced relationship while said core material is under said first of said conditions; and rigidifying said core material while said skins are in said spaced relationship by subjecting said core material to said second condition.

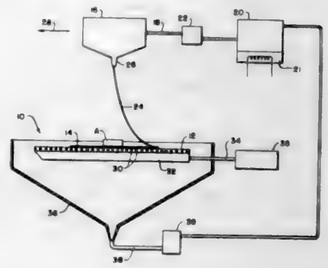
3,433,693
METHOD OF MAKING A PAINT ROLLER
Ingwald M. Evensen, 195 Oakwood St., Port Colborne, Ontario, Canada
Filed Oct. 23, 1965, Ser. No. 503,752
U.S. Cl. 156—242 5 Claims
Int. Cl. B44d *3/28;* B29d *27/04, 23/08*

The following disclosure is directed to a paint roller for painting wire fencing, the roller being formed by a cylinder having helical grooving on the outer surface. The ungrooved portions of the outer surface are covered by strips of fibrous material and the grooved cylinder is formed by filling the space between two coaxial fibre



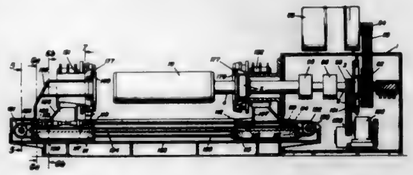
board tubes with foam plastic which adheres to the tubes, the outer tube and the adjacent foam plastic then being cut to form the helical grooving.

3,433,694
PACKAGING METHOD
Wallace H. Nuttall, Phoenixville, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,516
U.S. Cl. 156—244 6 Claims
Int. Cl. B65b *49/16, 53/00, 47/00*



A skin packaging process in which a molten resin film is drawn into conformity with the packaged object by evacuating air through the paper backer, adhesion of the molten film to the backer being promoted by first coating the backer with finely divided pigmentary material containing an amount of resin particles to which the film adheres but which amount is insufficient to inhibit evacuation of air through the paper backer.

3,433,695
APPARATUS FOR MANUFACTURING PNEUMATIC TIRES
Renato Caretta, Gallarate, Varese, and Antonio Pacciarini and Dario Giletta, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy
Filed July 23, 1965, Ser. No. 474,408
Claims priority, application Italy, July 24, 1964, 16,209/64
U.S. Cl. 156—401 27 Claims
Int. Cl. B60c *9/10, 15/04*



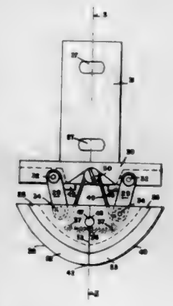
An apparatus for producing pneumatic tires in a manner whereby the carcass ply edges as well as the sidewall strips may be simultaneously turned up around the bead wires and applied against the sides of said carcass after the tire tread has first been stitched to said carcass, this being made possible through the provision of special means for anchoring the plies against the bead wires whereby said plies will not slip relative to said wires although only the carcass portion of the inflatable membrane is inflated during the carcass formation without preceding or simultaneous inflation of the sidewall portions of said membrane.

3,433,696
APPARATUS FOR MAKING FILAMENT REINFORCED PLASTIC PIPE
Vesta Fletcher Michael, Wichita, Kans., assignor, by mesne assignments, to Koch Industries, Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 15, 1965, Ser. No. 496,489
U.S. Cl. 156—425 5 Claims
Int. Cl. F16l *9/12, 9/14, 9/22*



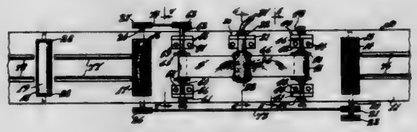
Filament reinforced plastic pipe is composed of a layered arrangement or reinforcements such as glass roving filaments arrangeed substantially parallel and transversely to the pipe longitudinal axis and is imbedded in a resin matrix while under tension to provide enhanced strength. To avoid the loss of the parallel arrangement of the filaments as a result of the centrifugal forces to which the central portions of the filaments are subjected to during the formation of the pipe, an apparatus and method is provided for retaining the central portions of the reinforcements in their desired relationship to the underlying mandrel on which the pipe is being formed.

3,433,697
LABEL APPLICATOR
Frank G. Chess, Nashua, N.H., assignor to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed July 15, 1965, Ser. No. 472,098
U.S. Cl. 156—489 2 Claims
Int. Cl. B65c *3/16, 3/12*



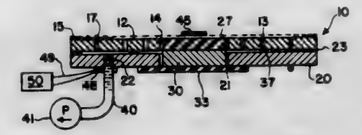
A device for applying labels to containers or the like utilizes a pair of roller members which together present a plano-convex surface, and pivotally move in opposite directions away from each other to press the label against the container in a divergent rolling motion.

3,433,698
APPARATUS FOR COATING ELONGATE WORK
Raymond T. Billings, 318 Mount Pleasant Ave., Ambler, Pa. 19002
Filed May 13, 1963, Ser. No. 280,035
U.S. Cl. 156—540 6 Claims
Int. Cl. B32b *31/08*



1. Apparatus for coating relatively rigid elongate work, said apparatus comprising a work feed roll engageable with the work to move the latter longitudinally along a predetermined substantially linear path, a pressure roll having a resiliently yieldable heat-conducting external surface, said pressure roll being located adjacent to the path of work movement for rolling relation with the work, said feed roll located adjacent to the work path on the opposite side thereof as said pressure roll for rolling engagement with the work under pressure by said pressure roll, pressure roll heating means positioned internally of said pressure roll, a supply roll mounted ahead of said pressure roll for supplying a coil of carrier material having a heat transferable coating material, a take-up roll behind said pressure roll for receiving said carrier material and drawing the latter between said pressure roll and work to transfer the coating material to the work, take-up roll rotating means establishing a rate of movement of the carrier material past said pressure roll substantially equal to the rate of movement of said work past said pressure roll and common power means for said work feed roll and for said take-up roll rotating means.

3,433,699
PRESSURE APPLICATOR FOR BONDING AN ARTICLE TO A THIN MATERIAL
Carl V. Rumble, 6 Braemar Drive, Hampton, Va. 23369
Filed Aug. 2, 1965, Ser. No. 476,762
U.S. Cl. 156—580 13 Claims
Int. Cl. B32b *31/10*



A pressure applicator utilized in securing strain gages to very thin metal. A plate-like member has a chamber formed therein and is otherwise vented to allow evacuation. An aperture is formed in the plate-like member and a piston slidably disposed therein. A flexible membrane covers the piston and a portion of the plate-like member. Upon evacuation atmospheric pressure causes the piston to exit pressure on a strain gage placed under the piston as the plate-like member supports the thin metal.

3,433,700
CELLULAR FOAM COMPOSITION AND PROCESS FOR ITS PREPARATION
Norman R. Migdol, 7 Spoganetz Ave., Carteret, N.J. 07008, and John Biskup, 77 Center Ave., Chatham, N.J. 07928
Filed June 22, 1964, Ser. No. 377,136
U.S. Cl. 161—160 15 Claims
Int. Cl. B32b *3/26, 5/20*

The invention relates to a laminate and to the process for its preparation, having a high degree of recovery from indentation by heavy loads. The laminate comprises a solid vinyl chloride polymer composition which forms the wear layer and a cellular vinyl chloride polymer composition layer bonded to the wear layer. The cellular foam layer contains three to fifteen parts of synthetic rubber for each 100 parts of vinyl chloride polymer. The laminate is prepared by applying a coating of polyvinylchloride composition to a web, heating to gel the coating, applying a second coating over the first coating and then heating to fuse the compositions and decompose the blowing agent contained in one of the coating compositions.

3,433,701
WATER RESISTANT POLYVINYL ACETATE ADHESIVE COMPOSITIONS
Walter B. Armour, Plainfield, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 18, 1965, Ser. No. 456,843
U.S. Cl. 161—198 6 Claims
Int. Cl. B32b *27/04, 27/06*

An adhesive composition characterized by its ability to rapidly set at ambient or elevated temperatures and capable of yielding dry films which exhibit optimum water resistance and high strength; said composition comprising a mixture of a stabilized aqueous vinyl acetate polymer emulsion, a B-stage phenolic resin and, as an optional ingredient, an acidic, metal salt curing agent.

3,433,702
WOODPULP BLEACHING PROCESS
Walter Q. Jack and Loyd V. Johnson, Tacoma, Wash., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed June 28, 1965, Ser. No. 467,697
U.S. Cl. 162—87 4 Claims
Int. Cl. D21c *9/14, 9/12*

There is provided a process for the bleaching of woodpulp comprising reacting the pulp with chlorine dioxide until the chlorine dioxide is at least partially depleted and, thereafter, reacting the woodpulp with chlorine. The process provides bleached pulps with excellent strength, brightness.

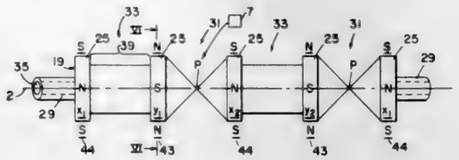
3,433,703
METHOD OF FORMING PAPER FROM SYNTHETIC FIBERS HAVING A SKELETAL STRUCTURE
Richard G. Riedesel, Stillwater Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application Feb. 3, 1964, Ser. No. 341,913. Divided and this application Nov. 21, 1967, Ser. No. 701,796
U.S. Cl. 162—157 3 Claims
Int. Cl. D21h *5/12*

Preparation of vapor permeable flexible synthetic leather construction by cutting monofilaments which contain ultra fine filaments therewithin, forming a dispersion of cut fibers into a mat on a paper machine, drying the mat and subjecting same to heat to form continuous skeletal structures from resin present in the monofilament.

3,433,704
ATTAPULGITE CLAY PAPER FILLER AND METHOD OF FORMING NEWSPRINT THEREWITH
Frederick L. Hecklau, Basking Ridge, and Aldo P. Allegrini, Westfield, N.J., assignors, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Edison, N.J., a corporation of Delaware
No Drawing. Filed Dec. 16, 1965, Ser. No. 524,987
U.S. Cl. 162—181 7 Claims
Int. Cl. D21h *3/66;* D21d *3/00*

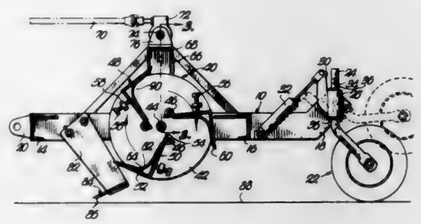
Raw extruded colloidal attapulgite clay is dispersed in water in the presence of sodium silicate and the dispersion is degritted and fractionated. The aqueous clay dispersion is incorporated with an aqueous furnish of newsprint pulp and paper is formed. Newsprint having reduced ink-strike is obtained.

3,433,705
STELLARATOR HAVING MULTIPOLE MAGNETS
Cornell D. Cornish, Port Jefferson, N.Y., asisgnor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 28, 1968, Ser. No. 709,080
U.S. Cl. 176—3 9 Claims
Int. Cl. G21b *1/00;* H01j *1/50;* G21j *1/00*



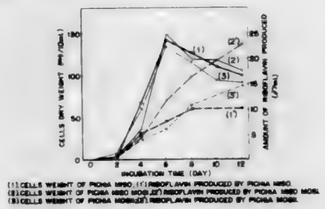
Multipole magnetic system having stabilized superconductors that provide for injecting and confining a high density, high temperature plasma along an endless axis in a stellarator. A particular stellarator configuration and method are provided for receiving and transporting the plasma particles in successive stages rotated between focusing and defocusing positions to provide a uniform velocity distribution in a central plasma column along an endless axis and a decreasing density gradient in the column radially outwardly from the axis and radially outwardly from the column to an endless tube wall.

3,433,706
ROTARY PLOW
Arvid J. Detrixhe, R.R. 2, Ames, Kans. 66931
Filed May 16, 1966, Ser. No. 550,377
U.S. Cl. 172—67 6 Claims
Int. Cl. A01b *9/00, 49/02, 35/28*



A rotary plow having a rotatably driven rotor carried by a mobile frame, the rotor including a plurality of horizontally spaced discs, there being a plurality of L-shaped dirt receiving blades swingably mounted on the rotor by means extending between said discs, the blades, upon operation of the plow, lifting the dirt, carrying it upwardly and depositing it back on the ground in an inverted position as the rotor rotates and the frame advances.

3,433,707
METHOD FOR THE PREPARATION OF RIBOFLAVIN
Tadao Matsubayashi, Urawa-shi, and Yahiko Suzuki, Tokyo, Japan, assignors to Dai Nippon Seito Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan, and The Nitto Institute of Chemical Research, Urawa-shi, Japan, a juridical foundation of Japan
Filed May 13, 1966, Ser. No. 549,934
Claims priority, application Japan, May 24, 1965, 40/30,195
U.S. Cl. 195—28 10 Claims
Int. Cl. C12d *5/04*



Riboflavin is produced in substantial yield as a metabolic product of the yeast species *Pichia miso, Pichia miso* Mogi and *Pichia mogii* growing in hydrocarbon culture meda.

3,433,708
PROCESS FOR PRODUCING A POLYSACCHARIDE
William H. McNeely, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,851
U.S. Cl. 195—31 15 Claims
Int. Cl. C12d *13/04;* C12b *1/02*

Xanthomonas hydrophilic colloid is produced by growing Xanthomonas bacteria on a media containing a carbohydrate source in the form of a hydrohyzate obtained from the essentially complete hydrolysis of a cereal grain.

3,433,709
BIOLOGICAL TRANSFORMATION OF α-6-DEOXY-TETRACYCLINES TO TETRACYCLINES
Jerry Robert Daniel McCormick, Spring Valley, N.Y., and Newell Oscar Sjolander, Saddle River, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 7, 1965, Ser. No. 512,196
U.S. Cl. 195—80 9 Claims
Int. Cl. C12k *1/00;* C07c *103/26*

This disclosure describes a process for biologically transforming a 6-deoxytetracycline having a β-6-hydrogen substituent to the corresponding tetracycline with a strain of the genus *Streptomyces aureofaciens.*

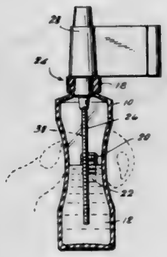
3,433,710
PROCESS FOR THE PREPARATION OF 7-CHLORO-5-HYDROXYTETRACYCLINE
Jerry Robert Daniel McCormick, Spring Valley, Sylvia Jennie Johnson, Pearl River, N.Y., and Newell Oscar Sjolander, Saddle River, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Jan. 7, 1966, Ser. No. 519,302
U.S. Cl. 195—80 6 Claims
Int. Cl. C12d *9/18, 9/00*

This disclosure describes a process for biologically transforming 7-chloro-5a,11a-dehydrotetracycline to 7-chloro-5-α-hydroxytetracycline with a strain of a 5-hydroxytetracycline-producing species of the genus Streptomyces such as *S. rimosus, S. platensis* and *S. hygroscopicus.*

3,433,711
PROCESS FOR TYLOSIN PRODUCTION
Paul G. Caltrider and Harold B. Hayes, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed June 25, 1965, Ser. No. 467,105
U.S. Cl. 195—114 6 Claims
Int. Cl. C12d *9/00;* C12b *1/00*

Improved process for the production of tylosin by fermentation comprising the addition to the fermentation medium of a tylosin degradation product selected from desmycosin, O-mycaminosyl tylonolide, dihydrodesmycosin, dihydro-O-mycaminosyl tylonolide, mycarose, mycaminose, and mycinose.

3,433,712
CHOLINESTERASE TEST
Horace W. Gerarde, 7 Rutgers Court, Westfield, N.J. 07090
Filed Jan. 28, 1965, Ser. No. 428,748
U.S. Cl. 195—127 9 Claims
Int. Cl. G01n *33/16;* C12k *1/00*

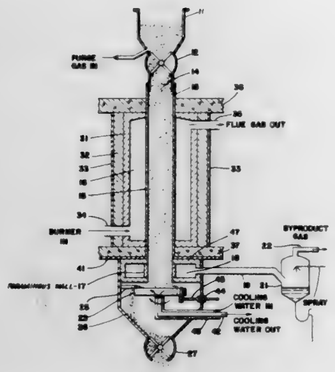


A test assembly for determination of blood chlolinesterase activity, the asssembly including a first and second container, one container having a quantity of an indicator responsive to pH changes and the other container having a predetermined quantity of stabilized anhydrous solution containing acetylcholine so that upon transferring the contents of one container to the other in the presence of blood having cholinesterase therein, the acetylcholine breaks down to cause a change in pH with a resultant indication by the indicator.

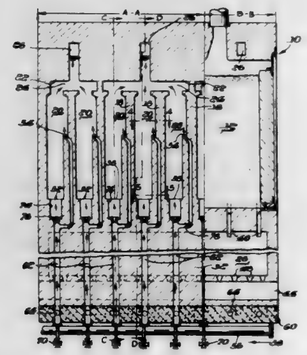
3,433,713
GRAVITY-FLOW CALCINER AND PROCESS FOR CALCINING CARBONACEOUS SOLIDS
Hugh T. Reid, 13875 Lake Ave., Lakewood, Ohio 44107
Filed June 23, 1965, Ser. No. 466,292
U.S. Cl. 201—34 7 Claims
Int. Cl. C10b *47/18, 47/00*

Particulate, substantially dry carbonaceous solids feed such as anthracite coal and petroleum coke containing upwards to about 20% volatile matter is converted into industrial carbon products by calcining it in a columnar bed to a temperature of at least 1300° C., and drawing resulting gasiform distillate down through the bed through the hottest bed section for discharge therebelow. The calciner for this purpose comprises a stationary shaft with an upper, substantially non-porous section and a lower foraminous wall section, an indirect heater, a chamber communicating with the foraminous wall section and exhauster means for drawing resulting gasiform products through the foraminous wall to discharge same from the

system, a product cooler, and feed and expeller means for loading and unloading the calciner while maintaining substantial exclusion of air from contact with the hot carbonaceous solids in process.



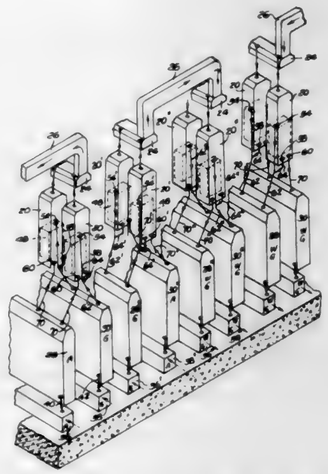
3,433,714
HIGH CHAMBERED COKE OVEN
Joseph Van Ackeren, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,227
U.S. Cl. 202—135 **5 Claims**
Int. Cl. C10b *21/22, 21/10*



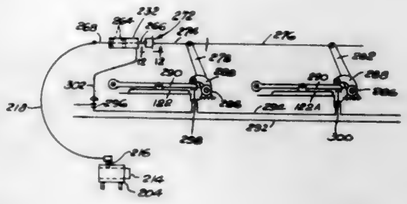
A coke oven according to the invention includes a flow regulating restriction positioned in the main fuel conduit adjacent the base of the heating flues which restriction regulates the quantity of fuel gas applied to the low level and the high level burner in each heating flue.

3,433,715
HEATING HIGH CHAMBERED HORIZONTAL COKE OVENS
Joseph Van Ackeren, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,307
U.S. Cl. 202—135 **9 Claims**
Int. Cl. C10b *21/24, 21/06*

A high chambered coke oven having a two stage heating system arranged to burn rich fuel gas or lean fuel gas or a combination of rich fuel gas and lean fuel gas at a location adjacent the base of the flue and at an elevated location within the flue. Separate ports are provided in the base of the flue to supply air, rich fuel gas and lean fuel gas or air. Other ports are provided at an elevated location to supply rich fuel gas and lean fuel gas or air. Where lean fuel gas is the heating fuel, the lean fuel gas is supplied to a high level port and a low level port and air is supplied through a single low level port so that combustion takes place at both the base of the flue and at an elevated location within the flue. Where rich fuel gas is the heating fuel, rich fuel gas is supplied through another high level port and through another low level port. Air for combustion is supplied through the air port in the base of the flue and through the lean fuel gas high and low level ports. Where lean fuel gas is the principal fuel, metered quantities of rich fuel gas may be supplied through either of the separate rich fuel gas ports. Separate air supply means is provided for the rich fuel gas port adjacent the base of the flue for supplying air to the "off" low level port and prevent carbon accumulation.

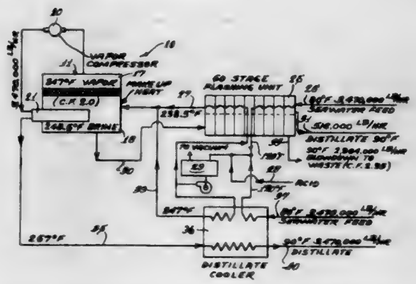


3,433,716
APPARATUS FOR REMOTELY SHIFTING REGENERATIVE COKE OVEN BATTERIES FROM RICH FUEL GAS HEATING TO LEAN FUEL GAS HEATING
Linwood G. Tucker, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,897
U.S. Cl. 202—151 **11 Claims**
Int. Cl. C10b *21/10, 21/06*



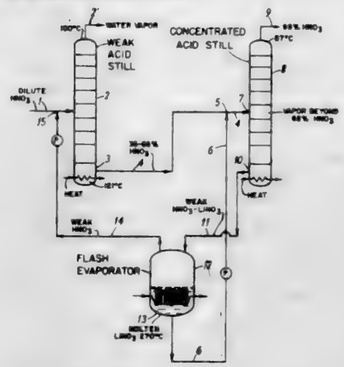
This disclosure relates to apparatus for remotely shifting the entire coke oven battery from combustion of rich fuel gas to the combustion of lean fuel gas in the combustion flues. A central actuator is connected to the clutch shaft of each clutch or actuator that alternatively connects the reversing mechanism to the air valve and a lean gas valve for each respective flue. A locking device for locking the air valves in a closed position is also connected to the central actuator. A hydraulic actuator is also provided to selectively open and close the rich gas valves associated with the respective flues.

3,433,717
MULTISTAGE FLASH STILL WITH VAPOR COMPRESSION PLANT
Frederick A. Loebel, Milwaukee, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin
Filed Mar. 1, 1965, Ser. No. 435,847
U.S. Cl. 202—173 **3 Claims**
Int. Cl. C02b *1/06;* **B01d** *3/06*



A vapor compression plant having a multi-stage flash evaporator serving as a brine preheater for a vapor compression evaporator and compressor. The multi-stage flash evaporator can be divided into a heat rejection section and a heat regenerative section. A heat exchanger serves to preheat make up water by extracting heat from the distillate prior to adding the preheated make up water to an intermediate stage of the multi-stage flash evaporator. The preheated water entering the vapor compression evaporator substantially increases the distillate producing capacity of the plant.

3,433,718
CONCENTRATION OF NITRIC ACID USING LITHIUM NITRATE
Anthony W. Yodis, Whippany, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Feb. 15, 1967, Ser. No. 616,386
U.S. Cl. 203—13 **6 Claims**
Int. Cl. C01b *21/46;* **B01d** *3/34*



This application relates to a process for the concentration by distillation of dilute nitric acid wherein molten lithium nitrate is added as a dehydrating agent to aqueous dilute nitric acid which has previously been concentrated in order to avoid the problem of azeotrope formation. Concentrated HNO_3 is taken off as an overhead in the distillation while HNO_3—H_2O—$LiNO_3$ bottoms is flashed for recovery of the HNO_3 hydrate as vapor recycle to feed.

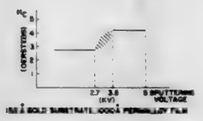
3,433,719
PLATING PROCESS FOR PRINTED CIRCUIT BOARDS
John Haskell Jones, Milan, Mo., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,053
U.S. Cl. 204—15 **8 Claims**
Int. Cl. C23b *5/50*

In a process for electrically interconnecting conductive circuit strata of multilayer circuitry in which the various strata are separated by insulative planes, thru-holes are provided between the strata, the walls of the holes seeded with a thin film of conductive material, and successive layers of conductive material then deposited on the seeded layer in such manner that adjacent layers have different grain configurations.

3,433,720
PRODUCTION OF TIN PLATE
Visvaldis Kupsis, Columbiana, and Royston P. Morgan, Canfield, Ohio, assignors to The Youngstown Sheet and Tube Company, Youngstown, Ohio
Filed Jan. 5, 1966, Ser. No. 518,890
U.S. Cl. 204—34 **3 Claims**
Int. Cl. C23b *5/60, 5/14*

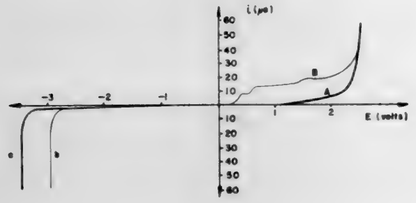
The method of making acid electrolytic tinplate which includes the step of chemically treating the metal to be treated with a solution of ferric chloride prior to its introduction to the plating unit and a postplating step of subjecting the treated metal to a tin reflow cycle to improve the corrosion resistance (Alloy Tin Couple value).

3,433,721
METHOD OF FABRICATING THIN FILMS
Irving W. Wolf, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Original application Mar. 28, 1960, Ser. No. 18,171, now Patent No. 3,234,525, dated Feb. 8, 1966. Divided and this application July 23, 1965, Ser. No. 484,155
U.S. Cl. 204—38 **5 Claims**
Int. Cl. C23f *17/00*



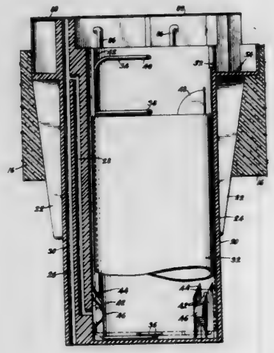
This invention relates to a method of forming very thin films with optimized magnetic properties. In particular, permalloy type nickel-iron films having a thickness on the order of a few hundred angstroms and which have an anisotropic axis with a square loop hysteresis characteristic are formed by a process comprising sputtering on a thin substrate and electro-depositing thereon the nickel and iron film.These films have utility as memory elements, parametric devices, etc. An example of a suitable application of these films is described in the Journal of Applied Physics, supplement to vol. 30, No. 4, April, 1959, pp. 60S and 61S ("Operating Characteristics of a Thin Film Memory") by J. I. Raffel.

3,433,722
ELECTROLYTIC METHOD OF REMOVING WATER FROM A POLAR SOLVENT
Joseph L. Weininger and Thomas O. Rouse, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,622
U.S. Cl. 204—129 2 Claims
Int. Cl. C01b *1/03, 13/04;* B01k *1/00*



A method for the removal of water from a non-aqueous polar solvent comprises dissolving in the solvent an electrolyte, and imposing on the solution a difference in potential sufficiently great to decompose the water, but not sufficient to decompose the solvent.

3,433,723
METHOD FOR PRODUCING HYPOCHLORITE SOLUTIONS AND INTRODUCING SAME INTO CONFINED BODIES OF WATER
Robert E. Stanton, 171 Downing St., Denver, Colo. 80218
Original application Mar. 28, 1962, Ser. No. 183,242, now Patent No. 3,222,269. Divided and this application May 24, 1965, Ser. No. 482,956
U.S. Cl. 204—149 3 Claims
Int. Cl. C02b *1/82*

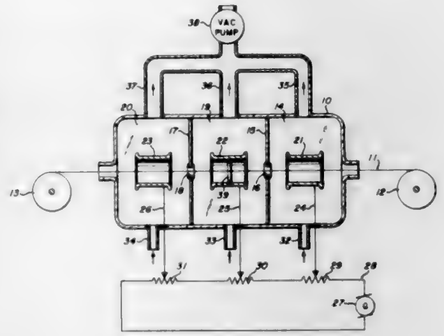


A method of treating a confined body of water by floating thereon an electrolytic cell containing a water soluble electrolytically decomposable metallic chloride salt, adding water to the salt to produce an electrolyte, transferring the electrolyte to the lower end of the cell which comprises an electrolysis zone partially submerged in the confined body of water, decomposing the electrolyte electrolytically to produce an hydroxide together with chlorine and hydrogen gases while simultaneously reacting the chlorine and hydroxide to produce the corresponding hypochlorite and introducing the thus produced hypochlorite into the confined body of water.

3,433,724
GRAFTING OF ACRYLONITRILE AND STYRENE ONTO POLYVINYL CHLORIDE USING HIGH ENERGY RADIATION
Adolphe Chapiro, Gif-sur-Yvette, and Anna-Maria Jendrychowska-Bonamour, Issy-les-Moulineaux, France, assignors to Centre Nationale de la Recherche Scientifique, Ministere de l'Education Nationale Republique Francaise, Paris, France, a corporation of France
No Drawing. Filed Apr. 3, 1964, Ser. No. 357,308
Claims priority, application France, June 23, 1963, 939,906
U.S. Cl. 204—159.17 4 Claims
Int. Cl. C08f *1/24, 15/40*

Process for grafting a mixture of acrylonitrile and styrene onto a polyvinyl chloride backbone wherein the grafter mixture contains 50–99% by volume acrylonitrile, preferably 75–99% by volume acrylonitrile.

3,433,725
METHOD OF MAKING METAL OR METALLOID CARBIDE YARN BY DECOMPOSING THE RESPECTIVE CHLORIDE IN THE PRESENCE OF CARBON YARN
Ralph L. Hough, Springfield, and Robert T. Schwartz, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 15, 1966, Ser. No. 543,771
U.S. Cl. 204—164 9 Claims
Int. Cl. B01k *1/00*

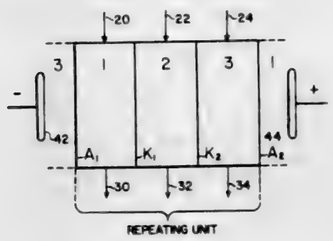


Yarn composed of metal carbides or metalloid carbides is made by passing metal carbides or metalloid carbides is made by passing carbon yarn through an atmosphere of a gaseous chloride of the metal or metalloid and simultaneously decomposing the chloride by heat or by an electrical discharge to cause the metal or metalloid to react with the carbon in the yarn.

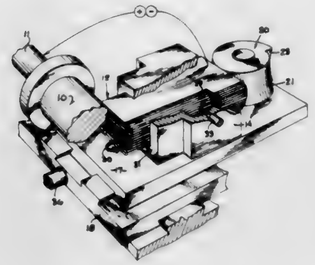
3,433,726
METHOD AND APPARATUS FOR TREATING LIQUID MILK PRODUCTS
Edgardo J. Parsi, Wellesley Hills, Mass., and Stuart G. McGriff, Washington, D.C., assignors to Ionics, Incorporated, Cambridge, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 199,691, June 8, 1962. This application June 5, 1967, Ser. No. 644,453
U.S. Cl. 204—180 11 Claims
Int. Cl. B01d *13/02;* B01k *5/00;* A23c *9/00*

This invention is directed to the treatment of liquid milk products by electrodialysis for the purpose of removing undesirable ionic constituents in the liquid milk product while simultaneously replacing said constituents, in situ, with corresponding desirable ionic constituents.

The invention may be employed to reduce simultaneously any undesirable radioactive or non-radioactive ionic constituent of milk while making up a corresponding increase or replacement in another desired ion.



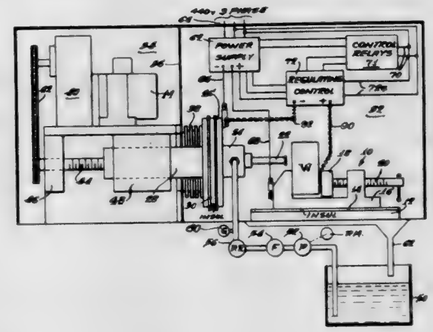
3,433,727
DYNAMIC ELECTRODE FOR ELECTROLYTIC MACHINING APPARATUS
George F. Keeleric, Big Sur, Calif.
(Shannon Airport P.O., County Clare, Ireland)
Filed Dec. 17, 1965, Ser. No. 514,463
U.S. Cl. 204—224 4 Claims
Int. Cl. B23p *1/12;* B01k *3/07*



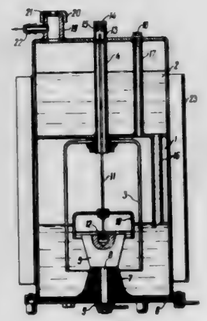
An electrode for electrolytic machining. The electrode changes contour by increments to follow shape of changing workpiece. Flat plates in a stack are advanced by a spiral cam form which changes the profile of the stack as the stack is advanced toward the workpiece.

3,433,728
CONTROL SYSTEM FOR ELECTROLYTIC MACHINING APPARATUS
Merlin O. Petroff, Grayslake, Ill., assignor to Anocut Engineering Company, Elk Grove Village, Ill., a corporation of Illinois
Filed July 28, 1964, Ser. No. 385,746
U.S. Cl. 204—224 10 Claims
Int. Cl. B23p *1/04*

An electrolytic machining apparatus of the type having an electrode placed opposite an electrode with a power unit to advance the electrode and workpiece toward each other while electrolyte is pumped through the gap between the electrode and the workpiece, an electric circuit for the power unit and the electrolyte pump, a transformer, a current rectifying output stage for electrolyzing current including at least one silicon controlled rectifier connected between the transformer and the electrode and workpiece, a voltage control unit coupled to the rectifier to maintain the electrolyzing current voltage at a predetermined value, and a control unit connected to detect an instantaneous charge in the electrolyzing current voltage to interrupt the firing of the silicon controlled rectifier and to cause the electric circuit to deenergize the power unit and the electrolyte pump.



3,433,729
APPARATUS FOR PRODUCING HYDROGEN AND OXYGEN
Lev Mikhailovich Proskuryakov, Ul. Pervomaiskaya 81/1, kv. 29, and Valentin Grigorievich Zizin, Ul. Kalinina 63, kv. 22, both of Ufa, U.S.S.R.
Filed Feb. 16, 1966, Ser. No. 527,781
U.S. Cl. 204—278 7 Claims
Int. Cl. C01b *13/06*



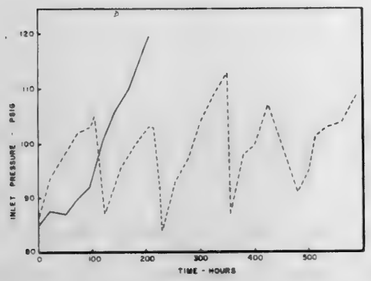
An apparatus for electrolyzing water to produce hydrogen and oxygen under pressure. The electrolytic cell acts as an electrode and has a bell jar in it which contains a second electrode. Gas delivery tubes are connected to the cell and to the inside of the bell jar. A valve is located in the bell jar gas delivery tube and actuated by a float in the bell jar above the electrode to ensure equalization of gas pressures in the bell jar and a gas consuming system.

3,433,730
ELECTRICALLY CONDUCTIVE TOOL AND METHOD FOR MAKING
George Charles Kennedy, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Filed Apr. 28, 1965, Ser. No. 451,650
U.S. Cl. 204—291 17 Claims
Int. Cl. B01k *3/06*

An electrically conductive material removal tool, for example, a cutoff or grinding wheel or an electrical ma-

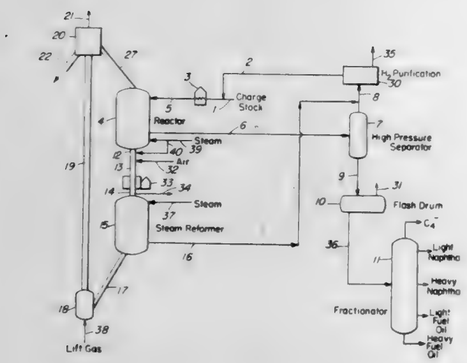
chining electrode, has a continuous electrical energy conducting means comprising a porous colloidal, refractory inorganic material, for example colloidal alumina, impregnated at least in part with an electrically conductive material, for example silver or silver oxide.

3,433,731
COIL DECOKING IN STEAM CRACKING BY INTERMITTENT SWITCH TO ETHANE FEED
George D. Oliver, Texas City, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,669
U.S. Cl. 208—48 **12 Claims**
Int. Cl. C10g *9/16*



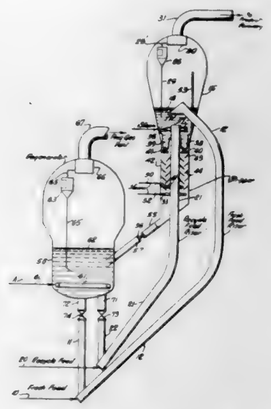
An improved method for cracking normally liquid hydrocarbons whereby on-stream decoking is accomplished comprising alternately cracking a normally liquid hydrocarbon and a normally gaseous hydrocarbon such as ethane.

3,433,732
CATALYTIC HYDROCRACKING PROCESS AND STEAM REGENERATION OF CATALYST TO PRODUCE HYDROGEN
Wilbur K. Leaman, Medford Lakes, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 17, 1967, Ser. No. 639,135
U.S. Cl. 208—111 **11 Claims**
Int. Cl. C10g *13/02, 11/28, 11/02*



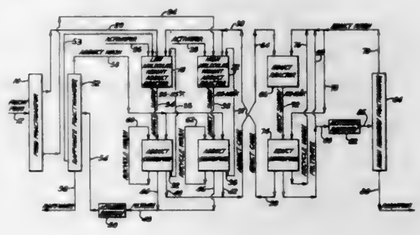
Petroleum hydrocarbons are upgraded and recovered from a catalytic hydrocracking step conducted under hydrogen pressure in the presence of a catalyst containing crystalline aluminosilicate having a hydrogenation component associated therewith. The catalyst from the hydrocracking step contains coke and is heated and then contacted with steam in a steam reforming step to produce hydrogen rich gas while at the same time regenerating the catalyst. The regenerated catalyst as well as at least a portion of the hydrogen rich gas produced in the steam reforming step are recycled to the hydrocracking step.

3,433,733
METHOD AND APPARATUS FOR FLUID CATALYTIC CRACKING
Dorrance P. Bunn, Jr., Henry B. Jones and Richard E. Nagle, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,281
U.S. Cl. 208—150 **9 Claims**
Int. Cl. C10g *11/18;* **B01j** *9/20*



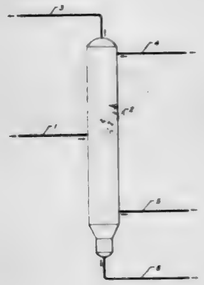
This invention relates to an improved method and apparatus for fluid catalytic cracking of hydrocarbon oils. More particularly, this invention relates to fluid catalytic cracking of at least one feed stock in a frusto-conic reaction zone with attendant stripping and regeneration of the catalyst.

3,433,734
METHOD FOR THE RECOVERY OF NORMAL PARAFFINS BY UREA ADDUCTION
Edgar Carlson, Pittsburgh, and Francis E. Wynne, Jr., Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,146
U.S. Cl. 208—308 **19 Claims**
Int. Cl. C10g *7/00, 29/22*



A mixture containing normal paraffins together with other materials is subjected to urea adduction in a process which tends to equalize the number of moles of each normal paraffin recovered. The process is performed with a plurality of adductors including an adductor for relatively low molecular weight normal paraffins and an adductor for relatively high molecular weight normal paraffins. The feed stream is subjected to overlapping distillation so that some of the normal paraffin fraction earmarked for the low molecular weight adductor is diverted to the high molecular weight adductor and some of the high molecular weight fraction earmarked for the high molecular weight adductor is diverted to the low molecular weight adductor. Following adduction, the urea from both adductors is subjected to an eduction step, but the educted normal paraffins are incompletely removed from the urea. The urea from both the low and high molecular weight adductors is intermixed and produces a combined urea stream containing some normal paraffins. The intermixed combined urea stream is then divided and recycled to both the low molecular weight and high molecular weight adductors.

3,433,735
SOLVENT DISPERSE PHASE EXTRACTION OF AROMATIC HYDROCARBONS
Donald B. Broughton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 583,041
U.S. Cl. 208—325 **4 Claims**
Int. Cl. C10g *21/12*



The present invention relates to an aromatic hydrocarbon extraction process, and more particularly to an operation wherein the extraction means is maintained with hydrocarbon as the continuous phase and with solvent selective for monocyclic aromatics as the dispersed phase. Where the extractor comprises a rotating disc contactor, the aromatic extraction process utilizes a solvent selective for monocyclic aromatics which may be selected from the group consisting of sulfolane solvents, sulfolane-type solvents, sulfolene solvents, and polyalkylene glycol solvents.

3,433,736
PROCESSES FOR ELIMINATING FROM A SOLUTION ANIONS DERIVED FROM HYDRACIDS AND OXACIDS
Jean-Louis Guth and Raymond Wey, Mulhouse, France, assignors to Commissariat à l'Energie Atomique, Paris, France
No Drawing. Continuation-in-part of applications Ser. No. 425,925, Jan. 15, 1965, and Ser. No. 426,420, Jan. 18, 1965. This application Apr. 8, 1968, Ser. No. 719,740
Claims priority, application France, Jan. 27, 1964, 961,689, 961,690, 961,691
U.S. Cl. 210—37 **2 Claims**
Int. Cl. C02b *1/58;* **C01b** *33/28*

Anions derived from hydracids and oxacids are removed from solutions by using hydroxysodalite as an ion exchanger and from oxacids using hydroxyparacancrinite as an ion exchanger at temperatures above 200° C. and at a saturated steam pressure at the temperature used.

3,433,737
METHOD OF REDUCING TOXICITY OF WASTE STREAMS CONTAINING ORGANIC THIOCYANATE COMPOUNDS
Donald Clifford Wehner, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 23, 1965, Ser. No. 509,407
U.S. Cl. 210—49 **4 Claims**
Int. Cl. B01d *21/01;* **C02b** *1/20*

Waste effluent streams containing spent mother liquor and wash liquid resulting from the synthesis of organic thiocyanate compounds such as methylene bisthiocyanate are rendered non-toxic by adding sufficient alkali to raise their pH to at least 9, followed by separation of the resulting decomposition products.

3,433,738
METHOD OF PRECIPITATING POLYVALENT CATIONS
William A. P. Black, Falkirk, Eric T. Dewar, Dalkeith, and David Rutherford, Edinburgh, Scotland, assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Application June 16, 1965, Ser. No. 527,998, now Patent No. 3,400,107, which is a division of application Ser. No. 225,168, Sept. 20, 1962, now Patent No. 3,225,012, which in turn is a continuation-in-part of application Ser. No. 140,618, Sept. 25, 1961. Divided and this application May 7, 1968, Ser. No. 739,955
U.S. Cl. 210—54 **1 Claim**
Int. Cl. C02b *1/20, 5/00*

Aqueous solutions of the sodium salt of poly(3-O-methacryloyl-D-gluconic acid) exhibit high viscosities and effectively precipitate polyvalent cations from solution. The preparation of the above polyacid via a subsequently deacetonated isopropylidene intermediate is described.

3,433,739
IRON DEPOSIT PREVENTION
Theodore R. Newman, Oak Lawn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 30, 1966, Ser. No. 606,022
U.S. Cl. 210—58 **2 Claims**
Int. Cl. C02b *5/06*

This invention relates to the use of minor amounts of citric acid to stablize water containing dissolved iron, wherein the water is used in once-through systems. Substantially less than equal parts by weight of citric acid have been found to be effective in reducing or preventing iron deposits in waters containing at least 0.5 p.p.m. of iron.

3,433,740
WELL FLUID ADDITIVE AND METHOD OF MAKING THE SAME
Arthur L. Armentrout, 455 E. Ocean Blvd., Long Beach, Calif. 90802
No Drawing. Continuation-in-part of application Ser. No. 502,507, Oct. 22, 1965. This application Jan. 18, 1968, Ser. No. 698,735
U.S. Cl. 252—8.5 **10 Claims**
Int. Cl. C09; C09k *3/00*

A combination weighting, fracturing and propping aggregate additive for well fluids comprising, a plurality of commingled groups of granulate mineral material, the granules of each group being substantially the same size, each granule having Krumbein indices of sphericity and roundness greater than 0.6, a specific gravity of 2.7 or greater and a Moh's hardness in excess of 3, the granule of each group of granules being approximately twice the size of the granules of the next smaller size group, the volume of each group of granules being approximately equal to the volume of every other group

of granules, and having a bulk density of over 160 pounds per cubic foot, the major dimensions of the smallest granules being less than one micron, and the major dimensions of the largest granules not exceeding 16,384 microns, preferably a predetermined portion of the granules are established of acid soluble material and all other granules are established of acid resistant material.

3,433,741

POLYBUTENE-1 COMPOSITIONS CONTAINING LUBRICANTS AND METHOD OF USE THEREFOR

Jack M. Kincaid, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Oct. 26, 1967, Ser. No. 678,178
U.S. Cl. 252—12 **16 Claims**
Int. Cl. C10m *7/52, 7/34, 7/24*

Method for supporting at least one moving surface; novel polybutene-1 compositions containing specified lubricants are disclosed.

3,433,742

POLYBUTENE-1 BEARING COMPOSITIONS AND METHOD

Edward M. Banta, Baytown, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Oct. 26, 1967, Ser. No. 678,198
U.S. Cl. 252—12 **16 Claims**
Int. Cl. C10m *7/04, 7/06, 7/14*

Method for supporting at least one moving surface; novel polybutene-1 compositions containing lubricants such as graphite, molybdenum sulfide and disulfide are disclosed.

3,433,743

LUBRICATING GREASE CONTAINING COLLOIDAL ASBESTOS

Arnold J. Morway, Clark, and Albert J. Bodner, Watchung, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,862
U.S. Cl. 252—13 **5 Claims**
Int. Cl. C10m *5/00, 5/16, 5/12*

5 to 40 wt. percent of colloidal asbestos in the form of small tubular fibers having outer diameters of 1 to 80.0 millimicrons and particle lengths of 2,000 to 30,000 millimicrons will thicken a major amount of lubricating oil to form a lubricating grease. Optionally, 0.5 to 15 wt. percent of carboxylic acid such as C_{12} to C_{30} fatty acids, dimers or trimers of said fatty acids, can be reacted by mixing and heating with the colloidal asbestos, during the grease making process, which makes the grease water-insoluble.

3,433,744

REACTION PRODUCT OF PHOSPHOSULFURIZED HYDROCARBON AND ALKYLENE POLYCARBOXYLIC ACID OR ACID DERIVATIVES AND LUBRICATING OIL CONTAINING THE SAME

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,714
U.S. Cl. 252—46.7 **7 Claims**
Int. Cl. C10m *1/34, 1/48, 1/08*

Phosphorus and nitrogen containing reaction products useful as additives in fuels, lubricants, and the like are prepared by phosphosulfurizing hydrocarbon or substituted hydrocarbon compounds to prepare a first intermediate, reacting this phosphosulfurized intermediate with an unsaturated dicarboxylic acid acylating agent to prepare a second intermediate, and finally reacting this second intermediate with an amine compound to prepare the desired phosphorus and nitrogen-containing product. These products impart dispersancy and other desirable properties to fuels and lubricants. A particularly useful product is the one prepared by phosphosulfurizing a polyisobutene with phosphorus pentasulfide, thereafter reacting the phosphosulfurized product with maleic anhydride, and then reacting this product with an alkylene polyamine such as tetraethylene pentamine.

3,433,745

DRY CLEANING DETERGENT COMPOSITION

Edward A. Knaggs, Deerfield, Marvin L. Nussbaum, Skokie, and Elias Fischer, Wilmette, Ill., assignors to Stepan Chemical Company, Northfield, Ill., a corporation of Delaware

No Drawing. Filed Apr. 12, 1965, Ser. No. 447,514
U.S. Cl. 252—153 **2 Claims**
Int. Cl. C11d *1/37;* **D06l** *1/02*

An improved dry cleaning composition and method of using the same by relatively unskilled workers in public coin-operated machines comprising an emulsion of water in a volatile dry cleaning solvent with a small amount of dry cleaning assistant which is a detergent component tolerant to relatively large amounts of water therein. The detergent component (*y*) is generally classifiable as a neutralized sulfated alkoxylated fatty alcohol which is usable per se in the dry cleaning composition or may be combined with certain minor proportions of (*a*) neutralized alpha-sulfo fatty ester or amide and/or with (*x*) sulfated alkyl chalcophenol polyalkoxide condensates.

3,433,746

DRY CLEANING DETERGENT COMPOSITION

Edward A. Knaggs, Deerfield, and Elias Fischer, Wilmette, Ill., assignors to Stepan Chemical Company, Northfield, Ill., a corporation of Delaware

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,063
U.S. Cl. 252—153 **2 Claims**
Int. Cl. C11d *1/37;* **D06l** *1/02*

An improved dry cleaning composition and method of using the same comprising an emulsion of water in a volatile dry cleaning solvent with a small amount of a dry cleaning assistant which is a detergent component. The detergent component (*a*) is generally classified as a neutralized alpha-sulfo fatty ester or amide which is usable per se in the dry cleaning composition or may be combined with certain minor proportions of (*x*) sulfated alkyl chalcophenol polyalkoxide condensates and/or with (*y*) neutralized sulfated alkoxylated fatty alcohols in addition with conventional additives such as lubricants, anti-static agents, etc.

3,433,747

METHOD OF PREPARING PETROLEUM CRACKING CATALYSTS

John S. Magee, Jr., Baltimore, and Warren S. Briggs, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Nov. 4, 1966, Ser. No. 591,968
U.S. Cl. 252—433 **6 Claims**
Int. Cl. B01j *11/64*

A means for preparing silica and alumina cracking catalysts which comprises gelling an appropriate sol with gaseous BF_3, followed by washing and drying the gel.

3,433,748

PROCESS FOR FORMING SILICA-ALUMINA HYDROCARBON CONVERSION CATALYSTS

John S. Magee, Jr., Baltimore, and Warren S. Briggs, Silver spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,726
U.S. Cl. 252—453 **12 Claims**
Int. Cl. B01j *11/40;* **C01b** *33/20*

Silica-alumina hydrocarbon conversion catalysts having

a surface area less than 400 m.²/g. are prepared by several variations of a basic process. In general, a silica-alumina gel slurry is formed and then the gel is separated, washed and dried. In the first variation, an alkali metal silicate solution and part of an aluminum salt solution is gelled, then the remainder of the latter is mixed in while the reaction mixture pH is kept within the 7 to 9 range by aqueous ammonia solution additives. In the second variation, the remainder of the aluminum salt solution is added before the pH is adjusted up to the 7 to 9 range. In the third variation, the alkali metal silicate solution is mixed with all of the aluminum salt solution and then the pH is adjusted up to the 7 to 9 range. The separated gels are washed with weak acid solutions, but when the alumina content is over 30 percent, an ammonium carbonate solution is used.

3,433,749

GLASS ELECTRODE COMPOSITIONS

Kazuyuki Nishimoto, Ibaraki-shi, and Yoshio Iida, Hirakata-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

No Drawing. Filed June 3, 1966, Ser. No. 555,001
Claims priority, application Japan, June 30, 1965, 40/39,870
U.S. Cl. 252—521 **4 Claims**
Int. Cl. H01b *1/08, 1/00*

In order to produce electrode glass compositions which have both remarkable low electrical resistance and high electrical potential per unit pH, in addition to other desirable characteristics, it is necessary that the compositions contain both BaO and U_3O_8, in special amounts (3 to 15 wt. percent of the latter and 5 to 13 wt. percent of the former).

3,433,750

NOVEL WATER-REPELLENT COMPOSITIONS

Jacob M. Fain and Edward McDonnell, Brooklyn, N.Y., assignors to Twenty Nine West Fifteenth Street Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,504
U.S. Cl. 260—2 **12 Claims**
Int. Cl. C08g *33/20, 31/02*

Water repellent compositions comprised of a silico-titanium copolymer and a cationic, surface-active quaternary ammonium compound and to a method of forming transparent water-repellent films on the surface of transparent solids during rain.

3,433,751

POLYETHER POLYOL COMPOSITION AND POLYURETHANE FOAMS PRODUCED THEREFROM

Masaru Yotsuzuka, Kobe, Akizo Keshi, Takatsuki, Norishige Hashimoto and Katsuhisa Kodama, Nishinomiya, and Shigenobu Nakahara, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,950
Claims priority, application Japan, Feb. 1, 1965, 40/5,748
U.S. Cl. 260—2.5 **10 Claims**
Int. Cl. C08g *22/14;* **C07c** *43/04*

Flexible polyurethane foams especially useful for mattresses or carpets are prepared from polyether polyol mixture having an OH number between 40 and 70 which consists of a mixture glycol or triol polyether and a sucrose or sorbitol polyether.

3,433,752

PROCESS FOR PREPARING RIGID POLYURETHANE FOAMS OF OPEN CELL STRUCTURE

Bonnie L. Zagoren, North Aurora, and Felix H. Otey and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation-in-part of application Ser. No. 492,949, Oct. 4, 1965. This application Jan. 4, 1967, Ser. No. 607,151
U.S. Cl. 260—2.5 **1 Claim**
Int. Cl. C08g *22/44*

The inclusion of an alkali metal salt of an α-sulfonated higher fatty acid in a one-shot rigid polyether polyurethane formulation also containing a conventional closed-cell surfactant provides a rigid foam in which from about 75 percent to about 99 percent of the cells now exhibit unexpected intercommunicating pores or capillaries, thus making these cells of the open type.

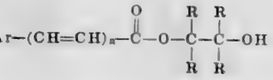
3,433,753

PAINT COMPOSITION INCLUDING A DISPERSANT HAVING A SOLVATABLE CHAIN-LIKE COMPONENT

Ferenc Karoly Farkas, Maidenhead, and Derek John Walbridge, Slough, England, and John Rodney Foot, Arbroath, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 27, 1964, Ser. No. 385,497
Claims priority, application Great Britain, Aug. 1, 1963, 30,581/63
U.S. Cl. 260—22 **8 Claims**
Int. Cl. B01f *17/52;* **C08f** *27/12;* **C08g** *45/00*

1. A paint composition comprising an organic liquid containing dissolved or dispersed therein a film-forming material, a pigment which is insoluble in said organic liquid and dispersed therein, and 0.1 to 200% by weight of the pigment of a dispersant for said pigment, said dispersant being soluble in said organic liquid and having the formula:



in which Ar is an aromatic group, *n* is 1 or 0, from 2 to 3 R groups are H, CH_3 or C_2H_5 and the remaining R group or groups individually or the remaining group



in combination provides a chain-like component of at least 12 atoms linked in series which is solvated by said organic liquid.

3,433,754

PROCESS FOR THE PRODUCTION OF SYNTHETIC RESINS HARDENABLE BY MULTIESTERIFICATION

Herbert Honel, Graz-Andritz, Austria, assignor to Vianova Kunstharz Aktiengesellschaft, Vienna, Austria, a corporation

No Drawing. Filed Apr. 12, 1965, Ser. No. 447,552
Claims priority, application Austria, Apr. 13, 1964, A 3,197/64
U.S. Cl. 260—22 **14 Claims**
Int. Cl. C09d *3/68, 3/70*

Improved compositions initially miscible in water and which are hardenable by heating are described. The compositions comprise a simple physical mixture and/or a partially esterified mixture which is still soluble of substantially equivalent proportions of (1) an additive compound prepared by substantially complete reaction of one part by weight of maleic anhydride and 1.5 to 2.5 parts by weight of a hydroxy-free polyol ester substantially of an unsaturated oil fatty acid selected from the group con-

sisting of oil fatty acids with isolated double bonds and oil fatty acids with singly conjugated double bonds, and (2) a diol. The compositions are initially soluble in an organic solvent and after saponification with a nitrogen base are soluble in water or a mixture of water and an organic solvent. The hardening of the compositions upon heating is due to multiesterification.

3,433,755

ION-EXCHANGE MATERIAL FROM HALOGENATED POLYETHYLENE

Brian Alfred Cooke, Chalfont St. Peter, England, and George Gourlay, Saltcoats, Scotland, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed July 26, 1965, Ser. No. 474,939
Claims priority, application Great Britain, Aug. 18, 1964, 33,719/64
U.S. Cl. 260—2.2 **12 Claims**
Int. Cl. C08f *27/00*; **B01d** *15/04*

A process for preparing polymeric ion-exchange material is disclosed. Halogenated polyethylene is reacted, in the presence of a Friedel-Crafts catalyst, with benzene or a substituted alkyl benzene to substitute aromatic nuclei in the polyethylene chain. The resulting polymeric material is treated in the conventional manner to attach ion-exchange groups to the aromatic nuclei of the polymeric material.

3,433,756

PROCESS FOR THE PRODUCTION OF HIGH MOLECULAR WEIGHT ESTERS OF A CARBOXYLIC ACID

Wolfgang Seeliger and Rudolf Nehring, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Oct. 29, 1965, Ser. No. 505,744
Claims priority, application Germany, Nov. 24, 1964, C 34,451
U.S. Cl. 260—22 **3 Claims**
Int. Cl. C08g *17/16*; **C08h** *9/00*; **C08f** *21/04*

High molecular weight polyesters of carboxylic acids with (cyclo)-aliphatic diols are produced through polycondensation of a compound of the formula

$$R\{O—R'—O—CO\}_xOR''$$

by heating the same in the presence of a specified fatty acid compound as catalyst.

3,433,757

NON-PAINTED, COLORED, HARD RUBBER STEERING WHEEL

Alex T. Sturrock, Lathrup Village, Mich., assignor, by mesne assignments, to Sheller-Globe Corporation, a corporation of Ohio

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,538
U.S. Cl. 260—31.4 **4 Claims**
Int. Cl. C08d *9/00, 11/76*; **B62d** *1/04*

A colored hard rubber steering wheel for steering vehicles and the like which wheel is of generally uniform color throughout its hard rubber composition, said wheel being comprised of means for grasping by hand and capable upon rotation of steering the vehicle, with the hard rubber composition comprising in parts by weight: 100 parts of styrene-butadiene rubber copolymer, about 60 to about 90 parts of a high viscosity hydrated silica pigment for thickening and having a particle size of less than 325 mesh, from 60 to about 200 parts of a low viscosity hydrated siiica pigment for thinning and having an ultimate particle size of about 0.08 to about 0.12 micron, about 5 to about 60 parts of a processing aid, about 2 to about 30 parts organic polyhydroxy plasticizer, about 1 to about 18 parts peroxide vulcanizing agent, and about 0.05 to about 7 parts coloring agent, and, the method of preparing same.

3,433,758

METHODS FOR PREPARING VANADIUM OXIDE-CATALYZED ORGANOPOLYSILOXANES

Ian M. Thomas, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed July 12, 1967, Ser. No. 652,726
U.S. Cl. 260—33.4 **16 Claims**
Int. Cl. C08f *45/34, 45/28*

Methods for hydrolyzing trifunctional organic silanes such as methyltrialkoxysilane, phenyltrialkoxysilane, or mixtures thereof at neutral conditions using a vanadium containing hydrolysis catalyst comprising vanadium pentoxide. The resultant heat curable, solvent-soluble prepolymer is used to prepare excellent laminates, moldings, and hard, clear, flexable coatings.

3,433,759

ROOM TEMPERATURE CURABLE LIQUID CONJUGATED DIENE COMPOSITIONS

Joseph James Bayerl, Wayne, Hendrik Kamiel de Decker, Montclair, and Ying Kao Lee and David Ivan Sapper, West Caldwell, N.J., assignors to Texas-U.S. Chemical Company, Parsippany, N.J., a corporation of Delaware

No Drawing. Filed July 17, 1964, Ser. No. 383,493
U.S. Cl. 260—33.6 **16 Claims**
Int. Cl. C07d *11/04*; **C07c** *11/30, 11/04*

A novel liquid polymer composition which is readily cured to the elastomeric state. The polymeric portion of the liquid composition is at least one homopolymer or copolymer of an emulsion process conjugated diene having from 4 to 8 carbon atoms, e.g., polybutadiene and styrene-butadiene copolymers. The liquid composition contains at least one stabilizer in a maximum specified concentration, and also contains between 3 and 10 parts of a curing agent. The viscosity of the liquid polymer is between 10 and 20,000 poises at 25° C. The invention provides a method for curing novel liquid polymer compositions to an elastomeric state in periods of up to two hours.

3,433,760

BLENDS OF LIQUID VINYL UNSATURATED HYDROCARBON POLYMERS WITH ORGANOPOLYSILOXANES

Harold A. Clark and Bernard Vanwert, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 9, 1965, Ser. No. 512,798
U.S. Cl. 260—37 **7 Claims**
Int. Cl. H01b *3/46, 3/44*; **C08g** *47/10*

A curable silicone-organic resin having improved electrical properties includes 100 parts by weight of a mixture of 75 to 95 percent by weight of a liquid hydrocarbon polymer having vinyl unsaturation and a molecular weight of 1,500 to 100,000, such as a styrene butadiene copolymer, and 5 to 25 percent by weight of an organopolysiloxane having at least 2 silicon bonded hydrogen atoms, such as $(CH_3)_3SiO[H(CH_3)SiO]_3Si(CH_3)_3$, 1 to 4 parts by weight of an organic peroxide curing catalyst, a catalytic amount of platinum, 0 to 25 parts of a hydrocarbon plasticizer and 0 to 200 parts of a filler.

3,433,761

FLOORING MATERIAL OF UNSATURATED POLYESTER RESIN ALUMINUM OXIDE GRIT AND CATALYST AND METHOD OF APPLICATION

Arthur W. Holle, 8858 W. 47th St., Brookfield, Ill. 60513

No Drawing. Filed May 20, 1966, Ser. No. 551,530
U.S. Cl. 260—40 **8 Claims**
Int. Cl. C08g *51/12*; **C08f** *45/12*; **C09d** *5/34*

A flooring material comprising a composition consisting of an unsaturated polyester resin mixed with a catalyst and a grit of essentially aluminum oxide which forms a slurry spreadable on the floor surface to be coated.

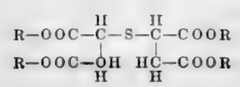
3,433,762

STABILIZED POLYPROPYLENE COMPOSITIONS CONTAINING A PHENOLIC ANTIOXIDANT AND TERT-ALKYL ESTER OF THIODISUCCINIC ACID

Charles Kezerian and Edwin G. Wallace, Orinda, Calif., and Adam F. Kopacki, Westwood, N.J., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 634,440, Apr. 26, 1967, which is a continuation-in-part of application Ser. No. 347,358, Feb. 26, 1964. This application Dec. 22, 1967, Ser. No. 692,639.
U.S. Cl. 260—45.8 **10 Claims**
Int. Cl. C08f *45/58, 29/02*

An antioxidant composition for polypropylene containing (1) from about 0.001% to 5.0% by weight of said polypropylene the phenolic compound (a) 4,4'-dithiobis (2,6-methylbenzylphenol), (b) 4,4'-dithiobis(ortho-phenylphenol), (c) 4,4'-butylidene bis(6-tert-butyl-m-cresol), (d) 4,4'-thiobis(3-methyl-6-tert-butylphenol), (e) the 3:1 condensation product of 3-methyl-6-tert-butylphenol with crotonaldehyde or (f) 6-(4-hydroxy-3,5-di-tert-butylanilino)-2,4-bis(n-octylthio-1,3,5-triazine and (2) from about 0.001% to about 5% by weight of said polypropylene of a tetra-alkyl ester of thiodisuccinic acid of the formula



wherein R is selected from the group consisting of alkyl and phenyalkyl groups containing from 4 to 22 carbon atoms, inclusive. An example of said ester is tetra-n-decyl thiodisuccinate.

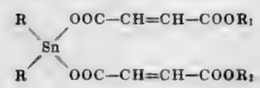
3,433,763

DIHYDROCARBYL TIN MALEIC ACID ESTERS AND THEIR USE AS PVC STABILIZERS

Kozaburo Suzuki, Kobe-shi, Toshio Seki, Osaka-shi, and Yohei Kawakami, Osaka-fu, Japan, assignors to Nitto Kasei Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 5, 1965, Ser. No. 506,572
Claims priority, application Japan, Nov. 5, 1964, 39/62,318
U.S. Cl. 260—45.75 **7 Claims**
Int. Cl. C08g *45/62*

In accordance with certain of its aspects this invention relates to novel compositions and to a novel process for stabilization of vinyl chloride resins against heat and light by adding to vinyl chloride resin 0.5 to 5% by weight of a stabilizer consisting essentially of an organotin compound having the general formula



wherein R represents a member selected from the group consisting of alkyl containing from 1 to 18 carbon atoms, aryl and benzyl radicals and OR_1 and OR_2 each represents a member selected from the group consisting of (a) the organic residue of an alcohol containing 8–16 carbon atoms and including an aromatic substituent in one of the α and β positions, the rate of autooxidation of said alcohol being more than 20.0×10^{-6}/l. sec. at a temperature of 80° C. in the presence of benzoyl peroxide as an initiator, and (b) the organic residue of a phenol containing 7–24 carbon atoms and including 1–3 substituents containing from 1–8 carbon atoms selected from the group consisting of alkyl and alkoxy radicals said phenol having an oxidation potential of less than 0.9 volt.

3,433,764

ART OF PRODUCING SILOXANE CONDENSATION PRODUCTS

Judith A. Walmsley, Sylvania, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,924
U.S. Cl. 260—46.5 **16 Claims**
Int. Cl. C08g *47/02, 31/02*; **C07f** *7/04*

Methods of making solvent-soluble, thermoplastic, film-forming organopolysiloxanes by hydrolyzing and partially condensing a hydrolyzable silane that is preferably propyltrialkoxysilane under alkaline conditions to form a prepolymer, and thereafter heating the prepolymer preferably under vacuum to avoid any detrimental action of oxygen and to remove volatile by-product alcohol and low boiling polymeric materials to provide the thermoplastic, organic solvent-soluble organopolysiloxanes. The resulting thermoplastic organopolysiloxanes are useful in coating and film-forming compositions and as plasticizers for other polymers.

3,433,765

METHOD FOR THE PRODUCTION OF SILICONE GUMS

Lothar Ernst Geipel, Adrian, Mich., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 7, 1967, Ser. No. 658,618
U.S. Cl. 260—46.5 **9 Claims**
Int. Cl. C08g *47/06, 31/09*

Polymerization reactions yielding silicone gums are speeded through the use of a particular catalyst aided by a promoter. The catalyst is derived by the reaction of a tetra-alkyl ammonium hydroxide and a siloxane tetramer while the promoter is characterized by its ability to increase the concentration of free anions through cation solvation.

3,433,766

DERIVATIVES OF BISPHENOLIC SUBSTITUTED CARBOXYLIC ACIDS

Reynold E. Holmen, White Bear Lake, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original application Apr. 20, 1955, Ser. No. 502,742. Divided and this application Sept. 8, 1967, Ser. No. 666,460
U.S. Cl. 260—47 **9 Claims**
Int. Cl. C08g *17/02, 5/16, 20/00*

Polyesters, polyamides and amide-esters of bisphenolic acids, such as gamma,gamma-bis(4-hydroxyphenyl)valeric acid useful as chemical intermediates by virtue of their many reactive sites. For example, they may be cross-linked through their plurality of phenolic groups to an insoluble, infusible state.

3,433,767

PHOSPHONITRILIC LAMINATING AND MOLDING RESINS EMPLOYING $Mg(OH)_2$ AS A CURING CATALYST

James M. Maselli, Ellicott City, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 652,710, July 12, 1967. This application Nov. 3, 1967, Ser. No. 680,339
U.S. Cl. 260—51 **3 Claims**
Int. Cl. C08g *5/10, 33/16*

Curing system for phosphonitrilic resins which uses a formaldehyde yielding source and freshly prepared magnesium hydroxide as the catalyst.

3,433,768

PREPARATION OF ISOCYANATE MODIFIED RESORCINOL FORMALDEHYDE RESIN

Robert A. Muhlberger, Erie, Pa., and Edward J. Lamby, Schenectady, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Feb. 17, 1967, Ser. No. 616,770

U.S. Cl. 260—54 9 Claims
Int. Cl. C08g *5/18, 22/08, 51/78*

Resorcinol is reacted with aqueous formaldehyde and the resin dehydrated. The molten resin the presence or absence of a solvent is reacted with an organic polyisocyanate.

3,433,769

CURING SYSTEM FOR ETHOXYLINE RESINS CONSISTING OF A SOLUTION OF PHOSPHOMOLYBDIC ACID AND A HYDROXY PHOSPHATE ESTER

Paul W. Juneau, Jr., Plymouth Township, Pa., assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Nov. 12, 1965, Ser. No. 507,592

U.S. Cl. 260—58 2 Claims
Int. Cl. C08g *30/10, 51/78*

Process for curing an epoxy novolak resin at room temperature by reacting the resin with a solution made up of phosphomolybdic acid and a hydroxy containing phosphate ester.

3,433,770

ADDITION OF DIARYL ESTER TO POLYCONDENSATION STEP OF POLYESTERIFICATION PROCESS

Takeo Shima and Hisashi Yamada, Iwakuni-shi, Japan, assignors to Teijin Limited, Kita-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed May 24, 1965, Ser. No. 458,377

Claims priority, application Japan, June 1, 1964, 39/30,851, 39/30,852

U.S. Cl. 260—75 9 Claims
Int. Cl. C08g *17/003, 17/08*

An improved process for preparing linear polyesters from dicarboxylic acids and dihydric alcohols wherein polyesters of a high degree of polymerization are prepared at a high polymerization rate, the improvement which comprises adding a diaryl ester of a dicarboxylic acid to the reaction mixture of the polycondensation reaction step when such reaction mixture has a viscosity of not less than 0.35.

3,433,771

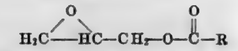
POLYURETHANE ADHESIVES BASED ON DIISOCYANATES AND AN EPOXY ESTER-DIBASIC ACID ADDUCT

Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 2, 1965, Ser. No. 511,227

U.S. Cl. 260—77.5 3 Claims
Int. Cl. C08g *22/10*

Polyurethanes made by reacting a dibasic acid, a compound represented by the formula



where R is an alkyl radical of 1–26 carbon atoms,

and an organic diisocyanate, useful as adhesives.

3,433,772

PROCESS FOR PREPARING POLYBENZIMIDAZOLES

Edward C. Chenevey, North Plainfield, and Anthony B. Conciatori, Chatham, N.J., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,797

U.S. Cl. 260—78.4 13 Claims
Int. Cl. C08g *20/32, 51/22*

An improved process is provided for the production of polybenzimidazoles in which at least the initial portion of the polymerization reaction is conducted in the presence of an inert organic additive present in the liquid state which is capable of inhibiting the formation of foam. The additives utilized in the process may be selected from the group consisting of alkanes, polycarbocyclic hydrocarbons, diaryl ethers, alkyl aryl ethers, and silicone oils.

3,433,773

NOVEL COPOLYMER

Hidehiko Kobayashi, Hiroshi Ohama, and Shizuko Saito, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,046

Claims priority, application Japan, Feb. 11, 1965, 40/7,228

U.S. Cl. 260—78.5 13 Claims
Int. Cl. C08g *17/06*

A novel copolymer is produced by a method which comprises heating a hydroxy cycloacrolein acetal with a cyclic acid anhydride or polyanhydride at a temperature from room temperature to 200° C. in the presence or absence of a polymerization solvent.

3,433,774

POLYMERISATION PROCESS

Clement Henry Bamford, Liverpool, and Frederic James Duncan and Reginald John William Reynolds, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,057

Claims priority, application Great Britain, Nov. 11, 1964, 45,958/64, 45,959/64

U.S. Cl. 260—80 14 Claims
Int. Cl. C08f *1/76, 1/64*

A process for the polymerisation of ethylenically unsaturated monomers normally polymerisable by free radicals which comprises contacting the monomeric material with a catalyst system comprising an N-halogenated organic compound and a transition metal carbonyl.

The polymerisation process may be operated without the need to exclude air and, in its preferred form, the invention provides a process for grafting polymers of ethylenically unsaturated monomers onto natural or synthetic polymers containing >N—H groups in the repeating units of the polymer chains which avoids the disadvantages often accompanying the prior peroxidation step normally required to provide the grafting centers.

3,433,775

PROCESS OF MAKING BUTYL RUBBER WHEREBY A BROAD MOLECULAR WEIGHT DISTRIBUTION IS OBTAINED UNDER CONTROLLED CONDITIONS

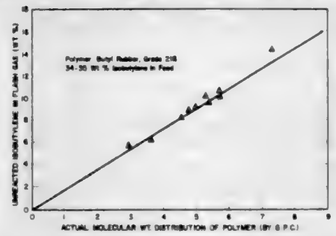
Richard Louis Ray and Marnell A. Segura, Baton Rouge, La., and John L. Bryan, Jr., Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 12, 1966, Ser. No. 520,282

U.S. Cl. 260—85.3 8 Claims
Int. Cl. C08f *1/72, 15/04*

A process for preparing solid polymers from isoolefins

and multiolefins having a desired molecular weight distribution which comprises operating the process according to the formula:



$$M_w/M_n = \text{Molecular weight distribution} = 0.925 + 0.057(A) + 0.263(B) - [(5\times10^{-5})(C)]$$

3,433,776

POLY(1,2-DIVINYL ETHYLENE OXIDE)-N_2F_4 ADDUCT

Anthony J. Passannante, Metuchen, and Eugene L. Stogryn, Fords, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 22, 1962, Ser. No. 219,373

U.S. Cl. 260—88.3 5 Claims
Int. Cl. C08f *15/04*

1. Poly(1,2-divinyl ethylene oxide)-N_2F_4 adduct containing about 60 to 68 wt. percent NF_2.

3,433,777

EMULSIFIABLE POLYOLEFIN COMPOSITION AND PROCESS FOR ITS PREPARATION

Marion Otis Brunson, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 444,405, Mar. 31, 1965. This application Dec. 20, 1966, Ser. No. 603,139

U.S. Cl. 260—88.2 12 Claims
Int. Cl. C08f *15/04, 27/28, 47/16*

Emulsifiable low molecular weight amorphous modified polyolefin compositions and processes for their preparation. Modified amorphous polyolefin compositions are prepared by reacting a low viscosity amorphous polyolefin having an inherent viscosity of less than 0.5 with an unsaturated polycarboxylic component such as maleic anhydride to produce a substantially non-cross-linked substantially emulsifiable modified polyolefin. These polyolefins can be used for many purposes including laminating aluminum to paper and as modifiers to improve the adhesion properties of petroleum waxes.

3,433,778

PROCESS FOR THE POLYMERIZATION OF BUTADIENE IN THE PRESENCE OF A CATALYST SYSTEM COMPRISING AN ORGANO Ni OR Co COMPOUND, A CHLORIDE OF Sn OR Ga AND AN ORGANOLITHIUM COMPOUND

Edward William Duck, Dibden Purlieu, and Michael Neil Thornber, Lyndhurst, England, assignors to The International Synthetic Rubber Company Limited, Southampton, England, a corporation of the United Kingdom

No Drawing. Filed May 24, 1966, Ser. No. 552,415

Claims priority, application Great Britain, June 1, 1965, 23,292/65

U.S. Cl. 260—94.3 11 Claims
Int. Cl. C08d *1/14*; B01j *11/84*

A process for the preparation of polybutadiene in which at least 80% of the monomer units are present in cis 1,4 addition structure, wherein butadiene is polymerized in the presence of a catalyst system obtained by bringing together (A) a compound which is preferably soluble in an organic solvent selected from a group comprising nickel or cobalt carboxylic acid salts and organic complex compounds wherein the metal atom is other than zerovalent, (B) a compound selected from the group comprising the chlorides of gallium and tin, and (C) an organo-metallic compound of lithium selected from the group comprising lithium alkyls, lithium aryls and lithium aralkyls, the lithium component (C) only being contacted with the other components of the catalyst system when in the presence of butadiene.

3,433,779

LONG-CHAIN ALIPHATIC ESTERS OF LYSINE AND OTHER BASIC AMINO ACIDS AND PEPTIDES THEREOF

Karl Vogler, Riehen, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,329

Claims priority, application Switzerland, Oct. 14, 1963, 12,600/63

U.S. Cl. 260—112.5 5 Claims
Int. Cl. C07c *101/24, 103/52*; A61k *27/00*

1. A compound selected from the group consisting of L-lysyl-L-lysine n-hexadecyl ester and pharmaceutically acceptable acid-addition salts thereof.

5. A compound selected from the group consisting of L-lysyl-L-lysine n-hexadecyl ester, N^{ϵ}-L-lysyl-L-lysine n-hexadecyl ester, L-lysyl-L-lysyl-L-lysine n-hexadecyl ester and N^{α}-L-lysyl-(N^{ϵ}-L-lysyl)-L-lysine n-hexadecyl ester, wherein the nitrogen of at least one amino group not partaking in a peptide linkage is substituted by a moiety selected from the group consisting of carbobenzoxy, tosyl, phthalyl, trityl, formyl, trifluoroacetyl and tert-butyloxycarbonyl.

3,433,780

COLLOIDAL SILSESQUIOXANES AND METHODS FOR MAKING SAME

Joseph Cekada, Jr. and Donald R. Weyenberg, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 427,077, Jan. 21, 1965. This application Jan. 25, 1967, Ser. No. 611,579

U.S. Cl. 260—29.2 48 Claims
Int. Cl. C08g *31/12, 31/26*

Colloidal suspensions of silsesquioxanes of the unit formula $RSiO_{3/2}$, wherein R is a hydrocarbon or a substituted hydrocarbon radical containing from 1 to 7 carbon atoms, in a water-surfactant mixture, said silsesquioxanes having an average particle size in the range of 10 to 1000 A. These suspensions are prepared by adding the appropriate silane to a water-surfactant mixture, with agitation, the amount of silane being (1) less than 10% or (2) the silane being added at the rate of less than ten mols of silane per liter per hour.

3,433,781

2,4-DIHALOGENO-PYRIMIDINE-5-CARBAMYL-SUBSTITUTED REACTIVE DYES

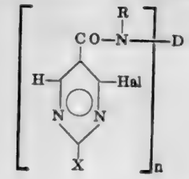
Hans Ackermann, Riehen, Hermann Frei, Basel, and Hubert Meindl, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,349

Claims priority, application Switzerland, Mar. 1, 1963, 2,683/63

U.S. Cl. 260—146 11 Claims
Int. Cl. C09b *62/26, 62/24, 62/22*

1. A fiber-reactive dyestuff of the formula



wherein D is a dyestuff-chromophoric radical selected from the class consisting of azo, anthraquinone and phthalocyanine dyestuff-chromophoric radicals, and wherein the nitrogen atom of the carbamyl group is attached to said chromophoric radical by a direct bond or through—lower alkylene-$NHSO_2$—to an aryl carbon atom thereof,

R is a member selected from the group consisting of hydrogen and lower alkyl,

n is an integer ranging from 1 to 2,

Hal represents fluorine, chlorine or bromine, and

X is a member selected from the group consisting of lower alkylthio and halogen of the same atom number as the halogen atom represented by Hal.

3,433,782

SEPARATION AND RECOVERY OF OLIGONUCLEOTIDES

Thomas Harry Kreiser, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,742

U.S. Cl. 260—211.5 **5 Claims**
Int. Cl. C07d *51/50*

1. A process for the separation of a mixture of oligonucleotides which comprises contacting an aqueous mixture of oligonucleotides with an anion-exchange material to adsorb all the oligonucleotide components of said mixture and selectively eluting the individual oligonucleotide components from said anion-exchange material with a lithium perchlorate or sodium perchlorate solution.

3,433,783

METHOD FOR THE PRODUCTION OF RIBONUCLEOSIDE-5'-PHOSPHATE

Mikio Honja and Kin-Ichi Imai, Takatsuki, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Continuation-in-part of application Ser. No. 635,311, Apr. 25, 1967. This application July 3, 1967, Ser. No. 650,661

U.S. Cl. 260—211.5 **9 Claims**
Int. Cl. C08b *19/00*

A method is provided for the production of ribonucleoside-5'-phosphate. In the process, the corresponding ribonucleoside is reacted with metaboric acid and the resultant product is subsequently reacted with a phosphorylating agent.

3,433,784

PENICILLINS SUBSTITUTED WITH HETEROCYCLIC GROUPS

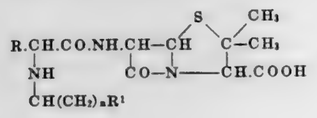
Anthony Alfred Walter Long, Reigate, and John Herbert Charles Nayler, Dorking, England, assignors to Beecham Group Limited, Brentford, Middlesex, England, a British company

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,850

Claims priority, application Great Britain, Apr. 26, 1966, 18,130/66

U.S. Cl. 260—239.1 **11 Claims**
Int. Cl. C07d *99/16, 99/14*

Penicillins of the general formula:



in which R is a phenyl or thienyl group, R^1 is a heterocyclic group which may be substituted and *n* is zero or 1 and their salts are valuable as antibacterial agents.

3,433,785

15,16-DISUBSTITUTED AROMATIC STEROIDS, INTERMEDIATES AND PROCESSES

Andrew John Manson and Donald K. Phillips, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 11, 1966, Ser. No. 564,025

U.S. Cl. 260—239.5 **25 Claims**
Int. Cl. C07c *173/10, 169/00, 167/00*

3 - lower - alkoxy - 1,3,5(10),15 - estratetraen - 17-ones are reduced or reacted with R'-lithium to give the corresponding 17α-R'-17β-OH compounds, where R' is hydrogen, lower-alkyl, lower-alkenyl, lower-alkynyl, hydroxy-lower-alkynyl or halo-lower-alkynyl. Various reagents are added to the 15,16-double bond to give 15,16-dioxy compounds, 15,16-epoxy compounds, [16,15-c]-1'-pyrazolines, and 15,16-methylene compounds. The products possess antihypercholesteremic activity.

3,433,786

6-METHYLSULFONYLANDROSTENES

Vlasios Georgian, 139 Clifton St., Belmont, Mass. 02178

No Drawing. Filed Mar. 22, 1967, Ser. No. 625,008

U.S. Cl. 260—239.5 **8 Claims**
Int. Cl. C07c *173/00;* **A61k** *17/00*

6α-methylsulfonylandrost-4-en-3-ones and 19-nor analogs are prepared by conversion of a testosterone or 19-nortestosterone to an enamine derivative, reaction with methanesulfonyl chloride and acidic hydrolysis of the enamine. The compounds have antiandrogenic activity.

3,433,787

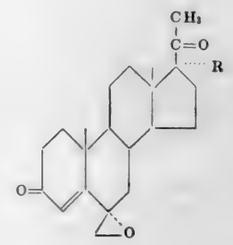
6-SPIROOXIRANEPROGESTERONES

James F. Kerwin, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,336

U.S. Cl. 260—239.55 **8 Claims**
Int. Cl. C07c *173/00, 169/34*

1. A compound of the formula



or a Δ^1 derivative thereof, where R is hydrogen, hydroxy, or lower alkanoyloxy of 1-8 carbon atoms.

3,433,788

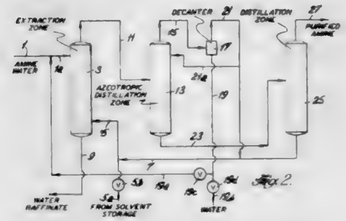
PROCESS FOR RECOVERY OF AMINES FROM AQUEOUS SOLUTIONS BY SOLVENT TREATMENT AND DISTILLATION

George S. Somekh, New Rochelle, and Edward N. Hawkes,, White Plains, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 517,504, Dec. 14, 1965, which is a continuation of application Ser. No. 200,393, June 6, 1962. This application Apr. 27, 1966, Ser. No. 545,713

U.S. Cl. 260—247 **23 Claims**
Int. Cl. C07d *87/50;* **B01d** *11/00*

An aqueous mixture of an amino group containing compound such as morpholine or ethylene diamine is concentrated by a combined extraction and distillation treatment with a solvent-entrainer material that is immiscible with water, chemically inert to and higher boiling than the amine. The extract phase from the extraction is distilled, usually in the form of a water-entrainer azeotrope and the amine is recovered as a separate stream.



3,433,789

S-BENZOYLOXYMETHYL-THIAMINES

Raffaello Fusco, Milan, and Franco Tenconi, Monza, Italy, assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,243

Claims priority, application Germany, Jan. 25, 1966, V 30,222

U.S. Cl. 260—256.5 **8 Claims**
Int. Cl. C07d *51/42;* **A61k** *15/12*

By reaction of a metal salt of thiol-form thiamine with an halomethyl ester of benzoic acid or substituted benzoic acid, there are obtained S-benzoyloxy or substituted benzoyloxymethyl thiamine which, also in the form of their non-toxic acid addition salts, show prolonged vitamin B_1 activity and are useful as nutritional supplements for foods and animal feedstuffs and for therapeutic purposes.

3,433,790

PROCESS FOR PRODUCING BETA CRYSTAL PHASE, 6,13-DIHYDROQUINACRIDONE

Kazuo Adachi, Masahisa Kawai, and Masakatsu Hoshikawa, Tokyo, Japan, assignors to Tekkosha Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,084

Claims priority, application Japan, Oct. 22, 1965, 40/64,450

U.S. Cl. 260—279 **5 Claims**
Int. Cl. C07d *37/04, 37/18, 37/24*

A process for producing beta crystal phase 6,13-dihydroquinacridone by heating a dialkyl-2,5-dianilino-3,6-dihydroterephthalate in the presence of N-methylpyrrolidone at a temperature in the range of 180°–270° C.

3,433,791

ENDOETHANO NOR ORIPAVINES AND NOR THEBAINES

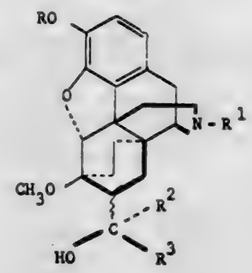
Kenneth Walter Bentley, Willerby, Hull, England, assignor to Reckitt & Sons Limited, Hull, Yorkshire, England

No Drawing. Continuation-in-part of application Ser. No. 478,738, Aug. 10, 1965. This application May 3, 1968, Ser. No. 726,591

Claims priority, application Great Britain, June 15, 1965, 25,289/65

U.S. Cl. 260—285 **8 Claims**
Int. Cl. C07d *43/28;* **A61k** *25/00*

Thebaine and oripavine derivatives of the formula:



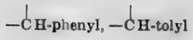
wherein

R is hydrogen or methyl,

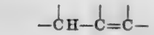
R^1 is hydrogen, alkyl, alkenyl or alkynyl of up to 8 carbon atoms or cycloalkyl methyl of 4–6 carbon atoms,

R^2 is hydrogen, alkyl or alkenyl of up to 3 carbon atoms, phenyl or tolyl, and

R^3 is cycloalkyl of 5–7 carbon atoms, alkyl or alkenyl of up to 8 carbon atoms or alkyl or alkenyl of up to 8 carbon atoms substituted on one of the carbon atoms numbered 1–4 (the carbon atom numbered 1 being adjacent to the carbon atom bearing the alcoholic hydroxy group) by cycloalkyl of 5–7 carbon atoms, phenyl, tolyl, alkoxy of 1–3 carbon atoms, phenoxy or tetrahydrofuryl, provided that in the case where R is hydrogen, R^2 and R^3 do not contain the system



or



attached directly to the carbon atom bearing the alcoholic hydroxy group, and non-toxic pharmaceutically acceptable salts thereof, are useful as analgesics.

3,433,792

ALKYLPYRIDINE PRODUCTION

Charles R. Adams, Ippendorf, Jurgen F. Falbe, Bonn, and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,221

Claims priority, application Germany, Oct. 6, 1964, S 93,642; May 10, 1965, S 97,026

U.S. Cl. 260—290 **11 Claims**
Int. Cl. C07d *31/20, 31/08*

Alkylpyridines are prepared by the vapor-phase reaction of hydrocarbon aldehydes and ammonia in the presence of a cobalt or nickel aluminum phosphate as catalyst.

3,433,793
XANTHENYLISONIPECOTONITRILES AND RELATED COMPOUNDS

Peter Yonan, Chicago, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,902
U.S. Cl. 260—293.4 **4 Claims**
Int. Cl. C07d *29/34;* **A61k** *27/00*

Isonipecotonitriles having a xanthenyl or thioxanthenyl substituent at the 1-position are described herein. The compounds are prepared by the reaction of the appropriate isonipecotonitrile with xanthydrol or thioxanthydrol. The compounds involved are useful as anti-ulcer agents, pepsin inhibitors, anti-bradykinin agents, and antihypertensive agents.

3,433,794
CERTAIN 7 - (2 - AMINOPHENYL) - 4,5 - DIHYDRO THIENO[2,3-C]PYRIDINES AND DERIVATIVES THEREOF

Hans Ott, Convent Station, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Continuation-in-part of application Ser. No. 470,571, July 8, 1965. This application Mar. 23, 1967, Ser. No. 625,287
U.S. Cl. 260—294.8 **11 Claims**
Int. Cl. C07d *31/48;* **A61k** *27/00*

7 - (2 - aminophenyl) - 4,5 - dihydro - thieno[2,3-c] pyridines I are precursors in the preparation of corresponding 7-(2-aminophenyl)-4,5,6,7-tetrahydro-thieno[2,3-c]pyridines II. The latter are intermediates for the preparation of 4,5,7,8,9,13b - hexahydro - thieno[2,3-c] pyrido[1,2-d][1,4]benzodiazepin-8-ones III, which are CNS-active compounds useful, e.g., as transquilizers. β-(3-thienyl)ethylamine and an isatoic anhydride are reacted to form the corresponding N - [β - (3 - thienyl)ethyl]-2-aminobenzamide IV. The amino group of IV is protected prior to effecting ring closure to produce the corresponding dihydrothienopyridine V. I results from the removal of the protective group, e.g. tosylate, from V. Reducing I with sodium borohydride results in the preparation of II. III is then prepared by boiling II in glacial acetic acid.

3,433,795
TRICYCLIC ESTER DERIVATIVES OF PYRIDINE CARBOXYLATES AND PROCESS FOR THEIR PRODUCTION

Seymour Hyden, Spring Valley, Louis Scarano, Middletown, and Godfrey Wilbert, Carmel, N.Y., assignors to Nepera Chemical Co., Inc.

No Drawing. Filed Aug. 12, 1966, Ser. No. 571,998
U.S. Cl. 260—295.5 **4 Claims**
Int. Cl. C07d *31/34;* **C08f** *45/44;* **C08g** *51/44*

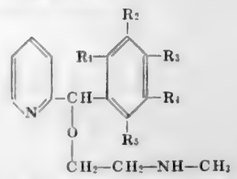
The present invention discloses compounds such as 8 - tricyclodecyl - (5,2,1,$0^{2,6}$) - nicotinate, 8 - tricyclo-4-decenyl-(5,2,1,$0^{2,6}$)-nicotinate and tricyclodecan-(5,2,1,$0^{2,6}$)methylyl nicotinate. These compounds are useful as plasticizers.

3,433,796
ETHERS OF α-(2-PYRIDYL) BENZYL ALCOHOLS

Wijbe T. Nauta, Niew Loosdrecht, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia, Amsterdam, Netherlands

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,920
Claims priority, application Great Britain, Sept. 23, 1964, 38,842/64
The portion of the term of the patent subsequent to Nov. 21, 1984, has been disclaimed
U.S. Cl. 260—296 **6 Claims**
Int. Cl. C07d *31/42, 31/28;* **A61k** *27/00*

This invention relates to new therapeutically useful ethers of α-(2-pyridyl) benzyl alcohols in accordance with the following formula



wherein R_1, R_2, R_3, R_4 and R_5 each represent either a lower alkyl group or hydrogen. These compounds and their acid addition salts are therapeutically active compounds possessing diuretic activity.

3,433,797
2 - (PHENYL - 2 - PYRIDYL - HYDROXYMETHYL)-6 - PHENYL - 6 - (2 - PYRIDYL)FULVENE, DERIVATIVES THEREOF AND DIMERS THEREOF

Chris Royce Rasmussen, Ambler, Elizabeth Landis Carson, Lansdale, and Richard Joseph Mohrbacher, Fort Washington, Pa., assignors to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Filed June 24, 1966, Ser. No. 560,063
U.S. Cl. 260—296 **5 Claims**
Int. Cl. C07d *31/28, 33/38*

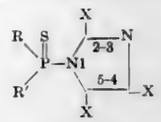
The compounds herein are Diels-Alder adducts of two 6,6-disubstituted fulvenes, which adducts are useful as ultra-violet light absorbers.

3,433,798
PHOSPHINOTHIOIC AMIDES

Paul B. Budde and Henry Tolkmith, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Apr. 29, 1965, Ser. No. 451,983, now Patent No. 3,323,990, dated June 6, 1967. Divided and this application Jan. 5, 1966, Ser. No. 518,788
U.S. Cl. 260—309 **5 Claims**
Int. Cl. C07f *9/36, 9/22;* **C07d** *105/02*

Novel imidazolyl phosphorus compounds, useful for the control of fungi, have the formula



wherein each X represents hydrogen, loweralkyl or phenyl; (A) each of R and R′ being taken separately, R represents (1) a heteroparaffinic amido radical selected from morpholino, thiomorpholino, piperidino, 1-pyrrolidinyl, 4-substituted-1-piperazinyl wherein the substituent is loweralkyl, phenyl or acetyl and 1,2,3,6-tetrahydro-1-pyridyl, or

(2)

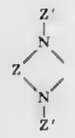


wherein G and G″ are each loweralkyl, phenylloweralkyl, (loweralkylphenyl)loweralkyl, furfuryl, tetrahydrofurfuryl, or 4-pyridylmethyl; and R′ represents (1) a heteroparaffinic amido radical as defined above or (2) heteroaromatic amido radical of the formula



wherein Q represents a group which with the nitrogen atom completes an aromatic ring which (a) has five ring atoms, of which ring atoms at least two are nitrogen and

one is carbon, each of the two remaining ring atoms being selected from the group consisting of carbon and nitrogen and (B) R and R′ being taken together, R and R′ jointly represent a moiety of the formula



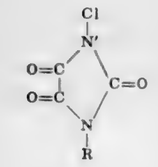
Z being o-phenylene or alkylene of from 2 to 3 carbon atoms; and Z′ being loweralkyl, phenyl, or phenyllower-alkyl.

3,433,799
CHLORINATED PARABANIC ACIDS

Ludwig Konrad Huber, Philadelphia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,907
U.S. Cl. 260—309.5 **4 Claims**
Int. Cl. C07d *49/30;* **A61l** *3/00*

Chlorinated parabanic acids, useful as bleaching, sanitizing, oxidizing and chlorinating agents, are provided having the formula



where R is chlorine, hydrogen or hydroxymethyl.

3,433,800
PROCESS FOR PREPARING 4,5-BIS(DIFLUOR-AMINO)IMIDAZOLIDIN-2-ONE

James Brown Parker, Kilwinning, Scotland, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 24, 1966, Ser. No. 538,899
Claims priority, application Great Britain, Apr. 28, 1965, 17,897/65
U.S. Cl. 260—309.7 **8 Claims**
Int. Cl. C07d *49/30;* **C07c** *91/12;* **C06b** *15/00*

1. A process for the preparation of 4,5-bis(difluoramino)imidazolidin-2-one which comprises reacting 1,2-bis(difluoramino)ethylene glycol with urea in an inert atmosphere in presence of an acidic substance selected from the group consisting of strongly water-absorbent acidic substances and strongly water-reactive acidic substance.

3,433,801
1-ARYL-3-(N-LOWER ALKYL AMINO) PYRROLIDINES

Norman D. Dawson, Richmond, Va., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,264
U.S. Cl. 260—326.3 **10 Claims**
Int. Cl. C07d *27/04*

1 - aryl - 3-lower-alkylamino-pyrrolidines, useful intermediates also having pharmacological activity as bronchodilators and antifibrilatory agents.

3,433,802
3-(N-LOWER-ALKYLANILINO)PYRROLIDINES

Norman D. Dawson, Richmond, and Albert D. Cale, Jr., Mechanicsville, Va., assignors to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 536,291, Mar. 22, 1966. This application June 25, 1968, Ser. No. 739,668
U.S. Cl. 260—326.5 **7 Claims**
Int. Cl. C07d *27/04*

3-(N-lower-alkylanilino)pyrrolidines, useful intermediates in preparing useful pharmacologically active indole compounds.

3,433,803
SUBSTITUTED IMINO-1,3-OXATHIOLS AND THEIR PREPARATION

Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 417,501, Dec. 10, 1964. This application Dec. 1, 1966, Ser. No. 598,186
U.S. Cl. 260—327 **14 Claims**
Int. Cl. C07d *89/06;* **A01n** *9/12*

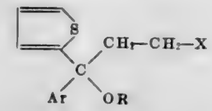
A series of substituted imino-1,3-oxathiols are provided by the reaction of selected S-chloroisothiocarbamyl chlorides with selected ketones having at least one methylene group immediately adjacent to the carbonyl group. The substituted imino-1,3-oxathiols are useful as agricultural chemicals.

3,433,804
BASIC-SUBSTITUTED DITHIENYLMETHYL- AND THIENYLPHENYLMETHYL ETHERS AND A PROCESS OF MAKING SAME

Roderich Höllinger and Wolf Wendtlandt, Linz, Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,695
Claims priority, application Austria, Mar. 22, 1965, A 2,558/65
U.S. Cl. 260—332.3 **12 Claims**
Int. Cl. C07d *63/12;* **A61k** *27/00*

Basic methyl ethers of the formula



wherein Ar is phenyl or thienyl, R is lower alkyl and X is di(lower)alkylamino or piperidino, their nontoxic salts and their alkyl ammonium halides which have a cough suppressing effect. The process of preparing such ethers by reacting dithienyl or thienylphenyl-methyl ethers with alkali metal amides and subsequently with basically substituted alkyl halides, both steps being carried out in liquid ammonia as solvent.

3,433,805
WATER-SOLUBLE FLAVANOID DERIVATIVES

Josef Krämer, Klaus Irmscher, Darmstadt, and Herbert Halpaap, Jugenheim, Bergstrasse, and Karl-Otto Freisberg, Speyer (Rhine), Germany, assignors to E. Merck A.G., Darmstadt, Germany

No Drawing. Filed Jan. 27, 1966, Ser. No. 523,262
Claims priority, application Germany, Jan. 29, 1965, M 63,973
U.S. Cl. 260—340.5 **14 Claims**
Int. Cl. C07d *7/24, 95/00;* **A61k** *27/00*

Sulfuric and phosphoric acid esters of certain hydroxy-containing flavanoids for lowering the cholesterol blood level concentration.

3,433,806
METHOD FOR THE PREPARATION OF DIOXENES AND DIOXADIENES

Stanley B. Cavitt, Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,775
U.S. Cl. 260—340.6 6 Claims
Int. Cl. C07d *15/00, 15/12*

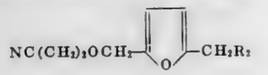
The disclosure is a method for the preparation of dioxenes and dioxadienes by the pyrolysis of a substituted dioxane over a noble metal catalyst. Dioxenes and dioxadienes may be polymerized in the presence of acid catalysts.

3,433,807
AMINOPROPOXYMETHYLFURANS AND INTERMEDIATES THEREFOR

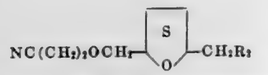
Robert E. Jones, North Muskegon, Mich., and Samuel A. Robinson, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,670
U.S. Cl. 260—347.7 12 Claims
Int. Cl. C07d *5/04, 5/20*

1. A compound selected from the group consisting of

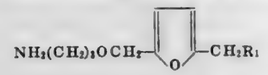


and

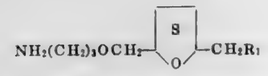


where R_2 is selected from the group consisting of β-cyanoethoxy and hydroxy.

6. A compound selected from the group consisting of



and



where R_1 is selected from the group consisting of γ-aminopropoxy, hydroxy and amino.

3,433,808
FURFURYL ALCOHOL ISOMERIZATION

Robert E. Rinehart, Rutherford, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 262,347, Mar. 4, 1963. This application Oct. 3, 1963, Ser. No. 313,424
U.S. Cl. 260—347.8 1 Claim
Int. Cl. C07d *5/10;* B01j *11/82*

This invention is directed to a method for the isomerization of certain monomeric olefinic cyclic compounds under mild condition of temperature and pressure by treatment with a rhodium salt.

3,433,809
TRIS(2-HALO-3,4-EPOXYBUTYL) PHOSPHATE

Gerald Joseph Trudel, Hilaire, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed May 11, 1964, Ser. No. 366,615
Claims priority, application Canada, June 4, 1963, 877,187
U.S. Cl. 260—348 2 Claims
Int. Cl. C07f *9/08*

Reaction products of an epoxidized material containing at least two epoxide groups per molecule, e.g., butadiene dioxide, and a phosphorus oxyhalide such as phosphorus oxychloride or phosphorus oxybromide. The proportions of reactants lie in the range of 2 to 4 moles of epoxidized material to each mole of phosphorus oxyhalide. Examples of the reaction products are tris(2-chloro-3,4-epoxybutyl) phosphate and tris(2-bromo-3,4-epoxybutyl) phosphate. The reaction products are useful as ingredients in the production of flame retardant foamed cellular materials.

3,433,810
1-AMINO(OR HYDROXY)-4-PHENYLUREIDO-ANTHRAQUINONES

Hans Rudolf Rickenbacher, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,685
Claims priority, application Switzerland, Dec. 4, 1964, 15,745/64; Apr. 15, 1965, 5,304/65
U.S. Cl. 260—377 6 Claims
Int. Cl. C09b *1/36, 1/16*

1-amino-4-phenylureido-anthraquinones substituted at the 2-position are valuable disperse dyestuffs of the anthraquinone series with excellent affinity for hydrophobic fibers and providing dyeings with excellent fastness to light and sublimation.

3,433,811
PRODUCTION OF 1,4-DIAMINOANTHRAQUINONE

Wolfgang Jentzsch, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 14, 1965, Ser. No. 513,843
Claims priority, application Germany, Dec. 23, 1964, B 79,870
U.S. Cl. 260—378 8 Claims
Int. Cl. C09b *1/20*

1. A process for the production of 1,4-diaminoanthraquinone which comprises heating to a temperature of from 130° to 350° C. 1,4-diamino-2,3-dihydroanthraquinone homogeneously distributed in an inert organic diluent in the presence of a dehydrogenation catalyst selected from the group consisting of a finely divided metal catalyst of the Eighth Group of the Periodic System and a mixed oxidic catalyst consisting essentially of two different oxides (a) and (b); (a) being selected from the group consisting of an oxide of copper, zinc and cadmium and (b) being selected from the group consisting of oxides of elements of Groups V–B and VI–B of the Periodic System.

3,433,812
PREPARATION OF 2,3-DICHLORO-1,4-NAPHTHOQUINONE FROM NAPHTHALENE

Lloyd R. Buzbee, Pittsburgh, Pa., and George G. Ecke, Akron, Ohio, assignors to Koppers Company, Inc., a corporation of Delaware

Filed Mar. 17, 1966, Ser. No. 535,200
U.S. Cl. 260—396 5 Claims
Int. Cl. C07c *45/02, 49/66*

The light catalyzed chlorination of naphthalene in an inert halogenated solvent at a temperature of 20–60° C. produces a substantially quantitative yield of 1,2,3,4-tetrachloro-1,2,3,4-tetrahydronaphthalene. Hydrolysis of the 1,2,3,4-tetrachloro-1,2,3,4-tetrahydronaphthalene by refluxing with water to produce 1,4-dihydroxy-2,3-dichloro-1,2,3,4-tetrahydronaphthalene followed by nitric acid oxidation results in the production of 2-chloro-1,4-naphthoquinone which is chlorinated to produce a useful fungicide, 2,3-dichloro-1,4-naphthoquinone.

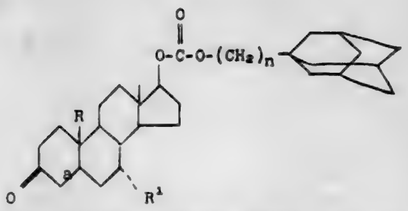
3,433,813
1-ADAMANTYL AND 1-ADAMANTYLMETHYL CARBONATES OF TESTOSTERONE AND SELECTED DERIVATIVES

George A. Boswell, Green Acres, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 29, 1966, Ser. No. 597,555
U.S. Cl. 260—397.4 12 Claims
Int. Cl. C07c *169/24;* A61k *17/06*

1-adamantyl or 1-adamantylmethyl carbonates of testosterone or related derivatives represented by the formula:

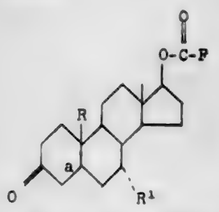
(I)



where R and R^1 are each hydrogen or methyl; *n* is 0 or 1; and *a* is a single or double bond; useful as pharmaceuticals.

Fluoroformates of testosterone or related derivatives represented by the formula:

(II)



where R, R^1 and *a* are as defined above; useful as pharmaceuticals.

The preparation of (II) from the corresponding testosterone by reaction with COF_2; the preparation of (I) from (II) by reaction with 1-adamantanemethanol or 1-adamantol; and the preparation of compounds of formula (I) where *n* is zero from the corresponding testosterone and 1-adamantyl chloroformate.

3,433,814
METHOD FOR PRODUCING INOKOSTERONE AND ISO-INOKOSTERONE

Tsunematsu Takemoto, Sendai, and Shuntaro Ogawa and Nobushige Nishimoto, Osaka, Japan, assignors to Rohto Pharmaceutical Co., Ltd., Osaka, and Tsunematsu Takemoto, Sendai, Japan

No Drawing. Filed Apr. 25, 1967, Ser. No. 633,395
Claims priority, application Japan, Oct. 19, 1966, 41/69,106
U.S. Cl. 260—397.25 14 Claims
Int. Cl. C07c *167/40, 169/00;* A01n *9/24*

Inokosterone and isoinokosterone are obtained by solvent extraction from plants of the Amaranthaceae family, and more especially from the Achyranthes and Cyathula genuses.

3,433,815
TREATMENT OF TALL OIL FATTY ACIDS

William C. Doyle, Jr., Gulf Breeze, Fla., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed May 12, 1964, Ser. No. 366,910
U.S. Cl. 260—419 7 Claims
Int. Cl. C11c *1/10*

The present invention relates to a novel method of treating tall oil fatty acids containing stilbene impurities to improve the color of the fatty acids and remove a substantial portion of the stilbene impurities which impart a reddish color to the fatty acids upon epoxidation. The present method involves treating the tall oil fatty acids with both a boron trifluoride catalyst and activated carbon. An aldehyde, for example, formaldehyde also may be used during the treatment with the catalyst and carbon. Thereafter, the catalyst and preferably the carbon are removed from the tall oil fatty acids by filtration through acid-activated clay, or by other means, and the filtrate is subjected to a distillation treatment and a distillate of tall oil fatty acids collected that contains a much smaller amount to stilbene impurities than the starting material. The carbon-catalyst treatment converts the stilbene impurities to derivatives having a higher boiling point than the fatty acids so that the derivatives are separated upon distillation and remain in the pot residue. The activated carbon is essential to prevent the catalyst from causing a large change in the relative amounts of oleic and linoleic acids present in the treated tall oil fatty acids as compared to the tall oil fatty acids in the starting material.

3,433,816
PROCESS FOR WASHING FILTER CAKES

Eckart Müller, Östliche Sandstrasse, Bergen-Enkheim, Germany

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,561
Claims priority, application Germany, Sept. 18, 1963, M 58,237
U.S. Cl. 260—419 14 Claims
Int. Cl. C07c *7/14;* C11c *1/08;* B01d *37/00*

1. In a process for separating water immiscible mother liquor from a filter cake consisting essentially of an organic compound insoluble in water and having a melting point lower than the boiling point of the mother liquor the improvement comprising respectively washing the filter cake with an intermediate organic solvent which is miscible both with the mother liquor and water, thereafter washing the filter cake with water, separating the water retained in the filter cake thereby producing an organic compound filter cake essentially free of mother liquor.

9. In a process for producing durene having a purity of about 99% and for separating water immiscible mother liquor from a hydrocarbon mixture insoluble in water consisting essentially of about 20% durene and about 80% iso-durene, methyl-sec.-butylbenzene and other alkyl aromatic hydrocarbons, the improvement comprising respectively in combination

(a) cooling the hydrocarbon mixture to about —15° C. to crystallize durene therefrom,
(b) filtering the durene from the mixture at about —15° C. to produce a durene filter cake,
(c) washing the durene filter cake with methanol,
(d) then washing the durene filter cake with water,
(e) heating the resulting washed cake until it melts at about 85° C. form an upper phase and a lower phase, and
(f) recovering durene from the upper phase to form durene having a purity of about 99%.

10. In a process for producing p-xylene having a purity of about 99% and for separating water immiscible mother liquor from a hydrocarbon mixture insoluble in water consisting essentially of about 50% p-xylene and about 50% o-xylene, m-xylene, ethyl benzene and other alkyl aromatic hydrocarbons, the improvement comprising respectively in combination:

(a) cooling the hydrocarbon mixture to about —40° C. to crystallize p-xylene therefrom,
(b) filtering the p-xylene from said mixture at about —40° C. to produce a p-xylene filter cake,
(c) washing the p-xylene filter cake at about —40° C. with methanol,

(d) then washing the p-xylene filter cake at about +5° C. with water,
(e) heating the resulting filter cake until it melts, and
(f) recovering the p-xylene therefrom having a purity of about 99%.

11. In a process for producing naphthalene having a purity of about 99% and for separating water immiscible mother liquor from a hydrocarbon mixture insoluble in water consisting essentially of 60% naphthalene and about 40% of other tar oil components boiling in the range of 200° to 230° C., the improvement comprising respectively in combination:
(a) cooling the hydrocarbon mixture to about 20° C. to crystallize naphthalene therefrom,
(b) filtering the naphthalene from said mixture to produce a naphthalene filter cake,
(c) washing the naphthalene filter cake with acetone,
(d) then washing the naphthalene filter cake with water,
(e) heating the resulting filter cake until it melts, and
(f) recovering the naphthalene therefrom having a purity of about 99%.

12. In a process for producing saturated fatty acids containing only about 0.5% unsaturated fatty acids and for separating water immiscible mother liquor from a mixture of natural fatty acids consisting essentially of about 60% saturated fatty acids and about 40% unsaturated fatty acids, the improvement comprising respectively in combination;
(a) cooling the mixture of natural fatty acids to about 10° C. to crystallize saturated fatty acids therefrom,
(b) filtering resulting crystals from the mixture at about +10° C. to produce a saturated fatty acid filter cake,
(c) washing the said filter cake with acetonitrile to remove remaining unsaturated fatty acids from the filter cake,
(d) washing the resulting cake with water,
(e) heating the washed cake until it melts at about 50° C. to produce an upper phase and lower phase, and
(f) recovering saturated fatty acids from the upper phase to produce saturated fatty acids containing about 0.5% of unsaturated fatty acids.

13. In a process for producing p-toluene sulfochloride having a purity of about 98% and for separating mother liquor from a mixture consisting essentially of about 48% p-toluene sulfochloride, about 32% o-toluene sulfochloride and about 20% carbon tetrachloride, the improvement comprising respectively in combination:
(a) cooling the mixture to about −10° C. to crystallize p-toluene sulfochloride therefrom,
(b) filtering the resulting crystals from the mixture to produce a p-toluene sulfochloride filter cake,
(c) washing the filter cake with carbon tetrachloride at about −10° C.,
(d) washing the filter cake with diethylene glycol monoethyl ether at about 20° C. and then
(e) washing the filter cake with water at about 20° C.,
(f) heating the washed cake until it melts at about 70° C., and
(g) recovering p-toluene sulfochloride therefrom having a purity of about 98%.

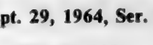
14. A process for producing benzene having a purity of about 99.95% and for separating mother liquor from a mixture consisting essentially of about 95% benzene and the remainder minor proportions of toluene, thiophene, carbon disulfide, cyclohexane, and nonaromatic hydrocarbons, the improvement comprising respectively in combination:
(a) cooling the mixture to about −15° C. to crystallize benzene therefrom,
(b) filtering the resulting crystals from the mixture to produce a benzene filter cake,
(c) washing the filter cake at about −5° C. with a mixture of ethylene glycol monobutyl ether and water in the ratio respectively, in parts by weight, of about 9 to 1, then
(d) washing the filter cake at about 1° C. with water,
(e) heating the washed cake until it melts, and
(f) recovering benzene therefrom having a purity of about 99.95%.

3,433,817
DIALKYLAMINODIALANES AND A PROCESS FOR PREPARING THEM

Archie R. Young II, Montclair, and Robert Ehrlich, Morristown, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

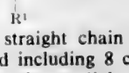
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,210
U.S. Cl. 260—448 **9 Claims**
Int. Cl. C07f *5/02, 5/06;* **C07c** *87/127*

1. Dialane derivatives of the formula:



wherein R and R^1 are straight chain aliphatic radicals having from 1 up to and including 8 carbon atoms.

7. A process for preparing a dialane product of the formula:



wherein R and R^1 are straight chain aliphatic radicals having from 1 up to and including 8 carbon atoms, comprising the steps of contacting an alkali metal aluminum tetrahydride reactant with a dialkylaminohaloalane reactant in the presence of an ether solvent until an alkali metal halide precipitates out, removing the precipitated alkali metal halide and adding a sufficient quantity of non-ether organic solvent to precipitate the dialane product, said organic solvent being selected from the group consisting of aliphatic and aromatic hydrocarbons.

3,433,818
PROCESS FOR PREPARATION OF DIANILINOSILANES

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of William R. Dunnavant, and Richard A. Markle, both of Columbus, Ohio

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,930
U.S. Cl. 260—448.2 **8 Claims**
Int. Cl. C07f *7/10, 7/12;* **C07d** *31/20*

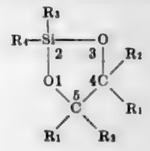
Dianilinosilanes are prepared by reacting a dichlorosilane with aniline in the presence of 2,4,6-trimethylpyridine (s-collidine) in an organic solvent. By-product aniline hydrochloride is removed from the reaction mixture by precipitation as a hydrochloride salt of the s-collidine. Contaminating side-reactions are avoided, and a high-purity product suitable for polymer snythesis is obtained.

3,433,819
HEXASUBSTITUTED-2-SILA-1,3-DIOXOLANES

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 491,412, Sept. 29, 1965. This application Sept. 22, 1966, Ser. No. 581,183
U.S. Cl. 260—448.8 **12 Claims**
Int. Cl. C07f *7/02, 7/18, 7/08*

Highly thermal stable hexasubstituted-2-sila-1,3-dioxolanes having the general structural formula:



in which R_1 and R_2 are individually either a $—CF_3$, $—C_2F$, or $—CF_2Cl$ radical and R_3 and R_4 can together constitute a C_4–C_7 alkylene radical or individually be one of the following radicals: C_1–C_{18} alkyl, C_2–C_8 alkenyl, C_3–C_7 cycloalkyl, phenyl, or a substituted phenyl having as a substituent group Cl, Br, F or $—OCH_3$, are provided for use in lubricants, heat transfer fluids and hydraulic fluids.

3,433,820
PREPARATION OF AROMATIC NITRILES FROM SUBSTITUTED BENZENES, HCN AND OXYGEN IN THE PRESENCE OF COPPER CYANIDE

Naoya Kominami, Tokyo, Hitoshi Nakajima, Urawa-shi, and Nobuhiro Tamura, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,664
Claims priority, application Japan, Nov. 7, 1964, 39/62,735
U.S. Cl. 260—465 **10 Claims**
Int. Cl. C07c *121/04, 121/02*

A process for preparing aromatic nitriles by reacting lower alkyl or alkenyl benzene with HCN and an oxygen containing gas at a temperature of 300°–500° C. in the vapor phase. The reaction is catalyzed by copper cyanide or a copper compound which yields copper cyanide under the reaction conditions.

3,433,821
PRODUCTION OF AROMATIC NITRILES FROM CYANOGEN HALIDE AND AN AROMATIC COMPOUND USING AN ALUMINO-SILICATE CATALYST

Lyle A. Hamilton, Pitman, and Phillip S. Landis, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,134
U.S. Cl. 260—465 **10 Claims**
Int. Cl. C07c *121/02*

A process for producing aromatic nitriles which comprises reacting an aromatic compound, e.g., benzene, and a cyanogen halide, e.g., cyanogen chloride, at a temperature from about 0° C. to about 300° C. in the presence of a catalyst comprising an alumino-silicate catalyst containing active cation sites within an ordered internal structure having a uniform pore size of from at least 6 A. to about 15 A., e.g., a rare earth exchanged faujasite, to produce a nitrile product, e.g., benzonitrile.

3,433,822
PROCESS FOR THE PRODUCTION OF ACRYLONITRILE

Arnold Hausweiler, Dormagen, and Bernhard Scherhag, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 4, 1965, Ser. No. 477,285
Claims priority, application Germany, Aug. 14, 1964, F 43,757
U.S. Cl. 260—465.3 **5 Claims**
Int. Cl. C07c *121/02, 121/32*

A process of treating the gas mixture produced in the synthesis of acrylonitrile by the catalytic oxidation of propylene in the presence of ammonia and oxygen for the separation therefrom of high boiling by-products produced in the reaction. The process involves subjecting the synthesis gas mixture to a scrubbing treatment with water having a temperature of from 70 to about 90° C. whereby the aforesaid secondary reaction products, i.e., polymers of hydrocyanic acid, polymers of acrylonitrile, acrylic acid and acrolein, etc., are absorbed into the wash water, the acrylonitrile and other low boiling materials remaining in the synthesis gas. The process has the advantage that substantially no acrylonitrile is lost and furthermore the high boiling compounds which disturb the further processing are eliminated.

3,433,823
PRODUCTION OF NITRILES

Joseph F. McMahon, Clinton, N.J., assignor to Princeton Chemical Research, Inc., Princeton, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 336,893, Jan. 10, 1964, which is a continuation of application Ser. No. 399,878, Sept. 28, 1964. This application Mar. 18, 1968, Ser. No. 714,119
U.S. Cl. 260—465.3 **5 Claims**
Int. Cl. C07c *121/32, 121/02, 121/10*

A catalytic process for preparing methacrylonitrile from isobutane, or isobutylene, oxygen and ammonia, at elevated temperature, said catalyst being a vanadium phosphate in conjunction with at least one of molybdenum oxide, copper oxide, tungsten oxide, thorium oxide, uranium oxide and/or zirconium oxide and said catalyst being separately deposited on different particles of a carrier of substantially inert character.

3,433,824
PROCESS FOR MAKING GLYCOL ESTERS

Lee H. Horsley, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,210
U.S. Cl. 260—476 **10 Claims**
Int. Cl. C07c *67/00, 69/78, 69/54*

2-hydroxyalkyl esters of carboxylic acids are made by reacting the carboxylic acid with at least three molar equivalents of alkylene oxide at a temperature below 125° C. and in the presence of a catalytic amount of the sodium or lithium salt of the acid.

3,433,825
ESTERS OF 4,4-DITERT.BUTYLPEROXY-PENTANOIC ACID

Pieter R. A. Maltha and Stephanus B. Tijssen, Schalkhaar, Netherlands, assignors to Koninklijke Industrieele Maatschappij vorheen Noury and van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,344
Claims priority, application Netherlands, Oct. 12, 1962, 284,315
U.S. Cl. 260—478 **7 Claims**
Int. Cl. C07c *73/00, 69/66*

The present invention relates to new organic peroxides and to novel methods for their preparation. These new organic peroxides are 3,3 - ditert.butylperoxybutanecarboxylic acid esters, also known as esters of 4,4-ditert.butylperoxypentanoic acid, wherein the ester moiety contains a hydrocarbon group having at most 20 carbon atoms. These esters are useful as peroxidic cross-linking initiators in the manufacture of copolymers of ethylene and monomers containing $CH_2=CH—$ groups.

3,433,826
ALKOXYPHENYL-N-METHYL CARBAMIC ACID ESTER

Rudolf Heiss, Cologne-Stammheim, Ernst Böcker, Leverkusen, and Wolfgang Behrenz, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 17, 1965, Ser. No. 464,864
Claims priority, application Germany, July 4, 1964, F 43,354
U.S. Cl. 260—479 **1 Claim**
Int. Cl. C07c *125/00*

3-alkyl-4-alkoxyphenyl-N-methyl carbamates, and especially 3-isopropyl-4-methoxyphenyl-N-methyl carbamate, which possess insecticidal properties.

3,433,827
CALCIUM ASPIRIN DIALKYLSULFOXIDES
Alexander Galat, 126 Buckingham Road, Yonkers, N.Y. 10701
No Drawing. Filed Mar. 13, 1967, Ser. No. 622,394
U.S. Cl. 260—480 4 Claims
Int. Cl. C07c *69/86*

Calcium acetylsalicylate ("soluble aspirin") and a lower dialkylsulfoxide react in organic medium to precipitate a double salt of the two in 1:1 molecular ratio. The preferred compound, calcium aspirin dimethylsulfoxide, is stable on storage, highly soluble in water, neutral in reaction and exihibts a high analgesic and anti-inflammatory action.

3,433,828
CARBOXYLIC ACID ESTERS DERIVED FROM 1,2-BIS-(3-CYCLOHEXEN-1-YL)-ETHYLENE AND DERIVATIVES THEREOF
John R. Norell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,332
U.S. Cl. 260—487 7 Claims
Int. Cl. C07c *69/62, 69/76, 69/22*

Novel esters and alcohols are formed from 1,2-bis(3-cyclohexen-1-yl)-ethylene and derivatives thereof.

3,433,829
PROCESS FOR THE PREPARATION OF DIACETYL COMPOUNDS
Christoph Dörfelt, Burghausen, Salzach, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 14, 1965, Ser. No. 513,827
Claims priority, application Germany, Dec. 30, 1964, F 44,840
U.S. Cl. 260—496 5 Claims
Int. Cl. C07c *67/00*

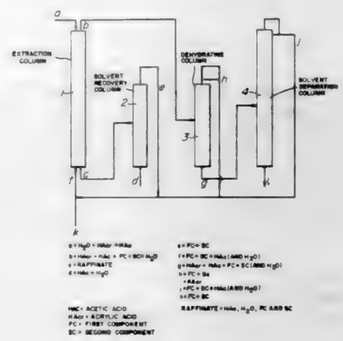
A process for producing mixed mono or polybutylene glycol diacetates by reacting tetrahydrofuran and acetic anhydride in the presence of a catalytic amount of bleaching earth.

3,433,830
ALIPHATIC DICARBOXYLIC ACID PURIFICATION PROCESS
John B. Wilkes, Albany, Calif., assignor to Chevron Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Sept. 30, 1964, Ser. No. 400,593
U.S. Cl. 260—514 2 Claims
Int. Cl. C07c *55/02*

Extractive process for the purification of aqueous salt solutions of dibasic aliphatic acids which contain salts of monobasic aliphatic acids as impurities using as the extractant a hydrocarbon solution containing inert organic oleophilic extractive adjuvant.

3,433,831
SEPARATION AND PURIFICATION OF ACRYLIC ACID FROM ACETIC ACID BY SOLVENT EXTRACTION AND AZEOTROPIC DISTILLATION WITH A TWO COMPONENT SOLVENT-ENTRAINER SYSTEM
Akira Yomiyama, Tokyo, Tsuneyuki Kato, Yokohama, Atsushi Aoshima, Kawasaki-shi, and Tokuichiro Kawanishi, Yokohama, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed June 29, 1966, Ser. No. 561,511
Claims priority, application Japan, June 30, 1965, 40/38,905, 40/38,906
U.S. Cl. 260—526 7 Claims
Int. Cl. C07c *51/46, 51/48, 51/42*

A method for separating acrylic acid from a mixture of acrylic and acetic acids by distilling the mixture at a pressure of less than 350 mm. Hg in the presence of a polymerization inhibitor and an entrainer consisting of a first component which is at least one member of the group consisting of aliphatic and alicyclic hydrocarbons of 7 carbon atoms and toluene and a second component which is at least one member of the group consisting of water,



esters of the formula R_1COOR_2, wherein R_1 is a hydrocarbon radical of 1–3 carbon atoms and R_2 is a hydrocarbon radical of 1–4 carbon atoms and nitriles of 3–4 carbon atoms; said first and second components being present in a molar ratio of 1:0.05–1.5.

3,433,832
RECOVERY OF α-AMINOCARBOXYLIC ACIDS FROM SODIUM CHLORIDE SOLUTIONS
Norman Swanson, Freeport, Richard O. Kirk, Lake Jackson, and George E. Woodward, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 3, 1965, Ser. No. 511,307
U.S. Cl. 260—534 5 Claims
Int. Cl. C07c *99/12*

Recovery of α-aminocarboxylic acids from aqueous sodium chloride solutions is improved by prior removal of sodium chloride through preferential crystallization at 85–120° C. from a concentrated solution adjusted to about the isoelectric point of the amino acid. The process is particularly suitable for recovery of amino acid such as methionine from a caustic hydrolyzate liquor neutralized with hydrochloric acid.

3,433,833
SUBSTITUTED BENZANILIDE
Gerhard Satzinger, Gundelfingen, Freiburg, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed July 5, 1966, Ser. No. 562,486
Claims priority, application Germany, July 12, 1965, G 44,139
U.S. Cl. 260—558 1 Claim
Int. Cl. C07c *103/20, 103/30*

The novel compound 2-amino-4'-(diethylamino)-2'-methyl-benzanilide which is useful as an anticonvulsant.

3,433,834
NITRATION OF 11a-CHLORO TETRACYCLINES
Robert Winterbottom, New City, Panayota Bitha, New York, and Henry Marcel Kissman, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 14, 1966, Ser. No. 533,824
U.S. Cl. 260—559 10 Claims
Int. Cl. C07c *103/28*

This disclosure describes a process for preparing various 7- and/or 9-nitrotetracyclines by nitrating an appropriate

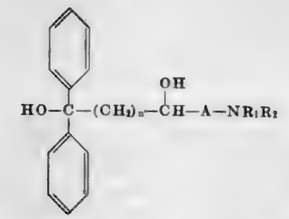
11a-chlorotetracycline with nitronium tetrafluoroborate followed by removal of the 11a-chloro group by treatment with sodium bisulfite.

3,433,835
PROCESS FOR THE PREPARATION OF PHENOLS CONTAINING UNSATURATED GROUPS
Erwin Müller, Leverkusen, and Karl Dinges, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 24, 1965, Ser. No. 509,610
Claims priority, application Germany, Dec. 8, 1964, F 44,634
U.S. Cl. 260—562 9 Claims
Int. Cl. C07c *103/30*

Phenol acrylamide or methacrylamides and a method for producing said compounds by reacting the corresponding acrylamide or methacrylamide alkyl cycloalkyl or aralkyl ether with a dialkyl-substituted phenol in the presence of an acid catalyst and polymerization inhibitor, effecting the reaction at 50–200° C.

3,433,836
α-DIARYL α,ω-ALKYLENE GLYCOL-DILOWER-ALKYLAMINES
Francis J. Petracek, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Jan. 14, 1966, Ser. No. 520,651
U.S. Cl. 260—570 3 Claims
Int. Cl. C07c *91/08, 91/04*

Substituted glycols of the formula:



wherein *n* is 1 to 4, A is lower alkylene and $—NR_1R_2$ is di-lower alkylamino. The compounds exhibit anti-inflammatory and antipyretic activity, and are useful as chemical intermediates in the preparation of other pharmacologically active compounds.

3,433,837
METHOD OF PRODUCING ADAMANTANE-2-ONE
Hendrik Willem Geluk, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 12, 1966, Ser. No. 564,673
Claims priority, application Netherlands, July 15, 1965, 6509139
U.S. Cl. 260—586 8 Claims
Int. Cl. C07c *45/16, 45/00*

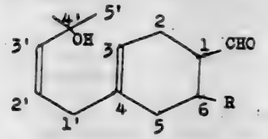
Production of adamantane-2-one by treatment of adamantane or 1 substituted derivatives thereof with concentrated sulfuric acid or fluorosulfonic acid.

3,433,838
PURIFICATION OF PERHALOACETONES
William J. Cunningham, Somerset, and Cyril Woolf, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 297,220, July 24, 1963. This application Sept. 21, 1966, Ser. No. 580,860
The portion of the term of the patent subsequent to Mar. 19, 1985, has been disclaimed
U.S. Cl. 260—593 22 Claims
Int. Cl. C07c *45/24, 49/08*

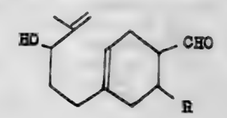
Perhaloacetones in crude reaction masses containing the same are purified by contacting the crude reaction masses with liquid phase water in an amount equivalent to at least one mole of water per mole of perhaloacetone, while maintaining temperature such that any free water present is in liquid phase to form a purified reaction mass from which water can then be eliminated to form anhydrous, purified perhaloacetone. The elimination of water can be accomplished by dehydration with a suitable desiccating agent or by dehydration to monohydrates which, upon heating, disassociate to form the corresponding trihydrates and anhydrous perhaloacetones.

3,433,839
PROCESS FOR THE PRODUCTION OF A MIXTURE OF ALICYCLIC HYDROXYALDEHYDES
Tatsuo Moroe, Musashino, Akira Komatsu and Takeshi Matsui, Tokyo, and Kuniaki Ueda, Kawasaki, Japan, assignors to Takasago Perfumery Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed May 8, 1967, Ser. No. 636,622
Claims priority, application Japan, May 12, 1966, 41/29,670
U.S. Cl. 260—598 4 Claims
Int. Cl. C07c *47/18*; C11b *9/00*

Myrcene obtained by pyrolysis of β-pinene is used as a starting material. This myrcene is first photo-oxidized to produce a mixture of its hydroperoxides and the resulting mixture is then reduced to produce a mixture of unsaturated alcohols, and the mixture thus obtained is subsequently condensed with a dienophile to obtain a desired mixture of two kinds of alicyclic hydroxyaldehydes respectively represented by the following general formulae:



and

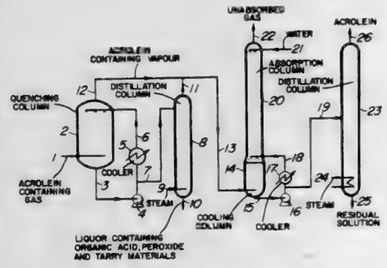


wherein R is a member selected from the group consisting of hydrogen and a methyl group. This mixture is a valuable new perfume material.

3,433,840
PROCESS FOR RECOVERING ACROLEIN BY QUENCHING, ABSORPTION AND PLURAL DISTILLATION
Takesaburo Shima, Yoshitsugu Sawaki, Katsuyoshi Tokunaga, Masao Sada, and Tetuji Takimoto, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 26, 1967, Ser. No. 693,651
Claims priority, application Japan, Dec. 29, 1966, 42/625
U.S. Cl. 260—604 4 Claims
Int. Cl. C07c *45/04*

In the process for recovering acrolein from the gaseous reaction mixture obtained by gas phase catalytic

oxidation of propylene, an improvement comprising quenching the reaction mixture to a relatively high temperature such as 30 to 80° C., separating a condensate formed, and contacting the remaining gas with water while or after cooling to a further lower temperature to



form an aqueous acrolein solution. The condensate is distilled without combining with the aqueous acrolein solution. The process is conducted continuously in the yield of above 85% without any troubles due to the polymerization of acrolein.

3,433,841
PURIFICATION PROCESS
John S. Dehn and John Arnold Glass, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,756
U.S. Cl. 260—643 **9 Claims**
Int. Cl. C07c *29/24*

Removal of iron carbonyl impurities from stream containing the same, particularly alcohol streams, by passing the stream to be purified through a cation exchange resin having a portion of the exchange sites occupied by either cupric, argentous, auric, ceric, or thallic ions.

3,433,842
PROCESS FOR THE HYDROGENATION OF TRANS, CIS-1,5-CYCLODECADIENE TO CIS-CYCLODECENE
James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Apr. 12, 1967, Ser. No. 630,195
U.S. Cl. 260—666 **10 Claims**
Int. Cl. C07c *5/04, 5/16, 5/14*

A process for converting trans,cis-1,5-cyclodecadiene to cis-cyclodecene utilizing a palladium hydrogenation catalyst. The cyclodecadiene contains an amine to modify the isomerization of the cyclodecadiene to undesirable by-products.

3,433,843
SELECTIVE HYDROGENATION OF TRANS,CIS-1,5-CYCLODECADIENE TO CIS-CYCLODECENE
James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Oct. 9, 1967, Ser. No. 673,973
U.S. Cl. 260—666 **5 Claims**
Int. Cl. C07c *5/06*

A process for converting trans,cis-1,5-cyclodecadiene to cis-cyclodecene. The trans,cis-1,5-cyclodecadiene is selectively hydrogenated over a palladium catalyst. An isomer of trans,cis-1,5-cyclodecadiene, formed as a by-product, is separated from the reaction mixture and selectively hydrogenated to cis-cyclodecene to give an improved product yield.

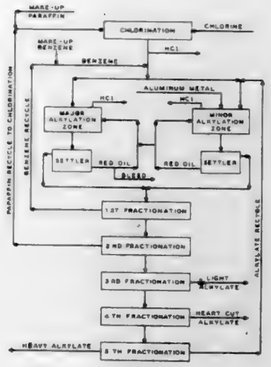
3,433,844
VINYLADAMANTANE PREPARATION
Eugene C. Capaldi, Broomall, and Leonard N. Leum, Media, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 30, 1967, Ser. No. 686,843
U.S. Cl. 260—666 **13 Claims**
Int. Cl. C07c *1/24*

Novel compositions of matter comprising vinyladamantanes useful as intermediates in the preparation of epoxyethyladamantanes.

3,433,845
PROCESS OF SOLUBILIZING, VIA HYDROGENATION, ALPHA-METHYLSTYRENE POLYMERS AND PRODUCT OBTAINED THEREBY
Stephen M. Kovach, Highland, Ind., and Robert A. Sanford and David W. Young, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 14, 1966, Ser. No. 541,435
U.S. Cl. 260—667 **8 Claims**
Int. Cl. C08f *27/25*

Alpha-methylstyrene polymers having a molecular weight of about 300 to 200,000, preferably about 350 to 80,000, are rendered more soluble in, for example, aromatic solvents, drying oils, hydrocarbon resins, polyesteramides, phenolic resins, polyvinyl chloride resins, paraffin waxes, mineral oils, etc., by hydrogenating at least about 70, preferably at least about 90, percent of the aromatic unsaturation of the polymers. In addition to alpha-methylstyrene homopolymers, there may also be subjected to the treatment, in order to increase their solubility, properties, copolymers of alphamethylstyrene and up to about 40 weight percent of one or more copolymerizable monomers selected from the group consisting of styrene and diene hydrocarbons of 4 to about 12 carbon atoms.

3,433,846
BIODEGRADABLE DETERGENT ALKYLATE HAVING IMPROVED DETERGENT PROPERTIES
Robert T. Adams, Lafayette, Irving E. Levine, Stinson Beach, and William A. Sweeney, San Rafael, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,635
U.S. Cl. 260—671 **14 Claims**
Int. Cl. C11d *1/66;* **C07c** *7/04, 5/22*



A process for producing a biodegradable detergent alkylate having improved detergent characteristics and composed of secondary phenyl-n-alkanes in the range of C_{10} to C_{14} and having a higher than equilibrium concentration of centrally attached phenyl isomers. A mixture of phenylalkanes in the C_{10} to C_{14} range and having at least 15% and preferably at least 50% by weight of phenylalkanes with 12 or more carbon atoms in the alkane portion of the molecule are subjected to fractional distillation to produce a lower boiling product fraction and a higher boiling fraction consisting predominantly of the terminal 2- and 3-phenylalkanes. This higher boiling fraction is subjected to isomerization, such as with a Friedel-Crafts or $AlCl_3$ catalyst, to convert the 2- and 3-phenyl isomers to the midchain phenylalkanes and thereafter returning the isomerized product to the aforementioned fractional distillation. Various process modifications and integration with a Friedel-Crafts alkylation process are described.

3,433,847
CONTINUOUS ALKYLATION PROCESS
Samuel J. Kahn, Rutherford, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Sept. 14, 1966, Ser. No. 579,209
U.S. Cl. 260—671 **10 Claims**
Int. Cl. C07c *15/02, 5/02*

Para-(tertiaryalkyl) alkylbenzene can be prepared by alkylating an alkylbenzene with a tertiary olefin in the presence of a catalyst system containing sulfuric acid and a mixture of the alkylbenzene reactant and the para-(tertiaryalkyl) alkylbenzene. In this way para-(tertiarybutyl)-toluene can be prepared; para t-butyltoluene is useful as a precursor of terephthalic acid.

3,433,848
METHOD OF CONTROLLING SELECTIVITY IN AN AROMATIC HYDROCARBON DEALKYLATION PROCESS
James T. Devins and Robert E. Quisenberry, Port Arthur, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 10, 1966, Ser. No. 571,411
U.S. Cl. 260—672 **6 Claims**
Int. Cl. C07c *3/58, 15/00*

The selectivity, that is the moles of dealkylated aromatic compound produced per mol of dealkylatable aromatic compound converted, of a thermal hydrodealkylation reaction in an unpacked tubular reactor is maintained at a value of above about 90 and for a time sufficient to convert about 90 percent of said dealkylatable aromatic compound by determining the concentrations of hydrogen and methane in the gaseous reactor effluent and introducing hydrogen into the reactor at a rate such that the coking factor, K_c, at the reactor outlet is maintained in the range of from 2.0 to 9.0, where K_c is defined as:

$$K_c = \frac{(Y_{H_2})^2(P_t)}{K_e(Y_{CH_4})}$$

3,433,849
PROCESS FOR RECOVERING PURE AROMATICS
Karl Heinz Eisenlohr, Buchschlag, Hesse, and Hans Wirth, Trostberg, Bavaria, Germany, assignors to Metallgesellschaft Akt., Frankfurt am Main, Germany
Continuation-in-part of application Ser. No. 167,871, Sept. 22, 1962. This application Aug. 2, 1966, Ser. No. 569,718
U.S. Cl. 260—674 **8 Claims**
Int. Cl. C07c *7/10, 7/00, 15/00*

The recovery of pure aromatic hydrocarbons from complex mixtures containing same, in the past, has been an involved and complicated procedure. It has now been found according to the present invention that substantially pure fractions of benzene, toluene and xylene can be obtained from mixtures boiling within the range 70 to 150° C. and admixed with aliphatic saturated and unsaturated hydrocarbons and olefins, by subjecting said mixture to dual countercurrent solvent extraction with N-methylpyrrolidone containing 15–25% by volume of water as a selective solvent and a liquid hydrocarbon fraction boiling below 60° C. as a counter solvent and an extract reflux to obtain a raffinate phase and an extract phase, and distilling said extract phase to separate said selective solvent and the extract containing benzene, toluene and xylene and aliphatic unsaturated hydrocarbons, and fractionating said extract to recover discrete pure fractions of benzene, toluene and xylene and collecting preliminary and transient fractions rich in aliphatic unsaturated hydrocarbons before and between said discrete pure fractions for recirculation as an extract reflux to said extraction process.

3,433,850
PREPARATION OF UNSATURATED HYDROCARBONS
Olin C. Karkalits, Jr., Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,686
U.S. Cl. 260—680 **6 Claims**
Int. Cl. C07c *11/00, 7/02*



Process for the oxidative dehydrogenation of aliphatic hydrocarbons wherein tars, polymers and precusors thereof are removed from the dehydrogenation effluent by dissolving these undesirable materials in a concurrent oil spray in a diffuser chamber. Production and recovery of methyl halides are also disclosed.

3,433,851
DEHYDROGENATION PROCESS WITH CATALYST PRETREATING FOR C_6–C_{24} ALKENES
Kestutis A. Keblys, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,343
U.S. Cl. 260—683.3 **8 Claims**
Int. Cl. C07c *5/18*

In dehydrogenation of dodecane to C_{12} alkenes over a heterogeneous catalyst, poor selectivity (unwanted aromatization) occurs during the initial time on stream. Operation at high temperatures (525–600° C.) during such initial period (0.5–6.0 hours) for each of 15 fresh catalysts gave better selectivity during the subsequent period at lower temperatures (420–500° C.) compared to the unfavorable product distribution during an initial period at such lower temperatures. Any of a variety of hydrocarbon feeds may be used for the line-out period.

3,433,852
PROCESS FOR C_6–C_{24} ALKENES BY PRETREATMENT OF PHOSPHATE CATALYSTS
Kestutis A. Keblys, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,348
U.S. Cl. 260—683.3 **7 Claims**
Int. Cl. C07c *5/18*

In dehydrogenation of dodecane to C_{12} alkenes over a heterogeneous catalyst, poor selectivity (unwanted aro-

matization) occurs during the initial time on stream. Operation at higher temperatures (525–600° C.) during such initial period (0.5–6.0 hours) for each of several fresh calcium nickel phosphate and calcium cupric phosphate catalysts gave better selectivity during the subsequent period at lower temperatures (400–501° C.) compared to the unfavorable product distribution during an initial period at such lower temperatures. Any of a variety of hydrocarbon feeds may be used for the line-out period.

3,433,853
POLYOLEFIN COMPOSITIONS CONTAINING A BASIC POLYAMIDE DYE SITE ADDITIVE
Ralph H. Earle, Claymont, Del., and Alfred C. Schmalz, Hollins, and Charles A. Soucek, Covington, Va., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 25, 1966, Ser. No. 552,722
U.S. Cl. 260—857 **4 Claims**
Int. Cl. C08f *29/12;* **D06p** *3/24*

The acid dyeability of olefin polymers is improved by incorporation of a minor amount of a polyamide resin based on a linear aliphatic dicarboxylic acid and a polyamine containing two primary or secondary amine groups and at least one tertiary amine group.

3,433,854
UNSATURATED POLYESTER RESINS PREPARED FROM PHOSPHORIC ACID ESTERS
Pasquale J. Apice, Cresskill, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 8, 1964, Ser. No. 402,610
U.S. Cl. 260—869 **9 Claims**
Int. Cl. C08g *23/16;* **C08f** *21/00*

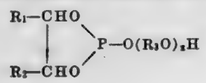
Flame retardant unsaturated polyesters having phosphorous incorporated into the polyester chain are prepared by reacting phosphoric acid with an alkylene oxide in a diol solvent and subsequently reacting with dicarboxylic acids and diols.

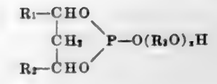
3,433,855
PROPYLENE-DIOLEFINIC HYDROCARBON BLOCK COPOLYMERS AND PROCESS FOR PREPARING SAME
Hugh J. Hagemeyer, Jr., and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 156,974, Dec. 4, 1961. This application Nov. 15, 1966, Ser. No. 594,630
U.S. Cl. 260—878 **6 Claims**
Int. Cl. C08f *15/04, 1/42*

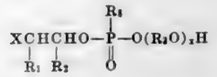
1. A polymer in which the polymer chains are crystalline polymerized propylene body segments terminated by crystalline tail segments of polymerized di-olefinic hydrocarbon, said polymer having a molecular weight of at least 10,000, a density of at least 0.85, a brittle point below 0° C. and containing at least 80 percent, by weight, of polymerized propylene.

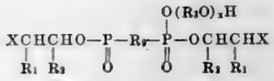
3,433,856
HALOGEN AND HYDROXY CONTAINING PHOSPHONATES
Lester Friedman, Beachwood, Ohio, assignor to Weston Chemical Corporation, Newark, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,215
U.S. Cl. 260—932 **29 Claims**
Int. Cl. C07f *9/40, 9/08;* **C07d** *105/04*

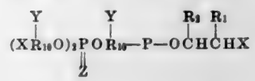
Compounds are prepared having the formulae

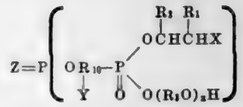
(a) 

(b) 

(c) 

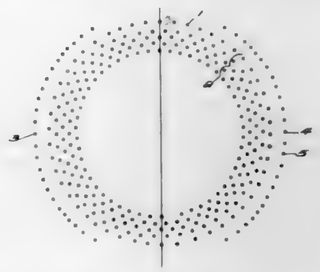
(d) 

(e) 

(f) 

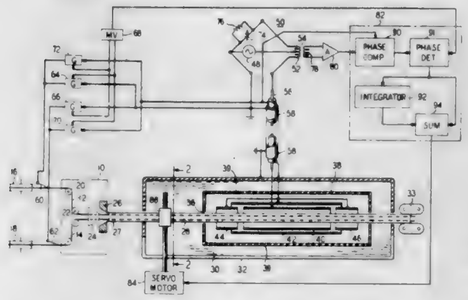
where R_1 and R_2 are hydrogen or lower alkyl, R_3 is lower alkylene of at least 2 carbon atoms, x is an integer of at least 2, R_8 is alkyl, alkenyl, aralkyl, haloaralkyl, cycloalkenyl-alkyl and halocycloalkenylalkyl, X is halogen of atomic weight 35 to 127, R_9 is divalent hydrocarbon or divalent halohydrocarbon, Y is hydrogen or halogen of atomic weight 35 to 127, R_{10} is 2 to 4 carbon alkylene and Z is nothing or oxygen. The compounds are useful to improve the flame resistance of polyurethanes and as stabilizers for halogen containing polymers and olefin polymers.

3,433,857
METHOD AND APPARATUS FOR FORMING NONWOVEN SHEETS
Hubert Wallace Dutton, Jr., Nashville, and Ray Frank Lees, Donelson, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 613,890
U.S. Cl. 264—24 **4 Claims**
Int. Cl. D01d *3/00*



A spinneret plate having one group of apertures arranged in concentric circles and a second group of apertures arranged in arcs surrounding and concentric with the first group. A projection of all apertures on a plane perpendicular to and bisecting the plane of the spinneret plate between the arcs contains a substantially constant ratio of the two groups.

3,433,858
METHOD AND APPARATUS FOR CONTROLLING CAPACITANCES IN MULTIWIRE STRUCTURES
Erich O. Bauer, East Orange, Paul E. Fox, Warren Township, Somerset County, and William F. MacPherson, South Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1965, Ser. No. 513,705
U.S. Cl. 264—40 **7 Claims**
Int. Cl. B29f *3/10*

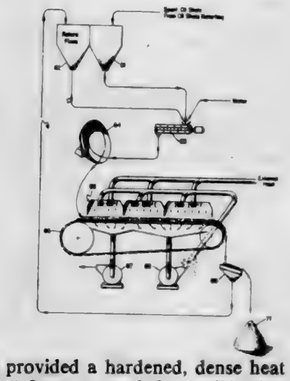


A servo system controls the difference in the capacitances exhibited between "ground" and each of two respective conductors, as the conductors are being continuously surrounded by plastic insulation to form an extruded pair. It does this by measuring the capacitance difference in the finished product and then by moving the finished product from side to side as it leaves the extruded die so as to change the positions of the conductors in the die relative to the insulating mass being extruded.

ERRATUM

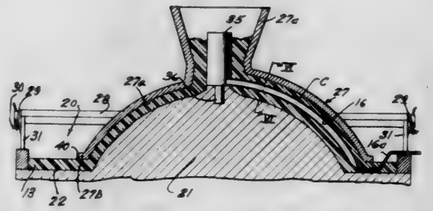
For Class 264—24 see:
Patent No. 3,433,857

3,433,859
PROCESS FOR THE PREPARATION OF HARDENED, DENSE HEAT TRANSFER MEDIUM
Thomas E. Ban, Cleveland, Ohio, assignor to McDowell-Wellman Engineering Company, a corporation of Ohio
Filed Feb. 21, 1966, Ser. No. 528,853
U.S. Cl. 264—44 **5 Claims**
Int. Cl. B29h *7/20, 19/00*



There is provided a hardened, dense heat transfer medium formed from spent shale particles by a process including the steps of sintering the particles, crushing the sintered particles, pelletizing, and indurating the pelletized sintered material.

3,433,860
METHOD FOR MANUFACTURING A SINK AND VANITY TOP COMBINATION
Kay L. Ruggles, Dale B. Gunnerson, and Howard S. Clark, Salt Lake City, Utah, assignors, by mesne assignments, to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,324
U.S. Cl. 264—71 **13 Claims**
Int. Cl. B29c *1/14;* **B29d** *3/02*



An integral sink and vanity top combination of a thermosetting synthetic plastic composition, preferably of a polyester resin type, wherein the bowl area is integrally formed with the vanity top area. The bowl area is provided with an overflow tube that is embedded within the material of the side wall of the bowl. A method of manufacture of the combination having one or more sink bowls is also disclosed and which method includes the steps of applying appropriate coatings to the mold and thereafter applying an initial pour of the polyester resin into the mold, mounting an overflow tube in proximity to the bowl mold area, then applying a bonnet over the overflow tube and bowl area after the first pour has become tacky, and then making a second pour of the same material into the interior of the bonnet area over the first pour to form the bowl area to shape in integral assembly with the vanity top area. A mineral filler may be added to the resin for the initial flow to produce different desired finishes on the sink and vanity top combination. As the material is permitted to gel the mold is vibrated to permit entrapped gasses to escape to insure a product essentially free of pockets of entrapped air.

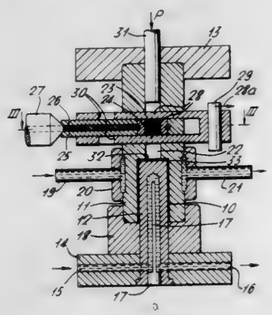
3,433,861
PRODUCTION OF DYED, SHAPED OXYMETHYLENE POLYMERS
Robert L. Hamilton, North Plainfield, and Richard G. Quynn, Summit, N.J., assignors to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Jan. 12, 1966, Ser. No. 520,084
U.S. Cl. 264—78 **9 Claims**
Int. Cl. D01f *1/06*

A method of improving the dye washfastness of oxymethylene polymer shaped articles comprising dyeing an undrawn article with a disperse dye and drawing the article at a temperature and draw ratio sufficient to improve the dye washfastness of the dyed shaped article.

3,433,862
METHOD OF FORMING ARTICLES FROM THERMOELASTICALLY DEFORMABLE MATERIALS
Eugen Weber, Zurich, Switzerland, assignor, by mesne assignments, to H. Dudley Wright, Yvoire, Haute-Savoie, France, and Robert Ernest Leclerc, Geneva, Switzerland
Filed Feb. 8, 1966, Ser. No. 525,903
Claims priority, application Great Britain, Feb. 22, 1965, 7,666/65
U.S. Cl. 264—97 **7 Claims**
Int. Cl. B29f *3/08*

A method of forming hollow thin-walled articles by extruding a thermoelastically deformable material in such

a manner that the extruded material will have a biaxially oriented structure which will thus provide greater biaxial strength. This biaxial orientation is accomplished by ex-



truding the thermoelastically deformable material through a narrow gap and then permitting flow laterally outwards in all directions while maintaining the material at a temperature within its softening range.

3,433,863

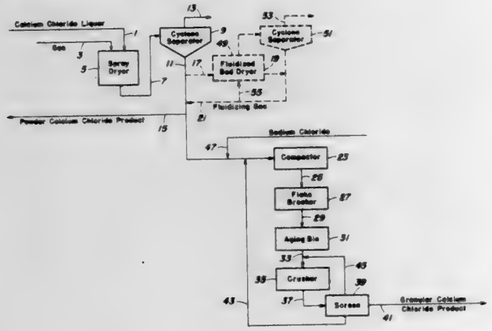
PROCESS FOR THE PREPARATION OF GRANULAR CALCIUM CHLORIDE

John H. Bowden, Wyandotte, Mich., and Clifford T. Terry, Windsor, Ontario, Canada, assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

Original application June 13, 1963, Ser. No. 287,593, now Patent No. 3,339,618, dated Sept. 5, 1967. Divided and this application July 17, 1967, Ser. No. 653,786

U.S. Cl. 264—140 **9 Claims**

Int. Cl. B02c *4/00*



Granular calcium chloride is prepared by compacting calicum chloride powder at a temperature of at least about 200° F. and at a pressure of about 2000 to 3500 p.s.i. into a sheet of compacted calcium chloride, breaking said sheet into flake-like particles, and crushing said particles to the desired particle size.

3,433,864

METHODS OF EXTRUDING COLLAGEN

John H. Highberger, Marblehead, Mass., and Robert A. Whitmore, Wyndmoor, Pa., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 8, 1966, Ser. No. 532,570

U.S. Cl. 264—202 **3 Claims**

Int. Cl. D01d *1/02, 5/00*

Process for making shaped collagen products by extruding an aqueous suspension of acid swollen collagen fibers in which the collagen fibers are formed from untanned limed hide and the suspension contains at least 2% of soluble collagen in solution and has a salt content under about 1% to insure wet strength of the extruded material in the deswelling bath.

3,433,865

CONTROLLING INSECTS WITH FUROYLOXY-ALKENYL THIO PHOSPHATES

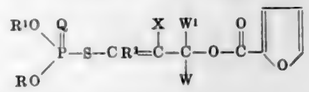
Sheldon B. Greenbaum, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Nov. 8, 1963, Ser. No. 322,526, now Patent No. 3,326,943, dated June 20, 1967. Divided and this application June 19, 1967, Ser. No. 655,978

U.S. Cl. 424—203 **3 Claims**

Int. Cl. A01m *9/36*

1. A method for controlling insects comprising applying to the locus to be treated an effective amount of the compound as represented by the formula:



wherein

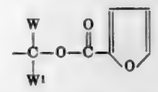
R and R^1 are alkyl of from 1 to about 6 carbon atoms;

Q is selected from the group consisting of oxygen and sulfur;

X is selected from the group consisting of chlorine, bromine and hydrogen;

W and W^1 are selected from the group consisting of hydrogen and alkyl of 1 to about 6 carbon atoms;

R^2 is selected from the group consisting of hydrogen, alkyl of from 1 to 6 carbon atoms and



wherein W and W^1 are as defined above, said substituent being hydrogen only when Q is sulfur.

3,433,866

PRODUCTION OF A NETWORK OF POLYACRYLONITRILE FILAMENTS

Francis Lombard and Pierre Juillard, Lyon, France, assignors to Crylor, Paris, France, a French body corporate

No Drawing. Filed June 1, 1964, Ser. No. 371,763

Claims priority, application France, June 6, 1963, 937,235; July 3, 1963, 940,254

U.S. Cl. 264—210 **7 Claims**

Int. Cl. D01d *5/12;* **D01f** *7/02, 7/06*

A tow of stretched polyacrylonitrile filaments containing 100–300 parts by weight of water and at least 0.5 part by weight of solvent is opened and subjected to a moist atmosphere wherein the wet bulb temperature is 65–120° C. to produce a network useful for the protection of crops.

3,433,867

METHOD OF FORMING MOLD FOR DUAL-CHAMBERED CONTAINER PARTITION

Charles A. Speas, Towson, and Charles T. Jordan, Baltimore, Md., assignors to Hedwin Corporation, New York, N.Y., a corporation of Maryland

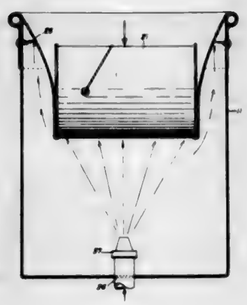
Original application Mar. 24, 1965, Ser. No. 442,410, now Patent No. 3,351,225, dated Nov. 7, 1967. Divided and this application Mar. 14, 1967, Ser. No. 623,036

U.S. Cl. 264—225 **6 Claims**

Int. Cl. B29c *1/02*

A method of producing a mold for use in performing

a contoured thermoplastic diaphragm, comprising stretching a thin rubber membrane over a supporting frame and depressing in said membrane an article of the shape to be molded. A liquid material having hardening properties is applied to the underside of the depressed membrane and permitted to harden and produce a shell. The article is then removed from the depressed membrane and a



mold-forming material is introduced into the shell and permitted to harden. Thereafter, the hardened mold-forming material is removed from the shell, resulting in the production of positive and negative patterns for the mold.

3,433,868

TWO PHASE FAST BREAKING FOAM PRESSURIZED HAIR WAVING COMPOSITION

Stanley Brechner, West Orange, Meyer Malakoff, Kendall Park, and Martin M. Rieger, West Englewood, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed July 27, 1964, Ser. No. 385,467

U.S. Cl. 424—47 **10 Claims**

Int. Cl. A61k *7/10*

An improved two liquid phase pressurized hair waving composition adapted for discharge from its container as a foam, consisting of a low molecular weight mercaptoalkanoic acid, an alkalizing agent imparting to the composition a pH of above about 7, a propellant, a surface active agent, a polyhydric alcohol, and the balance substantially water.

3,433,869

PROCESS FOR TREATING FATIGUE WITH CALCIUM GLUCOSE-1-PHOSPHATE

Roger Brule, Fontenay-sous-Bois, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France

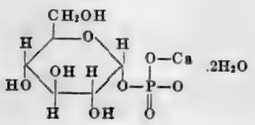
No Drawing. Original application July 3, 1964, Ser. No. 380,122. Divided and this application July 13, 1966, Ser. No. 574,519

Claims priority, application France, July 9, 1963, 940,884

U.S. Cl. 424—180 **3 Claims**

Int. Cl. A61k *27/00*

A novel salt, calcium glucose-1-phosphate having the formula



although the number of water crystallization molecules may vary depending upon the precipitation or crystallization conditions. The invention further relates to novel processes for the preparation of the said calcium salt and to novel compositions for increasing resistance to fatigue. The invention also relates to a method of increasing the resistance of warm-blooded animals to fatigue.

3,433,870

METHOD OF KILLING PESTS BY APPLICATION OF AN O,O-DILOWERALKYL PHOSPHORODITHIOYL METHYL-SUBSTITUTED MERCAPTOACETATE

Arnold D. Gutman, Oakland, and Jack P. Orr, Mountain View, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 1, 1965, Ser. No. 436,343, now Patent, No. 3,351,680, dated Nov. 7, 1967. Divided and this application Sept. 18, 1967, Ser. No. 709,508

U.S. Cl. 424—216 **12 Claims**

Int. Cl. A01n *9/36*

Insects and acarids are killed by applying to their habital a composition employing O,O-diloweralkyl phosphorodithioylmethyl-substituted mercaptoacetates.

3,433,871

SCHIFF BASES OF 2-FORMYLQUINOXALINE-1,4-DIOXIDES AS GROWTH PROMOTERS AND SYSTEMIC AND NON-SYSTEMIC INFECTION CONTROL AGENTS IN ANIMALS

James David Johnston, Old Saybrook, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 470,934, July 9, 1965, which is a continuation-in-part of application Ser. No. 397,004, Sept. 16, 1964. This application Aug. 1, 1967, Ser. No. 657,492

U.S. Cl. 424—250 **16 Claims**

Int. Cl. A61k *27/00;* **A01n** *9/22, 9/00*

Schiff bases derived from 2-formylquinoxaline-1,4-dioxides valuable for growth promotion of animals, control of chronic respiratory disease in poultry, infectious sinusitis in turkeys, and urinary tract and systemic and non-systemic infections in animals.

3,433,872

PALATABLE, FREE-FLOWING, NON-AGGLOMERATING CAFFEINE POWDER

Elmer De Ritter, Glen Rock, and Joseph Edward Raymond, Saddle Brook, N.J., assignors to Hoffman-La Roche, Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,792

U.S. Cl. 424—253 **2 Claims**

Int. Cl. A61k *27/00*

Caffeine-containing compositions, in the form of small, solid, discrete particles which are tasteless, free-flowing and nonagglomerating, are described. Such compositions are obtained by causing molten droplets, comprising an intimate mixture of caffeine and a mixture of monoglycerides and diglycerides of naturally occurring saturated fatty acids having a carbon chain length of from 16 to 18 carbon atoms, to solidify while being maintained physically separate from each other.

3,433,873
COMPOSITIONS AND METHODS FOR CONTROLLING BIRDS
Andrew J. Reinert and Ralph P. Williams, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,178
U.S. Cl. 424—263 **8 Claims**
Int. Cl. A01n *9/22*

Live bird management is accomplished by placing in an area in which the birds are to be managed an amidopyridine, picoline, lutidine, trimethylethyl pyridine or a higher alkyl substituted pyridine. A generic formula is given.

3,433,874
PESTICIDAL USE OF BENZOTHIOPHENES AND BENZOTHIENOTHIOPHENES
Emil J. Geering, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 270,791, Apr. 5, 1963. This application Oct. 24, 1965, Ser. No. 505,033
U.S. Cl. 424—275 **20 Claims**
Int. Cl. A01n *9/12;* **C07d** *63/18*

Methods for controlling pests selected from the group consisting of fungi, bacteria, nematodes and insects with benzothiophenes and benzothienothiophenes.

3,433,875
THE IMPROVEMENT OF MENTAL PERFORMANCE WITH POTASSIUM N-ACETYL DL AMINOSUCCINATE
Jean Cahn, 18 Rue J.M. de Heredia, Paris, and Jean-Claude Denis, 15 Rue Mathurin Regnier, Paris, France
No Drawing. Continuation-in-part of application Ser. No. 436,644, Mar. 2, 1965. This application Nov. 6, 1967, Ser. No. 681,003
Claims priority, application France, Mar. 26, 1964, 968,815
U.S. Cl. 424—319 **3 Claims**
Int. Cl. A61k *27/00*

Mental performance in humans is improved by the administration of pharmaceutical compositions containing potassium N-acetyl DL aminosuccinate.

3,433,876
FUNGICIDAL COMPOSITION CONTAINING 3a,4,7,7a - TETRAHYDRO - 2,3,3a,4,5,6,7,7a-OCTAHALO - 4,7 - METHANOINDENE 1,8-DIONE DIIMINE AND METHOD OF USING THE SAME
Earl T. McBee, Lafayettte, Ind., assignor to Purdue Research Foundation, West Lafayette, Ind., a corporation of Indiana
No Drawing. Original application Dec. 16, 1963, Ser. No. 330,603, now Patent No. 3,320,316, dated May 16, 1967. Divided and this application Nov. 23, 1966, Ser. No. 619,082
U.S. Cl. 424—325 **8 Claims**
Int. Cl. A01n *9/20*

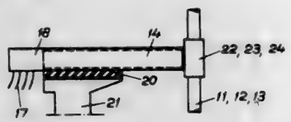
A method for controlling fungi that comprises applying to the locus to be treated an effective amount of 3a,4,7,7a-tetrahydro-2,3,3a,4,5,6,7,7a - octahalo - 4,7 - methanoindene-1,8-dione diimine. Also described is a fungicidal composition containing the active ingredient mentioned.

3,433,877
IMMOBILIZATION OF OYSTER DRILLS IN OYSTER BEDS
William Eric Ashton, Niagara Falls, and Edward D. Weil, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed July 15, 1965, Ser. No. 472,348
U.S. Cl. 424—353 **1 Claim**
Int. Cl. A01n *9/30;* **A01k** *61/00*

Oyster drills, which are normally found in oyster beds, are immobilized, thereby preventing their attacking oysters. Such immobilization is effected by applying to the drills a granular composition containing 5 to 80 percent of a mixture of trichlorobenzene, tetrachlorobenzene and pentachlorobenzene, on a low volatile matter attapulgus clay of low water disintegration rate and particle size in the range of about 4 to 50 mesh.

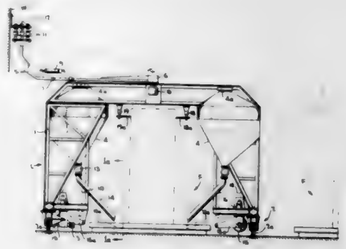
ELECTRICAL

3,433,878
LINE TRANSMISSION IN ARC FURNACES
Yngve Sundberg and Erik Svantesson, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed June 9, 1966, Ser. No. 556,298
Claims priority, application Sweden, June 10, 1965, 7,618/65
U.S. Cl. 13—14 **4 Claims**
Int. Cl. H05b *7/10*



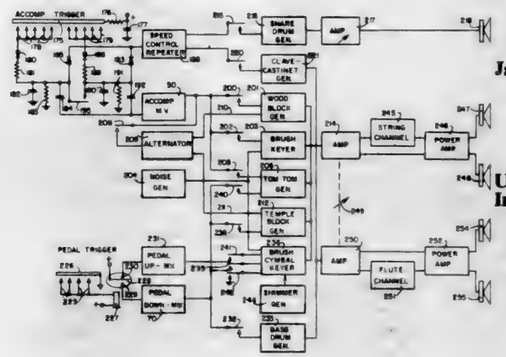
A line transmission between a suspended cable or cables from a multiphase furnace transformer to the electrodes of a multiphase arc furnace, each electrode is attached at the end of an electrode arm. Around the two outer electrode arms there are arranged tubular bodies of a material having high electrical conducting capacity, which bodies serve as conductors for electric current in the corresponding phases of the multiphase-fed furnace.

3,433,879
TRAVELLING GANTRY FOR OPERATING ALUMINUM ELECTROLYSIS FURNACES
Johan Nikolai Ström and Gudmund Heggstad, Hoyanger, Norway, assignors to A/S Norsk Aluminum Company, Oslo, Norway, a corporation of Norway
Continuation-in-part of application Ser. No. 348,521, Mar. 2, 1964. This application Mar. 24, 1967, Ser. No. 625,695
Claims priority, application Norway, Mar. 4, 1963, 147,755
U.S. Cl. 13—33 **5 Claims**
Int. Cl. H05b *3/60*



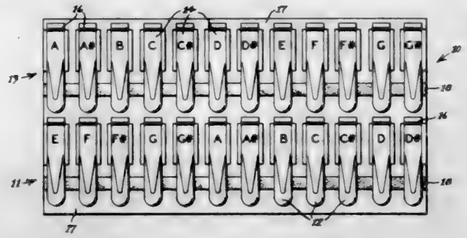
An apparatus for continuous crust breaking and oxide charging of a furnace including a travelling gantry framework spanning the furnace for supporting the operating means with limit switches on said framework for automatically terminating the operations at the ends of the furnace. Auxiliary wheel means are provided for raising the framework free of the floor and transversely shifting the unit to new position and a rotatable power boom is included to allow power to be taken from overhead rails along either side of the furnace.

3,433,880
PERCUSSION SYSTEM
James S. Southard, Elkhart, Ind., assignor to C. G. Conn Ltd., Elkhart, Ind., a corporation of Indiana
Filed Oct. 20, 1965, Ser. No. 498,889
U.S. Cl. 84—1.17 **5 Claims**
Int. Cl. G10h *3/06*



Percussion system for electric organ having generators for producing sounds of drums, blocks and other percussion instruments and noise source for producing signals keyed to provide brush and cymbal sounds. The generators and keyers are actuated by multivibrators controlled by accompaniment and pedal keyboards. Repeat action and production of alternate tones can be selectively provided.

3,433,881
PEDAL BOARD FOR MUSICAL INSTRUMENT
Richard M. Cotten, 1815 21st Ave. S., Nashville, Tenn. 37212
Filed Nov. 10, 1965, Ser. No. 507,203
U.S. Cl. 84—1.17 **3 Claims**
Int. Cl. G10h *3/06*



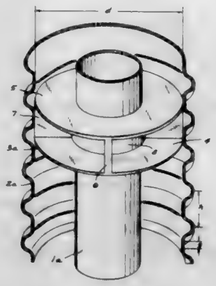
1. A pedal board for an electronic musical instrument comprising:
(a) a first longitudinal row of spaced pedals,
(b) a second longitudinal row of spaced pedals laterally adjacent said first row, so that each pedal in said first row is transversely aligned with a pedal in said second row,
(c) electronic sound producing means,
(d) electrical switch means connecting each pedal to said sound producing means so that said switch means are normally open in inoperative position and closed in operative position by the depression of said pedals to produce a tone in said sound producing means,
(e) the tones produced by the successive pedals in said first row corresponding to the notes in the chromatic scale,
(f) the tones produced by the successive pedals in said second row corresponding to the notes in the chromatic scale, and
(g) the tone produced by each pedal in said second row being a perfect fourth musical interval above the tone produced by the transversely aligned pedal in said first row.

3,433,882
COMPOSITE WELDING HOSE
Jan-Erik Henriksen and Svein Bjorkum, Laxa, Sweden, assignors to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a corporation of Sweden
Filed Apr. 21, 1967, Ser. No. 632,687
Claims priority, application Sweden, May 18, 1966, 6,871/66
U.S. Cl. 174—15 **3 Claims**
Int. Cl. H01b *7/34, 9/06*



A composite welding hose for connecting a welding tool for gas-shielded consumable-electrode arc welding to a supply unit, comprising a flexible wire guide tube and a flexible gas conduit surrounding the wire guide tube. The interior wall of the gas conduit and/or the exterior wall of the wire guide tube is provided with longitudinal ribs supporting the wire guide tube centrally within the gas conduit. Preferably the hose also comprises a tubular welding cable closely surrounding the gas conduit.

3,433,883
CABLE CONSTRUCTION
Karl Heinz Hahne, Blecher uber Bergisch Gladach, Germany, assignor to Felten & Guilleaume Carlswerk Aktiengesellschaft, Cologne-Mulheim, Germany
Filed Dec. 5, 1967, Ser. No. 688,042
Claims priority, application Germany, Dec. 8, 1966, F 50,878
U.S. Cl. 174—28 **9 Claims**
Int. Cl. H01b *9/04, 9/06, 11/18*



A coaxial cable includes an elongated inner conductor and an elongated corrugated outer conductor which coaxially surrounds the inner conductor with clearance.

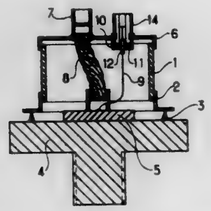
Spacing elements space the inner from the outer conductor and each consist of two discs surrounding the inner conductor and extending to the outer conductor, the discs being spaced in the longitudinal direction of the conductors, and wall portions which extend between the discs, being connected thereto, and which define with one another a cross so that they extend radially of the discs and of the inner conductor to the outer edges of the discs.

3,433,884
ELECTRICAL WIRE STRUCTURE
Nicholas J. Cogelia, Baltimore, Samuel M. Martin, Lutherville-Timonium, and Raymond B. Ramsey, Towson, Md.; said Martin assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York, and said Cogelia and said Ramsey assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Feb. 1, 1967, Ser. No. 613,188
U.S. Cl. 174—49 **13 Claims**
Int. Cl. H02g *3/04;* **H01b** *7/00*



A distribution panel and plural telephone stations are connected by wires contained in building conduits. The wires in the conduit have a resin jacket which includes a lubricant. The lubricant together with the jacket formulation reduce the wire-to-wire and wire-to-conduit frictional forces. The conductors are annealed copper of a reduced gauge. This wire structure requires substantially less pulling force when being installed in the conduit.

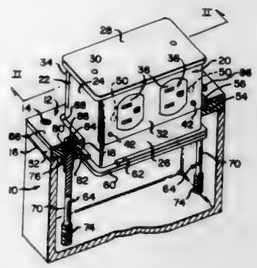
3,433,885
TIGHT COVER FOR A SEMICONDUCTOR DEVICE
Pierre Choffart, Massy, France, assignor to Compagnie Generale d'Electricite, Paris, France
Filed Dec. 2, 1966, Ser. No. 598,746
Claims priority, application France, Dec. 3, 1965, 40,883
U.S. Cl. 174—52 **8 Claims**
Int. Cl. H05k *5/02, 5/06*



The present disclosure relates to a vacuum tight cover for a semiconductor device wherein said cover is provided with coaxial type control terminals which assure a rapid union of the control terminal with the control source, as well as the shielding of this connection to avoid premature starting of the device.

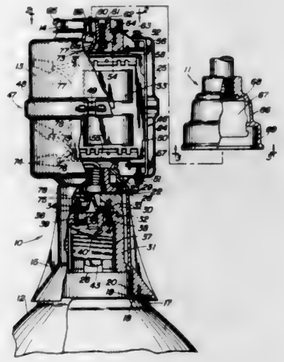
3,433,886
RECESSIBLE ELECTRICAL SERVICE DEVICE
John Leonard Myers, Leetsdale, Pa., assignor to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1966, Ser. No. 552,752
U.S. Cl. 174—57 **17 Claims**
Int. Cl. H01r *13/46;* **H01h** *9/02*

In a recessible electric service device, the combination comprising an electrical junction box arranged for flush-mounting in a building structure, an apertured cover member for said junction box, a recessible service box closely fitted for sliding movement within said aperture, means for moving said service box within said aperture to recess and to withdraw said service box relative



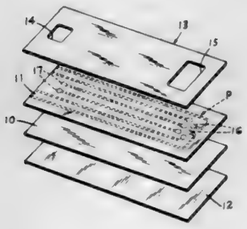
to said junction box, flanges on said service box on each side respectively of said cover member, and means for sealing said service box to said junction box in said withdrawn position and in said recessed position of said service box.

3,433,887
LIGHTING FIXTURE WITH QUICKLY REMOVABLE BALLAST ASSEMBLY
Thomas Driskell, Mansfield, Ohio, assignor to Thomas Industries Inc., Sparta, Tenn., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,437
U.S. Cl. 174—63 **4 Claims**
Int. Cl. H02b *1/10*



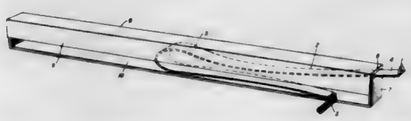
A plurality of inwardly facing lugs are integrally formed of the hood of mounting means for a lighting fixture of the type which comprises a ballast and a lampholder. The ballast is supported by a ballast enclosure. A plurality of outstanding bayonets attached to the ballast enclosure are adapted to engage the lugs and thereby connect the ballast holder to the hood. The bayonets are relieved to permit the ballast holder to be disconnected from the hood. An arrangement of annular electrical terminals on a terminal assembly base mounted to the ballast enclosure and horseshoe electrical contacts on a receptacle terminal base supported within the hood permits the electrical circuit for the lighting fixture to be made at the line side of the ballast when the ballast enclosure is connected to the hood and to be broken thereat when the ballast enclosure is disconnected from the hood.

3,433,888
DIMENSIONALLY STABLE FLEXIBLE LAMINATE AND PRINTED CIRCUITS MADE THEREFROM
Sidney K. Tally, Nashua, N.H., Victor F. Dahlgren, Chelmsford, Mass., and Thomas H. Stearns, Amherst, N.H., assignors to Electro-Mechanisms, Inc., Methuen, Mass., a corporation of New Hampshire
Filed Jan. 24, 1967, Ser. No. 611,289
U.S. Cl. 174—68.5 **18 Claims**
Int. Cl. H05k *1/00, 3/10*



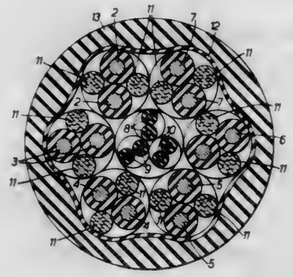
This invention relates to flexible, dimensionally stable and damage-resistant laminates and printed circuits composed of conductive metallic foil bonded to a fabric coated with an epoxy resin, the fabric being bonded to and supported by a layer of a flexible thermoplastic resin, the printed circuits also having a layer of flexible thermoplastic resin overlying at least portions of the metallic foil conductors of the printed circuits.

3,433,889
RECIPROCATING ELECTRIC CONNECTING SYSTEM
G. John DeVries, Jr., Dover, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 30, 1966, Ser. No. 561,979
U.S. Cl. 174—69 **1 Claim**
Int. Cl. H01b *7/06;* **H05k** *5/04*



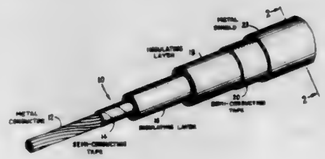
A system of electric connection between a stationary member and a reciprocating member adapted to move back and forth along a path of travel in a horizontal plane. The system comprises a receptacle having a length slightly greater than the length of said path of travel. The receptacle is fastened to the stationary member with its longitudinal axis lying in a plane parallel to said horizontal plane. One slot is formed in an end of the receptacle and another slot is formed along one side of the receptacle. A flexible electric cable is folded upon itself and is placed inside the receptacle. One end of the cable projects through the end slot and is attached to the stationary member. The other end of the cable protrudes through the side slot and is secured to the reciprocating member for movement therewith so that it slides back and forth along the length of the side slot thereby alternately unfolding and folding that portion of the cable which is in the receptacle.

3,433,890
SIGNAL TRANSMISSION CABLE
Ralph P. Gabriel, Chobham, Surrey, and Rupert I. Kinross, Shepperton, England, assignors to Communications Patents Limited
Filed Feb. 7, 1967, Ser. No. 614,450
Claims priority, application Great Britain, Feb. 10, 1966, 5,858/66
U.S. Cl. 174—116 **12 Claims**
Int. Cl. H01b *7/00, 11/02*



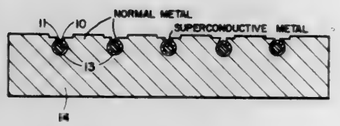
A plurality of pairs of insulated conductors are each twisted together at a pitch different from that of the others. The conductors of each pair form a pair of interstices therebetween. Each of a pair of electrically non-conducting non-metallic members extends along the length of each of the pairs of insulated conductors and is positioned in a corresponding one of the pairs of interstices of each pair of conductors. Each non-metallic member is a polyethylene filament having a circular cross-section having a diameter of not more than two-thirds the diameter of each insulated conductor.

3,433,891
GRADED INSULATED CABLE
Stephen Zysk, Stratford, and Burton T. MacKenzie, Jr., Monroe, Conn., assignors to General Electric Company, a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,797
U.S. Cl. 174—120 **16 Claims**
Int. Cl. H01b *7/20, 7/34*



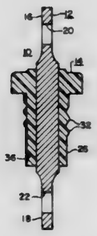
An insulated cable of graded construction which has a plurality of layers of insulation each formed of a cross-linked ethylene containing polymer, and each layer as characterized by a different dielectric constant is arranged or graded in descending order outwardly from the conductor.

3,433,892
COMPOSITE ELECTRICAL CONDUCTOR
Ahmed El Bindari, Cambridge, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Original application July 17, 1964, Ser. No. 383,392, now Patent No. 3,372,470, dated Mar. 12, 1968. Divided and this application Aug. 30, 1967, Ser. No. 664,537
U.S. Cl. 174—126 **3 Claims**
Int. Cl. H01b *5/02*



A composite superconductor wherein a superconductive material coated with a normal metal is embedded in and interdiffused with an outer coating of normal metal.

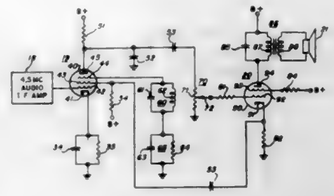
3,433,893
CAST ELECTRICAL BUSHING
Charles F. Hofmann, Monroeville, and August I. Keto, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 12, 1967, Ser. No. 645,319
U.S. Cl. 174—153 **11 Claims**
Int. Cl. H01b *17/26;* **C08g** *51/04*



A cast electrical bushing structure for electrical apparatus, such as transformers, having an insulating body portion formed of a filled epoxy resin system which is sealed directly to the conductor stud. The epoxy resin system includes both fused quartz and alumina trihydrate filler, with the particle size distribution and concentration of the fused quartz filler being controlled to provide a pourable mixture, which when cured establishes a high strength, crack resistant insulating structure having excellent weather resistance, and a coefficient of thermal expansion which substantially matches that of the conductor stud. Further, these physical characteristics are provided when using a concentration of alumina trihydrate of 20–25% of the total system weight, which is necessary to achieve the essential high power arc and track resistance.

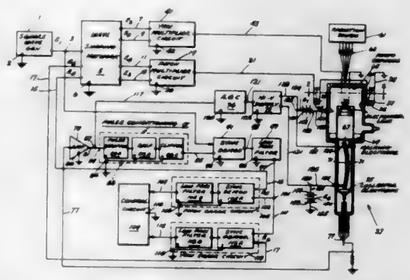
3,433,894
AUDIO AMPLIFIER CIRCUIT
Robert A. Wolff, Lombard, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,417
U.S. Cl. 178—5.8 **3 Claims**
Int. Cl. H04n *5/60*

A quadrature type detector drives the grid circuit of an audio output tube having an unbypassed cathode resistor. To offset degeneration introduced by the cathode resistor, an alternating current positive feedback path



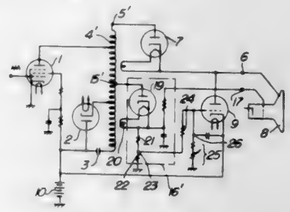
couples the output tube cathode to the screen grid of the quadrature detector.

3,433,895
***n*-LEAF ROSE PATTERN OPTICAL RADIATION SENSOR AND TRACKER SYSTEM**
Saul L. Malkiel, East Orange, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,300
U.S. Cl. 178—7.2 **21 Claims**
Int. Cl. H04n *5/00, 5/38*



This invention relates to an optical sensing mechanism and more particularly to an optical sensing mechanism utilizing an image dissector, one component of which is an electron multiplier, which may be used to sense the position of a source of radiation such as a star or planet.

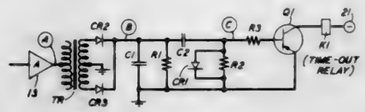
3,433,896
TELEVISION RECEIVER HIGH VOLTAGE POWER SUPPLY PROTECTION CIRCUIT
Yuji Sakai, Takatsuki-shi, and Ryoichi Nakayama, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed Feb. 20, 1967, Ser. No. 617,189
Claims priority, application Japan, Feb. 24, 1966, 41/11,528
U.S. Cl. 178—7.3 **2 Claims**
Int. Cl. H04n *3/18*



A television circuit to protect the high voltage rectifier tube and fly-back transformer including a rectifier tube

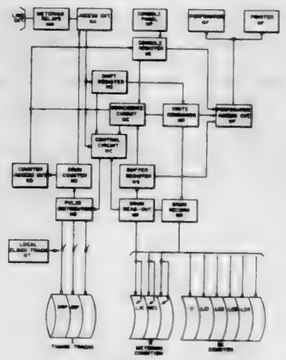
with warm-up characteristics similar to the HV rectifier tube and having heaters driven by the fly-back transformer, said rectifier tube controlling the grid bias of the shunt control tube biasing it toward conduction as the HV rectifier and rectifier tubes warm-up together.

3,433,897
VOICE OPERATED CONTROL CIRCUIT
Verne E. Munson, Manasquan, N.J., assignor to Bell Telephone Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Sept. 24, 1964, Ser. No. 398,877
U.S. Cl. 179—6 **3 Claims**
Int. Cl. H04m *11/00, 11/08*



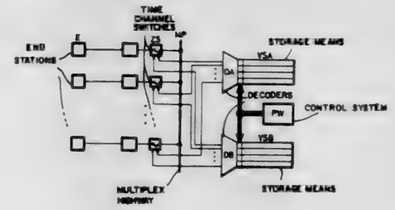
In a telephone answering set false triggering and consequent resetting of the time-out circuit by spurious voice-simulating tones is avoided by making the reset function of the time-out circuit responsive to the trailing edge rather than to the leading edge of the syllabic related envelopes of applied voice signals.

3,433,898
TELEPHONE PULSE METERING SYSTEM
Emiel H. M. Sellenslagh, Aartselaar, and Willy F. Van Hoeck, Boom, Belgium, assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 488,043
U.S. Cl. 179—7 **9 Claims**
Int. Cl. H04m *15/10*



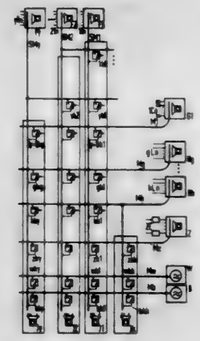
A time and zone metering system wherein a central store is used to accumulate the metering pulse total for each line. The central store consists of a magnetic drum with which a line scanner is synchronized. Each line is equipped with a relay that is operated by a metering pulse to close a pair of make contacts wired into a gating arrangement with the timing pulses, so that the combination of the allotted time by the scanner and the closed contacts are effective to place a mark on the section of the drum associated with this particular line. This mark is then re-read by the metering equipment, which reads the total count in another section of the drum for this particular line and upgrades its count to include this presently placed metering pulse.

3,433,899
TDM SYSTEM WITH MEANS FOR CROSSTALK REDUCTION BY CHANGING THE SLOT POSITIONS OF THE CHANNELS AFTER EACH FRAME PERIOD
Friedrich Pfeiderer, Munich-Solln, and Max Schlichte, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Sept. 23, 1964, Ser. No. 400,604
Claims priority, application Germany, Sept. 23, 1963, S 87,451
U.S. Cl. 179—15 **23 Claims**
Int. Cl. H04j *3/10*



For minimizing intelligible crosstalk between the individual channels of a pulse time multiplex communication system, the pulse phases made available for each of a group of n successive time channels during each system scanning period defined by appearance of all time pulse phases are constantly changed such that the time channels appear in all $n(n-1)$ possible combination pairs as directly adjacent time channels at equal frequency of appearance of at least $n(n-3)$ combination pairs and the remaining, at most $2n$, channel combination pairs appear at a greater frequency of occurrence.

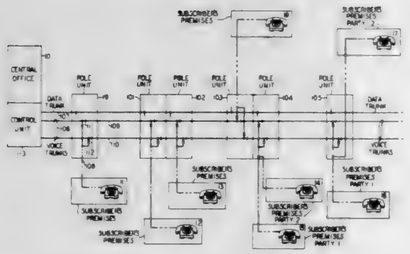
3,433,900
CENTRALIZED DIGIT RECEIVER SYSTEM FOR A PLURALITY OF TIME MULTIPLEX COMMUNICATION SYSTEMS
Max Schlichte, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Sept. 17, 1965, Ser. No. 488,195
Claims priority, application Germany, Sept. 29, 1964, S 93,427
U.S. Cl. 179—15 **4 Claims**
Int. Cl. H04j *3/00;* **H04m** *3/00*



The present disclosure is of a system combining together a number of time multiplex communication systems, such as for telephony purposes. In order to save equipment cost, such apparatus as digit receivers which are designed to process dialing information are combined

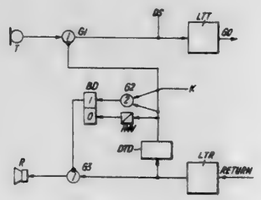
together in a separate or centralized time multiplex system, with a time multiplex line or highway which is connectible to the highways of the several time multiplex systems serving subscribers, by a matrix.

3,433,901
APPARATUS FOR CONTROLLING THE ESTABLISHMENT OF CALL CONNECTIONS IN A DISTRIBUTED LINE CONCENTRATOR SYSTEM
Harry Reinig, Piscataway Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,405
U.S. Cl. 179—18 **12 Claims**
Int. Cl. H04m *3/00, 3/56*



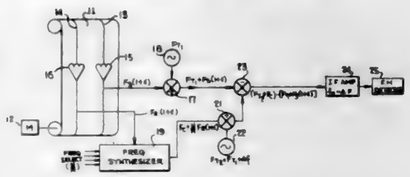
Distributed remote line concentrator equipment proximate to individual remote substation lines is disclosed for interconnecting the lines over a lesser plurality of trunks with a central office. The equipment further provides for connecting party line substations together without the necessity of establishing such connections over the trunks to the central office. Circuitry is also included at the central office for comparing signals returned from the remote equipment with signals transmitted to the equipment for determining the condition of a called line prior to establishing call connections.

3,433,902
SPEECH IMMUNITY VOICE FREQUENCY SIGNALLING SYSTEMS
John Anthony Weeks Butcher, Stansted, Geoffrey George Pullum, Shenfield, and Michael John Willson, Ruislip, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,913
Claims priority, application Great Britain, Nov. 19, 1965, 49,260/65
U.S. Cl. 179—84 **6 Claims**
Int. Cl. H04m *1/19, 1/00*



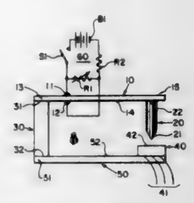
Upon detection of dial tone, a gate is disabled so that transmitter is disconnected from line. Provision is made for preventing dial tone from reaching receiver while transmitting selection signals.

3,433,903
FREQUENCY COMPENSATION SYSTEM
Jack T. Murray, Fairfax, and Homer D. Childers, Springfield, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed May 6, 1964, Ser. No. 365,418
U.S. Cl. 179—100.2 **17 Claims**
Int. Cl. G11b *5/00;* **H03d** *1/22;* **H04b** *1/26*



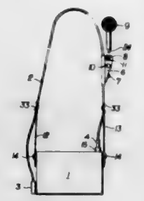
A system for correcting the constant percentage frequency deviation occurring over a band of frequencies as a result of relative motions, such as non-uniform movement of a magnetic tape recording past a reproducing head or velocity changes between transmitter and receiver in a communication system, in which a reference frequency is derived having the same percentage deviation in frequency as occurs in the band of interest, and the reference frequency is then selectively converted to a frequency corresponding to the center frequency of the band or approximately so, the conversion frequency also having the aforementioned percentage frequency deviation. The conversion frequency is translated by a fixed amount to still another frequency, which is predetermined for use as a local oscillator frequency suitable for mixing with the band of frequencies, while preserving the percentage frequency deviation only as to the conversion frequency prior to translation. Frequencies in the band are then shifted to other frequencies for mixing with the local oscillator frequency to generate a new band of frequencies with the percentage frequency deviation removed therefrom.

3,433,904
SEMICONDUCTOR TRANSDUCER
Ronald F. Kowalik, Lombard, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,111
U.S. Cl. 179—110 **10 Claims**
Int. Cl. H04r *21/02, 17/04;* **H01l** *15/00*



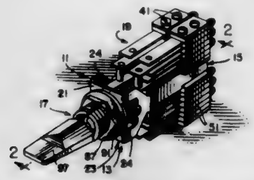
1. In a semiconductor transducer arrangement, the combination comprising:
a semiconductor element having at least one p-n junction;
an actuating element; and
structural means operative to maintain said actuating element and said semiconductor element normally in a spaced-apart relation, said structural means including support means supporting one of said elements and operative in response to an applied control to bring said actuating element into contact with said semiconductor element and to apply a biasing force of controllable magnitude between said elements.

3,433,905
TAPE RECORDER CARRYING AND COUPLING BELT ASSEMBLY
Ernst Pless, Vienna, Austria, assignor to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria
Filed Apr. 16, 1965, Ser. No. 448,792
Claims priority, application Austria, Apr. 28, 1964, A 3,769/64
U.S. Cl. 179—157 **5 Claims**
Int. Cl. H04m *1/02*



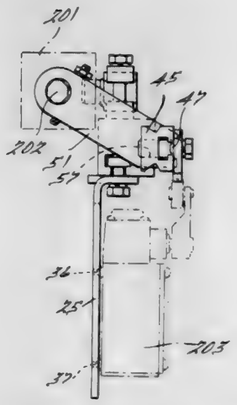
A carrying and coupling belt assembly for a sound transducer such as a tape recorder includes a combination supporting an electrical coupling belt having electrical conductor means therein for electrically connecting the electrical circuitry of the tape recorder to an external apparatus such as a microphone and also for supporting the recorder on the user's shoulder. The coupling belt includes connecting means for mechanically and electrically connecting one end of the belt to the tape recorder and it carries a control housing intermediate its length with control means in the housing electrically connected to the conductor means in the belt for connecting the microphone to the tape recorder. The control housing also includes a modulation control and an indicator and a microphone and recorder on and off switch. In one form, the control housing has a cover which is hinged in a manner such that it may be pivoted downwardly to a horizontal position for easily viewing the modulation indicator thereon. The housing includes a base portion which is formed integral with the belt and a removable portion which permits the mounting of the control removable portion on a tripod, for example.

3,433,906
LEVER SWITCH HAVING MEANS TO AVOID TRANSIENT SWITCHING
James R. Bailey, Chicago, and Vernon W. Lavigne, Rolling Meadows, Ill., assignors to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 19, 1966, Ser. No. 602,656
U.S. Cl. 200—1 **15 Claims**
Int. Cl. H01h *9/20, 3/04*



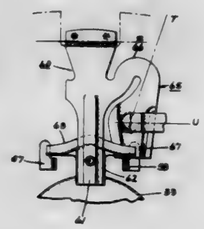
An electrical switch assembly embodying switching elements supported on a rigid frame comprising a bent sheet metal strip providing a pair of spaced arms and a medial lever mounting portion interconnecting the arms, at one end of the frame, and a pair of clamping plates interlocked with and rigidly interconnecting and securing the arms in spaced relation at the other end of the frame, said plates providing support for switching elements, on either or both sides of the frame, in position for actuation by a lever mechanism mounted on the medial portion of the frame and including a pivoted member carrying an axially slidable, switch actuating shoe, yieldingly urged toward a normal or neutral position. The switch elements in neutral or standby position, are entirely disconnected from the actuating lever or shoe, to thereby avoid transient switching through lever or shoe oscillation.

3,433,907
MOUNTING AND ACTUATING MEANS FOR CONTROL DEVICES
Harry E. Day, 19335 Riverside Drive, Birmingham, Mich. 48009
Filed Feb. 14, 1967, Ser. No. 616,015
U.S. Cl. 200—47 **14 Claims**
Int. Cl. H01h *3/16, 15/14, 17/12*



A fluid actuated motor, means for adjustably mounting several limit switches on said motor, and adjustable limit switch actuating means connected to the piston rod. The switches and actuators are supported by a slotted bracket carried by a pair of nipples mounted in the ports at the opposite ends of the motor. The limit switches are carried by a mounting plate adjustably secured to the bracket, the mounting plates being adapted to carry different types of limit switches. The various types of actuators are adjustably secured to a slotted slide mounted on the bracket and connected to the piston rod by an arm.

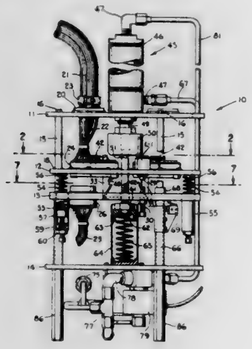
3,433,908
DYNAMOELECTRIC MACHINE WINDING CIRCUIT CONTROLLING SWITCH ASSEMBLY
Eldon R. Cunningham, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Aug. 26, 1966, Ser. No. 575,287
U.S. Cl. 200—80 **11 Claims**
Int. Cl. H01h *35/10, 9/02, 21/04*



A cutout switch for the starting winding of a single-phase electric motor has contacts which are arranged to open with an initial prying action. This is accomplished

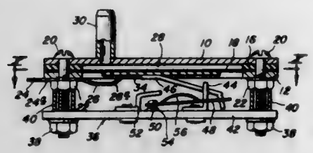
by having one contact stationary and by mounting the other on a spring offset arm which imparts a prying force to the contact when a force generally in alignment with the contact axes is applied to the spring offset arm.

3,433,909
SEPARATION SIMULATOR
Graydon A. Phlieger, Jr., Merritt Island, Fla., assignor to the United States of America as represented by the Administrator of National Aeronautics and Space Administration
Filed Aug. 24, 1967, Ser. No. 663,180
U.S. Cl. 200—82 10 Claims
Int. Cl. H01h 35/38



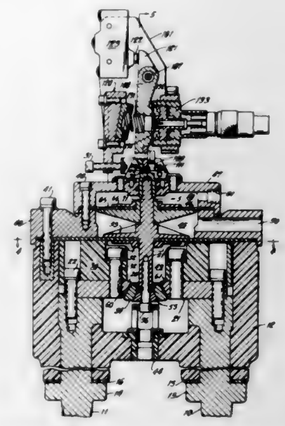
An apparatus for selectively separating electrical circuits for simulating interstage separation of a flight vehicle. The electrical cables from one stage are connected to one set of the simulator's test cables, while those from the next stage are connected to the other set. Each set of cables is attached to connectors in the simulator. Female connectors for one set are mounted on a fixed plate, while male connectors for the other set are mounted on a movable plate. The plates are selectively separated and remated so that functions that occur at stage separation can be simulated during preflight checkout of the space vehicle.

3,433,910
FLUID ACTUATED SWITCHING DEVICE
Milton Frank Pravda, Solon, Ohio, assignor to Cleveland Controls, Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 18, 1966, Ser. No. 566,063
U.S. Cl. 200—83 11 Claims
Int. Cl. H01h 35/24, 35/40



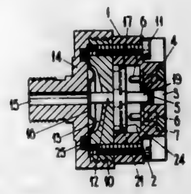
A fluid actuator and switching device combination. The actuator is formed of a pair of flat plates with a gasket and diaphragm interposed therebetween. The switch is independently formed and mounted on the actuator. The switch and diaphragm have coacting means to operate the switch as the pressure varies. In one embodiment the actuator itself acts as a conduit as a part of the fluid circuit. Also, optional adjustment means for changing the operating pressure are provided.

3,433,911
DIFFERENTIAL PRESSURE ACTUATED SWITCH WITH HIGH SPEED LATCH MEANS
Otto Jensen, Malvern, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1966, Ser. No. 586,238
U.S. Cl. 200—83 6 Claims
Int. Cl. H01h 35/40, 1/64



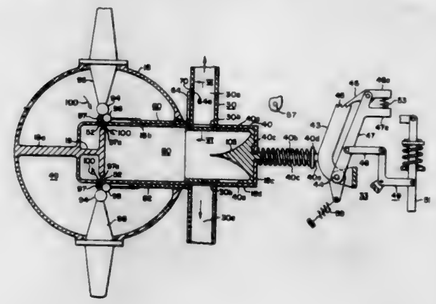
A closing switch in which a movable contact is carried on a flexible diaphragm which is supported within a sealed chamber filled with a high dielectric gas. Contacts are carried within the sealed chamber and are moved by differential pressure on opposite sides of the support diaphragm. The contacts are latched open by a high-speed latch. A second diaphragm forms the wall of a second sealed chamber and is connected to the latch rod through a lost motion connection and moves the movable contact to a disengaged position by application of pressure to the second diaphragm.

3,433,912
VIBRATION RESISTANT SWITCH UTILIZING AN ELONGATED STATIONARY CONTACT CO-ACTING WITH A PLANAR MOVABLE APERTURED CONTACT
Ronald Thomas James Hutchison and Stuart McEwen Jenkins, Rowlands Castle, England, assignors to The General Electric Company Limited, London, England
Filed Dec. 20, 1966, Ser. No. 603,714
Claims priority, application Great Britain, Dec. 22, 1965, 54,459/65
U.S. Cl. 200—83 7 Claims
Int. Cl. H01h 35/34



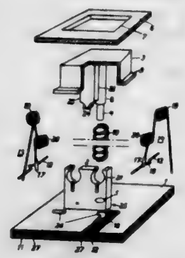
A vibration resistant electric switch comprising an elongated contact adapted to be forcibly inserted into an aperture in a co-operating contact of planar form, the planar contact being provided with slits extending outwardly from the aperture therein so as to provide two or more fingers which resiliently engage the sides of the elongated contact when it is forced into the aperture.

3,433,913
GAS-BLAST CIRCUIT INTERRUPTER
Winthrop M. Leeds, Forest Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 28, 1965, Ser. No. 475,440
U.S. Cl. 200—148 10 Claims
Int. Cl. H01h 33/82, 9/40, 33/14



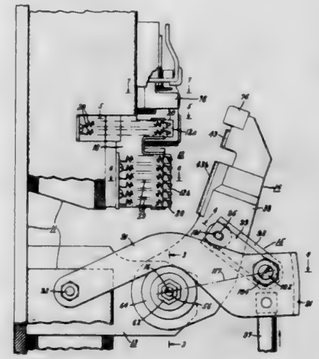
A gas-blast circuit interrupter is provided with a pair of separable main contacts shunted by the combination of a pair of separable impedance contacts in series with a resistance. A single blast valve serves unitarily as an upstream blast valve for controlling the gas flow at the main contacts, and at the same time, as a downstream blast valve for controlling the gas flow at the separable impedance contacts. A time delay is provided to separate the main contacts prior to separation of the separable impedance contacts.

3,433,914
PUSHBUTTON SWITCH
Eric R. Ericsson, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 25, 1967, Ser. No. 678,108
Claims priority, application Sweden, Feb. 24, 1967, 2,633/67
U.S. Cl. 200—159 6 Claims
Int. Cl. H01h 3/12, 3/14, 13/64



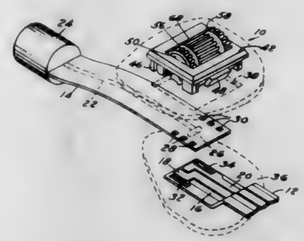
A switching device for switching conductors of a printed circuit board comprises a generally V-shaped contact spring one arm of which is fixedly connected to one conductor of the board and the other arm of which can be moved into and out of engagement with another conductor of the board and is snapped into engagement by the pressure of an actuating member against a spiral coil provided intermediate the length of said other arm when the actuating member is moved past a predetermined position with reference to the coil.

3,433,915
CONTACT STRUCTURE FOR AN ELECTRIC CIRCUIT BREAKER
Leslie L. Baird, Swarthmore, and Ralph J. Baskerville, Drexel Hill, Pa., assignors to General Electric Company, a corporation of New York
Filed July 19, 1967, Ser. No. 654,489
U.S. Cl. 200—166 4 Claims
Int. Cl. H01h 1/12



An electric circuit breaker comprising a pivotally-mounted contact arm and a link connected to the contact arm for driving it between open and closed positions. At its free end, the contact arm has a butt contact and a separate slide contact. The contact arm and the link are mounted on separate universal-type joints that permit the contact arm and the link to rock together about an axis connecting the centers of the two universal joints, thereby permitting a parallel relationship to be developed between the slide contact and a complementary slide contact while the butt contact remains in engagement with a complementary butt contact.

3,433,916
DIRECT ELECTRICAL HARNESS SWITCHING
William W. Chirota, Dearborn, Robert W. Holzwarth, Allen Park, and Thomas Shewchuck, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,671
U.S. Cl. 200—166 11 Claims
Int. Cl. H01h 3/00, 9/00

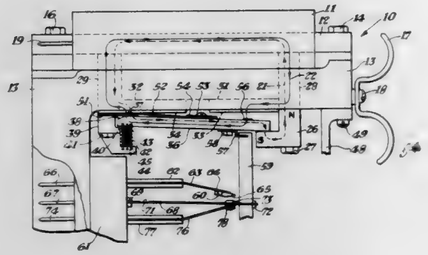


Apparatus for accomplishing electrical switching directly between electrically conductive paths formed on a pair of flexible printed circuit elements, thereby eliminating the necessity for a distinct switch assembly. The circuit elements are positioned in intimate contact and rotatable means are provided to engage one of the circuit elements and cause movement of said one circuit element relative to the other so that electrical contact may be established and broken selectively between the circuit elements' conductive paths.

3,433,917
FAIL-SAFE VITAL RELAY CONTACT ARRANGEMENT

Andrew Hufnagel, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Oct. 25, 1967, Ser. No. 677,928
U.S. Cl. 200—166 **6 Claims**
Int. Cl. H01h *3/00*

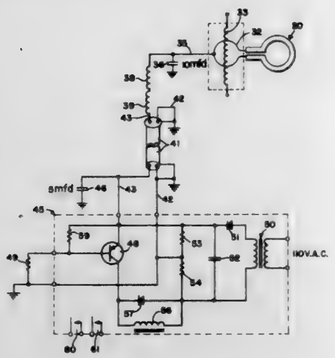


This invention relates to a fail-safe vital relay contact arrangement. The construction of the front, heel, and back contact members is such that should the back and heel contacts become welded together during operation of the relay, they will never be able to make additional contact with the front contact member because the heel contact member is constructed to include a notched region which only allows pivotal flexure coupled with column rigidity of the remaining portion of the heel contact member to prevent the physical excursion of the welded contacts sufficient to make electrical contact with the front contact.

3,433,918
GROUND DETECTOR

Harry D. Kauffman, Cincinnati, Ohio, assignor to Park-Ohio Industries, Inc., a corporation of Ohio

Filed Sept. 2, 1966, Ser. No. 577,053
U.S. Cl. 219—10.77 **5 Claims**
Int. Cl. H05b *1/02*

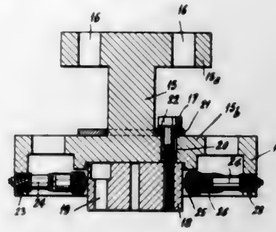


A detector for indicating the occurrence of a ground on a radio frequency powered induction heating coil includes a capacitor for maintaining the center tap of the coil at ground potential for alternating currents while allowing the coil to remain above ground potential for direct currents and a detector circuit to sense the occurrence of a ground potential on the coil. Radio frequency chokes isolate the radio frequency in the induction heating coil from the detector circuit.

3,433,919
APPARATUS FOR ELECTRICALLY TREATING WORKPIECES WITH ELECTRODES

Pierre Braudeau, Paris, and Alfred M. A. Maillet, Versailles, Yvelines, France, assignors to La Soudure Electrique Languepin, Paris, France, a company of France

Filed Aug. 24, 1961, Ser. No. 133,667
Claims priority, application France, Aug. 26, 1960, 836,908; Apr. 4, 1961, 857,687; June 16, 1961, 865,223; July 17, 1961, 868,124
U.S. Cl. 219—69 **7 Claims**
Int. Cl. B23k *11/22, 11/30, 9/16*

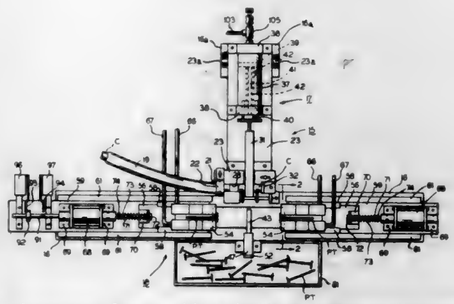


1. Apparatus for relatively moving an electrode element and a workpiece element for electrically shaping the latter, comprising separate, approximately coaxial holding means for each of said elements, a first one of said holding means and its related one of said elements being linearly movable axially and a second one of said holding means and its related one of said elements being restrained against such linear, axial movement, one of said holding means comprising a first body member restrained against movement transversely of the line of said linear movement, a second body member coaxially aligned with said first body member, a connection between said body members restraining them against relative rotary movement about said line and against relative movement in parallelism with said line, and actuating means for successively moving said second body member translationally to angularly spaced points in a plane perpendicular to said line whereby to enable said electrode element to form, on said workpiece element, a surface substantially uniformly spaced from directly opposed surface portions of said electrode element, said actuating means comprising a circular series of radially directed micrometer screws coacting between coplanar portions of said first and second body members.

3,433,920
APPARATUS FOR SECURING PIGTAILS TO FOIL WRAPPED CONDENSERS OR THE LIKE

Olaf A. Hedquist, 17 W. 211 Leahy Road, Villa Park, Ill. 60181

Filed Aug. 30, 1965, Ser. No. 483,626
U.S. Cl. 219—79 **5 Claims**
Int. Cl. B23k *11/02, 9/12;* **H01g** *13/00*



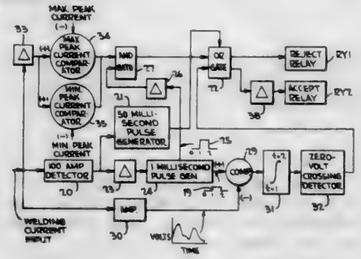
Apparatus for attaching pigtails to foil wrapped capacitors moved in end-to-end relationship to a feed shuttle

moving the first of the capacitors to a welding station, and including a pair of pigtail holding jaws for moving a pigtail against a corresponding end of the capacitor, with spring biased and lost motion means for maintaining the welding pressure of the pigtail against the capacitor substantially uniform.

3,433,921
APPARATUS AND METHOD FOR INDICATING DEFECTIVE WELDS

Karl E. Peterson, Mohnton, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 6, 1966, Ser. No. 548,147
U.S. Cl. 219—110 **16 Claims**
Int. Cl. B23k *9/10*

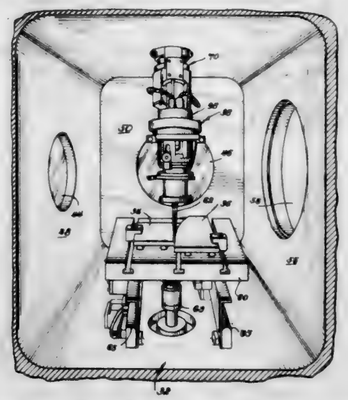


An indication of the probable failure of a percussive weld may be obtained by observing a time-varying current produced in forming the weld. If the welding current initially peaks outside of a predetermined range during the striking of a welding arc and/or falls continuously below a predetermined level within a predetermined time period immediately prior to extinguishment of the arc, the resulting weld is likely to fail. The described apparatus monitors the current during welding and indicates as unacceptable those welds which are likely to fail according to these criteria.

3,433,922
ELECTRON BEAM WELDING MACHINE

Louis A. McNabb, Glen Ellyn, Ill., assignor to Mech-Tronics Corporation, Melrose Park, Ill., a corporation of Illinois

Original application Aug. 10, 1964, Ser. No. 388,480, now Patent No. 3,400,243, dated Sept. 3, 1968. Divided and this application June 10, 1968, Ser. No. 735,600
U.S. Cl. 219—121 **4 Claims**
Int. Cl. B23k *9/02*

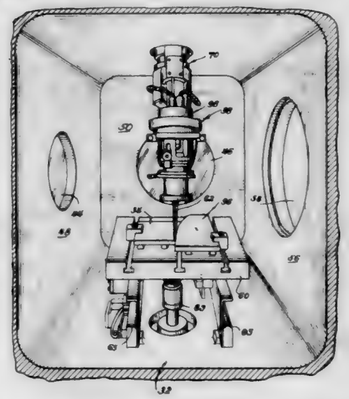


A high precision electron beam welding machine in which the welding beam emitter is heated electrically by electron bombardment to avoid generation of beam deflecting magnetomotive forces incident to electrical heating of the emitter to the end that a welding beam of electrons from the emitter is focused onto a workpiece with great precision by virtue of the path of the beam being rendered effectively free of beam deflecting magnetomotive influences incident to electrical heating of the emitter.

3,433,923
ELECTRONIC BEAM WELDING MACHINE

Louis A. McNabb, Glen Ellyn, Ill., assignor to Mech-Tronics Corporation, Melrose Park, Ill., a corporation of Illinois

Original application Aug. 10, 1964, Ser. No. 388,480, now Patent No. 3,400,243, dated Sept. 3, 1968. Divided and this application June 10, 1968, Ser. No. 735,601
U.S. Cl. 219—121 **5 Claims**
Int. Cl. B23k *9/00*

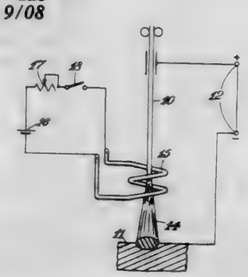


A high precision electron beam welding machine in which the electron beam emitter is heated electrically by emitter heating current that flows in converging or diverging current paths between the periphery of the emitter and a conductor joined to the center of the emitter to the end that with respect to the path of the beam the magnetomotive forces incident to the flow of heating current through the emitter are self-cancelling and the welding beam of electrons emitted by the emitter is focused onto a workpiece with great precision by virtue of the path of the beam being effectively free of beam deflecting magnetomotive influences incident to electrical heating of the emitter.

3,433,924
ELECTRIC ARC WELDING APPARATUS

Alexander Jura Sevenco, Burlington, Ontario, Canada, assignor to Lincoln Electric Company Limited, Welwyn Garden City, England, a British company

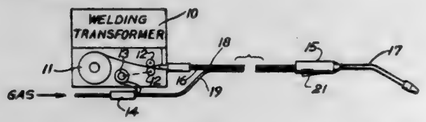
Filed Dec. 23, 1965, Ser. No. 522,339
Claims priority, application Great Britain, Dec. 24, 1964, 52,479/64
U.S. Cl. 219—123 **6 Claims**
Int. Cl. B23k *9/08*



A pulsating unidirectional magnetic field is applied to a consumable electrode with the magnetic field axis sub-

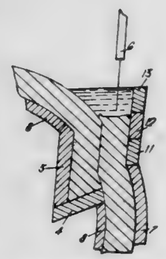
stantially parallel to the electrode to control the rate of transfer of metal to the weld in addition to the focusing of the arc by the field.

3,433,925
WELDING APPARATUS
Edward A. Benfield, Chicago, Ill., assignor, by mesne assignments, to Compak-O-Matic, Inc., Alsip, Ill., a corporation of Illinois
Filed Mar. 21, 1967, Ser. No. 624,745
U.S. Cl. 219—130 **6 Claims**
Int. Cl. B23k *9/00*



Welding apparatus including an electrode wire feed control in response to the flow of shielding gas to the welding head. Also a reversible non-symmetrical welding tip holder.

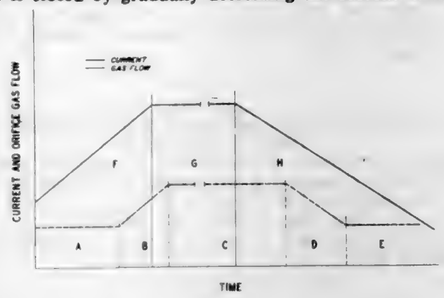
3,433,926
ELECTRO-SLAG WELDING
Norman T. Dick, London, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain
Filed June 24, 1964, Ser. No. 377,600
Claims priority, application Great Britain, June 25, 1963, 25,146/63
U.S. Cl. 219—137 **8 Claims**
Int. Cl. B23k *25/00*



A method and apparatus for forming a circumferential electro-slag weld in a gap formed between two workpieces by a surface on each of the workpieces facing one another. A first pocket in which the weld may be initiated is formed by bridging the gap between the facing surfaces with a removable member having a contoured surface which extends within the gap. The contoured surface defines a suitable run-off contour for weld metal. The electro-slag weld is initiated in the first pocket thus formed. The weld metal, in contacting the contoured surface of the movable member, has a run-off contour formed thereon. After the weld is extended around the gap, the removable member is removed. A second pocket bounded by the facing surfaces of the workpieces and the run-off contour surface is used for completing the electro-slag weld, the weld metal being deposited in the second pocket and run-off the contoured surface.

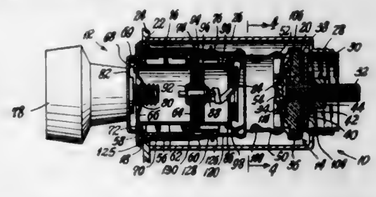
3,433,927
METHOD FOR ESTABLISHING AND CLOSING AN ARC WELD
Howard R. Miller, Clark, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed May 21, 1964, Ser. No. 369,060
U.S. Cl. 219—137 **8 Claims**
Int. Cl. B23k *9/00, 9/16, 9/10*

A method for establishing and closing a plasma arc weld wherein a keyhole is developed in the work to be welded by gradually increasing the arc current and gas flow rate from a low level to operating value and wherein the keyhole is closed by gradually decreasing the current in the



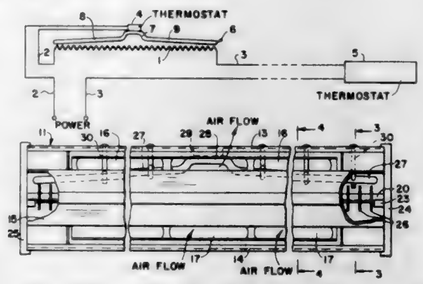
arc to substantially zero while decreasing the rate of gas flow from the welding rate to a minimum over a predetermined time interval.

3,433,928
CIGAR LIGHTER
Laurence G. Horwitt, New Haven, Conn., assignor to Cacso Products Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed June 16, 1967, Ser. No. 646,657
U.S. Cl. 219—267 **7 Claims**
Int. Cl. F23q *7/22*



An electric cigar lighter having a removable igniting unit in a holder in which the bimetallic latch contacts in the holder act as a hunting thermostat to prevent overheating and burning out of a heating element if the igniting unit is held too long in an energizing position either intentionally or accidentally.

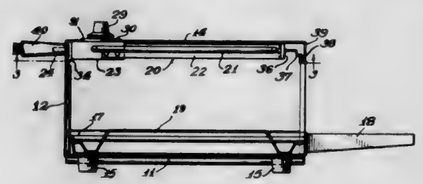
3,433,929
CONTROL DEVICE
Charles D. Snelling, Allentown, Pa., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 334,390, Dec. 30, 1963. This application Apr. 10, 1967, Ser. No. 648,508
U.S. Cl. 219—363 **9 Claims**
Int. Cl. H05b *3/14*



An over-temperature detection device employs a hermetically sealed detector tube nearly filled with a volatile

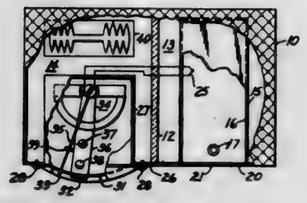
liquid and sloping upwardly from the detection area to a high point where it contacts a thermostatic control.

3,433,930
BROILER WITH REMOVABLE HEATING CARTRIDGE
Robert S. Knapp, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed May 2, 1966, Ser. No. 547,037
U.S. Cl. 219—386 **9 Claims**
Int. Cl. F27d *11/02;* **F24c** *7/10*



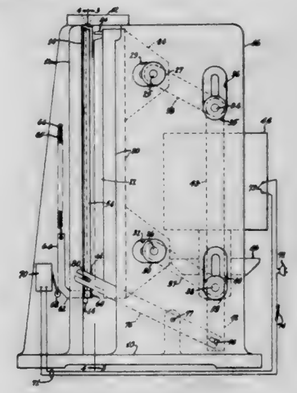
A broiler chamber and heater construction that is capable of being safely separated into components, so as to simplify cleaning, is provided by two sheet metal members with interconnecting mating elements, and an electrical heating cartridge is detachably mounted on one of the sheet metal members. One member serves as a base and provides a rear wall for the heater chamber, while the other member serves as a housing to provide the side walls and the roof of the chamber. A pair of transverse apertures in said housing provides access to electrical terminal studs and to a thermostatic control that extend outwardly of the heating cartridge, and the arrangement of parts desirably requires disconnection of the electrical supply from the heating cartridge before the electrical heating cartridge may be detached from said housing member.

3,433,931
GAGE CALIBRATOR
Josef U. Berkl, West Los Angeles, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed June 16, 1966, Ser. No. 558,112
U.S. Cl. 219—502 **6 Claims**
Int. Cl. G01k *15/00;* **H05b** *1/02*



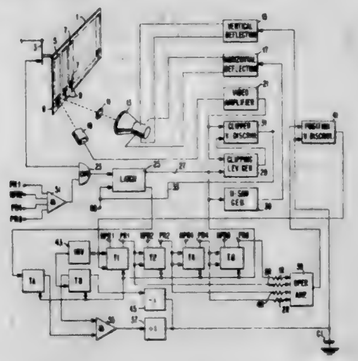
This disclosure relates to gage calibrators wherein temperature gages to be calibrated are inserted into a furnace. The temperature of the furnace is indicated by the position of a meter needle and is maintained at the desired temperature by heating means in the furnace controlled by a power control circuit. Manually adjustable mounting means is provided for selecting the desired furnace temperature and detector means is mounted to the mounting means for detecting the position of the meter needle when the needle indicates that the temperature of the furnace is at the desired value. Bias means, comprising a variable resistor in the power control circuit, is controlled by the detector means to control the control circuit which in turn operates on the heating means to maintain the furnace at the predetermined temperature.

3,433,932
PUNCHED CARD READER
William Rolke, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,776
U.S. Cl. 235—61.11 **9 Claims**
Int. Cl. G06k *7/06*



A punched card reader into which cards are manually fed one at a time. A card fed down into a hopper enters a U-shaped frame located between stationary and movable contact plates. The leading edge of the card closes a microswitch which energizes a solenoid. The solenoid acts through a mechanical linkage (1) to cause the frame to be pulled down, pulling the card to a sensing position, and (2) to cause the movable contact plate to be driven horizontally against the card and the stationary contact plate for electrical sensing of the holes in the card. After the card is sensed, the solenoid is deenergized, causing the card to be pushed up for manual removal.

3,433,933
APPARATUS FOR READING MARKS ON DOCUMENTS
William W. Hardin, Stewartville, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 7, 1965, Ser. No. 512,082
U.S. Cl. 235—61.11 **10 Claims**
Int. Cl. G06k *7/00;* **G01n** *21/30*



1. Apparatus for reading marks on documents comprising, in combination:

a flying spot scanner for scanning each of said documents with a scanning beam moving sequentially over predetermined positions where the presence or

absence of marks on the document conveys information;

first deflection circuit means for governing said flying spot scanner to successively position said scanning beam to predetermined locations along one edge of said document;

second deflection circuit means for governing said flying spot scanner to successively position said scanning beam to predetermined marking locations in a direction angularly related to said one edge of said document, said predetermined marking locations designating points at which the presence or absence of a mark signifies data;

detection means effective to provide mark sense output signals when said beam encounters a mark at one of said predetermined marking locations;

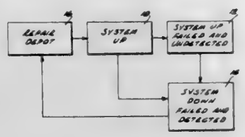
position signal generating means for generating a plurality of position signals having a predetermined relationship to the distance of said marking locations from the edge of the document;

comparator means for comparing the output of said second deflection circuit with the output of said position signal generator means;

means responsive to the output of said comparator means for governing said position signal generating means; and

output means governed by said detector means and said position signal generating means for providing outputs indicative of marks sensed at said predetermined marking locations.

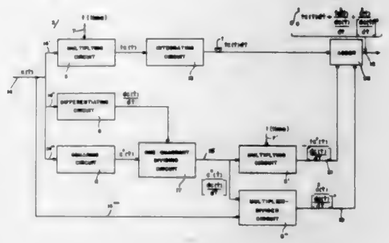
3,433,934
STOCHASTIC EVENT SIMULATOR
Edward J. Althaus, Playa Del Rey, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 21, 1964, Ser. No. 384,175
U.S. Cl. 235—92 **10 Claims**
Int. Cl. G06f *1/00*



A digital device that accurately relates variable statistical reliability and maintainability quantities to system effectiveness and availability. A population of systems may be simulated by elements each of which is subjected to random failures that may remain detected or undetected. Failure events are produced by random pulses generated by a radioactive source to provide a Poisson distribution of pulses in time. Each system is repaired at a single repair depot by a selectable repair source. Displays are included for visual demonstrations of populations in operable condition, in a failed but undetected condition and in the repair or waiting condition.

3,433,935
APPARATUS FOR COMPUTATION PARTICULARLY ADAPTED FOR PRODUCING A MEASURE OF TRANSIT TIME AND THE LIKE
Herbert Sherman, 3 Bates Road, Lexington, Mass. 02173
Filed July 12, 1963, Ser. No. 294,562
U.S. Cl. 235—183 **8 Claims**
Int. Cl. G06g *7/18, 7/16, 7/48*

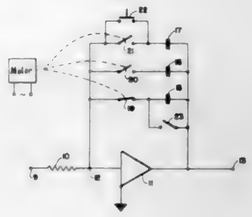
1. Apparatus for computing a measure of the area under a time-changing curve, a portion of which follows a predetermined law and has a predetermined characteristic, that comprises, means for producing a continuum of electrical input signals that are the analog of the curve, integrator means for continually integrating the input signals, means for continually producing from the input signals predicted signals representative of the area under a predicted curve following the said predetermined law,



and means for adding the integrated input signals to the predicted area signals.

2. Apparatus as claimed in claim 1 and in which the input signals are time-multiplied before being integrated and in which the predicted area signals are representative of the area under a time-multiplied predicted curve.

3,433,936
ELECTRONIC INTEGRATOR
Gordon Clifford Blanke, Whittier, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 28, 1964, Ser. No. 407,157
U.S. Cl. 235—183 **6 Claims**
Int. Cl. G06g *7/18;* **H03k** *5/00*

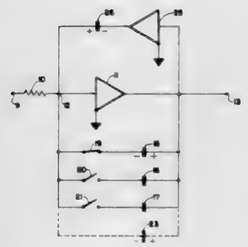


There is disclosed a multichannel, time-shared electronic integrator capable of sorting and separately integrating a plurality of multiplexed data signals time sharing a single input terminal. A plurality of switches are utilized to demodulate or short the multiplexed data signals and connect separate ones of a plurality of storage devices between the input and output of a high gain amplifier in an integrator circuit. In this manner separate integration circuits or channels are provided for each of the data signals which may be demodulated and separately integrated. A nondestructive readout is also provided.

3,433,937
TIME SHARED INTEGRATION CIRCUIT
Roy Arthur McCarthy, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 28, 1964, Ser. No. 407,159
U.S. Cl. 235—183 **8 Claims**
Int. Cl. G06g *7/18;* **H03k** *5/00*

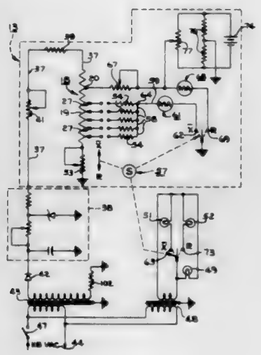
An improved multichannel circuit is disclosed wherein separate ones of a plurality of feedback capacitors are connected between the input and output of a high gain amplifier to form an integration circuit in synchronism

with separate ones of multiple data signals thereby forming, for each data signal, a separate time shared integration circuit. Positive feedback is provided to compensate stray capacitance between the input and output terminals of the integrating amplifier. The positive feedback



circuit includes an inverting amplifier and a capacitor. The component values of the positive feedback network are preferably chosen such that the product of the gain of the inversion amplifier and the feedback capacitor is equal to the value of the stray capacitance.

3,433,938
DATA PROCESSING APPARATUS
Arnold R. Johnson, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 12, 1964, Ser. No. 388,991
U.S. Cl. 235—193 **15 Claims**
Int. Cl. G06f *7/385*



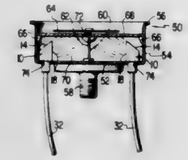
Apparatus for processing a plurality of numerical values includes a substantially constant voltage source and a resistance in circuit with the voltage source. Electrical contacts are engageable with the resistance at points thereon which are analogs of respective ones of the numerical values. Circuitry for determining the average of the numerical values includes a plurality of equal and relatively high resistances which are connectable in parallel to respective ones of the contacts and circuitry for determining the difference between the maximum and minimum numerical values includes wiring for interconnecting the contacts to short out a portion of the resistance which is an analog of the difference. A shadow projecting system is provided for automatically projecting the determined average and difference on associated charts for plotting purposes.

3,433,939
DECORATIVE NIGHT LIGHT
Mary F. Lothman, Detroit, Mich., assignor to Kenneth A. Sieloff and Dorothy L. Sieloff, doing business as a partnership under the name of Nancy Originals
Filed Oct. 22, 1965, Ser. No. 501,382
U.S. Cl. 240—10 **1 Claim**
Int. Cl. F21p *1/02*



A decorative night light has a housing with a light bulb socket at one end and contact prongs at the other end. Decorative plastic flower petals surround the light bulb and are attached to the housing with adhesive tape.

3,433,940
FIBER OPTICS INSTRUMENT LIGHTING
Edgar R. Baez, Evanston, and Walter M. Heinke and Alfred Nelken, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed June 7, 1967, Ser. No. 644,335
U.S. Cl. 240—2.1 **11 Claims**
Int. Cl. G01d *11/28*

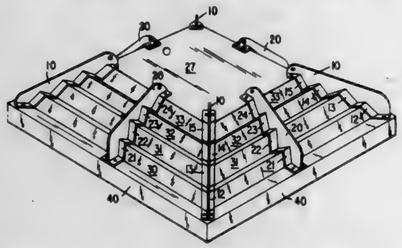


A light dispersing member for achieving uniform low intensity area illumination of an instrument dial from the terminal end of a fiber optics cable within the instrument casing comprising a unitary block of transparent material of trapezoidal shape, including a bore within one surface for receiving the terminal end of said fiber optics cable, with the inclined surface of the trapezoidal block facing the light transmitting instrument dial.

3,433,941
LIGHTING UNIT
William B. Hall, Fayetteville, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 606,117
U.S. Cl. 240—41.36 **6 Claims**
Int. Cl. F21v *7/00, 7/09*

A luminaire employing a mercury vapor light source for illuminating large areas is disclosed wherein the fixture is fabricated of a tier of discrete bands of reflectors each formed in the configuration of a rectangular fence of substantially equal height but of increasing length and width from top to bottom of the fixture in stepped array, the bands being joined exteriorly by a plurality of stepped brackets such that the top of each band is spaced horizontally from the bottom of the band above to provide for the free circulation of air, and each band is increas-

ingly inclined from the vertical proceeding from the bottom of the fixture such that a light source mounted centrally of the reflector at the top thereof has its rays di-

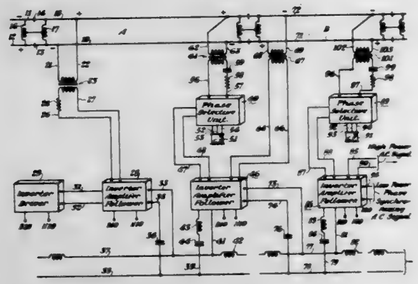


rected downwardly by the tiered reflector surfaces and by an upper reflector disposed above the light source and joining with the top band.

3,433,942
PILOT LINE SYNCHRONIZED PHASE SELECTIVE TRACK CIRCUIT

Chalmers W. Gilbert, Penn Hills Township, Allegheny County, and Ralph Popp, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Jan. 24, 1967, Ser. No. 611,429
U.S. Cl. 246—34 **8 Claims**
Int. Cl. B61l *25/00*



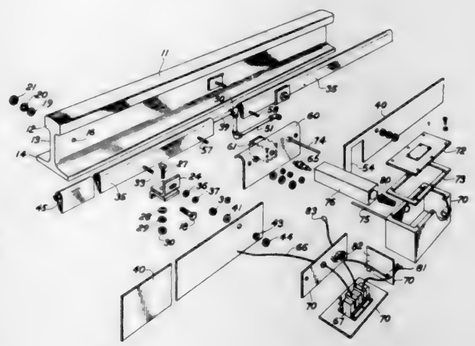
A phase sensitive train detection system in which provision is made for insuring an operation of the phase sensitive track circuits during failure of the commercial power supplies. The train detection is obtained by means of phase selective units connected to track circuits requiring relatively high power produced by means of amplifier followers energized from a direct current source, which are normally kept charged by rectifiers connected to a commercial power source. Each inverter amplifier follower also produces a synchronizing signal which can be carried from one inverter amplifier follower to the next inverter amplifier follower over either spare signaling wires disposed along the wayside or over other available signaling circuits, thus eliminating the need for a separate high power transmission system in which the proper signaling frequency is adequately maintained.

3,433,943
RAILROAD SWITCH HEATER

Harry J. Hirschhorn and John G. Rachford, Chicago, Ill., assignors to Midwesco-Enterprise, Inc., a corporation of Illinois

Filed Apr. 12, 1966, Ser. No. 541,993
U.S. Cl. 246—428 **11 Claims**
Int. Cl. E01b *7/24*

A heater for melting ice and snow from railway switching rails. Combustible gas is released at intervals inside an elongated burner chamber made up of a surrounding hood and plate which are spaced apart to form an air intake opening along the bottom of the chamber and an

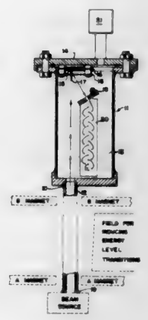


upper combustion throat adjacent the rail to be heated. A shield adjacent the chamber provides protection against "flame out" due to wind gusts.

3,433,944
DETECTOR FOR MOLECULAR OR ATOMIC BEAM APPARATUS

James George, Swampscott, Mass., assignor to Frequency Control Corporation, Topsfield, Mass.

Filed Oct. 11, 1966, Ser. No. 585,815
U.S. Cl. 250—41.3 **3 Claims**
Int. Cl. G01n *27/78*



A particle ionizer includes a heated element of titanium or zirconium in the path of the particles to be ionized.

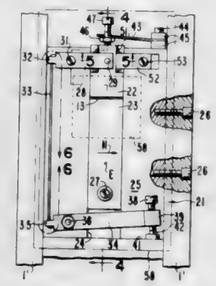
3,433,945
ELECTRICALLY ADJUSTABLE SLITS AND MASS SPECTROMETERS USING SAME

Raymond A. Erickson, San Jose, and Harmon W. Brown, Sunnyvale, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Apr. 4, 1966, Ser. No. 539,917
U.S. Cl. 250—41.9 **2 Claims**
Int. Cl. H01j *39/34*

An electrically adjustable beam defining slit and mass spectrometer using same are disclosed. The mass spectrometer includes an array of closely spaced, axially aligned, elongated, and relatively thin ring electrodes insulatively supported relative to each other and adapted

to be energized with a series of independent electrical potentials to establish a uniform electric field within the region of space bounded by the array of electrodes. The uniform electric field is directed at right angles to a uniform magnetic field to be applied within the region of uniform electric field for analyzing a beam of ions according to their charge-to-mass ratio. An ion source is provided for forming and projecting the beam of ions into the region of uniform cross electric and magnetic fields. An electrically adjustable beam thickness defining slit is disposed in alignment with the beam path at the exit of the ion source. The beam defining slit includes a pair or plate-shaped members having mutually opposed, spaced

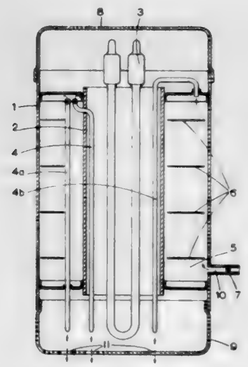


apart, side edges which define the slit. A thermally expandable wire is mechanically coupled to one of the beam defining plates and an elongated cantilever spring member is mechanically coupled to one of the beam defining plates to bias the wire in tension. The wire is arranged so that its thermal expansion and contraction causes at least one of the beam defining members to move toward or away from the other plate to change the thickness of the beam. The wire, cantilever spring, and the beam defining plates are all arranged to lie within the plane of one of the ring electrodes to be disposed substantially entirely within the thickness of the ring, so as not to perturb the uniformity of the electric field produced by the ring electrodes.

3,433,946
ULTRAVIOLET RADIATION FLUID STERILIZER HAVING MEANS FOR DISCHARGING THE FLUID FREE OF CONTAMINATION

Geoffrey H. E. Hardwick, Slough, England, assignor to Engelhard Hanovia of Canada Limited, a company of Canada

Filed Sept. 15, 1965, Ser. No. 487,544
U.S. Cl. 250—43 **13 Claims**
Int. Cl. G01n *23/12, 11/00;* **A61l** *3/00*

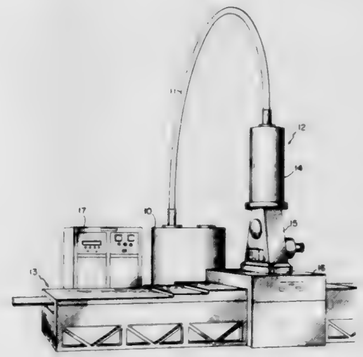


Apparatus for sterilizing fluids comprising a sealed vessel, a source of ultraviolet radiation so mounted in the vessel as to provide an annulus through which the fluid to be sterilized is passed from an inlet to an outlet, to atmosphere, the outlet being made of a material which readily transmits radiation so that the fluid is discharged without being contaminated.

3,433,947
ELECTRON BEAM ACCELERATOR WITH SHIELDING MEANS AND ELECTRON BEAM INTERLOCKED

Roy M. Emanuelson, Reading, and Robert D. Cram, Ipswich, Mass., assignors to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts

Filed June 2, 1966, Ser. No. 561,306
U.S. Cl. 250—49.5 **9 Claims**
Int. Cl. H01j *37/26*

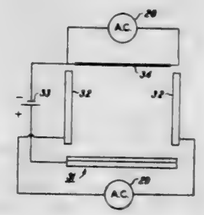


An apparatus for the electron irradiation of goods comprising an electron beam generator-accelerator, for creating a highly energetic electron beam, which has shielding integral with the walls thereof of sufficient thickness and density to attenuate X-rays generated therein, by the electron bombardment of the goods, to below 2–5 millirads per hour, which shielding cannot be removed wtihout causing stoppage of the electron beam.

3,433,948
NEGATIVE CORONA DISCHARGE SYSTEM USING ALTERNATING ELECTRIC FIELDS ACROSS THE AIR GAP

Charles F. Gallo, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

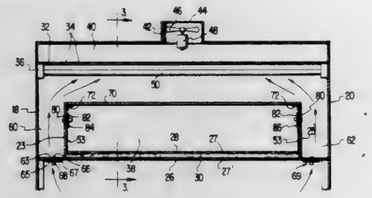
Filed Apr. 6, 1967, Ser. No. 628,995
U.S. Cl. 250—49.5 **7 Claims**
Int. Cl. H01j *37/26*



This invention relates to a negative corona discharge system for the uniform charging of a charge-retaining surface. A high voltage direct current potential source is applied across the air gap between the corona discharge electrode and the surface to be charged in the conventional manner while alternating electric and/or magnetic

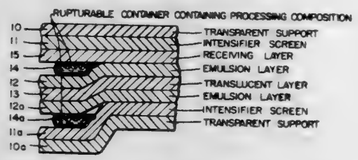
fields are applied across the air gap. The presence of the field influences the path of the electrons and negative ions as they migrate from the electrode to the surface being charged in such a manner that they are deposited more uniformly on the surface. The field is generated either by shorting an alternating current source across the length of the corona discharge electrode or by using an external field generator.

3,433,949
RADIANT ENERGY STABILITY TEST CHAMBER HAVING AIR CIRCULATING MEANS
Andrew Truhan, R.D. 3, Box 392T, Somerset, N.J. 08873
Continuation-in-part of application Ser. No. 453,694, May 6, 1965. This application Oct. 30, 1967, Ser. No. 678,867
U.S. Cl. 250—51 **2 Claims**
Int. Cl. G01n *21/06*



A radiant energy stability test chamber provided with a uniform nonpoint source of radiant energy with means for directing a flow of air selectively about the radiant energy producing means, by passing the test chamber or through the test chamber or part through the chamber and part through the air by-pass passages.

3,433,950
PHOTOGRAPHIC PRODUCTS AND PROCESSES
Herman E. Erikson, Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,412
U.S. Cl. 250—65 **5 Claims**
Int. Cl. H01j *37/22;* **G03c** *5/00;* **G01n** *23/04*

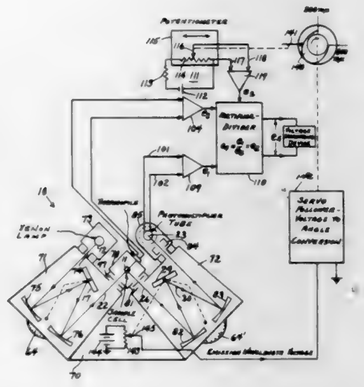


Procedures for preparing radiographs viewable by both transmitted and reflected light, utilizing a photographic product including a pair of photosensitive elements having a translucent material positioned therebetween.

3,433,951
COPYING PROCESS
Satoru Honjo and Kinji Okubo, Kanagawa, Japan, and Toshihiko Nagai, deceased, late of Kanagawa, Japan, by Kenichi Nagai, legal representative, Tokyo, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Dec. 28, 1965, Ser. No. 529,897
U.S. Cl. 250—65 **8 Claims**
Int. Cl. B41m *5/00;* **G03c** *11/22*

A copying process comprising a copying material including a support bearing a heat-sensitive layer of a colloidal binder, a material having water of crystallization releasable by heating, and at least one member selected from the group consisting of metallic soaps and waxes upon an original to be copied, subjecting the laminate of copy material and the original to an infrared exposure and developing with powder developer.

3,433,952
SPECTROPHOTOFLUOROMETER HAVING CORRECTION MEANS PROVIDING SUBSTANTIALLY EQUAL ENERGY EFFECTS IN RESPONSE AT DIFFERENT EXCITATION WAVELENGTHS
Hugh K. Howerton, Silver Spring, Md., assignor to American Instrument Co., Inc., Silver Spring, Md.
Filed July 18, 1966, Ser. No. 565,923
U.S. Cl. 250—71 **9 Claims**
Int. Cl. G01n *21/38*



An energy-compensated spectrophotofluorometer consisting of an assembly including a sample holder, a light source and a photomultiplier detector, with a first adjustable monochromator between the source and the sample holder and a second adjustable monochromator between the sample holder and the photomultiplier detector. A thermopile is located to receive a portion of the radiation from the source, and its signal goes through a deviation amplifier to develop a correction signal e_3. The photomultiplier signal goes through a fixed gain amplifier to develop an output signal e_1. A computer network receives a reference signal e_2 and the signals e_1 and e_3 and derives a corrected, energy-compensated output signal e_4 equal to e_1e_2/e_3.

3,433,953
COMPENSATING RADIOMETER
George E. Sweet, Yorktown, William W. Anderson, Jr., Newport News, and Howard B. Miller, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 4, 1967, Ser. No. 607,608
U.S. Cl. 250—83 **11 Claims**
Int. Cl. G01t *7/00*

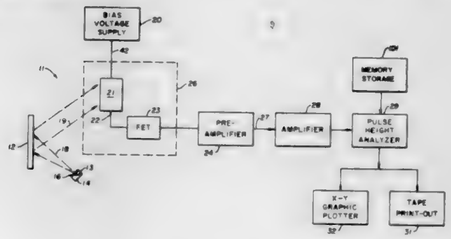
This invention relates to a radiometer which is capable of measuring low level radiant energy and which consists of a mount made of a material having a low thermal conductivity, low specific heat, low outgassing, and good dimensional stability over a large temperature range. A metal having good thermal conductivity is used for a sensor and compensating shield in order to minimize thermal gradients therein. The upper surfaces of these elements which face the radiation to be measured, are coated with a material of high absorptance. Two temperature detectors, such as thermocouples or resistance

thermometers, are attached to the upper surfaces of the sensor and compensating shield. The under surfaces of the sensors and compensating shield are coated with a



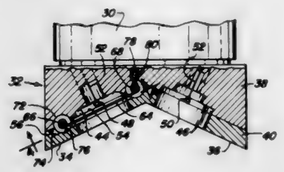
low emittance material and the compensating shield is larger than the sensor so that the exposed surface of the shield will also receive direct radiant energy, thus reducing the temperature gradient between the sensor and shield.

3,433,954
SEMICONDUCTOR X-RAY EMISSION SPECTROMETER
Harry R. Bowman, Walnut Creek, and Stanley G. Thompson and Earl K. Hyde, Berkeley, and Richard C. Jared, Hayward, Calif., assignors to the United States of America as represented by the Administrator of the United States Atomic Energy Commission
Filed Sept. 16, 1966, Ser. No. 580,571
U.S. Cl. 250—83.3 **11 Claims**
Int. Cl. G01t *1/16*



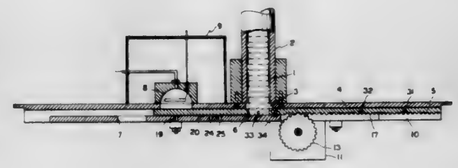
A new type of X-ray emission spectrometer incorporating high resolution semiconductor X-ray counters and specialized preamplifier circuitry in the detector system to provide a compact and economical instrument for rapid, non-destructive chemical analysis of materials.

3,433,955
X-RAY GENERATOR WITH EMISSION CONTROL ARRANGEMENT WITHIN THE FOCUSING CUP
John T. Perry, Melrose Park, Ill., assignor, by mesne assignments, to Picker Corporation, White Plains, N.Y., a corporation of New York
Filed Sept. 26, 1966, Ser. No. 582,027
U.S. Cl. 250—90 **7 Claims**
Int. Cl. H01j *35/16*



An X-ray generator is provided with an anode and a cathode, the latter comprising a planar faced metal body with an electron focusing cup formed therein. A parallel wire grid is located in the cup between the face of the cathode body and a filament also located within the cup. The grid is insulated from the cathode and is biased with respect thereto for controlling electron flow without substantially interfering with the electrostatic focusing produced between cathode and anode.

3,433,956
AUTOMATIC SAMPLE CHANGER AND MEASURER FOR RADIOACTIVE MATERIALS WITH PULSATING GAS PURGING
Denes B. Hunkar, 2983 Springer Ave., Cincinnati, Ohio 45208
Filed Apr. 19, 1965, Ser. No. 448,963
U.S. Cl. 250—106 **3 Claims**
Int. Cl. G21h *5/00*

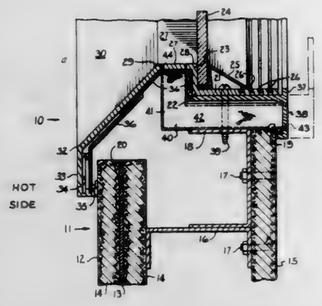


Apparatus for measuring the radioactivity of a plurality of samples, wherein the samples are automatically transferred by a slide plate from a loading chamber through a gas tight seal to the counting chamber, then to a discharge station. The counting chamber is purged by gas flow which is caused to pulsate as a series of exhaust vents are sequentially opened by movement of the slide plate. Movement of the slide plate is controlled by means responsive to its position.

3,433,957
PREFABRICATED RADIATION SAFE WINDOW ADJUSTABLE FOR MOUNTING IN BIOLOGICAL SHIELDS OF DIFFERENT THICKNESSES
Wilfred W. Nelson, Castro Valley, Calif. (8626 E St., Oakland, Calif. 94621)
Filed Oct. 14, 1965, Ser. No. 496,011
U.S. Cl. 250—108 **9 Claims**
Int. Cl. G21f *7/00;* **E06b** *3/60, 3/32*

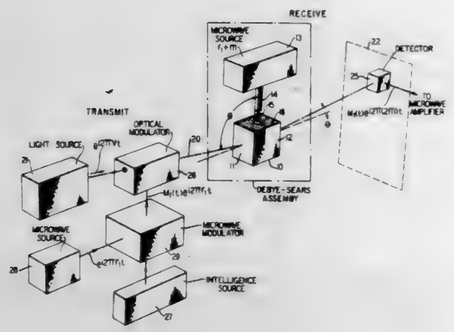
A prefabricated radiation safe window for biological shields is described which is adjustable to permit its incorporation into biological shields of different sizes. The window includes a casement having a raised window jamb and an outwardly flared encircling apron structure extending from one side of the casement for overlapping relationship with a biological shield wall into which the window is to be mounted. Radiation absorbing material such as lead extends from the inner periphery of the casement and along the outwardly flared portion thereof to provide a continuous absorbing structure from the shield wall to the

window opening in the casement. A plurality of spaced anchor grooves are provided along the inside periphery of the casement at a position spaced outwardly from the window jamb, and pane retainer spring clips are adapted to cooperate with the grooves to permit radiation absorb-



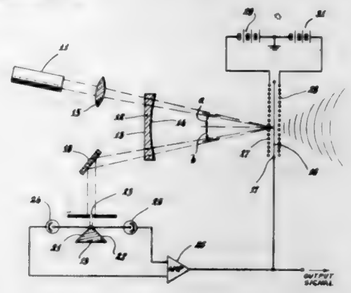
ing window panes of different thicknesses to be secured within the casing. A rim member is telescopically mated with the casement on the side thereof opposite the apron structure so that the frame can be mounted in biological shields of different thicknesses.

3,433,958
OPTICAL CHANNEL SEPARATION BY DEFLECTION
Pascal V. Lenzo, Warren Township, and Edward G. Spencer, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 27, 1965, Ser. No. 483,201
U.S. Cl. 250—199 **12 Claims**
Int. Cl. H04b *9/00*; **H01s** *3/00*; **G02b** *27/10*



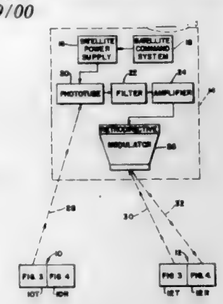
The principle of the Debye-Sears deflection is employed to separate a plurality of modulations on a plurality of microwave frequency subcarriers which are in turn modulated upon an optical beam. A plurality of elastic wave signals each having a frequency displaced by a small amount from the frequency of a corresponding one of said subcarriers are introduced into a diffraction medium. A plurality of optical detectors are located at points in the dispersed beam corresponding respectively to the several deflection angles produced by the respective elastic waves. Each detector has a limited bandwidth centered upon a frequency twice said small amount and detects intermodulation components containing only the modulation upon one of said microwave frequency subcarriers.

3,433,959
MICROPHONE
John G. Atwood, West Redding, and Edwin L. Kerr, Ridgefield, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed July 25, 1966, Ser. No. 567,500
U.S. Cl. 250—199 **11 Claims**
Int. Cl. H04b *9/00*



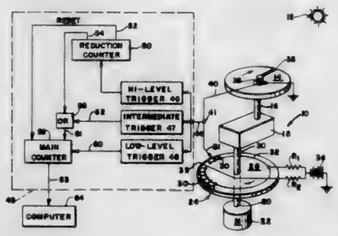
A microphone in which the diaphragm is a collodion membrane and forms one of the end mirrors of an optical resonant cavity. The other end mirror is partly transmissive. A beam of light from a laser enters the cavity, is subjected to multiple reflections and emerges as a beam of light containing a pattern of interference fringes. Movement of one of these interference fringes caused by a movement of the diaphragm is detected electro-optically and converted into electrical signals from which the direction and magnitude of the movement can be determined. These signals are also used to restore the diaphragm to its original position. The microphone is sensitive to Brownian noise in the ultrasonic frequency range.

3,433,960
RETRODIRECTIVE OPTICAL SYSTEM
Peter O. Minott, Greenbelt, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 31, 1966, Ser. No. 591,007
U.S. Cl. 250—199 **8 Claims**
Int. Cl. H04b *9/00*



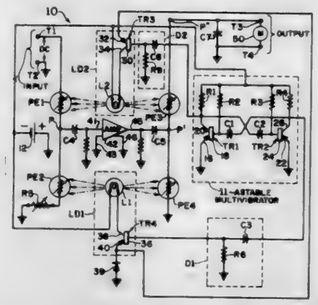
An optical communication system employing a remote retrodirective reflector modulator, which modulator is responsive to a remote information source wherein the modulater is a modified interferometer of the Fabrey-Perot type having non-planar surfaces.

3,433,961
SCANNING ASPECT SENSOR EMPLOYING AN APERTURED DISC AND A COMMUTATOR
Bruce R. Pincus, Davidsonville, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 31, 1967, Ser. No. 628,248
U.S. Cl. 250—203 **10 Claims**
Int. Cl. G01j *1/20*



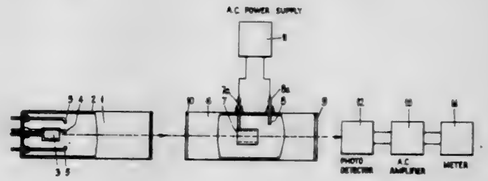
There is herein disclosed an aspect sensor having a rotatable apertured member with a single photosensitive means behind the aperture for receiving light from a radiating body. The rotatable member is driven in synchronism with a commutator which normally produces a synchronization pulse followed by a series of electrical pulses at a given level. A detection pulse at a different level is produced, however, when the aperture faces the radiating body. The normal pulses between the synchronization pulse and the detection pulse are counted to provide an indication of the direction of the radiating body with respect to the aspect sensing device.

3,433,962
DIRECT CURRENT AMPLIFIER EMPLOYING PHOTOELECTRIC CHOPPER WITH INCANDESCENT DRIVERS
Benjamin B. Neiger, Brooklyn, N.Y., assignor to Clariex Corporation, New York, N.Y., a corporation of New York
Filed Oct. 14, 1966, Ser. No. 586,724
U.S. Cl. 250—209 **10 Claims**
Int. Cl. H01j *39/12*



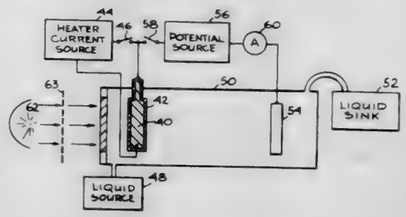
1. A direct current amplifier, comprising:
input terminals for receiving direct current of very small magnitude from an external source;
a pair of incandescent lamps having resistive filaments and rated for carrying current of a certain magnitude;
means for applying momentary current pulses to the lamps to light the same alternately and momentarily, said current pulses having magnitudes several times larger than said certain magnitude; and
a pair of photoelectric cells connected in circuit with the input terminals and disposed for illumination respectively and alternately by said lamps to produce a train of direct current pulses which can be amplified.

3,433,963
METHOD AND APPARATUS FOR PRODUCTION AND ISOLATION OF PHOTOELECTRIC SIGNALS GENERATED BY ATOMIC RESONANCE LINES
Alan Walsh, Brighton, Victoria, and John V. Sullivan, Carnegie, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate
Continuation-in-part of application Ser. No. 389,644, Aug. 14, 1964, which is a continuation-in-part of application Ser. No. 379,067, June 5, 1964. This application Nov. 7, 1967, Ser. No. 681,283
Claims priority, application Australia, June 12, 1963, 31,735/63; Dec. 30, 1966, 15,996/66; June 1, 1967, 22,606/67
U.S. Cl. 250—217 **11 Claims**
Int. Cl. G02p *1/36*



Atomic spectral radiation characteristic of a particular chemical element is directed through a cloud of ground state atoms of that element so that the resonance lines of spectral radiation are selectively absorbed. The population of the ground state atoms within the cloud is then pulsed so as to correspondingly modulate the degree to which the resonance lines are absorbed. The atomic cloud is generated by a gaseous discharge which gives rise to cathodic sputtering and the population of ground state atoms in the cloud is varied by varying the discharge current which varies, in turn, the degree of sputtering. In this way, the resonance line or lines can be selectively modulated to the exclusion of all other radiation so that signals produced by this selective modulation can be isolated by means of an AC detection system.

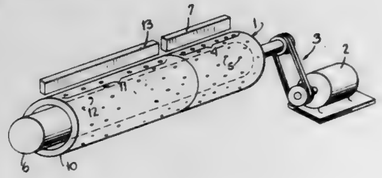
3,433,964
PHOTOELECTROSTATIC FLUID ANALYZER
Stanley R. Morrison, Los Altos, Kenneth M. Sancier, Portola Valley, and Thomas Freund, Woodside, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed July 12, 1965, Ser. No. 471,214
U.S. Cl. 250—218 **13 Claims**
Int. Cl. G01n *21/26, 31/00*; **H01j** *39/12*



This invention relates to apparatus for analyzing impurities in fluids, and more particularly to a new photoelectrostatic fluid analyzer. The fluid steam containing

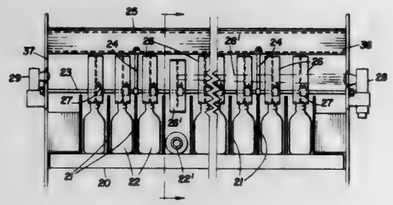
the impurities is passed over a semiconductor which absorbs the impurities and is then exposed to light. The amount of current produced is an indication of the amount of impurity in the fluid.

3,433,965
PHOTOELECTRIC APPARATUS FOR PROVIDING INFORMATION ABOUT THE WIDTH OF MATRICES IN A LINE CASTING MACHINE
David J. Sinnott, Ringwood, N.J., assignor to Powers & Eaton Industries, Inc., South Hackensack, N.J., a corporation of New Jersey
Filed June 2, 1966, Ser. No. 554,872
U.S. Cl. 250—219 **19 Claims**
Int. Cl. C01n *21/30*



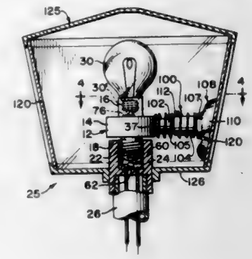
1. A mechanism for detecting the width of matrices comprising index means representing a predetermined character, having a plurality of index codes therein, information means having a plurality of information codes therein, each information code representing the width of matrices in a magazine bearing said predetermined character, and means for simultaneously detecting said index codes in said index means and said information codes in said information means.

3,433,966
ALARM SYSTEM FOR DETECTING FALLEN BOTTLES ON A CONVEYOR
Harry George Letch and Leonard Cyril Powell, London, Ontario, Canada, assignors to John Labbatt Limited, London, Ontario, Canada, a company of Canada
Continuation-in-part of application Ser. No. 490,309, Sept. 27, 1965. This application Jan. 3, 1968, Ser. No. 703,204
Claims priority, application Canada, Jan. 11, 1967, 936,015
U.S. Cl. 250—223 **6 Claims**
Int. Cl. H01j *39/12;* **G06m** *7/00*



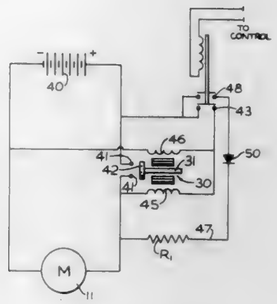
An alarm system for detecting fallen bottles on a conveyor for carrying bottles in a vertical position, in which depending hinge members are pivotally attached to a transverse axis above the bottles. A separate hinge member is provided for each longitudinal row of bottles and each hinge member has a feeler arm which rides along the mouth of the bottles and is arranged such that the feeler arm swings downwardly when it passes over a fallen bottle and actuates a switch in an electrical circuit.

3,433,967
PHOTOELECTRIC SWITCH ADAPTER FOR LANTERN
George W. Bernheim, P.O. Box 52, Riverdale, N.Y. 10471
Filed Feb. 15, 1967, Ser. No. 616,296
U.S. Cl. 250—239 **10 Claims**
Int. Cl. H01j *5/16, 39/12*



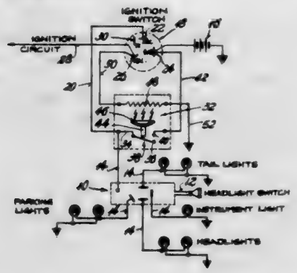
The disclosure describes a photoelectric switch adapter which supports a lamp bulb in a lantern. The adapter is rotatable in the lantern to different positions for optimum orientation of a photoelectric cell in the adapter. The adapter is provided with a telescopic optical tube for admitting ambient light to the photoelectric cell while excluding light from the lamp bulb. The tube has a resilient end to accommodate to different sizes of lantern globes and different shapes of lantern walls. Several different mechanical arrangements for axial adjustment of the tube are described. The adapter has a spring biased tip which permits rotational adjustment of the adapter in the lantern while maintaining electrical continuity with the lantern.

3,433,968
POSITIVE INDEXING CRANKING SYSTEM
Robert H. Broyden, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 18, 1966, Ser. No. 595,461
U.S. Cl. 290—37 **1 Claim**
Int. Cl. F02n *11/06*



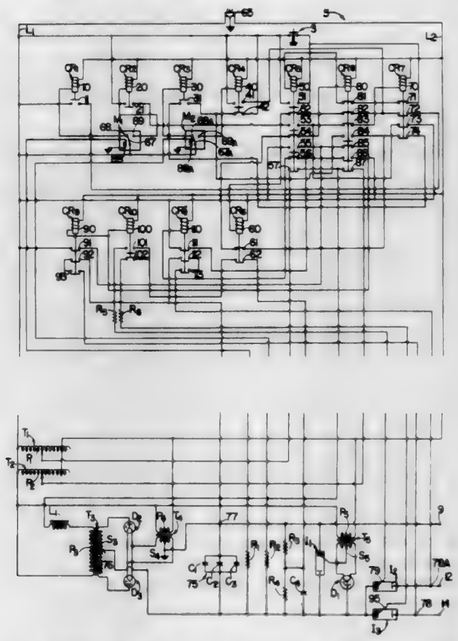
Starting systems with electric cranking motors having a protruding shaft, a shift assembly mounted on the shaft, a gear slidably mounted on said shaft so it is movable by the shift assembly into engagement with gearing for cranking an engine and a solenoid connected to the shift assembly to cause movement of the gear into engagement, can be improved if the solenoid and a resistive circuit are connected in parallel to a common power source through the winding of the motor and energized simultaneously so that the electric cranking motor will rotate the gear as the solenoid moves the gear into engagement for cranking.

3,433,969
DELAYED ACTION CIRCUIT CONTROLLER
Vincent G. Krenke, Fairfield, Conn., assignor to Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed Sept. 13, 1965, Ser. No. 486,883
U.S. Cl. 307—10 **12 Claims**
Int. Cl. H02b *1/00, 3/00*



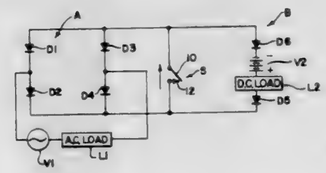
A control device for a main load circuit including a main switch and/or an auxiliary load circuit having an auxiliary switch, the control device having a shunt circuit for temporarily energizing the auxiliary circuit when the main circuit switch is opened, the shunt circuit including a switch and means for actuating the switch to close the shunt circuit when the main switch is closed and to open the shunt circuit after the lapse of a predetermined time after the main switch is opened.

3,433,970
ELECTRICAL PULSING CIRCUIT WITH AUTOMATIC SWITCHING MEANS
William E. Baldwin, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed July 28, 1966, Ser. No. 568,585
U.S. Cl. 307—11 **7 Claims**
Int. Cl. H02j *3/38;* **H01f** *27/42*



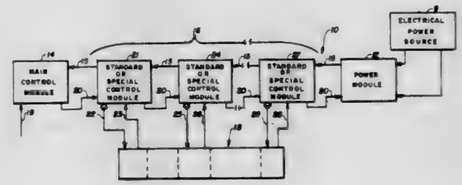
6. An electric circuit for sequentially injecting energy pulses into first and second windings comprising: a first energy source means for supplying energy at a first level, a second energy source means for supplying energy at a second level, control means for selectively coupling an energy storage means to either said first or said second energy source means to bring said energy storage means to said first level or said second level, means for sensing the level of energy of said energy storage means, means responsive to the first level of said energy storage means as sensed by said sensing means for discharging said energy storage means into said first winding, and means responsive to the second level of said energy storage means as sensed by said sensing means for discharging said energy storage means into said second winding.

3,433,971
AC-DC COMMON LOAD SWITCH
James Howard Hufford, Moline, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 608,034
U.S. Cl. 307—18 **5 Claims**
Int. Cl. H02j *3/38, 7/34, 3/02*



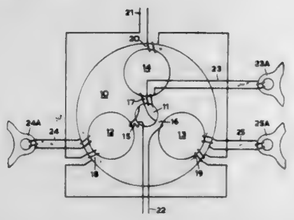
An AC load and an alternating current voltage source are connected together in series across the input circuit of a full wave bridge rectifier circuit. A DC load and a direct current voltage source are connected together in series across the output circuit of the bridge rectifier circuit. A normally open switch, such as a pair of relay contacts or a transistor, is commonly connected in parallel across the DC load series circuit, as well as across the output circuit of the bridge rectifier circuit. Thus, when the switch is closed, the DC load and the AC load are simultaneously energized by the direct current voltage source and the alternating current voltage source, respectively.

3,433,972
MACHINE TOOL CONTROL SYSTEM
Gerald R. Harris, 1230 Camelia Drive, Livermore, Calif. 94550
Filed Nov. 4, 1966, Ser. No. 592,059
U.S. Cl. 307—38 **19 Claims**
Int. Cl. H02j *3/14*



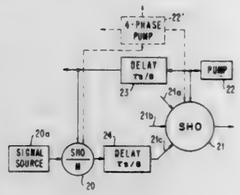
A modular electrical control system utilizing a single power supply and any number of various, readily interchangeable control modules capable of performing a variety of functions for controlling machine tools, whereby the tools can be made to automatically perform various preselected operative steps in a predetermined sequence.

3,433,973
MAGNETIC LOGICAL DEVICE
David Joseph Morris, Stoke-on-Trent, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Aug. 6, 1964, Ser. No. 387,931
Claims priority, application Great Britain, Aug. 9, 1963, 31,497/63
U.S. Cl. 307—88 5 Claims
Int. Cl. H03k 17/80



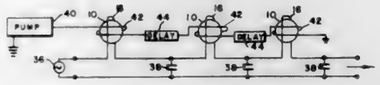
This invention relates to a magnetic logic device comprising a core having a central aperture and three outer apertures equally spaced around it. Three outer legs between the outer apertures and the periphery of the core and the three inner legs between the outer apertures and the central aperture are all of equal size, and the legs between adjacent outer apertures are at least twice this size. A reset winding is coupled to the outer legs to magnetise the first in one direction and the second and third in the opposite direction. The input windings are coupled to the second and third outer legs so that their magnetisation can be reversed by input signals. An output winding coupled to the first inner leg performs the AND function, the output being generated when a prime winding (coupled to the inner leg) is energised. A further output winding is coupled to the second and third inner legs and performs the EXCLUSIVE OR function, the output being generated simultaneously with the input signals.

3,433,974
PARAMETRIC COMPUTERS AND METHOD OF OPERATING SAME
John B. Gunn, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,639
U.S. Cl. 307—88 14 Claims
Int. Cl. H03k 3/47



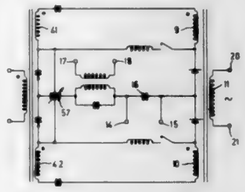
Parametric computers composed of parametric oscillator stages, arranged to act either as memory stages or logic stages. The stages are typically arranged in chains. Each parametric oscillator is driven by a pump whose output is periodically disturbed as by a change in phase angle. After each such phase disturbance, each oscillator is sensitive during a transient interval to the presence or absence of an input signal. At the end of the transient interval, the oscillator has settled down into one or the other of two opposed stable phase relations. In the absence of an input signal the stable phase relation of a particular oscillator alternates back and forth between the two stable phase relations at each phase disturbance. Delay lines are introduced between successive oscillators in a chain, and are effective to keep the information moving forwardly along the chain and to prevent it from moving backwardly.

3,433,975
PARAMETRIC AMPLIFIERS CASCADED IN A TRANSMISSION LINE ARRANGEMENT
William W. Davis, Minneapolis, Minn., and Arthur V. Pohm, Ames, Iowa, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1960, Ser. No. 61,981
U.S. Cl. 307—88 1 Claim
Int. Cl. H03f 7/02



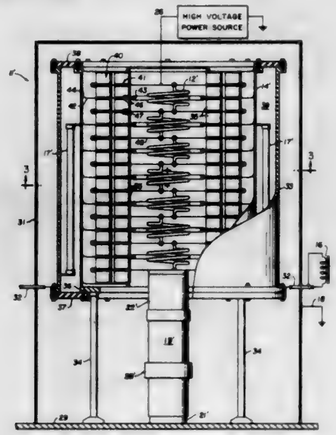
1. A parametric amplifier for amplifying an input signal comprising a transmission line for receiving said signal at an input end and having a plurality of successive sections each including a series inductance and a parallel capacitance, each of said inductances comprising a magnetic film and a conductor magnetically coupled thereto and connected in series with said line in its respective said section with each conductor being responsive to said input signal as present at the input of its respective section for applying a first field to the respective film, each of said films having an angularly oscillatable magnetization vector, and means for applying to each film and crosswise of the respective first field a second field timed and phased to coact with its respective first field to cause the magnetization vector of each film to oscillate and make each said section conductor look like a negative resistance to the input signal as received by that section, whereby the output of each section is an amplified version of the input signal received by that section.

3,433,976
PARAMETRIC AMPLIFIER
Guy N. L. J. Marechal, Ixelles, Belgium, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 5, 1967, Ser. No. 688,086
Claims priority, application Netherlands, Dec. 8, 1966, 6617222
U.S. Cl. 307—88.3 8 Claims
Int. Cl. H03f 7/02, 7/04



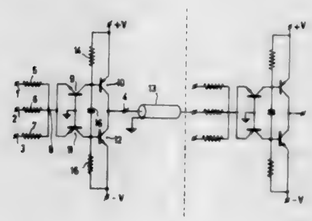
A parametric amplifier of the type having a plurality of differentially connected varactors and capacitors for adjusting the A.C. equilibrium of the amplifier, is provided with switches for selectively interrupting direct currents in the varactors without affecting direct currents in the other varactors or affecting alternating currents in any of the varactors. Means are also provided for selectively controlling the direct currents to the varactors. The arrangement permits minimizing current flow to an input source circuit that is independent of source voltage.

3,433,977
PULSE LINE HAVING COMPONENTS COAXIALLY INTERCONNECTED AND CONFINED WITH LARGE SURFACE AREA CONDUCTORS
William L. Gagnon, El Sobrante, Dominic Theodore Scalise, and Bob H. Smith, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 5, 1966, Ser. No. 571,156
U.S. Cl. 307—106 4 Claims
Int. Cl. H03k 3/00



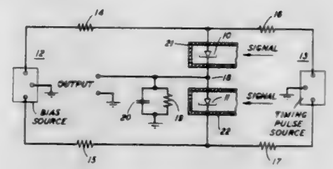
A fast-pulse-forming line constructed of a group of coils serially and coaxially aligned within an electrically conductive inner cylinder with a large number of capacitors mounted on annular discs in pairs of layers around the coils. The capacitors in each pair of layers have one set of terminals connected together to a disc that connects to the juncture of adjacent coils while the other capacitor terminals are connected together to a disc connected to the cylinder. An outer cylinder coaxially encloses the inner cylinder with resistors mounted and connected between the cylinders.

3,433,978
LOW OUTPUT IMPEDANCE MAJORITY LOGIC INVERTING CIRCUIT
Willem Bongenaar, Joannes Paulus Maria Gieles, and Arie Slob, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,633
Claims priority, application Netherlands, Apr. 11, 1964, 6403951
U.S. Cl. 307—214 3 Claims
Int. Cl. H03k 19/40, 17/60, 19/42



A majority logic inverting circuit employing pairs of symmetric transistor paths of complementary transistor types for providing a two level output signal having low output impedance conditions in either level.

3,433,979
MAJORITY POWER SENSOR
William M. Hubbard, Middletown Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Continuation-in-part of application Ser. No. 546,366, Apr. 29, 1966. This application Mar. 28, 1967, Ser. No. 633,340
U.S. Cl. 307—235 5 Claims
Int. Cl. H03k 5/20



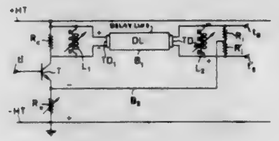
This application discloses apparatus for determining which of two alternating current signals is larger. In one embodiment, a pair of diodes whose current-voltage characteristics include a negative resistance region, are connected series-aiding across a balanced timing pulse source and biased below their negative resistance regions.

In the presence of unequal signals and a timing pulse, the diode subjected to the larger signal switches to an operating point above its negative resistance region. The polarity of the resulting output pulse identifies the switched diode. Devices of this type are advantageously utilized as regenerative-detectors in differentially-coherent phase modulation PCM systems.

In a second mode of operation, the apparatus functions as a differential detector indicating the difference in the powers of two alternating current signals.

A strip transmission line embodiment of the invention, adapted for operation at high bit rates, is disclosed.

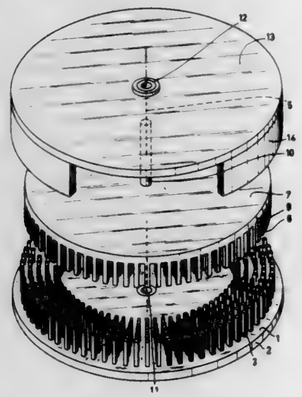
3,433,980
PLURAL CHANNEL DELAY LINE CIRCUIT FOR PROCESSING A PAL COLOR TELEVISION SIGNAL
Harry Leman Swaluw, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,647
Claims priority, application Netherlands, Aug. 25, 1966, 6611942
U.S. Cl. 307—293 8 Claims
Int. Cl. H03k 17/26, 17/28



A circuit is disclosed having a delayed branch and an undelayed branch between common input and output terminals. The delayed branch includes a delay line having a pair of outputs, whereby the signals at the outputs are in phase opposition. The output of the undelayed

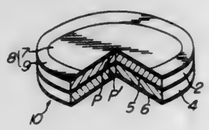
branch is added each output of the delay line with the same phase. A tuned circuit is provided to control the relative phases of the two branches. The circuit is useful in a PAL color television circuit, in which the delay time of the delayed branch is equal to a line period.

3,433,981
ELECTROSTATIC SYNCHRONOUS MOTORS
Boudewijn Bollee, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 630,996
Claims priority, application Netherlands, Apr. 27, 1966, 6605612
U.S. Cl. 310—6 **11 Claims**
Int. Cl. H02n *1/00*



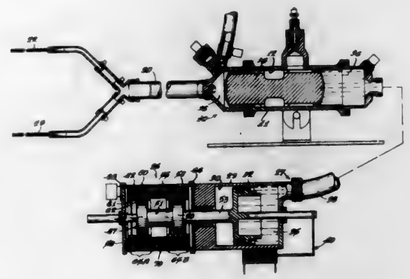
An electrostatic synchronous motor wherein the rotor and stator include a plurality of axially extending tooth-shaped electrodes positioned in concentric circular rows. The rows of electrodes of the rotor are rotatably interposed with the rows of stator electrodes and positioned in close proximity thereto. The width and location of the electrodes are fixed according to predetermined relationships.

3,433,982
PIEZOELECTRIC CERAMIC RESONATORS
Yuichi Kaname, Kaizuka-shi, Takashi Nagata, Ikeda-shi, Michio Ishibashi, Osaka, and Hiroshi Tsujimoto, Ibaragi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 300,306, Aug. 6, 1963. This application Dec. 19, 1966, Ser. No. 602,916
Claims priority, application Japan, Aug. 7, 1962, 37/34,174; Dec. 27, 1962, 37/59,290, 37/80,236
U.S. Cl. 310—8.2 **4 Claims**
Int. Cl. H04r *17/00, 17/10*



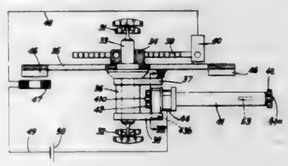
A piezoelectric ceramic resonator of the thickness extension mode type formed from a pair of polarized piezoelectric ceramic elements in which, when an electric potential is applied between electrodes on the surface thereof, mechanical displacements will become in superposed relation for the fundamental mode of vibration and cancel the contour mode vibration and subharmonics thereof.

3,433,983
ELECTROMAGNETIC ACTUATOR
Arnold R. Keistman, San Diego, Calif., and Robert H. Weakley, Boulder, Colo., assignors, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 594,081
U.S. Cl. 310—15 **2 Claims**
Int. Cl. H02k *33/16, 35/02*



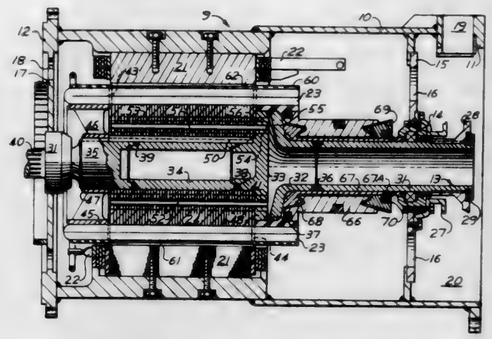
A linear electromagnetic actuator has a plurality of annular coils separated by magnetic gaps, the end pieces on the armature having an axial length which is at least equal to the sum of the actual length of two laminations and two gaps therebetween (add laminations), to provide a linear current versus force characteristic in either of two directions of stroke.

3,433,984
DEVICES FOR CONVERTING ROTARY VIBRATIONS INTO UNIDIRECTIONAL ROTARY MOVEMENT
Oswald Tschudin, Weil am Rhein, Germany, assignor to Brac Ltd., Breitenbach, Switzerland, a corporation
Filed Nov. 29, 1966, Ser. No. 597,783
Claims priority, application Germany, Nov. 29, 1965, T 29,894; Nov. 11, 1966, B 89,792
U.S. Cl. 310—37 **9 Claims**
Int. Cl. H02k *7/06*



1. A device for converting rotary vibration of a vibratory shaft into unidirectional rotary movement of a rotary shaft, wherein the vibratory shaft extends at a right angle to the rotary shaft with the axis of the vibratory shaft in the same plane as the axis of the rotary shaft and carries two arms enclosing, in the direction of the rotary shaft, an angle which is bisected in a rest position by the said plane, the arms being arranged to act successively during each rotary vibration of the vibratory shaft on stepping cams arranged on the periphery of the rotary shaft.

3,433,985
COOLING MEANS FOR HIGH SPEED HEAVY DUTY DYNAMOELECTRIC MACHINES
Gerald B. Ireland, Morton, and Marion J. Witzenburg, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 1, 1966, Ser. No. 569,451
U.S. Cl. 310—52 **3 Claims**
Int. Cl. H02k *9/19*



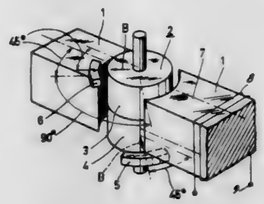
The rotor shaft of dynamoelectric machine has a hollow first end portion carrying a commutator, a short intermediate portion of enlarged diameter, and a second end portion which carries the rotor core and windings. Axially directed coolant passages in the rotor core are communicated with the hollow end of the shaft at the enlarged section. An apertured partition extends between the casing and the shaft to journal the first end thereof, to define a coolant input compartment therearound and to proportion the coolant flow between the interior and exterior of the rotor, thereby providing for efficient cooling in a compact, high-strength and relatively vibration-free construction.

3,433,986
OIL FILLED ELONGATED SUBMERGIBLE ELECTRIC MOTOR
Armais Arutunoff, Bartlesville, Okla., assignor to Reda Pump Company, Bartlesville, Okla., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,115
U.S. Cl. 310—87 **7 Claims**
Int. Cl. H02k *5/10, 5/12*



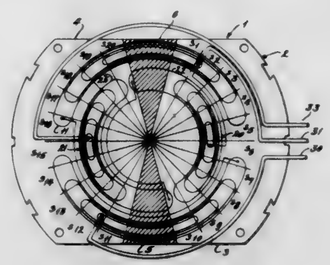
An elongated electric motor for deep wells wherein the radial bearing support for the rotor comprises the peripheral surface of the rotor, running against the bore of the stator. This rotor bearing surface is formed by applying a layer of non-magnetic metal thereto, which runs against the stator bore with a running clearance.

3,433,987
ROTOR WITHOUT STICKING MOMENT
Richard Thees, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 29, 1965, Ser. No. 475,750
U.S. Cl. 310—156 **20 Claims**
Int. Cl. H02k *21/12, 21/00*



A synchronous motor that includes a stator having a pair of spaced poles and a permanent magnet rotor divided axially into first and second contiguous cylindrical segments that are transversely magnetized at an angle of 90 degrees relative to one another. An auxiliary magnet that is offset relative to the field axis of the stator pole pair coacts with the rotor to insure that the motor is self-starting.

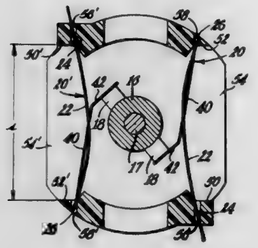
3,433,988
SLAB SIDE MOTOR WITH AN ASYMMETRICAL STARTING WINDING
Harold D. Arnold, Bellefontaine Neighbors, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed July 28, 1966, Ser. No. 568,477
U.S. Cl. 310—166 **5 Claims**
Int. Cl. H02k *17/04*



In a single phase, unidirectional induction motor having a start winding and a main winding and means for initially energizing both windings and subsequently deenergizing the start winding, the motor having a stator with a substantially cylindrical bore defined by the inner faces of radially inwardly extending teeth defining between them winding-receiving slots, the stator having at least one slab side, the stator has at that part of its bore along the slab side, a wide tooth spanning at least one slot width so as to eliminate at least one slot from the regular course of slots, the main winding has a plu-

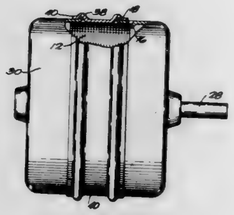
rality of coil sets at least one of which has coils embracing the wide tooth symmetrically and the start winding has a plurality of coils inner ones of which are placed concentrically with respect to one another between successive sets of coils of the main winding and an outer one of which is asymmetrically arranged to embrace the wide tooth at one reach of the coil in the direction of rotation of the motor.

3,433,989
BRUSH RETAINING MEANS FOR AN ELECTRIC MOTOR
William R. Leavitt, Southampton, N.Y., assignor to Rowe Industries Inc., Sag Harbor, N.Y.
Filed Aug. 10, 1966, Ser. No. 571,594
U.S. Cl. 310—239 **5 Claims**
Int. Cl. H02k *13/00*



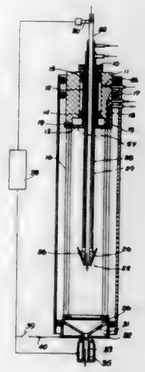
An easily replaced brush for electric motors which employs a bowed spring member having a resilient, elongated, leaf member depending therefrom. The spring member clips into a plastic housing arranged to cause the spring member to assume a bowed configuration.

3,433,990
ELECTRIC MOTOR AND HOUSING THEREFOR
Thomas W. Stone, Owosso, Mich., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Original application Jan. 29, 1965, Ser. No. 429,002. Divided and this application July 5, 1968, Ser. No. 742,937
U.S. Cl. 310—258 **6 Claims**
Int. Cl. H02k *1/12*



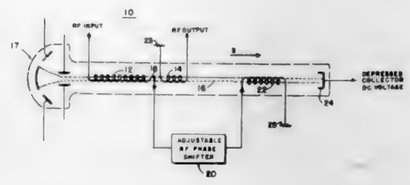
A motor stator extends between and is engaged in the open ends of two motor end bells. The facing ends of the end bells are flanged and a strip extends around the motor between and in overlying relationship with the flanged ends. The strip is deformed around the flanges and into engagement with the stator. Prior to deforming, one of the end bells is freely movable on the stator to adjust the end play of the rotor supported by the end bells.

3,433,991
PLASMA ARC DEVICE WITH CATHODE STRUCTURE COMPRISING PLURALITY OF RODS
Derek Whyman, Teddington, England, assignor to National Research Development Corporation, London, England, a body corporate
Filed Sept. 19, 1966, Ser. No. 580,388
Claims priority, application Great Britain, Sept. 24, 1965, 40,812/65
U.S. Cl. 313—231 **7 Claims**
Int. Cl. H01j *17/26, 61/28;* **B23k** *9/00*



A plasma arc device of improved construction which enables greater efficiency of operation and reduced contamination of the materials treated by the device wherein the assembly includes a plurality of thoriated rods defining between them a frustoconical space and touching each other around a circular exit aperture from said assembly.

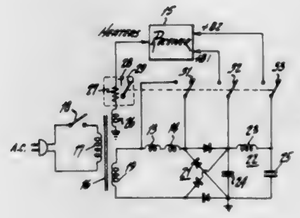
3,433,992
O-TYPE TRAVELING WAVE TUBE AMPLIFIER HAVING MEANS FOR COUNTERACTING THE MODULATION OF THE SPENT BEAM IN THE COLLECTOR ELECTRODE REGION
John J. Tancredi, Neptune, and Bruno W. Zotter, Belmar, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed June 7, 1966, Ser. No. 556,819
U.S. Cl. 315—3.6 **8 Claims**
Int. Cl. H01j *25/34, 23/02*



An electron beam microwave interaction device which includes a two-section severed slow-wave circuit both in coupling relationship to the electron beam. One severed circuit section is positioned in the beam path and in coupling relationship to the beam for modulating the beam with an input radio frequency signal such that the radio frequency signal is amplified, and the other severed circuit section is downstream from the first severed section and in coupling relationship to the modulated beam for further amplifying and extracting the signal. A third means which may be either a fast or a slow-wave circuit

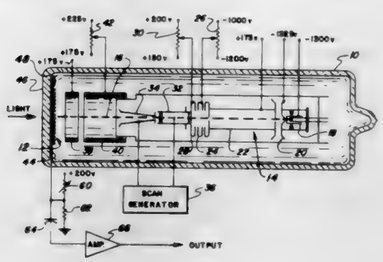
structure is positioned downstream of the signal extracting means and in coupling relationship to the spent modulated beam exiting from the second severed section. An adjustable phase shifter interconnects the output sever power of the first section to the third means for counteracting the modulation of the spent beam whereby the velocity spread of the beam as intercepted by the collector electrode is reduced.

3,433,993
TIME SWITCH CONTROLLED ENERGIZING CIRCUIT FOR AUTOMATIC DEGAUSSING APPARATUS
Ronald R. Norley, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 457,966, May 24, 1965. This application Dec. 15, 1967, Ser. No. 708,741
U.S. Cl. 315—8 **4 Claims**
Int. Cl. H01j *29/06*



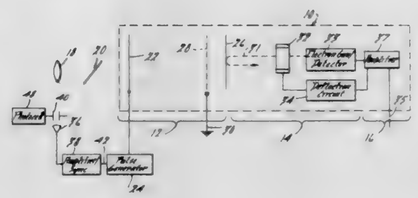
In a television receiver a degaussing coil which, upon closure of a power switch, is connected for energization by the charging current for the low voltage power supply filter capacitors is subsequently disconnected and power is applied to the television receiver by a thermally operated time delay switch connected to the power supply.

3,433,994
CAMERA TUBE APPARATUS
Charles B. Gibson, Jr., Beaverton, Oreg., assignor to Tektronix Inc., Beaverton, Oreg., a corporation of Oregon
Filed June 14, 1966, Ser. No. 557,586
U.S. Cl. 315—10 **11 Claims**
Int. Cl. H01j *31/28*



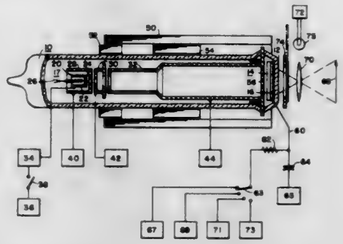
A camera tube is constructed with a target formed of a plurality of semiconductor target elements toward which a relatively high velocity electron beam is directed. The target elements comprise separate P-N junctions which receive light images thereon, converting the same into a plurality of potentials through photovoltaic action. The electron beam has a velocity such that secondary electrons are produced where the electron beam strikes the target, such secondary emission being in accordance with the voltage distribution across the semiconductor target elements.

3,433,995
IMAGE CONTRAST CONTROL
Gerald C. Scott, Ann Arbor, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,597
U.S. Cl. 315—11 **2 Claims**
Int. Cl. H01j *29/46*



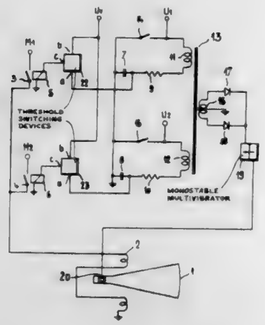
An image contrast control for subtracting background radiation from the signal from an object being viewed. Electrons representative of the total incoming signal strike a target from which secondary electrons are emitted. A charge pattern will thus be placed on the target. The portion of that charge pattern produced by the unwanted background radiation is removed by pulsing a beam of electrons equal to the background radiation, but with energy insufficient to cause secondary emission toward that target. The charge remaining on the target will represent the object being viewed and may be read out using well known scan techniques.

3,433,996
STORAGE SYSTEM
Paul E. Carnahan, Colorado Springs, Colo., and Donald C. Brooke, Montour Falls, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 13, 1966, Ser. No. 557,038
U.S. Cl. 315—12 **4 Claims**
Int. Cl. H01j *29/41, 31/26*



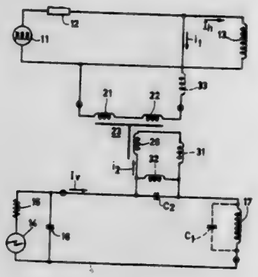
A storage system which includes a photoconductive input target layer responsive to input radiations. The target includes a conductive coating transmissive to the input radiations on one side of said photoconductive layer and a mosaic of dielectric islands is provided on the opposite side of the photoconductive layer with respect to the conductive layer. An electron beam is provided for scanning the side of the photoconductive layer on which the mosaic of dielectric islands is provided to permit multi-copy or readout from information stored on the dielectric islands and destructive readout from information upon the exposed photoconductive surface.

3,433,997
CIRCUIT ARRANGEMENT FOR SUPPRESSING THE INTENSITY OF AN INDICATOR TUBE
Werner Bidese, Zurich, Switzerland, assignor to Albiswerk Zurich A.G., Zurich, Switzerland, a corporation of Switzerland
Filed Mar. 22, 1968, Ser. No. 715,401
Claims priority, application Switzerland, Apr. 5, 1967, 4,803/67
U.S. Cl. 315—22 3 Claims
Int. Cl. H01j *29/70, 29/52*



A circuit arrangement for suppressing the intensity of an indicator tube during the switching-in and switching-out of measurement signals applied to the tube. A switching relay arrangement is provided for each measurement signal, the relay arrangement responding to the output of a switching stage having a threshold defined by a comparison voltage. The threshold switching stage is responsive to the voltage associated with an RC time-delay network which is selectively charged and discharged by a voltage source which can be effectively short-circuited by a selector switch. The charging and discharging current in the RC time-delay network generates a pulse which, through the effect of a transformer-rectifier arrangement and a monostable multi-vibrator, suppresses the brightness of the indicator tube.

3,433,998
CIRCUIT ARRANGEMENT FOR FRAME CORRECTION
Jörg Wölber, Hamburg-Stellingeh, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,262
Claims priority, application Germany, Apr. 24, 1965, P 36,612
U.S. Cl. 315—27 4 Claims
Int. Cl. H01j *29/76*



A pincushion correction system for television circuits employs a transductor with an E–I core. The control winding on the center leg is in series in the vertical deflection circuit, and a capacitor is connected in parallel with this winding to produce a resonant circuit, with unsaturated core, that has a period two to three times the line stroke period. The windings on the outer legs of the core are in series, and the series connection is in parallel in the horizontal deflection circuit. The outer windings are connected so that only one can be saturated at a time by the control winding. Each outer winding, in saturated condition, has an inductance that is in resonance with the capacitor at a frequency with a period from 0.5 to 1.5 times the line stroke period.

3,433,999
NON-RESONANT STUB SUPPORTS FOR SLOW WAVE CIRCUITS
Robert J. Espinosa, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 384,668, July 23, 1964. This application May 6, 1968, Ser. No. 727,090
U.S. Cl. 315—3.5 4 Claims
Int. Cl. H01j *25/34*

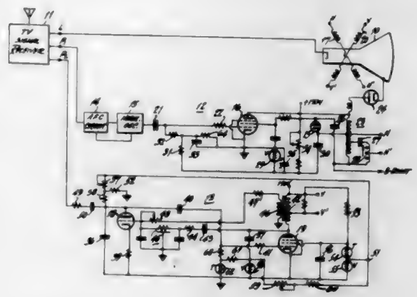


Troublesome spurious oscillations caused by prior art λ/4 stub supports can be eliminated in ring-and-bar type slow wave circuits by dimensioning the stub supports to have a length L defined by

$$\lambda_0/16<L<3/16\lambda_0 \text{ and } 5/16\lambda_0<L<1/3\lambda_0$$

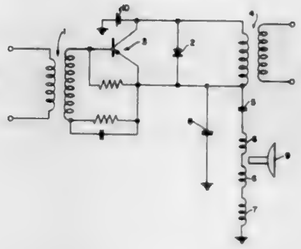
where λ_0 is the wavelength at the center frequency of the operating band.

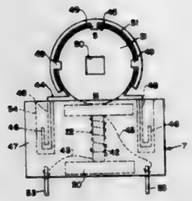
3,434,000
STABILIZATION OF TELEVISION DEFLECTION CIRCUITS
James Alexander McDonald, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,906
U.S. Cl. 315—27 7 Claims
Int. Cl. H01j *29/70*



In a television receiver, horizontal and vertical deflection circuits are stabilized so as to reduce the effect of line voltage changes on image height, linearity and width and also to reduce the effect of ambient temperature changes on image height and vertical linearity. A voltage dependent resistor is associated with a feedback bias arrangement in the horizontal stage while a combination of voltage dependent resistors and temperature dependent resistors are associated with the vertical deflection circuit.

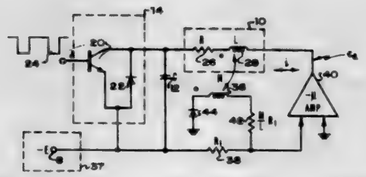
3,434,001
TELEVISION LINEARITY CONTROL MEANS
Osamu Okuda, Osaka, Japan, assignor to Sanyo Electric Company, Ltd., Osaka, Japan, a corporation of Japan
Filed Sept. 2, 1966, Ser. No. 576,947
Claims priority, application Japan, Sept. 2, 1965, 40/53,940; Nov. 17, 1965, 40/71,017
U.S. Cl. 315—27 8 Claims
Int. Cl. H01j *29/76*; H01f *21/08*





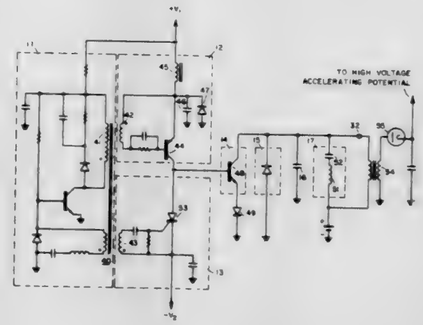
A linearity control device for a magnetic deflection type cathode ray tube scanning system which produces a forward and reverse bi-directional deflection current signal in which an H-shaped core of magnetically saturable material is provided. A cylindrical permanent magnet which is magnetized across its diameter is mounted with respect to the core such that the axis of the magnet transverse to said diameter is generally transverse to the longitudinal axis of the core. A coil is wound over the elongated center leg of the core and the static magnetic field produced by the permanent magnet acts to cancel the dynamic magnetic field produced by the reverse current signal and add to the dynamic magnetic field produced by the forward current signal.

3,434,002
HORIZONTAL DEFLECTION CIRCUIT WITH MONITOR WINDING INDUCTIVELY COUPLED TO YOKE
Bernard M. Oliver, Los Altos Hills, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 5, 1966, Ser. No. 584,492
U.S. Cl. 315—27 25 Claims
Int. Cl. H01j *29/70*



A voltage source and a flyback capacitor shunted by a solid state switch for periodically short-circuiting the flyback capacitor are connected in series with a deflection yoke winding to provide an energy conserving sweep circuit. The voltage source and a monitoring winding are connected for driving an amplifier to feed back a correction voltage in series with the yoke winding when the voltages produced by the voltage source and the monitoring winding differ from a predetermined magnitude relationship. Two cascaded emitter-follower stages connected for signal transmission from the input of the first stage to the output of the second stage whenever the first stage is biased on at a quiescent operating current are employed in the amplifier. The monitoring winding is electrically detached from the voltage source by a diode during the flyback period to protect the amplifier from large voltages produced in the monitoring winding during the flyback period. A capacitor may be connected in shunt with this diode to increase the current in the yoke winding at the end of the flyback period and thereby compensate for losses in the yoke winding. Circuitry is provided for drawing an adjustable centering current through the yoke winding. The voltage source is provided with a capacitive output impedance that resonates with the yoke winding during the forward sweep period to distort the sweep waveform as required to correct for the nonlinearity of deflection that exists in some cathode ray picture tubes.

3,434,003
HORIZONTAL DEFLECTION CIRCUIT
William Geller, Plainview, N.Y., assignor to General Telephone & Electronics Laboratories, Incorporated, a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,227
U.S. Cl. 315—27 7 Claims
Int. Cl. H01j *29/70*

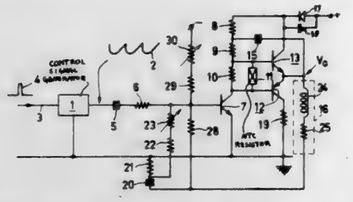


A solid state horizontal deflection circuit for the cathode ray tube of a television receiver is described wherein a sawtooth turn-on signal is utilized to maintain the switching transistor in saturation. The switching transistor is rapidly turned-off by the triggering of a silicon controlled rectifier coupled to the base of the transistor.

3,434,004
DEFLECTION CIRCUIT WITH FREQUENCY DEPENDENT NEGATIVE FEEDBACK
Wouter Smeulers and Peter Johannes Hubertus Janssen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1966, Ser. No. 598,029
Claims priority, application Netherlands, Dec. 10, 1965, 6516061
U.S. Cl. 315—27 6 Claims
Int. Cl. H01j *29/70*

A field deflection circuit includes an A.C. negative feedback circuit to linearize the sawtooth output current, and direct current negative feedback circuit to minimize jumps

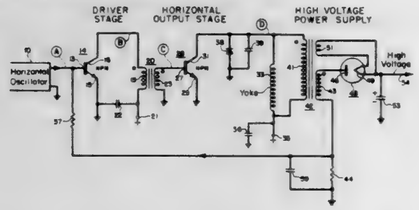
in the conduction of a pair of series connected output transistors. In order to overcome the effect of the direct current feedback circuit in attenuating low frequency input signals, the input signal for the circuit is the sum of a sawtooth wave and a parabolic wave.



3,434,005
PROTECTION CIRCUIT FOR HORIZONTAL OUTPUT TRANSISTOR

Erwin J. Dreiske, Oak Park, and Emanuel Saudinattis, Glencoe, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,537
U.S. Cl. 315—27 **8 Claims**
Int. Cl. H01j *29/76;* **H02h** *7/20*

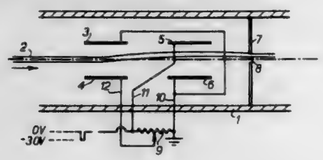


Malfunctioning, such as arcover, of the high voltage rectifier of a transistorized television horizontal scanning and high voltage generating system permits the high voltage filter capacitance to discharge through the rectifier and the secondary winding of the horizontal output transformer and this in turn causes high amplitude current to be transformed back to the horizontal output transistor, as a result of which the transistor may suffer permanent damage. Protection against such damage is obtained by developing a control pulse, in response to the discharging of the capacitance, and utilizing that pulse to drive the output transistor to cutoff thereby preventing the translation of current through the transistor.

3,434,006
ELECTRON BEAM DISCHARGE TUBES

Maurice Ronald Bennett, Rayleigh, England, assignor to English Electric Valve Company Limited, London, England, a British company

Filed May 19, 1965, Ser. No. 456,984
Claims priority, application Great Britain, May 22, 1964, 21,214/64
U.S. Cl. 315—30 **5 Claims**
Int. Cl. H01j *29/74*

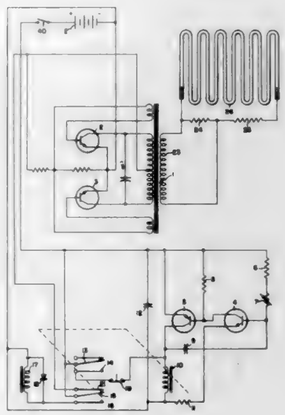


A deflection modulated electron beam tube has an apertured electrode across which the beam is deflected by a pair of deflecting plates to achieve modulation. One plate of a pair of compensating plates provided to compensate for the undesired shift of the point of final beam impact, is connected to one plate of the deflecting plates. Separate connections are brought outside the tube envelope from at least one plate of each pair of plates and connected to separate points along a potentiometer so that the voltages applied to the connections are adjustable.

3,434,007
ELECTRICAL CONTROL MEANS FOR A CHANGEABLE EXHIBITOR

John G. Fontaine, Fort Lauderdale, Fla., assignor to Automatic Displays, Inc., Fort Lauderdale, Fla., a corporation of Florida

Filed Oct. 24, 1966, Ser. No. 588,877
U.S. Cl. 315—119 **4 Claims**
Int. Cl. H05b *37/02, 39/02, 41/02*



An illuminating system is disclosed for controlling the illumination of a gas-filled lamp in coordination with the operation of an actuator associated with the lamp. A timing circuit connected to a direct current source includes a capacitor connected to a relay through a translating circuit, and the timing circuit controls energization of an inverter circuit operating the lamp. The relay's coil is energized upon charging of the capacitor to operate relay contacts which disable the inverter circuit, hold the relay coil energized, and also energize a solenoid which operates the actuator. After the cycle of operation of the actuator, it deenergizes the relay coil to reactivate the inverter circuit and deactivate the solenoid. Thus, the lamp is turned off when the actuator is being operated.

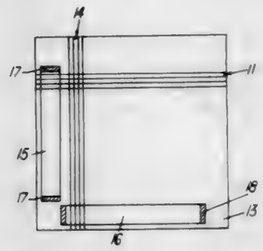
3,434,008
SOLID STATE SCANNING SYSTEM

Carl Peter Sandbank, Bishop's Stortford, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 29, 1966, Ser. No. 583,003
Claims priority, application Great Britain, Oct. 27, 1965, 45,460/65
U.S. Cl. 315—169 **10 Claims**
Int. Cl. H05b *39/09*

A solid state scanning system utilizes a pair of semiconductor devices exhibiting moving high field instability effects. The semiconductor bodies are arranged in transverse directions on a planar scanning element to form superimposed coordinate axes. Pulses propagated along each body providing coordinate scanning and cause an

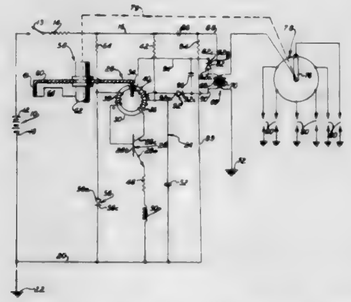
electro-luminescent layer to emit light at the points of intersection. The pulses may be coupled to a plurality of thin metal electrodes positioned transversely on each side of the layer.



3,434,009
ELECTRONIC IGNITION SYSTEM USING OSCILLATOR CONTROLLED CAPACITOR DISCHARGE

Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,040
U.S. Cl. 315—209 **12 Claims**
Int. Cl. H05b *41/30, 39/09*



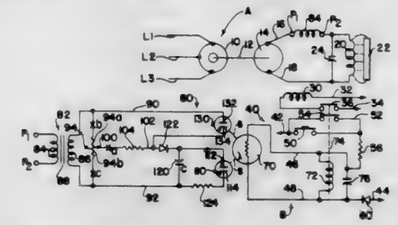
1. In an ignition system for an internal combustion engine having a source of electrical energy and a coil with a primary winding and a secondary winding, means for inducing an ignition voltage in the coil secondary winding comprising
   - an oscillator connected across said source of electrical energy,
   - timing means operated by the engine to start and stop oscillation of said oscillator,
   - a thyristor in series with the coil primary winding,
   - a capacitor in parallel with said thyristor and said coil primary winding,
   - winding means for charging the capacitor when the oscillator is oscillating, and
   - circuit means responsive to the current through the oscillator for turning said thyristor to a conducting state to discharge the capacitor through the coil primary winding when the oscillator switches to quiescence.

3,434,010
OVER CURRENT PROTECTOR DEVICE FOR INDUCTION HEATING INSTALLATION

James G. Weit, Cleveland, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 18, 1966, Ser. No. 587,470
U.S. Cl. 317—13 **6 Claims**
Int. Cl. H02h *7/06;* **H05b** *1/02;* **H01h** *47/24*

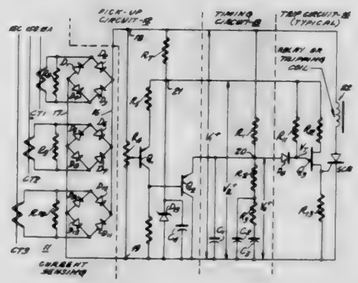
A device for de-energizing an induction heating power supply when an output parameter exceeds a given value. A photosensitive means de-energizes the supply when illuminated by a light source which light source is controlled by a capacitor charged by a voltage proportional to the monitored parameter.



3,434,011
SATURATING CURRENT TRANSFORMER FOR STATIC RELAYS

Stanley E. Zocholl, Holland, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 25, 1966, Ser. No. 575,020
U.S. Cl. 317—33 **5 Claims**
Int. Cl. H02h *3/20*



A static relay device for monitoring the current in a circuit to operate protective circuitry such as circuit breakers in order to isolate the circuit being protected in the case where above normal current conditions are found to exist. Isolation of the circuit by tripping operations is controlled in an inverse time current relationship by means of a timing circuit which is prevented from timing out in the presence of normal current and does not begin time out until a pick-up circuit is operated. The timing circuit controls static means for energizing a tripping coil as soon as a threshold voltage level is achieved. In order to convert the otherwise linear relationship between time and current for the timing circuit, a current transformer is employed having a saturable core designed to saturate at a predetermined current value which flattens the steepness of the time current curve in such a way that the saturable core and its saturation level plays a significant part in the shaping of the curve characteristic for the static relay device so as to very effectively simulate the desired conventional curves previously obtainable only through the use of conventional electromagnetic overcurrent relays.

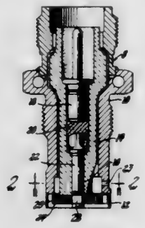
3,434,012
GLOW IGNITER

Gustav F. Rademacher, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 1, 1967, Ser. No. 642,775
U.S. Cl. 317—98 **5 Claims**
Int. Cl. F23q *7/00, 7/22*

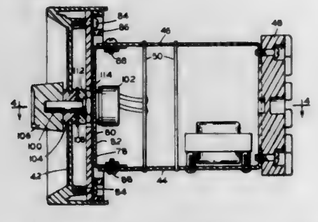
A glow igniter for use in a combustion chamber of a gas turbine engine having a flat coil of spirally wound

ribbon resistant wire supported on a fluted ceramic insulator within the lower end of the igniter shell. The surface of the fluted insulator end provides solid support



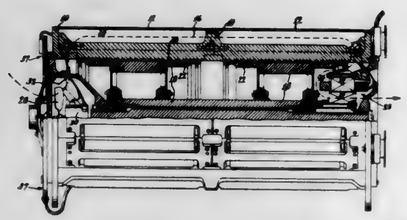
for the resistance wire coil without removing an excessive quantity of heat which adversely affects the operation of the coil.

3,434,013
PANEL MOUNT
Hassan B. Kadah, P.O. Box 566, Syracuse, N.Y. 13201
Filed Apr. 25, 1967, Ser. No. 633,500
U.S. Cl. 317—99 **6 Claims**
Int. Cl. H02b *1/04, 13/02*



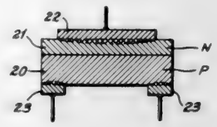
A panel mount housing is adapted to receive an electrical apparatus assembly having an indicating bezel at one end adapted to seal the housing, the electrical apparatus portion of the assembly being adapted to be inserted into the housing correctly oriented for electrical plug in connections by manipulating the bezel into a predetermined location to seal the housing, the bezel having pivoted and limited lateral movement with respect to the electrical apparatus.

3,434,014
PACKAGING OF ELECTRICAL EQUIPMENT
Ralph Taynton, North Palm Beach, Fla., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,687
U.S. Cl. 317—99 **24 Claims**
Int. Cl. H02b *1/00, 1/08*



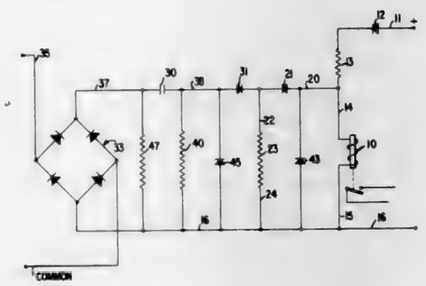
An arrangement for protecting and cooling electrical equipment and for distributing power and signals among different components of said equipment. Equipment may include a drum (employed for the storage of binary information) and circuits associated with the drum. Some of the circuits are mounted on circuit boards which form the doors of a housing for the drum and which both protect the drum from dirt and act as walls of passageways through which cooling air may be forced. Distribution of electrical currents is accomplished by means of a laminated structure including alternate conductor and insulator layers and a printed circuit board for connecting to the laminated structure, both secured to an end of the housing and both formed with an opening through which cooling air may enter the passageways.

3,434,015
CAPACITOR FOR MINIATURE ELECTRONIC CIRCUITS OR THE LIKE
Jack S. Kilby, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original applications Feb. 6, 1959, Ser. No. 791,602, now Patent No. 3,138,743, dated June 23, 1964, and Mar. 16, 1964, Ser. No. 352,389, now Patent No. 3,350,760, dated Nov. 7, 1967. Divided and this application Feb. 17, 1967, Ser. No. 632,856
U.S. Cl. 317—101 **6 Claims**
Int. Cl. H02b *1/04*



An integrated circuit structure comprising active and passive components including a capacitor with a semiconductor material as one plate of the capacitor and a dielectric layer formed thereon.

3,434,016
TRAFFIC SIGNAL SYSTEM
Richard F. Curtis, Liverpool, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Nov. 7, 1966, Ser. No. 592,353
U.S. Cl. 317—123 **5 Claims**
Int. Cl. H01b *47/18*



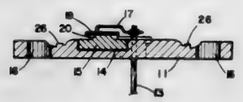
A system for switching traffic signals from the traffic signal controller to a flasher containing a relay in parallel with a shunting circuit comprised of a resistor and diode in series. Normally, the effect of the resistor is to hold the current in the relay below the pull in but above the hold in current value. The resistor is, however, effectively removed from the shunting circuit when a control pulse passes through a control circuit capacitor and second diode rendering the first diode non-conductive. With the resistor thus rendered ineffective, the relay receives pull in current.

3,434,017
SEMICONDUCTOR DEVICE
Herbert Schlosshauer, Ulm, Danube, and Horst Wahl, Neu-Ulm, Danube, Germany, assignors to Telefunken A.G., Berlin-Charlottenburg, Germany
Continuation-in-part of application Ser. No. 99,398, Mar. 30, 1961. This application Aug. 25, 1964, Ser. No. 394,375
Claims priority, application Germany, Apr. 2, 1960, T 18,182
U.S. Cl. 317—234 **4 Claims**
Int. Cl. H01l *5/00*



1. A high-frequency semiconductor diode comprising: a semiconductor body of the first conductivity type with an ohmic electrode on one side and an alloyed electrode with a recrystallization zone of the second conductivity type on the opposite side of the body, the configuration of said semiconductor body being such that the zone of said first conductivity type is confined to the region between said two electrodes and the width of said zone of said first conductivity type is, throughout its entire extent, approximately equal to the width of the recrystallization zone of said second conductivity type.

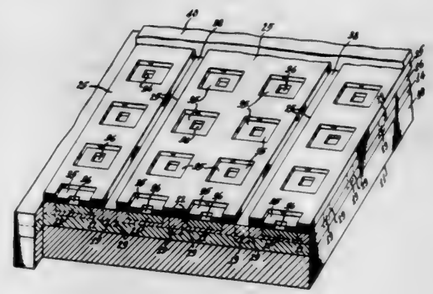
3,434,018
HEAT CONDUCTIVE MOUNTING BASE FOR A SEMICONDUCTOR DEVICE
William J. Boczar and William C. Davis, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 5, 1966, Ser. No. 562,597
U.S. Cl. 317—234 **4 Claims**
Int. Cl. H01l *5/02, 1/02, 1/12*

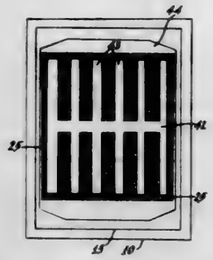


A semiconductor device is mounted on a heat conductive base comprising a generally disk-shaped major mounting base of aluminum having a cavity filled by a copper insert on which the semiconductor unit is located. The combination is enclosed within a metallic cover welded to the major mounting base.

3,434,019
HIGH FREQUENCY HIGH POWER TRANSISTOR HAVING OVERLAY ELECTRODE
Donald R. Carley, Neshanic Station, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,678
U.S. Cl. 317—235 **9 Claims**
Int. Cl. H01l *13/00*

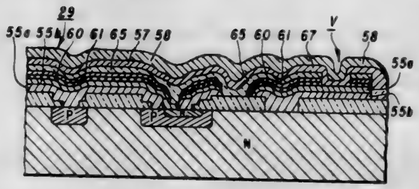
1. A transistor comprising a crystalline semiconductive body, an electrically insulating coating on one surface of said body;
- a plurality of discrete given conductivity type emitter regions in said body at said surface thereof;
- a collector region of said given conductivity type in said body;
- an opposite conductivity type base region in said body between said emitter and collector regions;
- a plurality of conductive zones in said base region adjacent said surface, said zones being of said opposite conductivity type but of substantially lower resistivity than the remainder of said base region, said zones being disposed between and spaced from said emitter regions;





conductive means on said insulating coating interconnecting said emitter regions and overlying said base region and some of said conductive zones but separated therefrom by said insulating coatings; and
- an electrical connection to said zones, said connection including an array of contacts, said contact array extending over a portion of said surface.

3,434,020
OHMIC CONTACTS CONSISTING OF A FIRST LEVEL OF MOLYBDENUM-GOLD MIXTURE OF GOLD AND VANADIUM AND A SECOND LEVEL OF MOLYBDENUM-GOLD
Edward M. Ruggiero, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,348
U.S. Cl. 317—235 **9 Claims**
Int. Cl. H01l *19/00, 3/00*



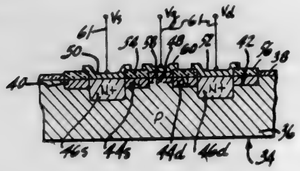
1. An ohmic contact and electrical interconnection arrangement for a semiconductor integrated circuit of the type having a plurality of circuit components formed by semiconductor regions extending to one face of a body of semiconductor material, a protective coating of insulating material upon said one face, each region including at least one P-N junction extending to the said one face beneath said protective coating, said arrangement comprising a first film essentially of molybdenum ohmically

engaging and electrically interconnecting select ones of said regions through apertures in said protective coating, a second film essentially of gold overlying said first film, a third intermetallic film of a mixture of gold and vanadium overlying said second film, and a vanadium oxide film overlying said third intermetallic film.

3,434,021
INSULATED GATE FIELD EFFECT TRANSISTOR

Steven R. Hofstein, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 13, 1967, Ser. No. 609,079
U.S. Cl. 317—235 5 Claims
Int. Cl. H01l *11/14*

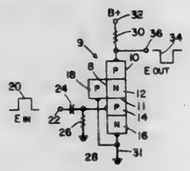


A more stable insulated gate field-effect transistor has source and drain regions which, adjacent to the ends of the conductive channel, containing doping impurities in amounts less than 10^{19} cm.$^{-3}$.

3,434,022
SEMICONDUCTOR CONTROLLED RECTIFIER DEVICE

Theodore E. Byrd, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Jan. 27, 1967, Ser. No. 612,197
U.S. Cl. 317—235 6 Claims
Int. Cl. H01l *13/00, 3/00*



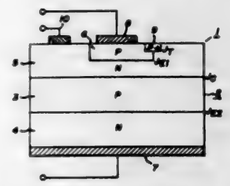
A semiconductor controlled rectifier device having four layers or regions of alternate conductivity type semiconductor material defining three PN junctions, and the intermediate PN junction being operative in the reverse breakdown mode when the device is triggered into conduction. A fourth PN junction is formed by an additional semiconductor region located between the parent region of the device and a point of reference potential, and this additional region provides a low impedance path to carrier flow when the device turns off, thereby substantially decreasing the switching time of the device.

3,434,023
SEMICONDUCTOR SWITCHING DEVICES WITH A TUNNEL JUNCTION DIODE IN SERIES WITH THE GATE ELECTRODE

Israel Arnold Lesk, Scottsdale, Ariz., assignor to General Electric Company, a corporation of New York

Continuation of applications Ser. No. 116,478, June 12, 1961, and Ser. No. 516,297, Dec. 27, 1965. This application Dec. 28, 1967, Ser. No. 694,351
U.S. Cl. 317—235 4 Claims
Int. Cl. H01l *11/10, 19/00*

Gate firing characteristics of a PNPN gate fired switch are stabilized by making a portion of the emitter junction between one of the main electrodes and the gate electrode a tunnel junction diode in order effectively to place the tunnel diode in series with the gate electrode.

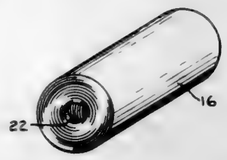


In one embodiment, the gate electrode is connected directly to a degenerate region which forms the tunnel junction.

3,434,024
CAPACITOR WITH CLOSURES AT END OF ARBOR HOLE THEREIN AND METHOD OF MAKING THE SAME

Robert F. Kalina, Lombard, and Lawrence E. Verenski, North Chicago, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 18, 1967, Ser. No. 639,378
U.S. Cl. 317—260 5 Claims
Int. Cl. H01g *1/02, 13/00*

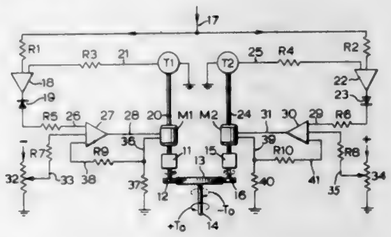


A wound capacitor has an arbor hole which is closed at its ends to prevent solder from entering the hole. The closing is done by spin swaging only the portions of the ends of the capacitor adjacent the arbor hole.

3,434,025
DRIVE SYSTEM EMPLOYING DUAL MOTORS

Peter Parkinson and Thomas William John Kennedy, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Aug. 23, 1966, Ser. No. 574,341
U.S. Cl. 318—8 12 Claims
Int. Cl. H02p *1/54*

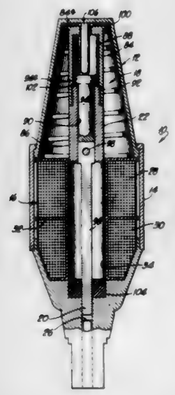


A method and apparatus for driving a load by a pair of direct current motors delivering opposed, unidirectional torque each through a gear train. A balanced bias current is continuously applied to the motors in the same sense as their drive currents while a drive current is applied to either one of the motors which is a function of a bias signal, a demand signal modified by a feedback signal proportional to the speed of the motor, and a signal proportional to the armature current of the motor.

3,434,026
ELECTRICALLY OPERATED RECIPROCATING TOOL

Richard H. Doyle, Mount Prospect, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois

Filed Dec. 12, 1966, Ser. No. 600,982
U.S. Cl. 318—125 12 Claims
Int. Cl. H02k *33/12*

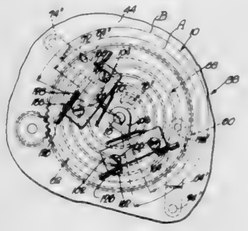


1. An electric tool adapted to be energized by an alternating current potential source comprising a housing, winding means in said housing, an armature assembly mounted for movement adjacent the winding means, said winding means including a plurality of winding arranged along the path of movement of said armature assembly, and a control circuit for moving said armature assembly through a single power stroke and including means for energizing said windings on succeeding half cycles of the alternating current potential source and in a sequence corresponding to the direction of movement of said armature assembly in said power stroke.

3,434,027
SELF-REVERSING SYNCHRONOUS MOTOR

Harold K. Cummings, Whitewater, Wis., assignor to Amphenol-Borg Electronics Corporation, Broadview, Ill., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,355
U.S. Cl. 318—282 2 Claims
Int. Cl. H02p *1/22, 1/40, 3/20*

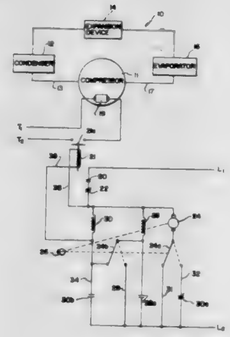


The disclosure deals with a cycling device for a synchronous motor with a permanent-magnet rotor starting and running in either direction on energization of an associated field coil, with the device having a fixed part and a rotor-driven part with a continuous spiral-like track of more than one turn and shoulders at the opposite ends thereof, and an element having a follower and being mounted on the fixed part for movement with its follower in following relation with the track, whereby on the rotor drive the follower impacts with the shoulders, respectively, with ensuing reversal of the driven rotor and rotor-driven part on each such impact.

3,434,028
COMPRESSOR MOTOR TIME DELAY CIRCUIT

Raymond G. McCready, Marshalltown, Iowa, assignor to Lennox Industries, Inc., a corporation of Iowa

Filed July 14, 1966, Ser. No. 565,219
U.S. Cl. 318—484 4 Claims
Int. Cl. H02p *1/04*

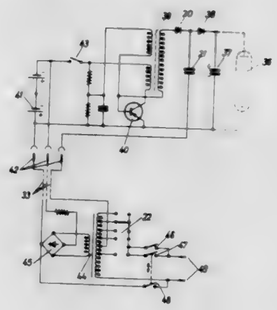


A compressor motor time-delay circuit for protecting a refrigerant compressor against rapid cycling which includes time-delay means for maintaining a specified predetermined minimum time period between starts of the compressor motor.

3,434,029
DEVICE FOR RECHARGING POWER CELLS AND REACTIVATING ELECTROLYTIC CAPACITORS

Karl Ackermann, Berlin, Germany, assignor to Robert Bosch Elektronik GmbH, Berlin, Germany

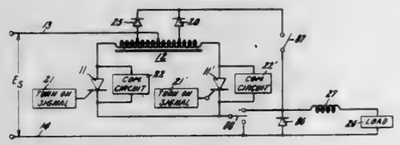
Filed Jan. 26, 1965, Ser. No. 428,151
Claims priority, application Germany, Mar. 31, 1964, B 76,130
U.S. Cl. 320—1 16 Claims
Int. Cl. H02j *7/04;* H01g *9/00;* F01b *19/00*



An arrangement for applying a rejuvenating charge to a primary cell, and a reactivating voltage to an electrolytic capacitor. A switching circuit connects, when actuated, a low voltage D.C. source to the primary cell, and a high voltage D.C. source to the electrolytic capacitor. After a predetermined time interval, less than one hour, the switching circuit automatically disconnects the D.C. voltage sources from the primary cell and the capacitor. The switching circuit is timed so that the voltage applied

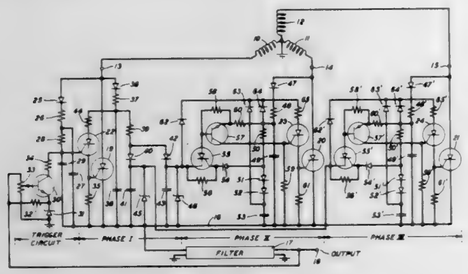
to the primary cell does not result in the destruction of the cell due to overcharging. At the same time, a voltage applied to the capacitor prevails only for a period of time necessary to reactivate the capacitor.

3,434,030
TRANSFORMER COUPLED TIME RATIO CONTROLLED CIRCUITS
Burnice D. Bedford, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Original application Sept. 14, 1964, Ser. No. 396,153, now Patent No. 3,331,008, dated July 11, 1967. Divided and this application Mar. 14, 1967, Ser. No. 623,081
U.S. Cl. 321—2 **1 Claim**
Int. Cl. H02m *3/32*



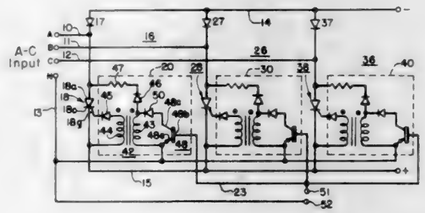
A family of time ratio controlled power circuits employ transformer coupling between the D-C supply and the load to achieve more effective voltage control for a wide number of applications. In some circuits an autotransformer is used, while in others where isolation is desired a two-winding transformer is used. One or more SCR's, power transistors, silicon controlled switches or GTO's are in series with at least a portion of the primary winding of the transformer to chop the D-C supply, the load and a filter inductance are coupled across at least a portion of the secondary winding, and at least two load current carrying rectifiers are provided. In some circuits different modes of operation are possible as by varying the period of conduction of the SCR, etc. or by employing mechanical switches.

3,434,031
REGULATED POLYPHASE RECTIFYING CIRCUITS
Noble E. Wickliff, Winston-Salem, N.C., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Sept. 19, 1966, Ser. No. 580,379
U.S. Cl. 321—5 **5 Claims**
Int. Cl. H02m *1/08, 7/44, 7/68*



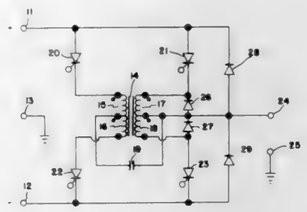
Integrating circuits associated with respective phases of a polyphase rectifier accumulate charges beginning when their respective phase voltage levels exceed the rectified output voltage. When the rectifier in a first phase is fired in response to an error voltage, the integrating action in that phase is halted and the accumulated charge is held. In each remaining phase, a detector fires a rectifier when the charge in its integrating circuit equals that held by the first phase integrating circuit.

3,434,032
RECTIFIER SYSTEM WITH INTEGRAL CYCLE CONTROL
Thomas C. Jednacz and Karl V. Schmittle, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 20, 1967, Ser. No. 647,472
U.S. Cl. 321—5 **5 Claims**
Int. Cl. H02m *7/20, 1/08*



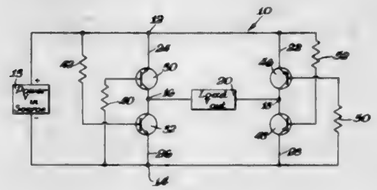
A three phase rectifier arrangement includes, in each phase, a diode with an SCR which has its gate coupled over a transformer to the A-C input circuit. When the varying A-C input is of the wrong polarity to make the SCR conduct it is of the proper polarity to cause current flow across the transformer to the SCR gate. As soon as the input A-C polarity across the SCR changes, the SCR immediately conducts because current is already flowing in the gate circuit. A transistor is coupled in parallel with the transformer primary winding and, when gated on, effectively shunts the primary and prevents current injection into the SCR gate, thus preventing conduction of the SCR during a particular cycle or cycles. A suitable pulse generator applies cycle control signals to all the transistor switches.

3,434,033
TRANSIENT-COMPENSATED SCR INVERTER
Hugh M. Holt, Williamsburg, Eugene L. Kelsey, Newport News, and Stacey M. Mills, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 17, 1967, Ser. No. 632,154
U.S. Cl. 321—11 **4 Claims**
Int. Cl. H02m *1/18*



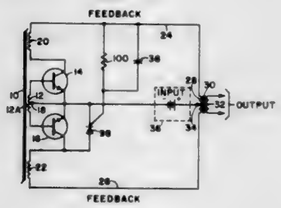
A silicon-controlled rectifier (SCR) inverter in which transients produced in the inverter are compensated for so that the SCR's in the inverter are not subject to false gating by the transients. A transformer is used in the inverter to produce voltages that oppose the transients and thereby cancel or decrease the amplitudes of the transients.

3,434,034
UNIVERSAL AC OR DC TO DC CONVERTER
Thomas Garber, Framingham, and William L. Kelleher, Newburyport, Mass., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 14, 1967, Ser. No. 623,038
U.S. Cl. 321—43 **5 Claims**
Int. Cl. H02m *3/14, 7/20*



A transistor bridge is constructed to have a transistor in each leg of the bridge. By selecting majority carrier conductivity types of the transistors and selectively connecting their base electrodes to different ones of the input terminals of the bridge, a low voltage power converter is obtained. The circuit is effectively a two pole double throw switch synchronized with the power frequency down to and including direct current.

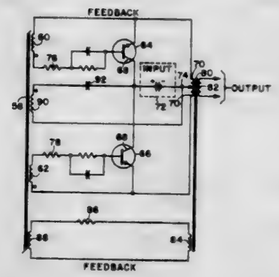
3,434,035
STARTING CIRCUIT FOR MAGNETIC CORE VOLTAGE INVERTER SYSTEM
Robert A. Phillips, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Original application Feb. 2, 1967, Ser. No. 613,564. Divided and this application May 1, 1968, Ser. No. 725,597
U.S. Cl. 321—45 **2 Claims**
Int. Cl. H02m *7/52;* **H03k** *3/26*



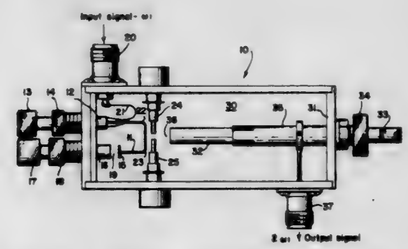
A starting circuit for a two-transformer transistorized inverter circuit which does not load the power supply during inverter operation. A silicon controlled rectifier type of device is actuated to conduct current across one transistor to initiate initial current conduction in the inverter. Once the inverter starts operating the starting circuit is effectively isolated from the inverter circuit.

3,434,036
STARTING CIRCUIT FOR MAGNETIC CORE VOLTAGE INVERTER SYSTEMS
Robert A. Phillips, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Original application Feb. 2, 1967, Ser. No. 613,564. Divided and this application May 1, 1968, Ser. No. 725,596
U.S. Cl. 321—45 **3 Claims**
Int. Cl. H02m *7/52;* **H03k** *3/26*

A starting circuit for a two-transformer transistorized inverter circuit which does not load the power supply during inverter operation. A capacitor is connected between the common collecors to an auxiliary winding on a saturable core transformer which is operative to initiate conduction of one transistor before the other. The polarity of the winding determines which transistor starts conducting current first.

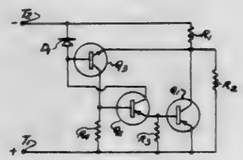


3,434,037
MULTIPLE VARACTOR FREQUENCY DOUBLER
Joseph H. Habra, Lawndale, Calif., may be granted to National Aeronautics and Space Administration under provisions of 42 U.S.C. 2457(d)
Filed Apr. 15, 1965, Ser. No. 448,365
U.S. Cl. 321—69 **1 Claim**
Int. Cl. H02m *5/16;* **H01p** *7/00*



A frequency multiplier comprising a dual cavity device in which the input cavity resonates at a frequency of ω_1 and an output cavity arranged to resonate at a frequency of $2\omega_1$. A pair of varactor elements external to the input cavity is coupled to said input cavity for generating current of the desired output frequency. The output cavity includes the dual varactors as part of the tuned circuit for generating the desired multiplied frequency.

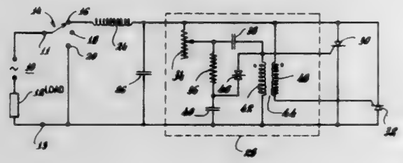
3,434,038
DC CURRENT REGULATOR
Carl W. Vette, 17120 W. 10½ Mile Road, Southfield, Mich. 01259
Filed May 27, 1966, Ser. No. 553,544
U.S. Cl. 323—4 **6 Claims**
Int. Cl. G05f *1/10, 1/58;* **H02j** *1/04*



A solid state DC current regulator circuit which may be inserted serially between a load and a power supply. The current flows through a current-sensing resistance, the voltage developed being compared to that of a voltage

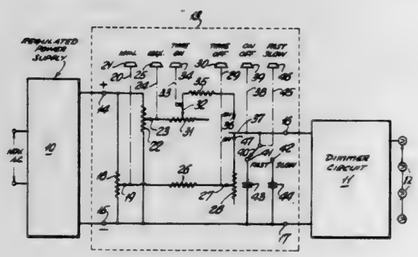
reference diode by an error-sensing transistor. The error-sensing transistor drives a control transistor which varies the conduction of a regulator transistor used for adjusting the current flowing through the current-sensing resistance. The essentially constant base current of the regulator transistor operates the voltage reference diode. The regulator is temperature compensated, free of warmup drift and is capable of over-regulation.

3,434,039
PHASE CONTROLLED ALTERNATING CURRENT CIRCUIT
John Misencik, Shelton, and Sung C. Lee, Bridgeport, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 8, 1966, Ser. No. 570,798
U.S. Cl. 323—22 **9 Claims**
Int. Cl. G05f *1/44*



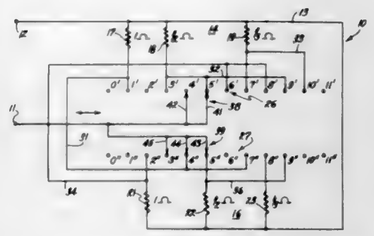
A phase controlled circuit useable, for example, as a light dimmer. A pair of silicon controlled rectifiers are connected in reversed parallel relationship in series with the load. A time-variable triggering circuit, including a pair of capacitors interconnected through a three-layer diode, has its output connected to one of the rectifiers and to the primary of a two-winding transformer. When the voltage across the diode builds to its breakover value, it passes a current pulse to the primary winding and, if this occurs during the proper half cycle, renders the rectifier conductive. The secondary of the transformer is connected to the other rectifier and is polarized to trigger it into conduction during the half cycle in which the first rectifier would be non-conductive.

3,434,040
POWER CONTROL APPARATUS
Arthur W. Schneider, New York, N.Y., assignor to Commercial Radio-Sound Corp., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 343,701, Feb. 10, 1964. This application Jan. 12, 1967, Ser. No. 608,941
U.S. Cl. 323—74 **2 Claims**
Int. Cl. H05b *41/02*



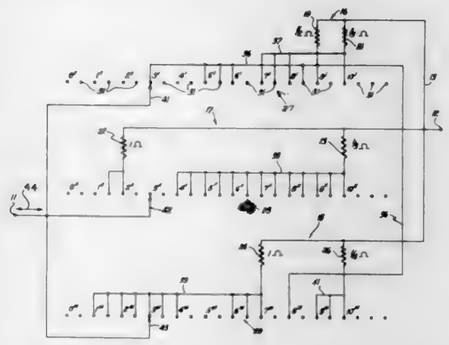
A control circuit for providing a pre-programmed voltage schedule to a lamp dimming circuit. The rate at which the illumination increases and decreases and the time duration for which the lamps are lighted between their minimum and maximum illuminations can be independently controlled and repeated by controlling the charge and discharge of capacitors.

3,434,041
LINEAR CONDUCTANCE SWITCH
John G. Nordahl, Lexington, and John Kaczorowski, Jr., Marshfield, Mass., assignors to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,935
U.S. Cl. 323—74 **14 Claims**
Int. Cl. H02p *13/16*



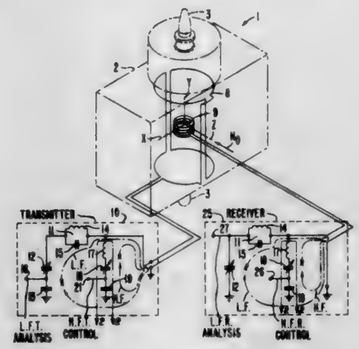
Provides conductance switching by unit steps from zero mho to *n* mhos. A plurality of resistance elements are divided into two groups, each resistance element of the first group having a different resistance value and having a corresponding resistance element in the second group. The resistance elements are selectively connected in parallel relationship via a plurality of wiper elements to provide the desired conductance.

3,434,042
LINEAR CONDUCTANCE SWITCH
John Kaczorowski, Jr., Bayberry Point, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,430
U.S. Cl. 323—74 **9 Claims**
Int. Cl. H02p *13/16*



Provides linear conductance switching by unit steps from zero to *n* mhos. A plurality of resistance elements are divided into three groups, the second group having at least one resistance element corresponding to a resistance element in the first group and at least one resistance element corresponding to a resistance element in the third group. For each conductance setting, certain of the resistance elements are connected in parallel circuit relationship via a plurality of wiper elements to provide the desired conductance.

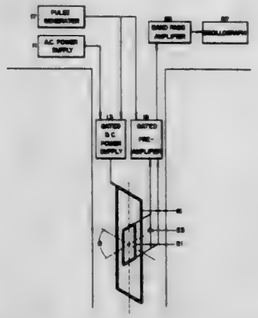
3,434,043
NUCLEAR MAGNETIC RESONANCE PROBE APPARATUS HAVING DOUBLE TUNED COIL SYSTEMS FOR SPECTROMETERS EMPLOYING AN INTERNAL REFERENCE
Forrest A. Nelson, Palo Alto Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 14, 1966, Ser. No. 527,311
U.S. Cl. 324—.5 **5 Claims**
Int. Cl. H01s *1/00;* **G01n** *27/00;* **G01r** *33/08*



A nuclear magnetic resonance spectrometer is disclosed. The spectrometer includes a probe structure for immersing a control group and a sample group of nuclear resonant bodies in a polarizing magnetic field. The spectrometer includes a control channel for exciting and detecting nuclear resonance of the control group to derive a control signal for controlling the resonance conditions of the spectrometer. The spectrometer also includes an analysis channel including means for exciting nuclear resonance of the sample group of nuclei at a lower resonant frequency than that of the control group to derive a resonance signal for analysis of the sample. A coil structure is common to both the control and analysis channels for providing coupling of radio frequency magnetic A.C. fields, at the substantially different resonant frequencies of the groups, between the control and sample groups of nuclei and the control and analysis channels of the spectrometer. The analysis channel includes an analysis loop portion tuned to the lower resonant frequency of the sample, whereas the control channel includes a control loop portion connected in shunt across the analysis loop portion with the control loop portion being tuned to the resonant frequency of the control group which is higher than the resonant frequency of the analysis loop portion. The analysis loop portion includes a tuned trap external of the control loop portion with the trap being tuned to the frequency of the tuned control loop for separating the control signals into the control loop portion and the analysis signals into the analysis loop portion.

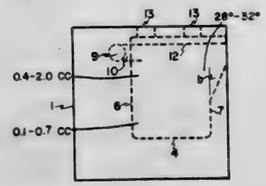
3,434,044
NUCLEAR PRECESSION WELL LOGGING METHOD
Paul E. Baker, Anaheim, Stanley B. Jones, Whittier, and Delmar O. Seevers, Fullerton, Calif., assignors to Chevron Research Company, a corporation of Delaware
Original application Feb. 17, 1953, Ser. No. 337,384, now Patent No. 3,213,354, dated Oct. 19, 1965. Divided and this application Sept. 22, 1958, Ser. No. 762,291
U.S. Cl. 324—.5 **2 Claims**
Int. Cl. G01r *33/08*

1. In a method for measuring porosity and permeability within the formation adjacent to a well bore, the improvement comprising the steps of introducing into said well bore a drilling fluid to provide a drilling fluid filtrate having a distinctive nuclear gyromagnetic resonance characteristic, impressing a magnetic field of predetermined strength and uniformity on said formation from within said well bore to polarize protons in said filtrate within said formation, said field being directed at an angle to the earth's magnetic field within said



formation, interrupting said impressed magnetic field to initiate precession of said polarized protons about the earth's magnetic field, and detecting signals having said distinctive nuclear gyromagnetic resonance characteristics in precession signals derived from said precessing protons to provide data relating to the porosity and permeability of said formation.

3,434,045
LOW-VOLUME CHAMBER FOR ELECTRICAL POTENTIAL MEASUREMENTS
Vernon R. Rogstad, Texas City, and Robert W. Sims, Pasadena, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 575,028
U.S. Cl. 324—30 **5 Claims**
Int. Cl. G01r *31/00*

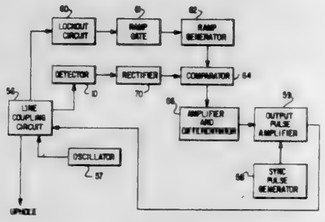


A low-volume chamber for use in measuring the electrical potential of liquids obtained from gas-liquid mixtures passed through said chamber which is of a design such that the residence time of the liquid in the cell is very short so as to provide the sensitivity needed for the detection of very small changes in electrical potential of the liquid.

3,434,046
ELECTRONIC BOREHOLE CASING COLLAR LOCATOR
Robert O. Wilson and Paul Lorenzino, Jr., Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,829
U.S. Cl. 324—34 **5 Claims**
Int. Cl. G01r *33/12;* **G01v** *3/08*

A magnetic borehole casing joint detector having a generally E shaped core positioned against the wall of the casing by an expandable bow spring and having a time phase modulated pulse signal output which may be inter-

posed between other logging signals on a single conductor. The center leg of the core is wound with an alternating current excited winding. Discontinuities in the casing are

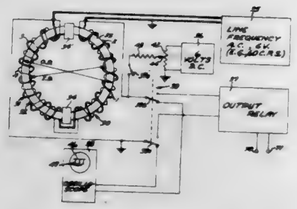


detected by modifications in the magnetic flux which couples detection coils mounted on the outside legs of the core in phase opposition.

3,434,047
MAGNETIC FIELD SENSING AND MEASURING APPARATUS

Joseph L. Brickner, Orange, Calif., assignor to Precision Winding Company, Inc., Santa Ana, Calif., a corporation of California

Filed July 25, 1966, Ser. No. 567,553
U.S. Cl. 324—43 **11 Claims**
Int. Cl. G01r *33/02, 33/12*

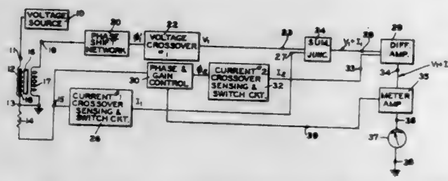


Apparatus for sensing and measuring magnetic fields having a core made of magnetic material and hysteresis loop of which has lobes in its demagnetizing sectors at least when in the presence of steady ambient magnetic fields.

3,434,048
EDDY CURRENT APPARATUS FOR TESTING THE HARDNESS OF A FERROMAGNETIC MATERIAL

Kenneth J. Law, Southfield, and Gordon R. Brown, Livonia, Mich., assignors to K. J. Law Engineers, Inc., Detroit, Mich., a corporation of Michigan

Filed July 10, 1964, Ser. No. 381,850
U.S. Cl. 324—34 **5 Claims**
Int. Cl. G01r *33/00, 33/02, 33/12*



1. In a magnetic hardness testing apparatus for testing the hardness of a test piece, the combination comprising:

(a) an alternating current source;

(b) a flux producing coil coupled to said source;

(c) a detection coil coupled magnetically to said test piece, and test piece being coupled magnetically to said flux producing coil;

(d) means connected to said flux producing coil for generating a first signal indicative of the zero reference crossover of the current through said flux producing coil;

(e) means connected to said flux producing coil for producing a second signal indicative of the zero reference crossover of the current through said flux producing coil and phase shift means coupled to said last mentioned means to provide a predetermined phase shift of said second signal;

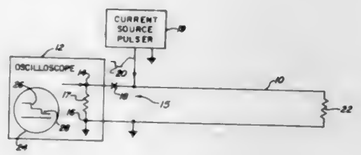
(f) means connected to said detection coil for producing a third signal indicative of the zero reference crossover of the voltage produced by the flux induced in said detection coil; and,

(g) means connected to said first signal generating means and said third signal producing means for comparing said first and said third signals to produce a comparison signal and means connected to said comparing means and said second signal producing means for comparing said comparison signal with said second signal including a meter for giving a visual indication of the result of the combination of said signals.

3,434,049
TIME DOMAIN REFLECTOMETRY SYSTEM HAVING A CURRENT SOURCE FOR LOCATING DISCONTINUITIES IN A TRANSMISSION LINE

George J. Frye, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Dec. 6, 1965, Ser. No. 511,614
U.S. Cl. 324—52 **10 Claims**
Int. Cl. G01r *31/11*



A current source is employed to apply a step wave to a transmission line for detecting line discontinuities by reflection. The current source itself presents no significant discontinuity because of its high impedance, and it may therefore be used with a wide variety of lines. A detecting means such as an oscilloscope is also coupled to the transmission line under test for displaying reflections. The current source in a particular embodiment of the present invention includes a transistor output amplifier connected in a common base configuration and operated in a nonsaturated region of the transistor characteristic. A tunnel diode oscillator is effective for rapidly turning off such transistor to provide an output step wave.

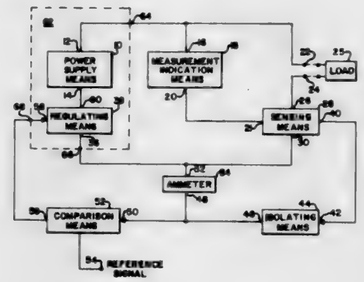
3,434,050
HIGH IMPEDANCE MEASURING APPARATUS

Michael M. E. Van Scholack, Anoka, Minn., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 25, 1966, Ser. No. 544,899
U.S. Cl. 324—57 **3 Claims**
Int. Cl. G01r *27/08;* **G05f** *1/40, 1/60*

A high impedance measuring apparatus comprising a power supply which supplies an output current to a load impedance. The current through the load is conducted through a sensing means to create a voltage which is measured by measurement indication means to indicate load impedance. The sensing means also provides a signal

proportional to the current therethrough which is fed to an isolating means series-connected to a comparison means where it is compared with a reference signal. The comparison means produces an error control signal corresponding to the difference between the apparatus output current and the desired output current. The error con-

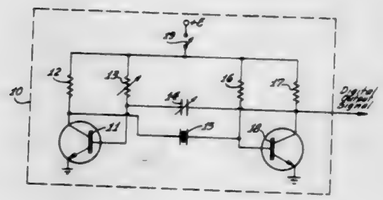


trol signal is fed to a regulating means which alters the output current by varying its internal impedance so that the voltage which appears across the controlled supply means and at the output terminals of the apparatus either increases or decreases in accordance with the need for more or less current.

3,434,051
CRYSTAL CONTROLLED TRANSDUCER COUPLING CIRCUIT

Harry Robert Newhoff, Santa Susanna, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.

Filed Mar. 25, 1964, Ser. No. 354,671
U.S. Cl. 324—60 **4 Claims**
Int. Cl. H03k *3/28, 3/34*



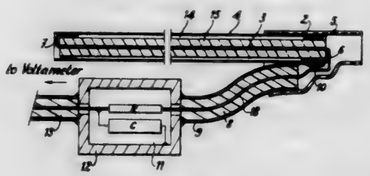
Transducer coupling apparatus for generating a bilevel signal of a predetermined controlled frequency having a duty cycle that may be varied by the change in characteristics of a transducer used as a component of the coupling circuit. A piezoelectric crystal is interposed between two transistors of the coupling circuit to regulate the inter-switching frequency of the two transistors between their conducting and noncoductig states.

3,434,052
DEFORMABLE LOOP APPARATUS FOR MEASURING ALTERNATING CURRENTS

Louis Joseph Féchant, Le Vesinet, France, assignor to La Telemecanique Electrique, Nanterre, Hauts-de-Seine, France, a limited company

Filed Apr. 18, 1966, Ser. No. 543,178
Claims priority, application France, Apr. 23, 1965, 14,408
U.S. Cl. 324—127 **6 Claims**
Int. Cl. G01r *29/00;* **H01f** *21/02*

The present invention broadly relates to the measurement of alternating currents through the use of a Rogowsky loop. The instant invention more particularly discloses a Rogowsky loop which is built as a deformable

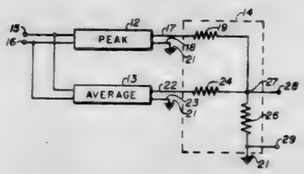


coaxial cable and is adapted for measuring alternating currents of comparatively high frequencies.

3,434,053
CIRCUITS FOR AN ELECTRICAL RMS MEASURING INSTRUMENT

Donald A. McKee, Grand Junction, Colo., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed July 21, 1964, Ser. No. 384,268
U.S. Cl. 324—132 **6 Claims**
Int. Cl. G01r *15/10, 7/00*

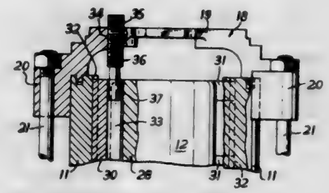


An RMS measuring instrument including a first circuit for measuring peak electrical values and a second circuit for measuring average electrical values, both terminated in a summing device. Impedances for adjusting the amplitude of the electrical values in each circuit establish an electrical signal in the summing device which approximates the RMS level of an incoming signal.

3,434,054
MOVING COIL ELECTRICAL INSTRUMENT HAVING A MAGNETIC SHUNT MOVABLE TRANSVERSELY IN A FLUX LEAKAGE PATH

Derek John Dean, Pottersbar, Middlesex, England, assignor, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed Sept. 23, 1964, Ser. No. 398,673
Claims priority, application Great Britain, Sept. 27, 1963, 38,232/63
U.S. Cl. 324—151 **7 Claims**
Int. Cl. G01r *1/16*



1. A moving coil type electrical measuring instrument which includes a pivotally mounted coil winding, a generally cylindrical stationary central core within said movable coil winding and having an axis parallel to the axis of coil winding rotation, said central core including a permanent magnet arranged to magnetise said core in

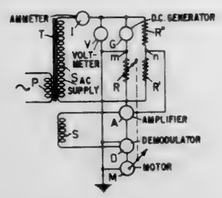
a diametral plane and a stationary yoke ring surrounding said coil winding, said yoke ring and said central core having opposed arcuate surfaces which define two diametrically opposed arcuate flux gaps within which said coil winding can operate, said central core comprising a pole-forming member of magnetic material surrounding said permanent magnet and having regions of magnetic material which are of reduced cross sectional area in the diametral plane lying at right angles to said magnetisation plane, said regions providing a flux leakage path within said core between opposite poles of said permanent magnet, said pole-forming member including an elongated aperture which extends into at least one of said regions disposed with its longitudinal axis parallel to the axis of said central core and an adjustable position slug of magnetic material movable axially into and out of said aperture to alter the reluctance of the leakage path through said region thereby to alter the value of effective flux from said permanent magnet present in said arcuate flux gaps.

3,434,055

A.C. BRIDGE CIRCUIT FOR DETERMINING THE OPTIMUM OPERATING CONDITION OF A D.C. GENERATOR

German Frick, Antofagasta, Chile, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 27, 1962, Ser. No. 240,339
Claims priority, application France, Nov. 27, 1961, 880,108
U.S. Cl. 324—158 **12 Claims**
Int. Cl. G01r *17/10, 31/22*



An apparatus for determining the operating point of maximum efficiency of a direct current generator connected in one branch of an A.C. energized bridge circuit. The other branch of the bridge circuit includes impedance elements having a predetermined impedance ratio such that the direct current generator operates at its point of maximum efficiency in the balanced condition of the bridge.

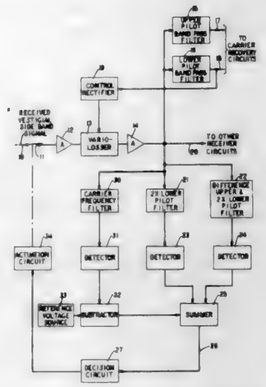
3,434,056

DISTORTION MONITORING BY COMPARING SQUARE AND CUBIC LAW DISTORTION TO CARRIER

Floyd K. Becker, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 31, 1966, Ser. No. 554,161
U.S. Cl. 325—65 **7 Claims**
Int. Cl. H04b *1/10, 15/02*

Nonlinear distortion monitoring apparatus is simply and economically provided in a receiver for a vestigial-sideband data transmission system to terminate data calls which would be excessively error-prone before a customer billing charge can be made. Nonlinear distortion of the square-law type is detected by monitoring the second harmonic content of one of two band-edge pilot tones accompanying the received signal and distortion of the cubic-law type, by monitoring the difference between one pilot tone frequency and twice that of the other. The carrier-frequency component transmitted during call set-up can also be monitored as a measure of the slope of the amplitude-frequency characteristic of the transmission



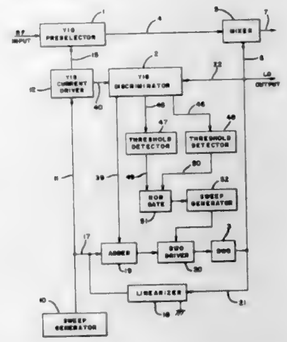
channel. The monitoring apparatus controls a relay which opens the transmission path at the receiver as a signal to a switching center to terminate a potentially unintelligible data call before billing.

3,434,057

AUTOMATIC LOCKING RECEIVER

Claude A. Jackman and Elbert L. Turner, San Jose, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,863
U.S. Cl. 325—423 **3 Claims**
Int. Cl. H04b *1/16, 1/36*



An electrically tuned receiver employing a voltage tunable filter, having an yttrium iron garnet element, as a preselector; a backward wave oscillator to generate a local oscillator signal; and cavity-discriminator automatic frequency control techniques causing said oscillator to track said preselector so that there is no change in the difference between the output frequency of said oscillator and the midband frequency of said preselector.

3,434,058

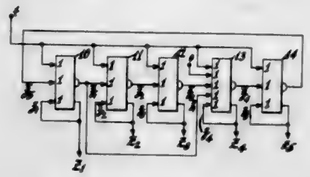
RING COUNTERS EMPLOYING THRESHOLD GATES

Robert O. Winder, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 31, 1967, Ser. No. 612,840
U.S. Cl. 328—43 **9 Claims**
Int. Cl. H03k *23/02, 21/00*

The ring counters of the invention include an odd number of threshold gates, one more than the number of

pulses they count. Each gate receives as one input its own output signal, as a second input the signals indicative of the bits to be counted, and as a third input an output



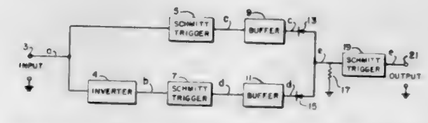
signal from the preceding gate in the ring. One of the gates in the counter receives, in addition to all of these inputs, an output signal from the third gate preceding it in the ring.

3,434,059

BIPOLAR TO TWO-LEVEL BINARY CODE TRANSLATOR

Thomas J. Kesolits, East Newark, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 6, 1966, Ser. No. 577,540
U.S. Cl. 328—117 **4 Claims**
Int. Cl. H03k *5/20*



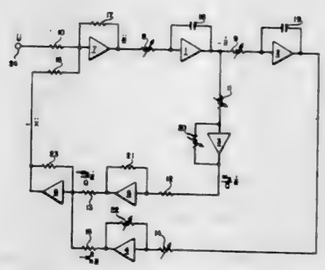
The circuit includes a pair of Schmitt triggers, one connected directly to the input bipolar binary signal and the other thereto via an inverter. The trigger circuits are arranged to be in a one stable state with positive input and in another state with zero or negative inputs. The two trigger circuit outputs are then combined to form a two-level binary signal containing the same information as the original bipolar signal.

3,434,060

DAMPED SHOCK SPECTRUM FILTER

Giles W. Painter, Granada Hills, and Hugh J. Parry, North Hollywood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Oct. 14, 1964, Ser. No. 403,818
U.S. Cl. 328—127 **17 Claims**
Int. Cl. G06g *7/18*



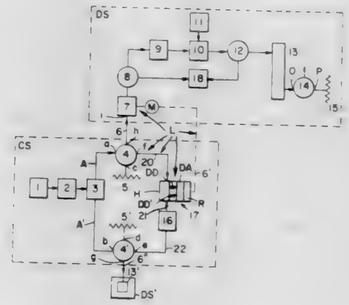
An electrical network is described which simulates a second-order, base-excited vibration system. Various input accelerations may be applied to the input and a continuous frequency analysis made of the response acceleration. Simulation of a damped single-degree-of-freedom vibration system is achieved by varying the spring force as a function of the damping force to maintain a fixed ratio therebetween.

3,434,061

COMPENSATION OF PHASE DRIFT ON LONG CABLES

Harald Hahn, East Patchogue, and Henry J. Halama, Shoreham, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 19, 1966, Ser. No. 580,513
U.S. Cl. 328—155 **5 Claims**
Int. Cl. H03k *5/18*



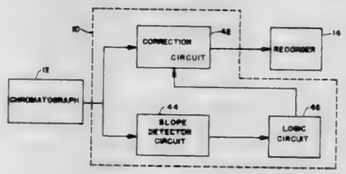
A method and apparatus for compensating for phase drift on long cables, comprising utilizing a reflected signal in said cable to measure and compensate for phase difference independent of changes in the cable characteristics. The system of this invention is praticularly adapted for use with a radio-frequency beam separator having RF deflectors for separating the desired particles from a charged particle beam.

3,434,062

DRIFT DETECTOR

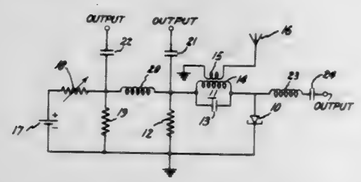
James R. Cox, 602 Downing St., Richardson, Tex. 75080

Filed June 21, 1965, Ser. No. 465,633
U.S. Cl. 328—163 **18 Claims**
Int. Cl. H03k *5/18, 3/42;* **H04b** *15/00*



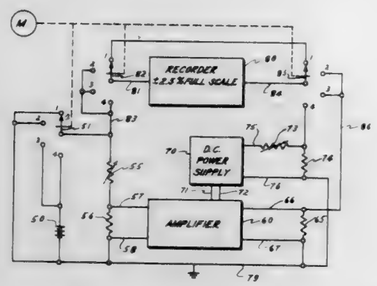
There is disclosed apparatus for generating a correction signal which is subtracted from an uncorrected signal having base line drift to provide a corrected signal having a constant base line. The apparatus includes means for producing a signal proportional to the derivative of an instrument output signal, a memory for storing the derivative signal and switching means responsive to the slope of the instrument output signal for selectively connecting and disconnecting the memory means into a drift correction circuit including a signal summing element and an integrator.

3,434,063
SELF-QUENCHING NEGATIVE RESISTANCE SUPERREGENERATIVE DIODE DETECTOR
Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1966, Ser. No. 539,466
U.S. Cl. 329—205 13 Claims
Int. Cl. H03d 1/10



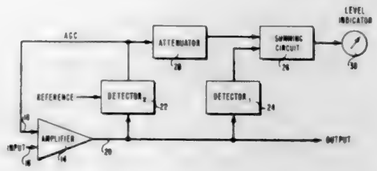
A self-quenching superregenerative detector employing a tunnel diode in series with both a parallel resonant circuit tuned to a high radio frequency, and a resistance. Incoming radio frequency signals are inductively coupled to the tuned circuit. An inductance and a bias means are connected in shunt with the resistance and produce relaxation oscillations of the tunnel diode at a considerably lower frequency than the frequency at which the tuned circuit resonates. The relaxation oscillations, which vary in frequency in accordance with amplitude of the received radio frequency signal, comprise the quench signal.

3,434,064
AMPLIFIER DRIFT TESTER
David Cree, Houston, and Guss E. Wenzel, Friendswood, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 17, 1966, Ser. No. 529,609
U.S. Cl. 330—2 2 Claims
Int. Cl. G01r 23/02



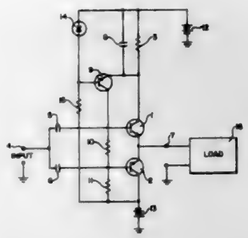
A device for automatically measuring and recording the gain and zero drift characteristics of an electronic amplifier during long-term dynamic environmental conditions. The apparatus comprises a stable voltage source and voltage dividing means for reducing the source voltage by a factor equal to the reciprocal of the rated amplifier gain. An automatic switching means, periodically connects the voltage source across the voltage dividing means and alternately shorts across the voltage dividing means to thereby sequentially and repeatedly apply the reduced voltage and a zero voltage to the amplifier input. Zero drift, as represented by an amplifier output voltage during application of the zero input voltage, and the combined effects of zero drift and gain drift, as represented by the difference between amplifier output voltage and the source voltage during application of the reduced voltage, are recorded continuously by a differential voltage recording means. For amplifier systems having an associated transducer power supply, the automatic switching means and a second switching means act in synchronism to also periodically couple the source voltage and a fraction of the rated power supply voltage to the differential voltage recording means to obtain an indication of power supply drift.

3,434,065
AUTOMATIC-GAIN-CONTROLLED AMPLIFIER HAVING A LEVEL INDICATOR
David C. Chu, Menlo Park, and Lee-Sen Ting, Mountain View, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 17, 1967, Ser. No. 624,006
U.S. Cl. 330—2 5 Claims
Int. Cl. G01r 19/10, 21/00, 23/00



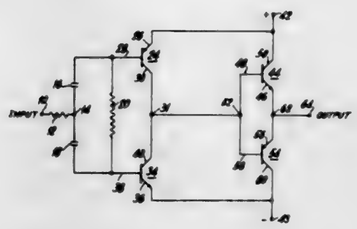
An amplifier employing automatic gain control (AGC) to prevent its output signal level from increasing further when the upper limit of its dynamic operating range is reached and to provide an analog output indication that varies substantially linearly with its input signal level both above and below the upper limit of its dynamic operating range.

3,434,066
LOW-DISTORTION BIAS-CONTROLLED TRANSISTOR AMPLIFIER
Christopher R. Huntley, New Westminster, British Columbia, Canada, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,088
U.S. Cl. 330—13 3 Claims
Int. Cl. H03f 3/18, 3/26, 3/68



In a class AB amplifier, usual emitter bias resistors are omitted, and both emitters of a pair of complementary transistors are connected directly to a load. The elimination of the usual emitter bias resistors decreases distortion previously caused by change in resistance in the load of the amplifier at the cross-over operating point of the transistors. A by-passed resistor is inserted in the collector circuit of one of the transistors, and control voltage developed across the resistor by average current flow in the collector-emitter circuits is used to control a direct-current amplifier stage. The output of the direct-current amplifier supplies bias voltage for the bases of the complementary transistors. The controlled bias maintains the average collector-emitter current substantially constant at different levels of AB operation.

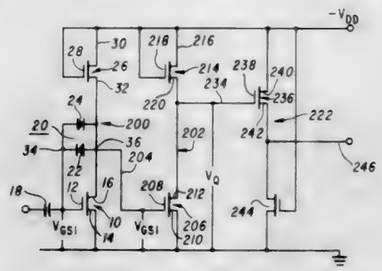
3,434,067
PUSH-PULL AMPLIFIERS
Herman J. Eckelmann, Jr., 117 Christopher Circle, Ithaca, N.Y. 14850
Filed Aug. 19, 1966, Ser. No. 573,592
U.S. Cl. 330—15 7 Claims
Int. Cl. H03f 3/18, 3/26, 3/68



A pair of opposite type transistors are connected in series with the collectors in junction, and with the emitters connected to proper polarities in an external energizing circuit, and with a normally balanced input to permit free flow swing of either transistor according to signal input polarity. The balanced input provides a neutral point for a feed-back connection.

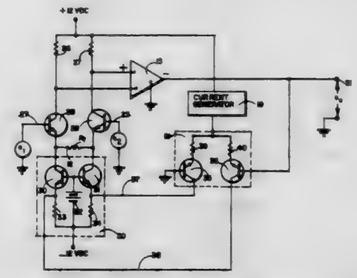
This driver circuit provides a high impedance input current source to drive an unbiased push pull complementary output stage, and eliminates coupling transformers.

3,434,068
INTEGRATED CIRCUIT AMPLIFIER UTILIZING FIELD-EFFECT TRANSISTORS HAVING PARALLEL REVERSE CONNECTED DIODES AS BIAS CIRCUITS THEREFOR
Leonce J. Sevin, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,049
U.S. Cl. 330—19 13 Claims
Int. Cl. H03f 3/42, 3/04



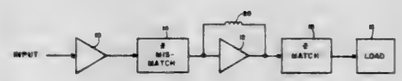
A stable, high-gain, integrated circuit amplifier is disclosed, which includes one or more cascaded stages, and which requires no external resistors or capacitors. Each stage includes at least one metal-oxide-semiconductor field effect transistor amplifier element, connected to a load metal-oxide-semiconductor field effect transistor and in a preferred embodiment, biased by diffused junction diodes. The diodes are operated with an essentially zero voltage drop thereacross and may cooperate with a metal-oxide-semiconductor coupling capacitor to provide the requisite time constant at the input of the circuit so as to obtain desired low frequency response characteristics and stable operation. In addition, means are provided in the integrated circuit amplifier for elevating the output voltage produced by the circuit so as to provide a signal which will adequately drive an external load.

3,434,069
DIFFERENTIAL AMPLIFIER HAVING A FEEDBACK PATH INCLUDING A DIFFERENTIAL CURRENT GENERATOR
Robert L. Jones, La Habra, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,288
U.S. Cl. 330—30 17 Claims
Int. Cl. H03f 3/68, 1/38



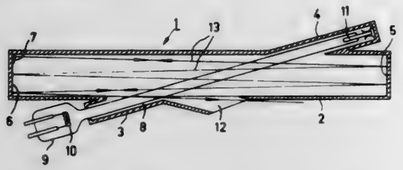
A wideband, differential D-C feedback amplifier having common mode rejection, gain stability and D-C stability properties and comprises a direct-coupled differential voltage amplifier stage in cooperation with a pair of differentially-controlled current generators, and a four-terminal high-gain operational amplifier responsively coupled to the output of the differential amplifier. The output of the four-terminal amplifier is feedback-coupled through a differential current converter comprising the pair of differentially controlled current generators. Adjustment of a passive impedance connected across the output of the current generators adjusts the closed loop gain without affecting the closed loop bandwidth.

3,434,070
SHUNT FEED FOR INCREASING AMPLIFIER OUTPUT POWER
John C. Bartnik, Cheektowaga, and Ellsworth R. Moss, Williamsville, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,678
U.S. Cl. 330—31 8 Claims
Int. Cl. H03f 3/04, 3/68, 1/22



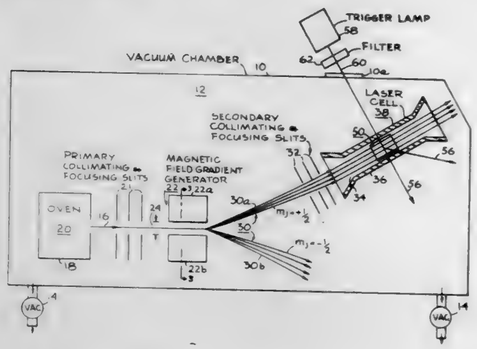
An amplifier circuit having an input network tuned to provide an impedance mismatch between the input of the amplifier and its drive source to thereby cause a selected portion of the drive power to be reflected. A feed-through circuit comprising a DC blocking capacitor and an inductance are series connected between the input and output of the amplifier to provide a broadband network for shunting the reflected power to the amplifier output in a manner providing in-phase summation of the shunted power with the amplifier output power.

3,434,071
INCOHERENT MICROWAVE GENERATOR INCLUDING A GAS DISCHARGE TUBE
Paul Anton Herman Hart, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,701
Claims priority, application Netherlands, Sept. 16, 1966, 6613076
U.S. Cl. 331—78 8 Claims
Int. Cl. H03b *29/00*



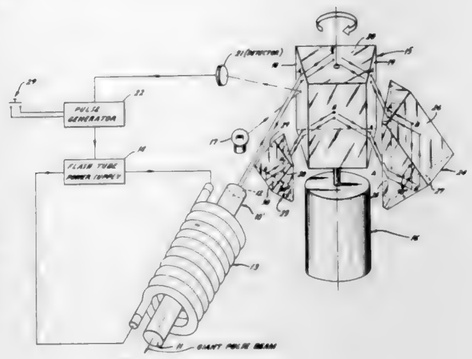
A device for the production of incoherent microwave radiation in the positive column of a gas discharge. The length of the radiation path in the positive column is increased by providing microwave reflectors so that the path extends through the column more than once.

3,434,072
CONTINUOUS WAVE LASER ARRANGEMENT
Milton Birnbaum, Palos Verdes Estates, Calif., assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 8, 1963, Ser. No. 263,964
U.S. Cl. 331—94.5 22 Claims
Int. Cl. H01s *3/00*



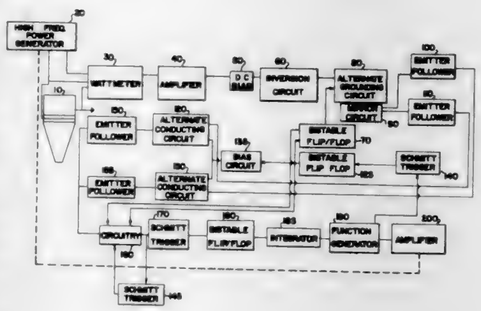
1. In combination:
means for generating a continuous beam of optically orientable particles having a plurality of allowable quantum energy levels and having a preselected velocity in a first direction;
means for optically inducing preselected quantum energy transitions in said beam of optically orientable particles to provide at least a first portion of said beam of optically orientable particles comprised of particles having energy substantially concentrated in one of said plurality of allowable quantum energy levels; and
means for continuously extracting in a second direction different from said first direction a coherent beam of electromagnetic radiation from said first portion of beam of optically orientable particles, said coherent beam of electromagnetic radiation having energy in at least one preselected wavelength of electromagnetic radiation corresponding to a quantum energy separation between a first and a second of said plurality of allowable quantum energy levels.

3,434,073
RAPID ACTING LASER Q-SWITCH
John F. Forkner, Plymouth Meeting, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,820
U.S. Cl. 331—94.5 3 Claims
Int. Cl. H01s *3/00, 3/16;* G02f *1/34*



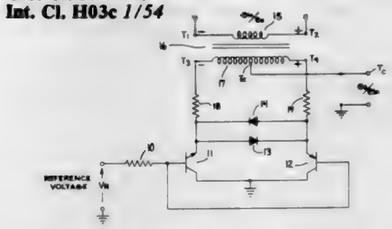
A relatively high-speed optical shutter for use in the optical system of a laser for greatly increasing its peak power output. In one aspect, the optical shutter comprises a system of prisms arranged to cause multiple impingement of the internal laser beam on a rotatable mirror, whereby to multiply the angular sweep rate of the laser beam as it is reflected back into the laser medium. In another aspect, the optical shutter includes a telescope arranged to increase the apparent rotational speed of the mirror, and hence the angular sweep rate of the beam, by magnifying the width of the beam reflected back into the laser medium.

3,434,074
HIGH SPEED, WIDE FREQUENCY RANGE FEEDBACK CIRCUIT
Ross C. Libby, West Jefferson, Ohio, assignor to The Ohio State University Board of Trustees, Columbus, Ohio
Filed Jan. 16, 1967, Ser. No. 609,624
U.S. Cl. 331—183 2 Claims
Int. Cl. H03b *5/00*



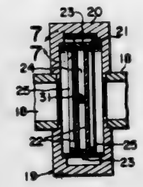
The invention is for a high speed, wide frequency range feedback circuit which, by rapid electronic processing, utilizes a D.C. signal as feedback information to control the frequency of operation of a high voltage electrical generator. This generator functions as the source for a high power ultrasonic transducer whose peak power output is at its resonant frequency.

3,434,075
PHASE-SENSITIVE MODULATOR AND DEMODULATOR UTILIZING A SINGLE TRANSFORMER
Eldon W. Hawkins, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 31, 1966, Ser. No. 540,154
U.S. Cl. 332—43 3 Claims
Int. Cl. H03c *1/54*



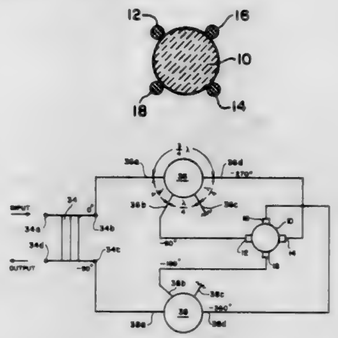
An improved phase sensitive modulator-demodulator circuit requiring only one transformer, and utilizing a pair of PNP-NPN complementary transistors as phase sensitive switches in such manner that the reference voltage may be directly coupled into the circuit without the use of a second transformer inherent in prior art devices. The direction of current flow in the secondary winding of the single input transformer is dependent upon the phase of the reference voltage. Thus the output signal, taken from the center terminal of the transformer secondary winding is phase sensitive with respect to both the input voltage and the reference voltage.

3,434,076
WAVEGUIDE WINDOW HAVING CIRCULATING FLUID OF CRITICAL LOSS TANGENT FOR DAMPENING UNWANTED MODE
Floyd O. Johnson, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Oct. 17, 1963, Ser. No. 316,865
U.S. Cl. 333—98 4 Claims
Int. Cl. H01p *1/00, 1/08*



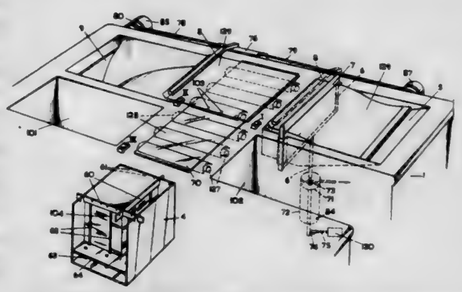
A microwave waveguide window structure is disclosed. The window structure includes a dielectric wave permeable structure hermetically sealed across the interior of a waveguide. The dielectric window structure includes or is constructed to define a fluid passageway therethrough. Means are provided for circulating a dielectric fluid througn the passageway, said fluid having a loss tangent between 0.001 and 0.009 for mode damping of the window structure and for cooling of the window structure in use. By providing the loss tangent between 0.001 and 0.009, the loss presented by the fluid to the transmission mode is substantially less than that which would be presented by water as the coolant. Therefore, a relatively small amount of the desired power to be transmitted through the window is absorbed in the dielectric fluid, thereby permitting relatively efficient cooling of the window structure in use. However, this relatively low loss tangent provides sufficient damping for certain resonant ghost modes to prevent sustained excitation thereof, whereby overheating of the window structure in use is prevented since the ghost modes are effectively damped.

3,434,077
TEM MODE FARADAY ROTATOR
Walter S. Heath, Grand Rapids, Mich., and Leland R. Megargel, Buffalo, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 10, 1967, Ser. No. 615,112
U.S. Cl. 333—24.1 4 Claims
Int. Cl. H03h *5/00;* H01p *5/12*



A microwave Faraday rotator of TEM mode construction and having a ferrimagnetic rod with four conductive wires symmetrically disposed on the rod to form two pairs of orthogonally related balanced transmission lines, and a solenoid disposed around the rod to produce a longitudinal magnetic field in the rod. A linearly polarized wave generated by energization of one transmission line pair is rotated by an amount determined by the magnitude and sense of the magnetic field, with the output being obtained via the relative magnitude of the signals appearing at the output end of each transmission line pair. A circularly polarized wave is generated by energizing all four wires with signals in the phase relation 0°, 90°, 180° and 270°, with the output, taken at the output end of the four wires, being phase shifted by an amount goverened by the sense and strength of the magnetic field.

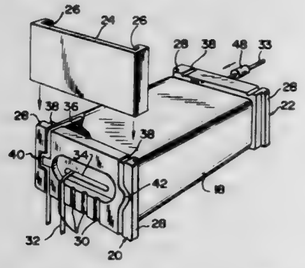
3,434,078
PHOTOPRINTING APPARATUS
Bastiaan Klaas Nederlof, Delft, Dingeman Bijl, Rotterdam, and Jan Johannes van der Meij, Leidschendam, Netherlands, assignors to N.V. Lichtdrukpapierfabriek "De Atlas," Delft, Netherlands, a corporation of the Netherlands
Continuation-in-part of application Ser. No. 279,897, May 13, 1963. This application June 25, 1965, Ser. No. 467,054
Filed June 25, 1965, Ser. No. 467,054
Claims priority, application Netherlands, May 14, 1962, 278,412
U.S. Cl. 355—79 19 Claims
Int. Cl. G03b *27/02, 27/32*



A method and apparatus of separating information and reproducing the same on photosensitive material in re-

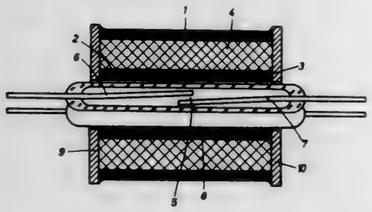
combined form. Such information is recorded respectively, on a first, a second, and a third collection of *a*, *b*, and *c* transparent information carrying units, respectively. Each unit of the first collection carrying *e* items of subdata, as well as *d* series of yes-no signals, each corresponding with at least one of said items of subdata and adapted to be sensed by sending means. Then sensing each unit of said first collection a first time and a second time to cause selected items of subdata to be printed on photosensitive material on which the associated main data has been printed during the preceding printing operation.

3,434,079
ENCAPSULATED REED SWITCH RELAY CONSTRUCTION
William W. Ege, Jr., Logansport, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Mar. 27, 1967, Ser. No. 626,265
U.S. Cl. 335—151 **9 Claims**
Int. Cl. H01h *1/66, 51/00, 9/02*



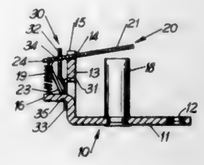
A reed switch relay having a hollow barrel portion flanked at each end by outwardly extending flanges. An elongated reed switch capsule is inserted in the hollow barrel portion and the reed switch leads are fitted into grooves defined in the end flanges. A cover plate is then slidably mounted over each of the flanges to securely hold the lead wires in position. Channels are also defined in the flanges for receiving lead wires from the magnetizing coil wrapped around the hollow barrel. Plugs may be mounted on the capsule lead wires and positioned in the ends of the hollow barrel portion to more securely hold the capsules in position.

3,434,080
ELECTROMAGNETIC REED RELAY HAVING METAL FOILS UNDERNEATH AND ABOVE THE EXCITATION WINDING
Volker Mengelberg, Johannesburg, Transvaal, Republic of South Africa, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,432
U.S. Cl. 335—154 **7 Claims**
Int. Cl. H01h *1/66, 51/28*



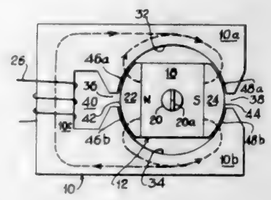
For spark quenching, i.e. for damping the switch-off voltage peaks at terminals of the excitation winding of a relay, several layers of electrically and/or magnetically conductive metal foils are arranged underneath as well as above the excitation winding.

3,434,081
ARMATURE RETAINER FOR RELAYS WITH CLAPPER TYPE ARMATURE
Jack V. Foster, Fort Branch, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of application Ser. No. 600,088, Dec. 8, 1966. This application May 20, 1968, Ser. No. 732,006
U.S. Cl. 335—203 **19 Claims**
Int. Cl. H01h *9/00, 50/18*



A relay including a retaining member to prevent inadvertent disengagement of a clapper type armature from the bearing end of a support leg, said retaining member being loosely interconnected to the armature and the support leg.

3,434,082
LIMITED ROTATION TRANSDUCER HAVING PERMANENTLY MAGNETIZED ROTOR
Jean I. Montagu, Boston, Mass., assignor to Mechanics for Electronics, Cambridge, Mass.
Filed Apr. 17, 1967, Ser. No. 631,341
U.S. Cl. 335—229 **14 Claims**
Int. Cl. H01f *7/08;* **H02k** *21/12*

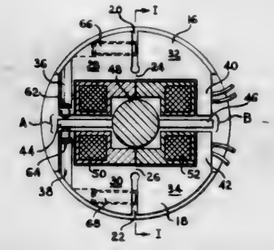


A rotary actuator having a rotor carrying a permanent magnet with a magnetically soft pole piece on each magnet pole. The stator has an electromagnet arranged between two magnetically soft pole shoes that are disposed about the rotor to provide parallel magnetic flux paths between the pole pieces for the permanent magnet field. The rotor pole pieces form parallel magnetic flux paths between the stator pole shoes for the field of the electromagnet.

3,434,083
ELECTRIC TORQUE MOTOR WITH ADJUSTABLE SLOTTED POLE PIECES
Richard J. Lewis, New Hartford, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 621,018
U.S. Cl. 335—230 **4 Claims**
Int. Cl. H01f *7/08*

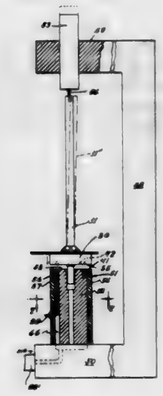
An electric torque motor with armature permanent magnet biasing flux and a pair of differentially excited

coils generating a second magnetic flux to angularly displace the armature a distance proportional to the degree of imbalance. A pair of slotted pole pieces are provided with one half of each affixed to a face of a permanent



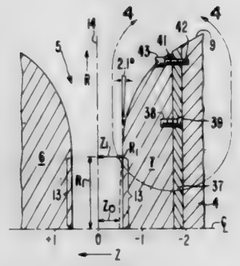
magnet and the other half left movable and adjustable to vary the air gap to obtain a magnetic null. Adjustable limit stops are provided for the armature arms, and the armature shaft is resiliently restrained by a torsion spring.

3,434,084
METHOD OF MAGNETIZING MAGNETS FOR A REPULSION TYPE OF SUSPENSION
James W. Milligan, West Lafayette, Ind., assignor to Duncan Electric Company, Inc., a corporation of Indiana
Original application Aug. 14, 1961, Ser. No. 131,286. Divided and this application Oct. 23, 1965, Ser. No. 504,257
U.S. Cl. 335—284 **5 Claims**
Int. Cl. H01f *7/20, 13/00*



A magnetic suspension for meter disks and the like comprises a pair of opposing magnets, each in the form of a molded button with two concentric annular poles facing axially. Each magnet is magnetized by face-to-face contact with a fixture completing a path of magnetic metal between the two pole faces. The same fixture is then used for a partial knockdown of the magnet to make it stable. If a magnet is mounted on a shaft without true perpendicularity of the magnet face to the shaft axis its position is shifted, with a compensatory effect.

3,434,085
MAGNETS HAVING LOGARITHMIC CURVED POLE CAPS FOR PRODUCING UNIFORM FIELDS ABOVE SATURATION
Robert E. Gang, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 8, 1967, Ser. No. 636,871
U.S. Cl. 335—297 **5 Claims**
Int. Cl. H01f *3/00, 7/00*



Magnets for producing magnetic field intensities above saturation with extremely high homogeneity are disclosed. The magnets employ pole caps that have their opposed faces shaped to conform to the following equation with $O<K<K_{opt}$:

$$R-R_1=\frac{Z_0}{\pi-\tan^{-1}\frac{1}{K}}LN\left(\frac{Z-Z_0}{Z_1-Z_0}\right)-K(Z-Z_1)$$

where R is the radius of the pole cap from the axis of the gap, R_1 is the value of R where the curved face of the pole cap makes an angle of 2.1° with a plane perpendicular to the axis of the gap, Z is the axial distance from the midplane of the gap to the pole cap face in the curved region thereof, Z_1 is the value of Z at R_1, Z_0 is the value of Z on the Z axis if the curved portion had been continued to the Z axis, K is an optional parameter having a negative value with an absolute magnitude greater than zero but less than K_{opt}, that value of K which yields a constant flux density pole cap for the ratio of gap diameter ($2R_1$) to gap length ($2Z_0$) of the magnet, and

$$\tan^{-1}\frac{1}{K}$$

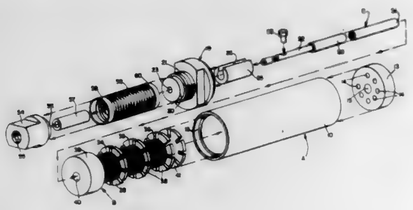
lies between O and π.

By selecting |K| greater than zero but less than $|K_{opt}|$ for the particular ratio of gap diameter to gap length a uniform field is produced at a certain value of field intensity above saturation, thereby permitting use at a higher field intensity than the prior constant flux density design which corresponds to use of K_{opt}. These smaller values of K also mean that the magnet pole diameters and required magnetomotive force are less than with the prior K_{opt} design. Moreover, even lower values of K and, thus, even smaller magnets may be used by boring the pole caps from the backsides thereof on the axis of the gap and/or by decreasing the taper of the side edges of the pole caps.

3,434,086
GAUGING TRANSDUCER
Grover K. Houpt, Wayne, and Edward T. Thomson, Phoenixville, Pa., assignors to Automatic Timing & Controls, Inc.
Filed Oct. 27, 1966, Ser. No. 590,040
U.S. Cl. 336—30 **7 Claims**
Int. Cl. H01f *21/02, 21/06*

This gauging transducer includes a tip member which is attached by a metal bellows to a housing member. The

tip has one end of an armature fixed axially thereof which passes through an axial passageway in the housing and extends to a region between a plurality of coils located

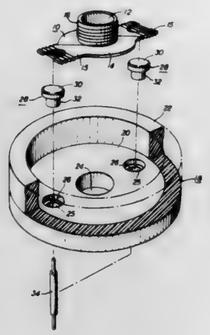


around the path of travel of the armature. The armature shaft may include a projecting pin which rides in a groove in a fixed anti-rotation sleeve within the housing.

3,434,087
CRACK-RESISTANT CASTING COMPOSITION
Charles F. Hofmann, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 12, 1967, Ser. No. 645,320
U.S. Cl. 336—96 **12 Claims**
Int. Cl. C08g *51/04, 30/00;* **H01f** *27/32*

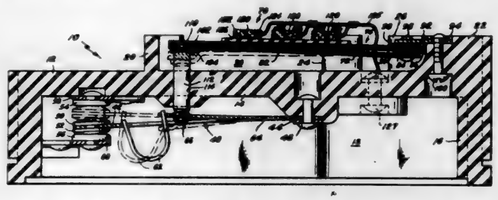
A resinous casting composition for encapsulating an electrical apparatus composed of not more than about 35% of an epoxy resinous composition and of more than about 65% of a selected filler having a predetermined particle size distribution. Said composition is characterized by a low viscosity when unpolymerized, and an unusually low coefficient of thermal expansion of as low as 10×10^{-6} and lower when cured.

3,434,088
COIL STRUCTURE
Robert S. Zieles, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Oct. 17, 1967, Ser. No. 675,909
U.S. Cl. 336—192 **8 Claims**
Int. Cl. H01f *15/10, 27/28*



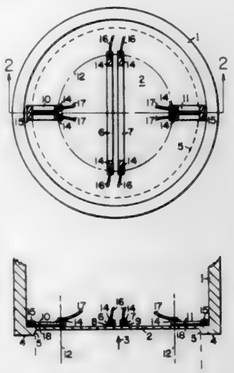
A coil structure comprises a coil wrapped around a spool that is accommodated by a cup-shaped frame. A flange on the spool has a pair of bifurcated extensions about which the initial and final turns of the coil are respectively wound, and one or more of these turns are ultrasonically welded to rivets mounted in the base of the frame.

3,434,089
RELAY WITH VOLTAGE COMPENSATION
Joseph W. Waseleski, Jr., Mansfield, and Francis P. Buiting and Bernard M. Kulwicki, Plainville, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,297
U.S. Cl. 337—40 **6 Claims**
Int. Cl. H01h *61/01, 71/16*



A relay in which a snap acting switch cooperates with a thermally responsive actuating means comprsing two bimetallic blade members which provide ambient compensation so that a change in ambient temperature will cause the blades to tend to move in opposite directions against each other. A heater is provided to heat one of the blades to a temperature different than the other blade causing movement of both blades and consequent actuation of the snap acting switch through a motion transfer pin. The heater in one embodiment comprises a plurality of pills constructed of material having a steep-sloped, positive resistivity-temperature curve (PTC) electrically connected in parallel. Another embodiment shows a PTC heater pill mounted on a support with an air gap of a predetermined size separated the heater from the bimetallic blade to provide a time delay of a desired amount. Still another embodiment shows a cantilever mounted support for the heater pill so that the air gap will vary as the bimetallic blade flexes due to heat generated by the heater. The use of the PTC material minimizes the effects of voltage variations on temperature and the use of the air gap as thermal barrier results in voltage compensation.

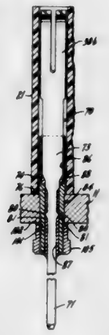
3,434,090
COMPOUND STRAIN GAGE STRUCTURE
Herbert Chelner, Reseda, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 1, 1967, Ser. No. 619,619
U.S. Cl. 338—4 **10 Claims**
Int. Cl. G01l *1/22*



A strain gage transducer having an integral diaphragm-side wall structure has a thicker peripheral ridge portion than the thickness of the diaphragm as a whole. Plural

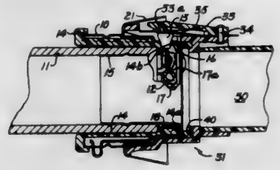
centrally located first strain gage elements are each attached throughout their length to the diaphragm and terminate mechanically at its neutral strain axis. Plural peripherally located strain gage elements of typically U shape are similarly attached to the diaphragm and each terminates mechanically at the neutral axis and at the peripheral ridge, respectively. The center gage elements are activated in tension, the peripheral gage elements in compression, and all are symmetrically interconnected electrically. The structure results in minimum slip between elements and diaphragm, thus reducing "creep" and hysteresis. Also, non-linear magnitude of deflection of the diaphragm induced by the peripheral ridge compensates for non-linear performance of the electrical bridge measuring circuit.

3,434,091
CONNECTOR
George Walter, Chicago, Ill., assignor to Malco Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed July 20, 1967, Ser. No. 654,727
U.S. Cl. 339—14 **3 Claims**
Int. Cl. H01r *3/06;* **H02b** *1/02*



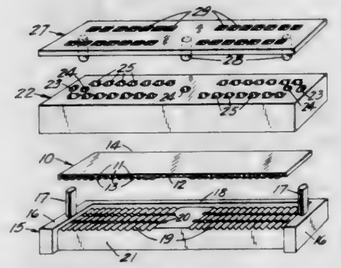
A ground connector assembly for connecting a terminal pin with a contact on one end and a wire-wrap post on the other end to a metal plate. The assembly includes a metal sleeve with a passage extending therethrough. The pin extends through and is connected to the sleeve in electrical contact. A nut holds the sleeve and pin in an aperture in the plate and forms a gas-tight connection therebetween.

3,434,092
AIRFLOW-ELECTRIC COUPLING
Robert J. Brown, South Salem, N.Y., and John J. Kowalewski, Riverside, and John J. Moughty, Old Greenwich, Conn., assignors, by mesne assignments, to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland
Filed June 26, 1967, Ser. No. 648,653
U.S. Cl. 339—16 **4 Claims**
Int. Cl. H01r *3/04*



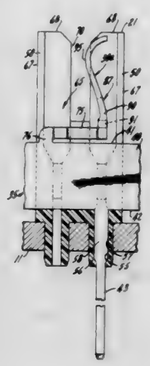
A coupling for a vacuum cleaner suction hose having integral conductors which are connected with a pair of radially extending contact blades projecting from a push connector part of the coupling which is attached to one end of the hose. The receptacle part of the coupling which receives the push connector has a pair of slots for receiving the contact blades. A second pair of "live" contacts are accessable from the inner end of the slots for engagement with the contact blades, and to prevent accidental access to the second pair of contacts, which are "live" when the cleaner is in operation and the hose is not attached to the suction inlet, a pair of resilient fingers are positioned in the receptacle part of the coupling in order to cover the "live" contacts.

3,434,093
SOLDERLESS CONNECTOR FOR MULTIPLE-CONDUCTOR FLAT CABLE
Albert D. Wedekind, West St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 27, 1966, Ser. No. 582,285
U.S. Cl. 339—17 **7 Claims**
Int. Cl. H01r *11/20, 11/32, 13/46*



A connector for making solderless contact with any or all of the parallel wires in a longitudinally ridged multiple-conductor flat cable includes a close-fitting correspondingly grooved and transversely slotted base and an aligned body carrying U-shaped contact elements in line with the slots.

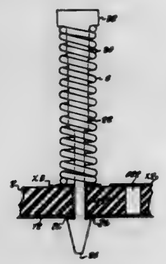
3,434,094
BUSS STRIP
George Walter, Chicago, Ill., assignor to Malco Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed July 20, 1967, Ser. No. 654,843
U.S. Cl. 339—17 **7 Claims**
Int. Cl. H05k *1/00;* **H01r** *9/08, 13/24*



An electrical connector which has a spring arm integral with and extending along an edge of a buss strip. A spring

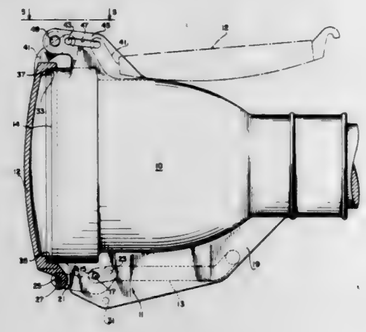
finger which has an arcuate contact surface extends from an end of the spring arm for contact with circuitry on a printed circuit board.

3,434,095
PROGRAMMING SWITCH
Ralph A. DeRose, Villa Park, Ill., assignor to International Telephone and Telegraph Corp., New York, N.Y., a corporation of Maryland
Filed Apr. 17, 1967, Ser. No. 631,434
U.S. Cl. 339—18 **6 Claims**
Int. Cl. H05k *1/04;* **H01r** *13/38*



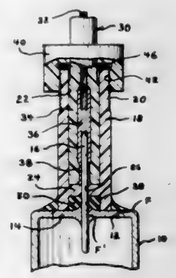
A programming switch or connector is supplied for interconnecting conductors on opposite faces of printed circuit boards. Arrow shaped conductors fitted with coiled springs are pushed through elongated holes in printed circuit boards against the tension of the spring and then turned so that the barbs of the arrowheads engage a conductor on one side of the board while the coiled spring interconnects the arrow and a conductor on the other side of the board.

3,434,096
COUPLING
Anthony J. Pusateri, Jr., Canoga Park, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 17, 1967, Ser. No. 631,514
U.S. Cl. 339—44 **8 Claims**
Int. Cl. H01r *13/44, 13/54;* **F16l** *37/20*



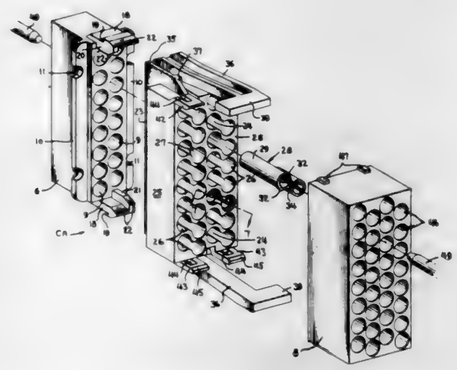
A coupling adapted for removably connecting a first structural member to a second structural member is defined by this invention. It includes a latch mechanism on the first structural member for automatically engaging and locking the two members in a desired relationship. The latch mechanism comprises a lever and a connecting link coacting as an over-center device with cam means for guiding the connecting link into engagement with a catch on the second structural member.

3,434,097
VACUUM TUBE TERMINATION
William Jeffrey Hudson, Jr., Harrisburg, and John William Gaw, Elizabethtown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 3, 1967, Ser. No. 672,566
U.S. Cl. 339—89 **6 Claims**
Int. Cl. H01r *13/54, 33/74;* **H01j** *9/18*



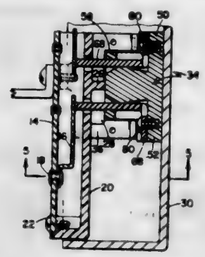
A termination for vacuum tubes is disclosed which provides a high voltage, corona free connection mounted on the envelope of a vacuum tube. A conductive pin carried in a glass bead fused to the tube material is extended within the bushing of a high voltage connector which is bonded to the face of the bead by an adhesive which will fail before the tube envelope. The mating plug assembly carrying a high voltage lead can be mated to the conductive pin and bushing with less likelihood of tube breakage.

3,434,098
SEPARABLE ELECTRICAL CONNECTOR HOUSING ASSEMBLIES
William Ludlow Schumacher, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 21, 1966, Ser. No. 544,239
U.S. Cl. 339—91 **6 Claims**
Int. Cl. H01r *13/54, 13/64*



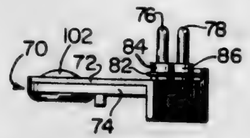
An electrical housing assembly comprises a first housing member securable on a mounting panel, a second housing member matable with the first housing member in a polarizing manner with latching means provided by the first and second housing members to latchably secure the housing members together, and a third housing member latchably secured to the second housing member in a polarizing manner.

3,434,099
CONNECTOR STRUCTURE
Robert E. Lewis, Brockton, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 14, 1966, Ser. No. 594,112
U.S. Cl. 339—176 **9 Claims**
Int. Cl. H01r *13/50;* **E05c** *3/06, 3/16*



An electrical connector assembly includes a base that has a central support insulator on which is disposed two rows of L-shaped contacts. Each contact is secured in a slot by cooperation of a projection in the rear wall of the slot, two tabs that overlie that rear wall and a screw that extends into a hole in the base wall of the slot. A chassis has a support insulator to which are secured corresponding beryllium copper leaf contacts. These contacts are restrained by a cover that has apertures through which the base contacts extend to complete electric circuits.

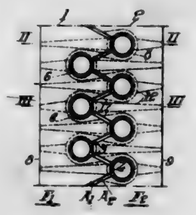
3,434,100
ELECTRIC TERMINAL
Theodore J. Dykzeul, Rolling Hills, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,173
U.S. Cl. 339—196 **9 Claims**
Int. Cl. H01r *33/04*



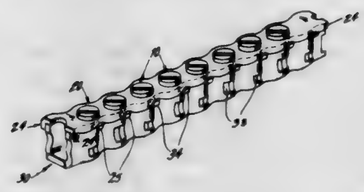
An electric terminal having a body member of insulating material with a pair of contact blades and an insulating strip disposed therein. Such blades have a deformed portion at one end for nesting purposes and prongs formed at the opposite end for securement purposes. The deformed portions accommodate a first conductor therein, which conductor extends through an opening in the body member. The prongs, which extend outwardly through the body member, are pressed into metallic conductor receptacles in a plastic plug to establish electrical contact with a circuit operatively associated with the plug.

3,434,101
INSULATING SUPPORT FOR ELECTRICAL CONNECTORS
Francois Henri Raymond, Saint-Germain-en-Laye, France, assignor to Societe F.R.B., Gennevilliers, France, a society of France
Filed June 19, 1967, Ser. No. 646,823
Claims priority, application France, June 22, 1966, 66,420
U.S. Cl. 339—207 **6 Claims**
Int. Cl. H01r *13/50, 13/22*

An insulating support for electrical connectors comprising a block made of two elements having complementary edges fitting in each other, each of said edges consisting of a plurality of triangular saw teeth juxtaposed in one direction and extending across said direction, the bottoms of said teeth being provided with cylindrical cavities parallel to said teeth and extending throughout said pieces, and conducting sockets fitting in said cavities.



3,434,102
NEUTRAL TUBING FOR PANELBOARDS
Birley Stancil, deceased, late of Marietta, Ga., by Pearl Stancil, executrix, Marietta, Ga., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 24, 1966, Ser. No. 589,136
U.S. Cl. 339—242 **3 Claims**
Int. Cl. H01r *13/24, 9/00, 7/12*

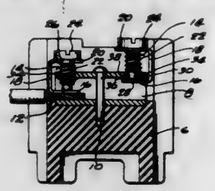


1. A terminal block for conductors comprising a substantially U-shaped terminal base having a pair of upright opposing corrugated surfaces arranged to form a series of open ended loops, each of said pair of upright opposing corrugated surfaces further formed to accommodate a series of conductors inserted in conductor passageways therein parallel to one another but orthogonal with respect to the long axis of said terminal base, capping means fixedly mounted along the upper length of said terminal base thereby rigidly maintaining the shape of said terminal base, said capping means supporting a series of downwardly extending helically ribbed cylindrical shafts mounted thereon at intervals fixed such that said helically ribbed cylindrical shafts are each axially disposed orthogonally to each axis formed by said conductor passageways and coincident with the longitudinal axis formed by each of said open ended loops, each of said pair of upright opposing corrugated surfaces being helically ribbed to engage one of said helically ribbed cylindrical shafts therebetween.

3,434,103
ELECTRICAL TERMINAL WITH CAPTIVE SCREW
Lyle J. Hancock, Elm Grove, and Robert E. Miller, Wauwatosa, Wis., assignors to Curtis Development & Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 4, 1967, Ser. No. 607,196
U.S. Cl. 339—272 **2 Claims**
Int. Cl. H01r *7/12, 13/24;* **F16b** *43/00*

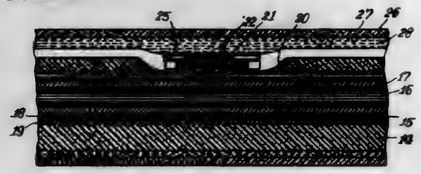
A conductor to be anchored electrically is received into a tubular terminal and engaged within the tubular terminal by the end of a resilient U-shaped clip which passes

about the end of the terminal and has externally of the terminal a leg with a bifurcated end embracing the neck



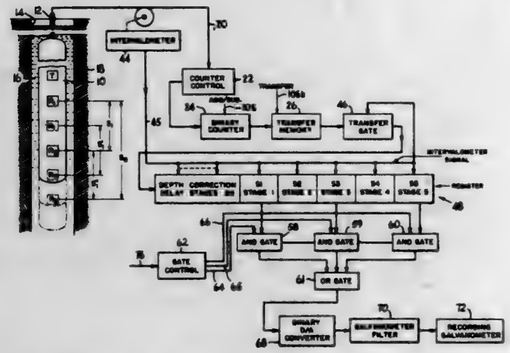
of a captive screw threaded through the wall of the terminal tube.

3,434,104
HYDROPHONE CABLE
Fred E. Stapleton and James E. Buescher, Houston, Tex., assignors to Mandrel Industries, Inc., a corporation of Michigan
Filed Aug. 10, 1967, Ser. No. 659,720
U.S. Cl. 340—7 **1 Claim**
Int. Cl. H04b *13/00*



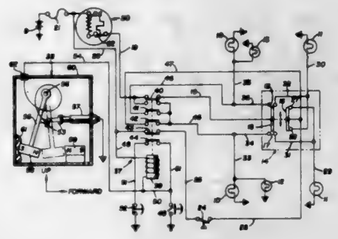
This invention provides a new type of hydrophone cable section wherein a body of cellular material such as foamed polyurethane is provided with cavities in its exterior surface, in which crystal detectors are recessed, and the body is enclosed by a waterproof jacket. Flotation liquid is contained in the space between the outer jacket and the body, and strain members and electrical conducting wires are enclosed within the body, the combination producing a cable section which will not lose its entire flotation ability nor its ability to protect the crystal detectors and wires even though the outer jacket may be ruptured by contact with external bodies.

3,434,105
WELL LOGGING SYSTEMS
Robert J. Schwartz, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 2, 1967, Ser. No. 620,165
U.S. Cl. 340—18 **11 Claims**
Int. Cl. G01v *1/40*



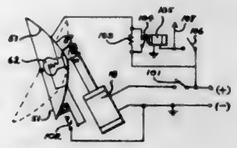
A well bore logging system providing an analog output signal representing the acoustic travel time per unit distance over a longitudinal formation zone which may be greater than the longitudinal span defined between a pair of acoustic transducers. Electrical signals from one or more of the transducers are converted into digital signals that are successively entered into consecutive stages of a digital shift register in synchronization with movement of the well tool over predetermined depth increments. One or more of the signals stored in the stages of the shift register are selected and combined to provide an analog signal representing travel time measurement corresponding to a multiple of the span between the acoustic transducers.

3,434,106
AUTOMATIC EMERGENCY SIGNALING SYSTEM FOR A VEHICLE
Merrittt B. Lawless, Birch Drive (NN), Harmony Acres, Mickleton, N.J. 08056
Filed Aug. 16, 1966, Ser. No. 572,829
U.S. Cl. 340—55 **12 Claims**
Int. Cl. B60q *1/44*



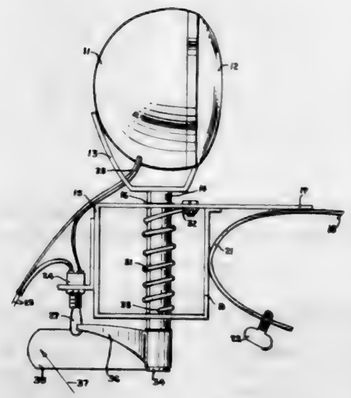
A signaling system for motor vehicles in which all turn indicator lights of the vehicle are automatically flashed when an emergency stop is made. On rapid deceleration, an inertia switch closes a circuit to a self-held relay which disconnects the turn indicator selector switch and the brake operated switch and applies to output of the turn signal flasher switch simultaneously to all of the turn signal lights. The tail lights may also be flashed concurrently when an emergency stop is made.

3,434,107
AUTOMOBILE LIGHT SIGNALLING DEVICE
Charles E. Pfund, 16 Balcarres Road, Newton, Mass. 02165
Filed Oct. 10, 1966, Ser. No. 585,386
U.S. Cl. 340—74 **4 Claims**
Int. Cl. B60q *1/26, 1/00;* **F21v** *7/00*



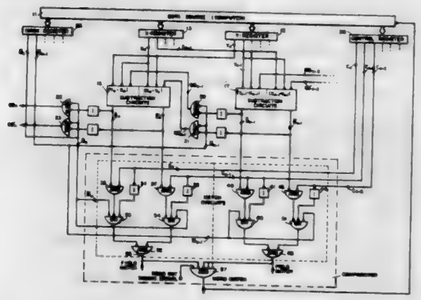
An automobile signal light provides a transient signal cycle which sweeps a narrow light beam through a small angle during which the light is energized and after which the light is extinguished. An electromechanical actuator responsive to a driver operated switch is used to rotate a focused beam lamp through a small horizontal angle and to control energization of the lamp. The lamp is energized during the rotation and deenergized at the end of the cycle automatically to prevent continuous energized oscillation of the lamp.

3,434,108
AUTOMOBILE SIGNAL
John W. Dawson, Norwell, Mass., assignor to Charles E. Pfund, Newton, Mass.
Filed Oct. 10, 1966, Ser. No. 585,467
U.S. Cl. 340—74 **2 Claims**
Int. Cl. B60q *1/26, 1/46*



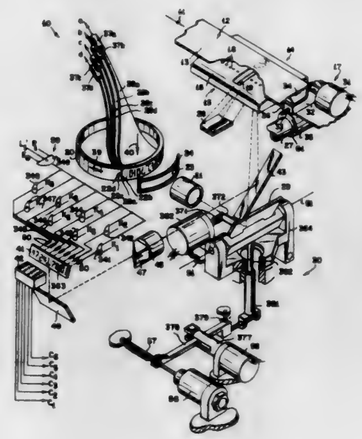
An automobile signal light provides a transient signal cycle which sweeps a narrow light beam through a small angle during which the light is energized and after which the light is extinguished. In the mechanical embodiment shown the focused beam lamp is mounted on a vertical axis and can be rotated by the driver away from the rest position and released for spring return. An electric switch for energizing the lamp is actuated by the motion to turn the lamp on and off at the limits of travel.

3,434,109
MULTIFIELD COMPARATOR ADJUSTABLE TO COMPARE ANY COMBINATIONS OF FIELDS AND TO PROVIDE SELECTABLE BASES OF COMPARISON
John M. Coote, Kings Park, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,495
U.S. Cl. 340—146.2 **10 Claims**
Int. Cl. G06f *7/06;* **G08c** *13/00*



This invention relates to a digital comparator device, and more particularly to such a device in which comparisons may be made between one or more corresponding groups of bits in two digital words, said groups being readily selectable as to their size and as to their positions within words, and the criteria or bases for comparison between the corresponding groups of bits likewise being readily selectable.

3,434,110
OPTICAL CHARACTER READING SYSTEM
Edward P. Bucklin, Jr., Hawthorne, Werner Pollack, Santa Monica, and Carl O. Carlson, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed July 6, 1965, Ser. No. 469,692
U.S. Cl. 340—146.3 **14 Claims**
Int. Cl. G06k *9/00*

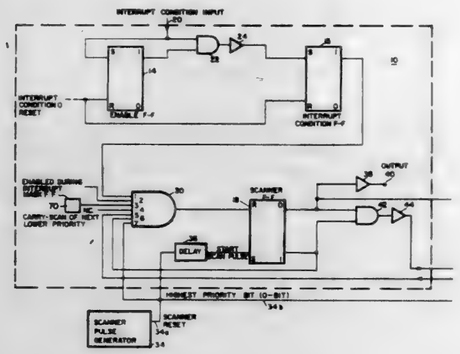


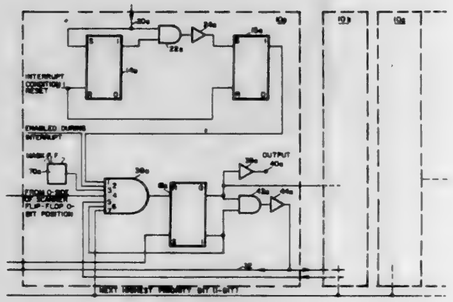
A system arrangement is disclosed for optically scanning documents to provide translation of printed characters into signals for use directly in data processing, and wherein concurrent scanning, error checking and storage of characters is provided for high speed reading. Rescanning of characters misread is provided by altering optical projection of character images by movement of a mirror simulating the required movement of the document for scanning. Each character not recognizable by the system is displayed on a screen along with other characters in a row, and a light spot is automatically projected by the system on the characters not recognized by the system whereby an operator can manually enter the character on a keyboard to provide continuing and complete translation of characters from the document.

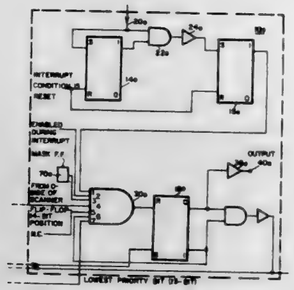
3,434,111
PROGRAM INTERRUPT SYSTEM
Raymond A. Schmidt, Oceanport, Frederick A. Wilhelm, Jr., and William W. Kayle, Eatontown, N.J., assignors to Electronic Associates, Inc., Long Branch, N.J., a corporation of New Jersey
Filed June 29, 1966, Ser. No. 561,555
U.S. Cl. 340—172.5 **12 Claims**
Int. Cl. G11b *13/00*

A priority interrupt system is disclosed including a scanning system having a plurality of bit positions arranged in sequence according to priority significance. Each bit position includes logic circuitry to sense whether an

interrupt is present. If no interrupt is present in that bit position a start-scan signal is propagated to the next



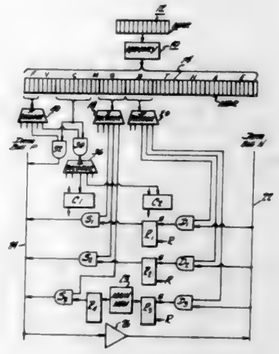




least significant bit position scanning all priority interrupt lines until an interrupt request has been sensed.

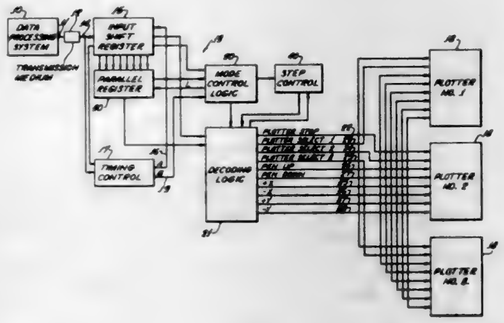
3,434,112
COMPUTER SYSTEM EMPLOYING ELEMENTARY OPERATION MEMORY
Richard H. Yen, Camden, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,150
U.S. Cl. 340—172.5 **3 Claims**
Int. Cl. G11b *13/00*

An arrangement for making binary number constants available in a computer system of the type wherein each instruction is executed by accessing a unique sequence of elementary operation words from a read-only memory. Elementary operation words include a function field, a counter/constant field, and a destination field. Decoding the function and destination fields can result in the



transfer of a binary number constant from the counter/constant field to a specified destination register.

3,434,113
METHODS AND SYSTEMS FOR PROVIDING GRAPHICAL DISPLAYS
Franklyn L. Wiley, Long Beach, and Le Roy E. Amendt, Whittier, Calif., assignors to California Computer Products, Inc., Anaheim, Calif., a corporation of California
Filed Aug. 8, 1966, Ser. No. 570,914
U.S. Cl. 340—172.5 **27 Claims**
Int. Cl. G11b *13/00*

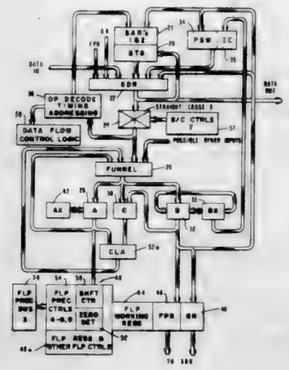


A graphical data display system for efficiently operating a high speed incremental plotter from a substantially lower speed transmission medium.

3,434,114
VARIABLE FLOATING POINT PRECISION
Jeganandaraj A. Arulpragasam, Chandlers Ford, England, and Harold E. Frye, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 23, 1966, Ser. No. 581,603
U.S. Cl. 340—172.5 **9 Claims**
Int. Cl. G11b *13/00, 13/02*

A data processing system has a variable precision floating point feature wherein fractions are processed with different degrees of precision. The precision is determined by a precision register set by a switch or OP code to the desired degree. The register sets a shift counter

to reduce the number of iterations where the degree of precision is less than the maximum degree and it also

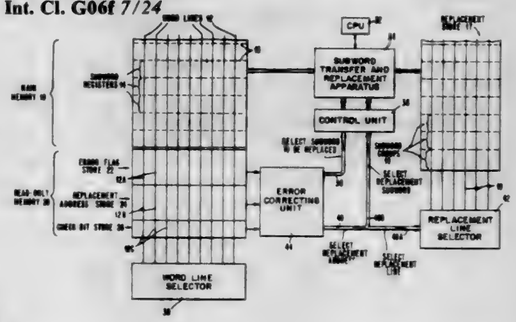


controls the degree of truncation of low order digits not needed for the selected degree.

3,434,115
TIMED OPERATION SEQUENCE CONTROLLER
John S. Chomicki, Carteret, N.J., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 15, 1966, Ser. No. 565,487
U.S. Cl. 340—172.5 **12 Claims**
Int. Cl. G11b *13/00*

An apparatus is described for timing the duration of each of a succession of events which are represented by a binary code. The coded events and their respective durations are loaded upon command from a remote computer via a computer interface into the appropriate orders of a shift register which closes a recirculating storage loop including a delay line. The data organization in the storage loop also includes an elapsed time field which is incremented each 1/60 of a second by a sidereal time control. The active event (marked by a marker bit in the field) is stored in an output function buffer while its timeout (scheduled duration) is stored in a state timeout buffer. At each 5/60 of a second the elapsed time is compared with the state timeout and upon comparison the marker bit is moved to the next following field to load the next function into the output function buffer and the corresponding timeout into the state timeout buffer. Upon the next occurring 1/60 second sidereal time pulse (thus completing a full second count) the output function buffer loads an output function register to control the output function, and the elapsed time field of the storage is reset to zero. Thus, no cumulative errors in timing occur. Since the recirculation rate is 111.5 microseconds, all data processing can proceed at a rate much faster than the 1/60 second minimum time interval. The circulation of data and the signalling of the presence of the bits and fields in the shift register is vested in a clock pulse generator, a bit counter and a field counter. These control all loading, incrementing, comparison, etc., when the respective data is present in the correct orders of the shift register. Parity check and parity generation is provided. If a field is unused, its state timeout is zero and this causes the field to be skipped by advancing the marker bit to the next active field within the 1/60 second.

3,434,116
SCHEME FOR CIRCUMVENTING BAD MEMORY CELLS
Wilhelm Anacker, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 15, 1966, Ser. No. 557,714
U.S. Cl. 340—172.5 **11 Claims**
Int. Cl. G06f *7/24*

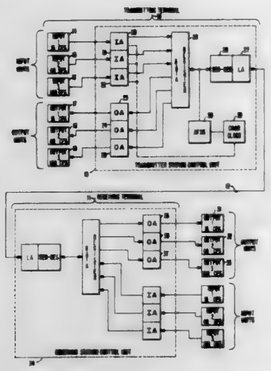


Defective bit cells having a random distribution within a large word-oriented memory are rendered ineffective by a scheme which minimizes the proportion of the total storage capacity that must be devoted to corrective action. Each word line in the main memory is divided arbitrarily into a plurality of subword storage sections or registers which can be effectively replaced by good replacement-subword storage sections in the event that any of the subword registers may contain one or more bad bit cells. Associated with each word line in main memory is a set of error flag cells for denoting the number and positions of the subword registers containing bad cells in that line, together with a replacement address store which contains the address of the replacement storage section, or the first in a series of replacement storage sections if more than one defective register is to be replaced. During data storage operations information is written into both the defective subword registers and the replacement subword registers, but during readout only the good subwords are transferred out of storage.

3,434,117
AUTOMATIC TRANSMISSION SPEED SELECTION CONTROL FOR A DATA TRANSMISSION SYSTEM
Robert G. Gibson, Binghamton, N.Y., David R. Hughes, Raleigh, N.C., and Richard L. Leavenworth, Friendsville, Pa., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 24, 1967, Ser. No. 633,208
U.S. Cl. 340—172.5 **7 Claims**
Int. Cl. G11b *13/00*

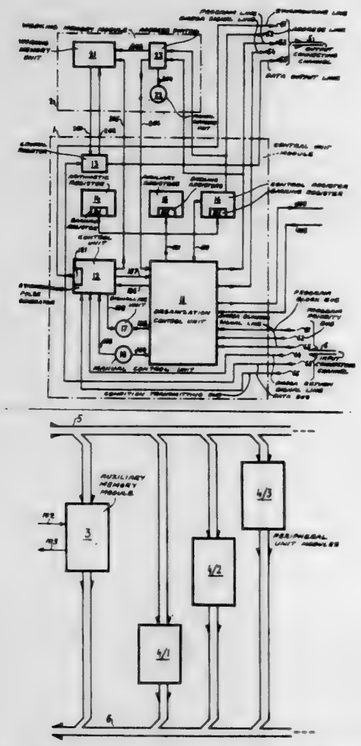
An automatic speed selection control for a data trans-

mission system wherein the output devices have different speeds of operation and it is essential to regulate the



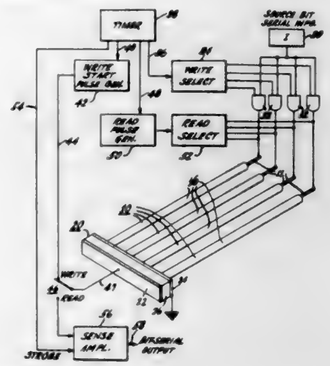
speed of the transmitting terminal into conformity with the speed of the receiving or output device.

3,434,118
MODULAR DATA PROCESSING SYSTEM
Antonín Svoboda, Jan Oblonský and Zdeněk Korvas, Prague, Czechoslovakia, assignors to Výzkumný ústav matematických strojů, Prague, Czechoslovakia
Filed May 1, 1964, Ser. No. 364,206
U.S. Cl. 340—172.5 **23 Claims**
Int. Cl. G11b *13/00;* **G06f** *1/00*



A modular data processing system comprises central apparatus which includes organization control equipment and further comprises a working memory, an auxiliary memory and peripheral apparatus. Each auxiliary memory and each peripheral apparatus includes a discriminating circuit. Output connecting channels connect the central apparatus in common to the auxiliary memory and the peripheral apparatus and include a program line connected between the organization control equipment and the discriminating circuit of each of the auxiliary memories and each of the peripheral apparatus for transmitting to each of the discriminating circuits a signal indicating to which of a plurality of independent programs a selected instruction relates. Input connecting channels connect the auxiliary memories and the peripheral apparatus in common to the central apparatus.

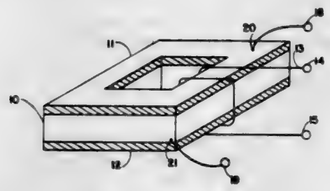
3,434,119
MAGNETIC MEMORY EMPLOYING STRESS WAVE
Lubomyr S. Onyshkevych, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 5, 1964, Ser. No. 387,586
U.S. Cl. 340—173 **6 Claims**
Int. Cl. G11b *5/00, 3/00*



A memory array includes a plurality of parallel elongated paths each including an electric conductor, a sonic stress wave conductor, and switchable magnetic material physically intimate with the electric conductor and the stress wave conductor. An electromechanical transducer is mechanically coupled to all of the stress wave conductors. For writing, means are provided to electrically pulse the transducer to propagate a stress wave along all of the stress wave conductors, and to apply electric bit-serial information signals to a selected one of the electric conductors in time-position synchronism with the propagation of the stress wave. To reproduce recorded information, an electric pulse is applied to a selected one of the electric conductors to cause a switching of stored information fluxes and the generation of corresponding stress information signals on the stress conductor. The stress information signals propagate along the stress conductor to the electromechanical transducer where they are translated to corresponding electrical bit-serial information signals.

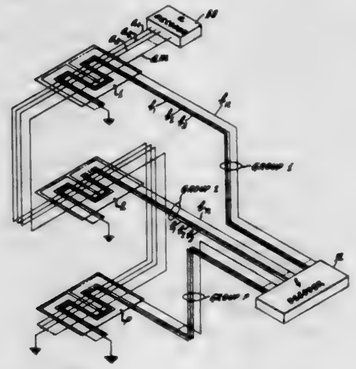
3,434,120
CAPACITIVE MEMORY STORAGE DEVICE EMPLOYING MAGNETIZABLE MATERIAL AS A DIELECTRIC
Everett O. Olsen, Wrentham, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 14, 1965, Ser. No. 495,874
U.S. Cl. 340—173 **2 Claims**
Int. Cl. G11b *5/62;* **H01g** *7/06;* **H01c** *7/16*

A capactive memory storage device employs a magnetizable material as a dielectric sandwiched between two electrically conducting members; the combination has a capacitance dependent upon the magnetization of the dielectric; a quantity is stored in the device by magnetizing the dielectric to a degree related to the quantity, which



stored amount may be read at any time in terms of the device capacitance until such time as the magnetic state is again altered.

3,434,121
CRYOELECTRIC MEMORY SYSTEM
Robert A. Gange, Belle Mead, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,664
U.S. Cl. 340—173.1 **7 Claims**
Int. Cl. G11b *9/00*

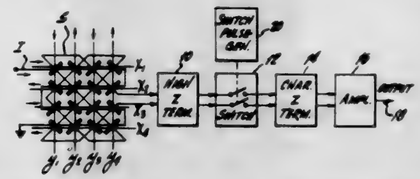


4. A cryoelectric memory system comprising:
P memory planes, where P is an integer;
P groups of *b* drive lines, one group for each plane, each group of lines passing back and forth a plurality of times over its plane;
a plurality of *a* drive lines, each such line passing over all memory planes, and each such line crossing each *b* line at a plurality of different locations on each plane;
a plurality of persistent current storage elements at each plane, one at each location where an *a* wire crosses a *b* wire; and
a plurality of *a* sense lines at each plane, each such sense line being coupled only to the persistent current elements on a plane which store bits of the same significance.

3,434,122
MULTIREMANENCE FERROELECTRIC CERAMIC MEMORY ELEMENT
Cecil E. Land and Gene H. Haertling, Albuquerque, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 13, 1964, Ser. No. 351,875
U.S. Cl. 340—173.2 **8 Claims**
Int. Cl. G11b *9/02;* **C04b** *35/24*

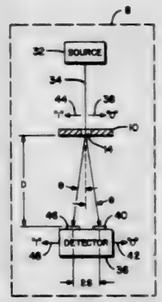
A single phase rhombohedral ferroelectric ceramic composition having a plurality of stable, repeatable and detectable polarization states above zero polarization comprising a solid solution of lead zirconate-lead titanate in the mole ratios between 60:40 and 80:20 including a 0.1 to 4 atom percent additive of an element in oxidic form selected from the group consisting of niobium, tantalum, bismuth and antimony, the composition being formed by hot pressing at a temperature between 1250 and 1350° C. at a pressure of at least 1500 p.s.i. for a time of at least one hour, and providing a multiremanence memory element having a 2-terminal resonator constructed of the ferroelectric composition.

3,434,123
SENSE AMPLIFIER FOR MAGNETIC MEMORY
Robert A. Williams, Marlboro, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,816
U.S. Cl. 340—174 **9 Claims**
Int. Cl. G11b *5/00*



A memory sense amplifier with strobe switch in series with signal input path. The terminals of a memory sense winding are connected at the input terminals of a differential sense amplifier to a first terminating impedance having a value much higher than the characteristic impedance of the sense winding. The input terminals are also coupled through a series transistor switch to a second terminating impedance having a value equal to the characteristic impedance of the sense winding. The transistor switch is rendered conductive to pass signals to be amplified solely during read time. At other times, the first high impedance causes noise disturbances in the memory to decay rapidly.

3,434,124
READOUT OF A PLANAR, APERTURED THIN-FERROMAGNETIC-FILM BY THE DEFLECTION OF ELECTRONS PASSING THERETHROUGH
Arvid L. Olson, St. Paul, Henry N. Oredson, Ramsey, and Ernest J. Torok, Savage, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,468
U.S. Cl. 340—174 **13 Claims**
Int. Cl. G11b *5/32;* **H01j** *25/02, 25/22*



An apparatus for and a method of the nondestructive readout of a planar thin-ferromagnetic-film memory element having a central aperture therethrough whereby a beam of electrons is passed through the aperture, normal to the plane of the memory element, and the direction of

deflection of such beam is detected by detectors on the far side of the memory element.

3,434,125

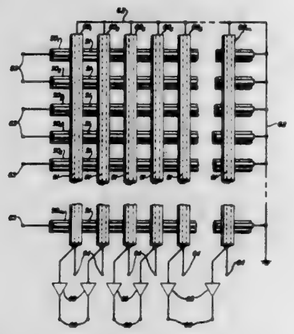
MAGNETIC INFORMATION STORAGE CIRCUITS

John A. Baldwin, Jr., Fullerton, Calif., and Andrew H. Bobeck, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Original application May 18, 1960, Ser. No. 29,856, now Patent No. 3,182,296, dated May 4, 1965. Divided and this application Nov. 23, 1964, Ser. No. 413,219

U.S. Cl. 340—174 12 Claims

Int. Cl. G11b *5/44, 5/62*



A magnetic memory element is formed at the intersection of two adjacent and orthogonally oriented conductive magnetic members. Coincident half-select currents applied to the members establish differently oriented remanent magnetization states in the facing portions of those members at their intersection. A full-select current applied to one of the members causes a readout signal to be induced in the other member with a polarity which is a function of the remanent magnetization orientation, and the readout is non-destructive if the readout drive is at radio frequency. In the latter case detection is accomplished by a phase discriminator. The formation of multiple elements is achieved by extending the conductive magnetic members to form a coordinate array of intercepting straps.

3,434,126

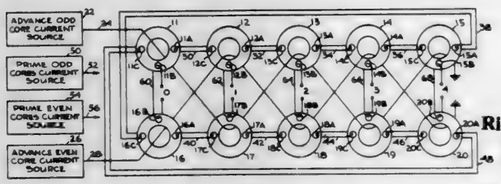
ODD NUMBER MAGNETIC CORE COUNTER

William K. English, Menlo Park, Calif., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 8, 1963, Ser. No. 322,369

U.S. Cl. 340—174 8 Claims

Int. Cl. G11b *5/00*



A magnetic core ring counter, made of multiaperture cores is operated at twice the speed of the usual two-core per binary bit multiaperture core ring counter by constructing an n stage ring counter having a count capacity of n, where n is odd, using 2 n serially coupled cores. A count, indicating output, is derived as an OR function from different pairs of cores, determined as the small ath core and $a+n$th core, where a is any integer from 1 to n.

3,434,127

MAGNETIC STORAGE APPARATUS EMPLOYING HIGH PERMEABILITY AUXILIARY CORE

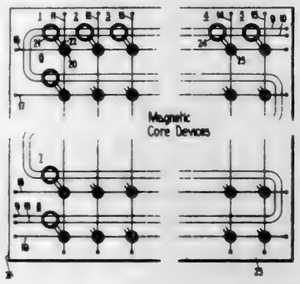
Gerald Patrick Rodgers, Southampton, England, assignor to The General Electric Company Limited, London, England, a British company

Filed Dec. 6, 1965, Ser. No. 511,820

Claims priority, application Great Britain, Dec. 7, 1964, 49,668/64

U.S. Cl. 340—174 20 Claims

Int. Cl. G11b *5/12*



1. A magnetic data store device comprising:

(a) a first ferromagnetic member which is fabricated of high permeability material having a small coercivity and which has an aperture,

(b) a second ferromagnetic member which is fabricated of material having an approximately rectangular hysteresis characteristic and hence a large coercivity,

(i) said second member being of small size relative to the first member whereby it requires a weaker magnetic field for magnetic saturation than said first member, and

(ii) said second member having an aperture that is small relative to the aperture of said first member,

(c) a number of wires which pass through the aperture of said first member,

(d) a smaller number of wires which pass through the aperture of said second member,

(i) the said wires which pass through the aperture of one member comprising control wires for carrying electric control signals to induce magnetic flux changes in this one member, and

(ii) the said wires which pass through the aperture of the other member comprising output wires in which electric output signals are induced by magnetic flux changes in this other member, and

(e) a continuous electric conductor path which passes through both apertures and in which electric signals are induced by and induce magnetic flux changes respectively in the member associated with said control wires and the member associated with said output wires.

3,434,128

COINCIDENT CURRENT MEMORY

Richard P. Shively and David V. Dickey, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Apr. 22, 1966, Ser. No. 544,495

U.S. Cl. 340—174 49 Claims

Int. Cl. G11b *5/44*

8. In combination:

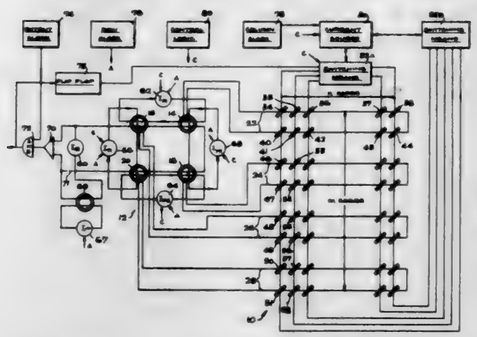
a plurality of ferromagnetic storage cores;

a plurality of ferromagnetic driving cores;

means for eleetromagnetically coupling of said driving cores to predetermined storage cores;

coincident current means, electromagnetically coupled to said storage cores, including switching means adapted to switch current from said coincident current means to selected pluralities of said storage cores;

magnetomotive force biasing means, electromagnetically coupled to said driving cores for biasing said driving cores into a first remanent state;



switching magnetomotive force means adapted selectively to apply magnetomotive force to said driving cores in opposition to said magnetomotive force biasing means to switch the flux of a selected one of said driving cores into a second remanent state to drive a selected plurality of said storage cores; and

means for sensing changes of remanent state of said storage cores, including means for sensing and measuring changes in magnetic flux which are induced into said driving cores by the changes in the remanent states of said storage cores when said selected driving core is changing remanent state.

3,434,129

MAGNETIC TRANSFLUXOR MATRIX INFORMATION STORAGE DEVICE

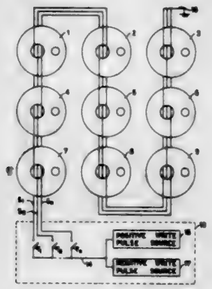
Michele Canepa, South Norwalk, Conn., assignor, by mesne assignments, to Olivetti-General Electric S.p.A., Milan, Italy, an Italian company

Continuation of application Ser. No. 292,358, July 2, 1963. This application Feb. 14, 1968, Ser. No. 705,566

Claims priority, application Italy, July 2, 1962, 13,362/62

U.S. Cl. 340—174 11 Claims

Int. Cl. G11b *5/30*



There is disclosed a storage device employing a matrix of transfluxors, each transfluxor storing a bit. The value of the bit stored is determined by the direction of rotation of the flux around the small aperture of the transfluxor. A plurality of write windings are threaded through the large apertures of the transfluxors. Each one of the write windings is threaded in a first sense through a portion of the transfluxors. The portion of the transfluxors in which any one write winding is threaded in the first sense is unique to that write winding. Each write winding is thus coupled in the first sense to a different set of transfluxors although there is overlapping between the sets. In addition, there are pulse sources attached to the write windings so that proper selection of write winding and sequencing of pulses, taking into consideration the direction of the pulses, provides the ability to store information bits having a given value in a selected portion of the transfluxors.

3,434,130

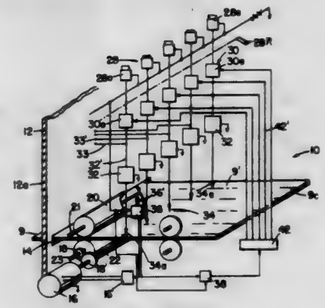
RECORD CARD SCANNING APPARATUS

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of applications Ser. No. 142,748, Aug. 28, 1961, and Ser. No. 347,524, Feb. 26, 1964. This application Dec. 10, 1964, Ser. No. 417,386

U.S. Cl. 340—174.1 10 Claims

Int. Cl. G11b *5/00*; G06k *7/00*



A record card scanning apparatus is provided for recording on and reading record cards containing information recorded across at least one face of the cards. The apparatus is particularly applicable for business functions requiring the manual entry of data into a computer or storage device or the local monitoring of information.

The card scanning apparatus includes a housing for reading transducers and a slot operative to receive and guide a card into the housing. Automatic control means is provided for driving the card during a reading function and for automatically conditioning the machine for the next reading cycle. The apparatus also includes means for selectively recording simple business information automatically upon the insertion of a card into a transducer housing.

3,434,131

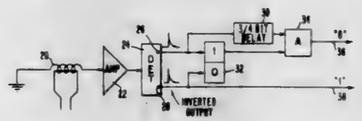
PULSE WIDTH SENSITIVE MAGNETIC HEAD WITH ASSOCIATED BINARY IDENTIFICATION CIRCUIT

Robert P. Dingwall, Mahopac, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 13, 1965, Ser. No. 513,490

U.S. Cl. 340—174.1 9 Claims

Int. Cl. G11b *5/00*



1. A magnetic recording system including:

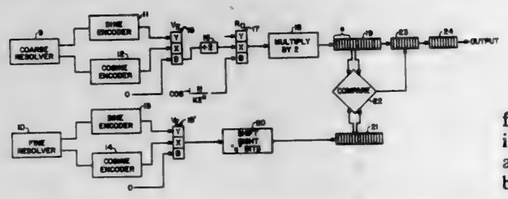
means for reading information recorded on a magnetizable recording surface, wherein the binary data is represented by wide and narrow initial pulses, said reading means comprising:

the combination of a reading head and an amplifier, said combination having a frequency response such that it produces a pulse of a first polarity but sub-

stantially no pulse of opposite polarity when a narrow pulse is detected on the recording surface and produces a pulse of a first polarity followed by an opposite polarity pulse when a wide pulse is detected on said recording surface, and

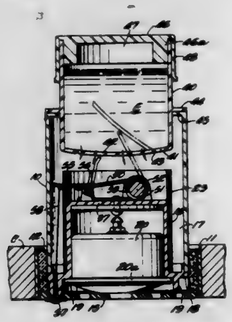
utilization means adapted to receive the pulses from said combination for indicating a first binary value when a first polarity pulse from said combination is followed immediately by another first polarity pulse, and for indicating a second binary value when a first polarity pulse from said combination is followed sequentially by an opposite polarity pulse.

3,434,132
INDICATOR ERROR CORRECTION APPARATUS
Edgar J. Smith, West Caldwell, and Lell E. Barnes, North Caldwell, N.J., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,735
U.S. Cl. 340—198 **6 Claims**
Int. Cl. G08c *25/00, 25/04*



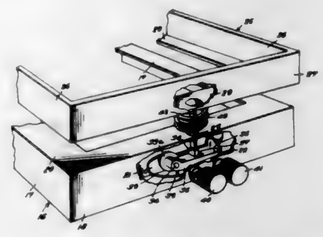
1. In a system having a coarse sensing device for indicating the number of whole revolutions of a shaft and the extent of a fractional revolution thereof and a fine sensing device for indicating the extent of the fractional revolution of the shaft and wherein the speed ratio of said devices is a value, N, an indicator error compensation apparatus comprising, means for scaling the indication of one of said indicators to the other by multiplying the same by a power of the ratio, N, and R^a wherein a is a positive or negative integral number, means for comparing the scaled indication with the other indication and deriving a logical correction signal according to the variation therebetween, means responsive to said variation for correcting the coarse indication and means for combining the corrected coarse and fine indications to provide a correct resultant indication.

3,434,133
FIRE ALARM
Theodore J. Colium, 251 Winter Drive, Worthington, Ohio 43085
Filed Apr. 27, 1966, Ser. No. 545,740
U.S. Cl. 340—227.1 **4 Claims**
Int. Cl. G08b *17/06*



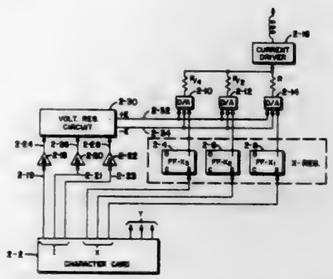
A simple, compact, self-contained fire alarm device having its own source of current which is in the form of a reserve-type primary battery that is activated upon the addition of an electrolyte which occurs only upon the predetermined increase of the ambient temperature.

3,434,134
FUEL INDICATING DEVICE
Dewitt L. Batchelor, HQ 3rd Bn (HJ), 2nd Arty., 1st Armored Division, Fort Hood, Tex. 76545
Filed Aug. 22, 1966, Ser. No. 574,507
U.S. Cl. 340—244 **1 Claim**
Int. Cl. G08b *21/00*



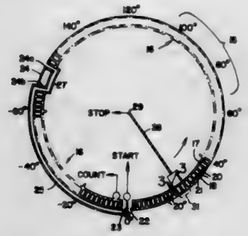
A fuel indicating device including a base and an upper frame pivoted on the base frame. The upper frame, which is a tray, supports a fuel container and is normally biased away from the base frame by a spring. A plunger carried by the upper frame closes the switch when there is sufficient fuel in the container to tilt the upper frame towards the forward portion of the base frame and when the fuel becomes low in the container, the spring tilts the upper frame away from the forward portion of the base frame and opens the switch, so that the amount of fuel may readily be observed by the position of the upper frame and container or remotely by a signal.

3,434,135
CONSTANT VELOCITY BEAM DEFLECTION CONTROL RESPONSIVE TO DIGITAL SIGNALS DEFINING LENGTH AND END POINTS OF VECTORS
Mauritz L. Granberg, Minneapolis, and Jerome J. Stoffel, Farmington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,181
U.S. Cl. 340—324 **1 Claim**
Int. Cl. G06f *3/14*



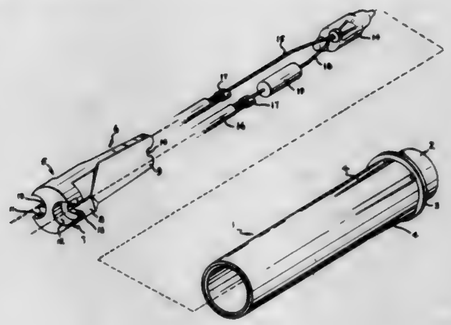
A writing circuit for cathode-ray tube display apparatus in which the intensity of the trace is controlled to produce a constant intensity irrespective of the length of the character stroke. This is a accomplished by controlling the slope of the output current ramp deflection signal obtained from the digital-to-analog converters as a function of the character length so that a constant writing rate is established.

3,434,136
DIGITAL DATA SYSTEM
Jack S. Hawley, Berkeley, and George R. Towner, Oakland, Calif., assignors to Berkeley Instruments, a corporation of California
Filed Aug. 27, 1965, Ser. No. 483,207
U.S. Cl. 340—347 **6 Claims**
Int. Cl. H04l *3/00;* **H03k** *13/02*



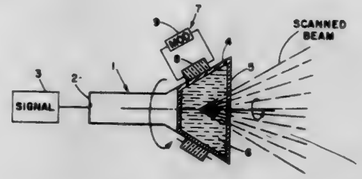
1. A digital data system comprising:
(a) an analog measuring device having scale indices and an indicator for such indices;
(b) scanning means responsive to said position of said indicator on said scale;
(c) digitizer means having a plurality of pulse output means substantially equal in number and corresponding to said indices of said scale and spaced from one another by distances substantially similar to the spacing of corresponding indices, said pulse output means comprising a substrate formed of insulating material, a plurality of separate conductive elements having leading and trailing edges on said substrate in the path of movement of said scanning means, said scanning means including means whereby the leading edge of each of said conductive elements provides one pulse output and the trailing edge of each of said conductive elements provides another pulse output and
(d) counting means responsive to said plurality of pulse output means for counting pulses therefrom.

3,434,137
HOUSING FOR INDICATING LAMP OR OTHER ELECTRICAL COMPONENTS
Herman Rueger, Lancaster, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 403,789, Oct. 14, 1964. This application Sept. 14, 1967, Ser. No. 667,860
U.S. Cl. 340—381 **10 Claims**
Int. Cl. G09f *9/14*



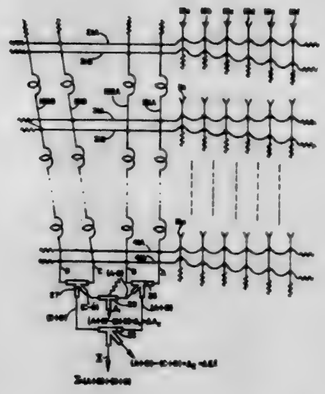
A unitary panel light and housing therefor, the housing being adapted to be readily inserted and removed from various size mounting apertures through the provision of axially tapered ribs around the periphery. The lamp leads are provided with separator and strain relief means.

3,434,138
RADIATING HORN ANTENNA WITH SOUND MODULATED LENS
Arnold A. Shostak, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 15, 1966, Ser. No. 565,500
U.S. Cl. 343—754 **6 Claims**
Int. Cl. H01q *19/06*



There is disclosed an electromagnetic beam scanning arrangement wherein the radiating structure, which may be a wave guide horn, accommodates within its flared end portion an enclosed container filled with an electrolyte. Cooperating with the horn is a sound wave source and, by changing the direction in which the sound energy travels through the electrolyte, the direction of the emerging electromagnetic beam may be controlled.

3,434,139
FREQUENCY-CONTROLLED SCANNING MONOPULSE ANTENNA
Jerry A. Algeo, Buena Park, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed July 15, 1965, Ser. No. 472,236
U.S. Cl. 343—778 **9 Claims**
Int. Cl. H01q *13/02, 13/00, 3/26*

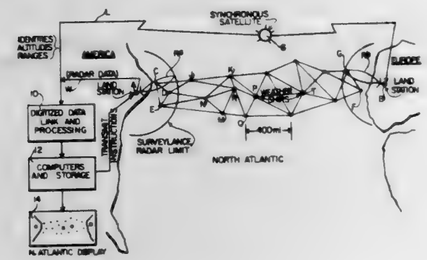


A dual plane frequency-scanning, dual plane monopulse antenna. A matrix of radiating elements are arranged in rows and columns, each row being fed by a separate first pair of mutually phase-squinted feedlines. There is also provided a second and third pair of feedlines, the third pair being progressively phase-squinted relative to the second pair, a first and second feedline of each of the second and third feedline pairs being connected to a corresponding first and second feedline, respectively, of each of the first pairs of feedlines.

3,434,140
MATRIX NAVIGATION SYSTEM

John P. Chisholm, Box 2122, Olympic Valley, Calif. 95730

Filed Oct. 26, 1966, Ser. No. 589,698
U.S. Cl. 343—6 10 Claims
Int. Cl. G01s *9/00*



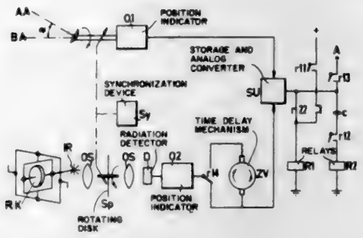
An air traffic control system illustrated by an example in which a large number of mobile units, and perhaps a few similar fixed units, exchange signals from which each unit can determine identity and range to other nearby units. No bearings are usually taken, but instead a central computer receives all these ranges and identities, and computes and displays a geometric figure made up of points each of which represents the relative position of a unit, the spacings between points being proportional to the ranges. The computing of portions of such a figure which are in remote areas outside of direct radio range is made possible by having the remote aircraft associate related identity and range signals and then relay such paired data back toward the computer through other units located nearer to it. The fact that range data is taken by several aircraft as a result of separate measurements made at the several local aircraft, and then relayed separately back to the computer, provides a degree of redundancy useful to the computer in checking the correctness of its figure. Identities and functions are kept separate by time sharing techniques, and where fixed reference points are absent, one or more aircraft can take occasional directional measurements and telemeter enough azimuth data to the computer to orient its figure with respect to earth coordinates.

3,434,141
APPARATUS FOR CONTROLLING A MOVING SELF-GUIDING OBJECT IN ORDER TO PREVENT A COLLISION

Arno Welti, Zurich, Switzerland, assignor to Albiswerk Zurich AG, Zurich, Switzerland, a corporation of Switzerland

Filed Dec. 7, 1967, Ser. No. 688,950
Claims priority, application Switzerland, Dec. 16, 1966, 18,090/66
U.S. Cl. 343—6 8 Claims
Int. Cl. G01s *9/48*

An improved method and appartus for controlling a moving, self-guiding object for the purpose of preventing a collision. The underlying basis of steering in this regard is guiding or guidance in accordance with the principle of a constant bearing course or invariable line of sight in a geometric horopter. Guiding takes place as a control towards a "collision" with virtual or imaginary targets derived from the plotted data of further moving actual objects which are on a collision course. By employing data storage devices, it is possible to simultaneously determine the presence of a number of objects which are located on a collision course and the course of the self-guiding object can be determined relative to each of the remaining objects. The course or heading corrections to avoid an actual collision can be indicated by optical means and proper corrective control can take place manually, or such

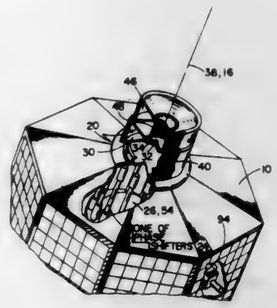


heading corrections can be automatically delivered directly to the control or steering system.

3,434,142
ELECTRONICALLY CONTROLLED AZIMUTH SCANNING ANTENNA SYSTEM

Stephen N. Andre, Tonawanda, Ronald D. Hettich, Depew, and Leland R. Magargel and Carl J. Stengel, Jr., Buffalo, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,181
U.S. Cl. 343—100 19 Claims
Int. Cl. H04b *7/00, 7/10*

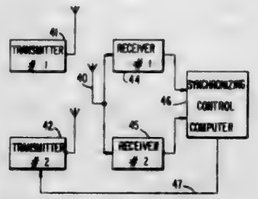


An electronically despun antenna system for a spin stabilized communication satellite comprising a flared biconical horn inwardly terminated by a parallel plate region which is excited by a ring of cophasally fed probes. A polarizer comprising a set of gratings on a dielectric sheet is disposed about the periphery of the horn to provide circular polarization. The probes are energized by a transmitter coupled through a plurality of controllable phase shifters, each comprising a Faraday rotator, quarter wave plate and dual mode transducer for coupling conjugated phased outputs to a pair of diametrically opposite probes from a single input. The phase shifters are controlled by a set of mutually phase offset periodic waveform signals generated from a beam control circuit in response to a source of reference pulses, such as earth center pulses derived from an infrared horizon sensor. The beam control circuit comprises a sinewave synthesizer, controlled in timing by a phase lock loop responsive to the reference pulses, and a phase synthesizer for producing a plurality of phase shifted versions of the synthesized sinewave. In the event of a failure in the beam controlled or reference pulse circuitry, a failure detection circuit generates a signal operative to switch the transmitter output power from the ring of probes to a center probe, thereby providing a toroidal omnidirectional antenna pattern.

3,434,143
APPARATUS FOR DETERMINING THE RADIOLOCATION OF A MOVABLE PART

Etienne A. H. Honore, Chatenay-Malabry, Hauts-de-Seine, and Emile L. G. Torcheux, Paris, France, assignors to Societe d'Etude et d'Application des Techniques Nouvelles, Paris, France

Filed Feb. 28, 1967, Ser. No. 619,266
Claims priority, application France, Mar. 29, 1966, 55,325
U.S. Cl. 343—105 9 Claims
Int. Cl. G01s *1/30*

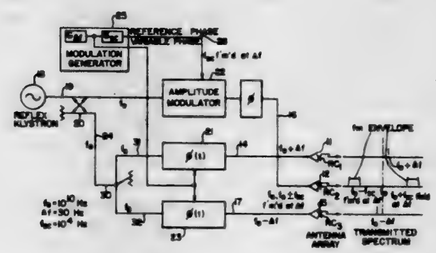


Apparatus for determining the radiolocation of a movable part carrying a plurality of radio receiving subassemblies with reference to cooperating mutually spaced transmitting stations lying at predetermined geographical points. The frequency of the waves transmitted from each transmitting station to the corresponding receiving subassembly is caused to vary in discrete constant frequency steps with each step lasting a few seconds. The transition from one constant frequency step to the next, during a single transmission cycle of operation, is phase coherent in order to enhance the accuracy of the measurements of phase differences in the radio receiving subassemblies.

3,434,144
PRECISION INTERFEROMETER NAVIGATION SYSTEM

Herbert Warren Cooper, Hyattsville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 9, 1967, Ser. No. 621,892
U.S. Cl. 343—108 7 Claims
Int. Cl. G01s *1/18*

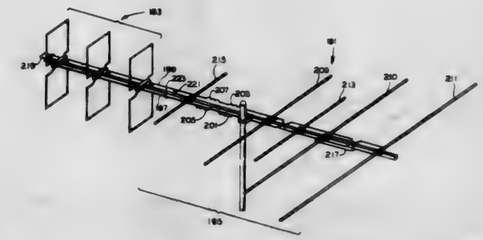


A microwave interferometer precision navigation ground system utilizing a fixed linear array of a carrier antenna and sideband antennas, having their maxima in the same direction, in which the angle in space with respect to the location of the ground system is encoded upon a microwave carrier as an audiofrequency modulation whose phase, with respect to a reference phase, is advanced for angles on one side of the reference angle and retarded for angles on the opposite side. A carrier frequency, amplitude modulated by the same subcarrier frequency on which a reference phase has been frequency modulated, is radiated from the carrier antenna and only one sideband is radiated from each of the sideband antennas.

3,434,145
DOUBLE LOOP ANTENNA ARRAY WITH LOOPS PERPENDICULARLY AND SYMMETRICALLY ARRANGED WITH RESPECT TO FEED LINES

Donald H. Wells, Oregon, Ohio, assignor to S & A Electronics, Inc., Oregon, Ohio, a corporation of Ohio

Filed Aug. 1, 1966, Ser. No. 569,251
U.S. Cl. 343—726 17 Claims
Int. Cl. H01q *21/06*

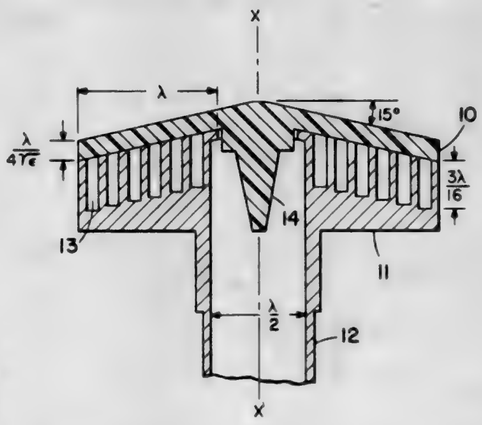


This invention relates to an open loop antenna and the means of electrically connecting it to a pair of lead conductors, which means may include a specific dielectric support connection therefor. More particularly, it deals with an array of such loop antennas capactively and/or integrally coupled together to form one or more figure 8 configurations so as to produce a high gain over a wide frequency band.

3,434,146
LOW PROFILE OPEN-ENDED WAVEGUIDE ANTENNA WITH DIELECTRIC DISC LENS

Louis G. Petrich, Morris Plains, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Aug. 3, 1966, Ser. No. 570,099
U.S. Cl. 343—753 9 Claims
Int. Cl. H01q *19/06*

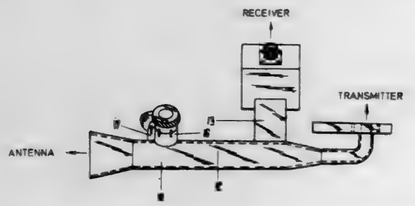


This invention relates to a low-profile microwave antenna, with a dielectric surface-wave configuration. The antenna takes the form of a slightly conical, circular, dielectric disk in contact with a metallic ground plane. The ground plane is embedded with circular chokes.

3,434,147
ANTENNA FEED WITH POLARIZATION SELECTIVITY

Paul J. Cabion, Johannesburg, Transvaal, Republic of South Africa, and Jules A. Fejer, Dallas, Tex., assignors to South African Inventions Development Corporation

Filed Aug. 8, 1966, Ser. No. 571,001
Claims priority, application Republic of South Africa, Sept. 3, 1965, 65/4,817
U.S. Cl. 343—756 10 Claims
Int. Cl. H01q 19/00, 13/00; H01p 5/12

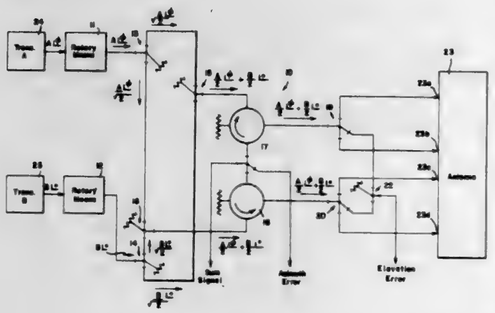


1. A microwave transmission apparatus including a first waveguide adapted to pass a first microwave radiation from a transmitter to an antenna and comprising an input section and an output section, a second waveguide connected to the first waveguide at the junction of the input and the output sections, means to prevent microwave radiation polarized in a first prescribed plane from passing through the input section, means to prevent microwave radiation polarized in a second prescribed plane from passing through the second waveguide, the output section being adapted to pass microwave radiations polarized in at least the first and the second prescribed planes, and formations protruding into the output section and adapted to re-radiate a portion of the first microwave radiation back towards the input section such that the re-radiated portion is polarized in the first prescribed plane only.

3,434,148
MICROWAVE POWER ADDER CIRCUIT

Lawrence H. O'Brien and Richard S. Jamison, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Aug. 1, 1966, Ser. No. 569,275
U.S. Cl. 343—858 6 Claims
Int. Cl. H01q 1/50

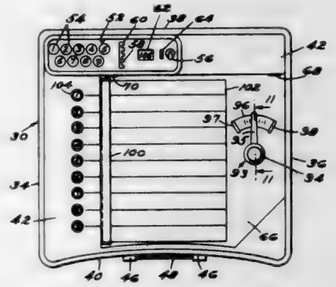


1. A microwave power adder circuit comprising:
first hybrid junction means for dividing a first electromagnetic wave signal equally between first and second signal paths and for dividing a second electromagnetic wave signal equally between third and fourth signal paths;
second hybrid junction means coupled to said first hybrid junction means for combining the electromagnetic wave signals of said first and third signal paths to form a first combined electromagnetic wave signal and for combining the electromagnetic wave signals of said second and fourth signal paths to form a second combined electromagnetic wave signal;
non-reciprocal means coupled to said second hybrid junction means for providing respective signal paths for said first combined electromagnetic wave signal and for said second electromagnetic wave signal; and
third hybrid junction means coupled to said non-reciprocal means for dividing said first and second combined electromagnetic wave signals.

3,434,149
METHOD AND RECORDER FOR MAKING TIME STUDIES

Roy D. Brousseau, 11313 Charest, Detroit, Mich. 48212, and Carl W. Kogstrom, Detroit, Mich.; said Kogstrom, assignor to said Brousseau

Filed Aug. 8, 1966, Ser. No. 570,919
U.S. Cl. 346—1 23 Claims
Int. Cl. G01d 15/08



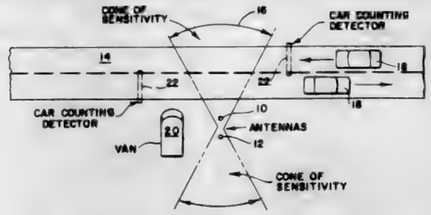
A portable machine for recording time study data in which a turntable is rotatably mounted in a housing to removably support a circular electro-sensitive chart for co-axial rotation therewith. A motor and drive mechanism rotates the turntable about its axis at a pre-determined speed and also, through a lead screw drive take off, propels a recording head along a recording arm which extends over the turntable generally radially thereof and parallel to the chart surface. The recording head carries a plurality of electro-discharge styli which are individually connected to charged capacitors by manually operating, selectively and/or simultaneously push button switches disposed in a keyboard array. Each switch completes a circuit connection between one or more of the styli and the chart on the table to thereby generate an electrostatic capacitive discharge which burns a dot on the recording chart decodable into measured time periods by the positional relationship of the styli and dots relative to chart indicia or read-off instruments.

A pace simulating mechanism is also provided which includes a pointer manually movable through a fixed arc corresponding to the end limits of an observable movement of a worker. The swinging motion of the pointer from one end limit to the other end limit actuates spaced switches in the path of pointer movement which are connected to styli in the recording head to make a dot recording indicative of the time span of an intermediate portion of the movement of the worker and thereby accurately determine the pace or tempo at which the worker is moving.

3,434,150
APPARATUS AND METHODS FOR SILENTLY SURVEYING AUTOMOBILE RADIOS

Roger F. Wernlund, Lake Worth, Fla., assignor to Franklin Gno Corporation, West Palm Beach, Fla., a corporation of Florida

Filed Apr. 10, 1967, Ser. No. 629,632
U.S. Cl. 346—1 15 Claims
Int. Cl. G01d 9/00

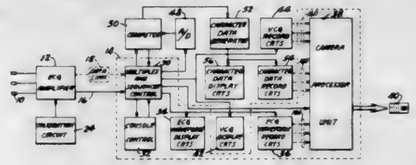


Automobile radios are surveyed to determine station choice by monitoring emissions from local oscillators. Monitoring equipment includes antennae positioned adjacent to a roadway and a plurality of receivers having narrow band channels which analyze signals within the local oscillator spectrum. In one embodiment a channel output is registered only when coincident with the output of a separate car detector. Register data are periodically printed. Signal-to-noise ratio is greatly improved by a differential antenna arrangement and by other techniques.

3,434,151
ELECTROCARDIOGRAPHIC RECORDING SYSTEM

William F. Bader, Maplewood Village, and Arney Landy, Jr., Roseville Village, Minn., and Marvin J. Schmitz, North Hudson Village Wis., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 20, 1967, Ser. No. 676,860
U.S. Cl. 346—1 13 Claims
Int. Cl. G01d 9/40, 9/10



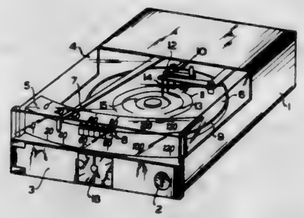
An electrocardiographic recording system is disclosed wherein a source of electrocardiographic signals are simultaneously connected as an input to a multiplexing circuit which generates a composite time division output signal for controlling a waveform generating means, such as a plurality of cathode ray tubes, to produce electrocardiographic waveforms dervied from the composite time division output signals for exposing a photographic media to make a permanent record of the electrocardiographic waveforms.

3,434,152
TACHOGRAPHS FOR AUTOMOBILES

Karl Vögtlin, Villingen, Black Forest, Germany, assignor to Kienzle Apparate G.m.b.H. Villingen, Black Forest, Germany

Filed Jan. 10, 1967, Ser. No. 608,396
Claims priority, application Germany, Jan. 13, 1966, K 58,129
U.S. Cl. 346—18 15 Claims
Int. Cl. G01d 9/38, 15/26, 15/34

A tachograph housing is mounted on the dashboard of an automobile in a position in which the diagram sheet is located in a plane perpendicular to the dashboard, and has a door or drawer supporting the clock driven carrier of the diagram sheet so that the carrier can be pulled out

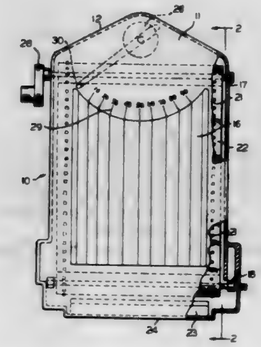


of the housing for exchange of the diagram sheet. At the beginning of the movement of the diagram sheet out of the housing, it is moved out of engagement with the recording means to prevent undesired recordings.

3,434,153
RECORDER WITH SELF-ERASING CHART

George E. Sonntag, 10555 W. Spencer Place, Milwaukee, Wis. 53224

Filed June 15, 1967, Ser. No. 646,355
U.S. Cl. 346—21 4 Claims
Int. Cl. G01d 9/12



A recording device equipped with a self-erasing chart wherein a powder is stored in the device and disposed to make frictional contact with the chart. A stylus, driven in response to a signal, wipes away the powder from the face of the chart. A means is provided for charging the chart to cause the powder to adhere to the chart.

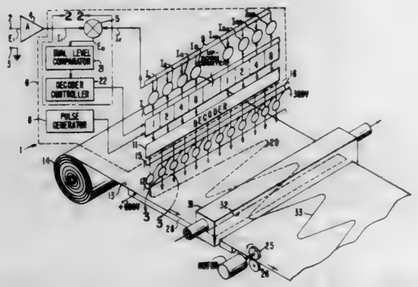
3,434,154
ELECTROGRAPHIC RECORDER EMPLOYING AN ANALOG-TO-DIGITAL CONVERTER HAVING A DUAL COMPARATOR MEANS DEFINING THE DEAD ZONE

Nicky M. Johnson, San Carlos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 21, 1967, Ser. No. 661,873
U.S. Cl. 346—32 3 Claims
Int. Cl. G01d 9/30

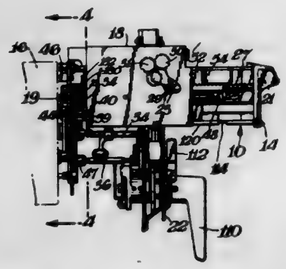
An electrographic recorder is disclosed which employs an analog-to-digital converter for energizing an array of writing electrodes in accordance with the converted analog input signal. The electrographic recorder includes an error detector wherein the analog input signal is compared with a feedback reference signal derived from the output of the analog-to-digital converter to derive an error signal

for causing the output of the analog-to-digital converter to track the input analog signal. The analog-to-digital converter includes a counter-circuit which is caused to count up or down or to not count at all in accordance with the error signal. A dual comparator circuit operates on the error signal for comparing the amplitude of the error signal with a pair of predetermined reference level signals corresponding to the levels at the margins defining



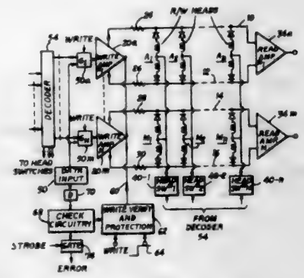
a dead zone which preferably has a width slightly greater than the width represented by the signal level difference between adjacent writing electrodes. The output of the dual comparator is a binary coded signal which is fed to a decoder controller which decodes the binary signal and causes the counter to count up, down, or not to count at all, depending upon the coded output of the dual comparator. The dual comparator defined dead zone prevents hunting of the recorder.

3,434,155
TICKET PRINTING DEVICE FOR DISPENSER
Edward L. Copony, Salisbury, Md. and Walter E. Pedroli, Lexington, and Robert Hermann, Brookline, Mass., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Sept. 9, 1966, Ser. No. 578,205
U.S. Cl. 346—43 **32 Claims**
Int. Cl. G01d *15/20*



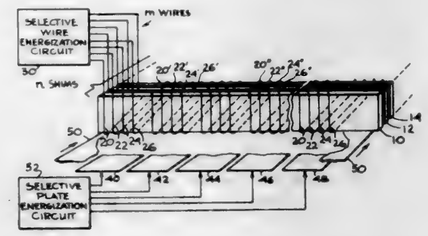
Printing device mounted on gasoline dispenser for printing customer credit card and transaction information on multiform ticket. Printing module incorporated in sliding drawer which may be locked within dispenser during operation. Outward movement of drawer presses printing roller against platen. Money and gallon amounts are set into printing module from dispenser. Centering mechanism for last digit printing wheel includes a double wedge device operated by the programming or cycling cam in the printing module. An advantageous programming cam is a bar cage and is rotated in response to movement of the dispenser controls. One-way clutch and resilient connection to printing wheels facilitate centering of lowest order digit before printing.

3,434,156
WRITE VERIFICATION FOR A RECORDING SYSTEM
Emrys C. James, Lake Park, Fla., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 17, 1965, Ser. No. 433,294
U.S. Cl. 346—74 **10 Claims**
Int. Cl. G01d *5/12*



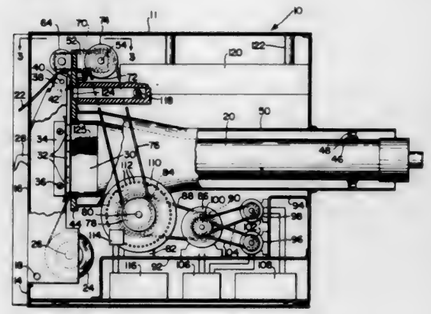
A write verification circuit which includes a single path common to a plurality of write amplifiers. Means coupled to this path senses whether or not write verification current is present and also determines, by sensing the duration and time of occurrence of this current, whether certain faults exist in a transducer to which write current is being applied.

3,434,157
ELECTROSTATIC PRINTING HEAD
Albert Macovski, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Feb. 4, 1966, Ser. No. 525,191
U.S. Cl. 346—74 **4 Claims**
Int. Cl. G01d *15/06*



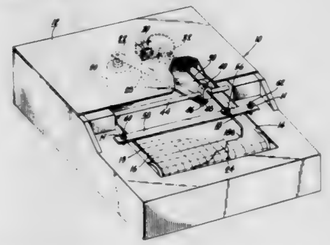
1. An improved electrostatic printing head of the dot matrix type comprising a plurality of thin elongated substantially rectangularly shaped members, on each member there being wound a multifilar wire helix, there being *m* wires in each helix, and there being *p* winding turns of each helix around each member, the placement of the wire and the spacing of turns of each helix around each elongated member being substantially identical, said elongated members being placed adjacent one another with their flat faces substantially parallel, to establish *p* dot matrices with the portions of the windings of said wire helices which pass around one of the edges of all of said elongated members.

3,434,158
FIBER OPTICS CATHODE-RAY TUBE RECORDER
Norman L. Stauffer, Englewood, and Donald E. Shafer and Tommy N. Tyler, Littleton, Colo., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 7, 1967, Ser. No. 614,448
U.S. Cl. 346—110 **10 Claims**
Int. Cl. G01d *9/42*



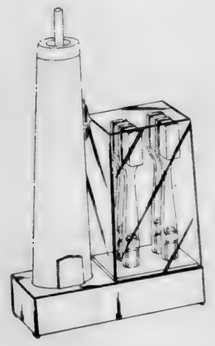
A fiber-optics cathode-ray tube is used to produce an electromagnetic radiation having a predominant wavelength which strikes a recording medium ultrasensitive to that wavelength. The recording medium is continuously drawn past the face plate of the fiber-optics cathode-ray tube in slidable contact with the surface thereof, while a high frequency input signal is transversely and continuously displayed on the face plate of the tube for exposing the recording medium and forming a recording trace thereon. A skew correction circuitry provides an electrical signal for offsetting each transversely displayed recording trace and thereby compensates for the continuous motion of the recording medium. This free running recording trace allows the intensity of the electron beam to be initially increased as it does not retrace its path across the face plate. The rate of change of the high frequency input signal is determined and applied to the control grid for increasing the electron beam intensity in proportion to the writing velocity of the input signal. This arrangement thus provides for a high speed continuous recording of a high frequency input signal which may be immediately displayed upon the recording medium.

3,434,159
RECORDER HAVING STYLUS PRESSURE ADJUSTMENT ASSEMBLY
Charles A. Erdman, Marlton, N.J., assignor to Venus Esterbrook Corporation, Cherry Hill, N.J., a corporation of New York
Filed Aug. 14, 1967, Ser. No. 660,431
U.S. Cl. 346—139 **3 Claims**
Int. Cl. G01d *15/18*

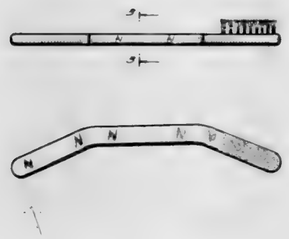


A mounting means for a stylus assembly in a recording device having a movable recording medium and means for actuating the stylus in response to changes in a variable condition to record a trace on the recording medium comprising a magnet carried by said stylus and a bar of magnetic material extending generally transversely of the recording medium which is adjustable relative to the magnet to selectively vary the air gap between the magnet and bar whereby the pressure applying relation of the stylus tip on the recording medium may be selectively controlled.

213,539
TOOTHBRUSH CHARGING UNIT AND HOLDER OR THE LIKE
Peter N. Ryckman, Mansfield, and Walton E. Sparks, Lexington, Ohio, assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Dec. 26, 1967, Ser. No. 9,910
Term of patent 14 years
U.S. Cl. D4—16
Int. Cl. D4—*02*



213,540
TOOTHBRUSH
Paul Razickas, 85—49 80th St., Woodhaven, N.Y. 11421
Filed May 15, 1967, Ser. No. 7,132
Term of patent 14 years
U.S. Cl. D4—25
Int. Cl. D4—*02*



213,541
BOTTLE OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., and James Malcolm Grear, Providence, R.I., assignors to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 9,103
Term of patent 14 years
U.S. Cl. D9—76
Int. Cl. D9—*01*



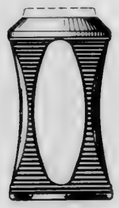
213,542
COMBINED BOTTLE AND CLOSURE THEREFOR
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1967, Ser. No. 9,493
Term of patent 14 years
U.S. Cl. D9—145
Int. Cl. D9—*01*



213,543
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 11,555
Term of patent 14 years
U.S. Cl. D9—149
Int. Cl. D9—*01*



213,544
BOTTLE OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., and James M. Amburgey, Kendall Park, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1967, Ser. No. 9,492
Term of patent 14 years
U.S. Cl. D9—155
Int. Cl. D9—*01*



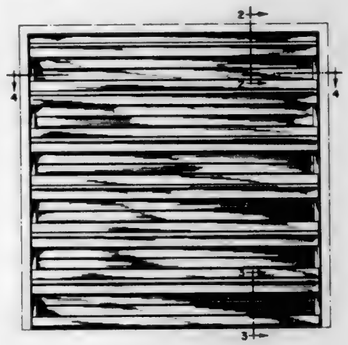
213,545
BOTTLE OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1967, Ser. No. 9,491
Term of patent 14 years
U.S. Cl. D9—169
Int. Cl. D9—*01*



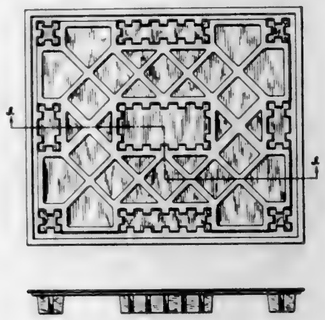
213,546
PLASTIC CUP OR THE LIKE
John A. Noel, 4238 N. 28th St., Phoenix, Ariz. 85015
Filed Apr. 26, 1967, Ser. No. 6,871
Term of patent 14 years
U.S. Cl. D9—242
Int. Cl. D9—*04*



213,547
DOOR
Francis Joseph McCabe, P.O. Box 131, Penns Park, Pa. 18943
Filed May 13, 1968, Ser. No. 11,904
Term of patent 14 years
U.S. Cl. D13—1
Int. Cl. D25—*02*



213,548
PALLET
John F. Redman, Jr., Fairway, Kans., assignor, by mesne assignments, to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Apr. 3, 1968, Ser. No. 11,272
Term of patent 14 years
U.S. Cl. D14—3
Int. Cl. D12—*13*



213,549
EXPLOSION SHIELD
Thomas P. Abbott, 18434 Topham St., Tarzana, Calif. 91356
Filed June 15, 1967, Ser. No. 7,481
Term of patent 14 years
U.S. Cl. D14—6
Int. Cl. D12—*14;* D29—*99*



213,550
BABY WALKER
Joseph D. Carpenter, Los Angeles, and Fred E. Golding, South Pasadena, Calif., assignors to Aeon Industries, Inc., doing business as Pride Products Company, Glendale, Calif., a corporation of California
Filed Feb. 23, 1968, Ser. No. 10,703
Term of patent 14 years
U.S. Cl. D15—1
Int. Cl. D12—*12*



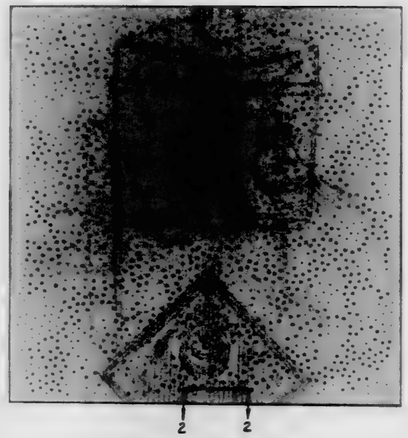
213,551
SEAT CUSHION
Morris Cohen, % Levindale Hebrew Home and Infirmary, Belvedere and Greenspring Aves., Baltimore, Md. 21215
Filed Dec. 20, 1967, Ser. No. 9,866
Term of patent 14 years
U.S. Cl. D15—8
Int. Cl. D6—*02*



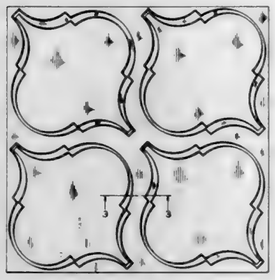
213,552
STOOL
George L. Hall, 1551 Spring Drive 67207, and Marion H. Mickey, 7814 E. Gilbert 67208, both of Wichita, Kans.
Filed Mar. 27, 1968, Ser. No. 11,159
Term of patent 14 years
U.S. Cl. D15—8
Int. Cl. D6—*01*



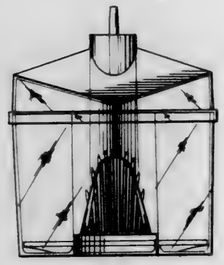
213,553
WALL PANEL UNIT
Ernest William Pick, Union City, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Apr. 13, 1967, Ser. No. 6,671
Term of patent 14 years
U.S. Cl. D18—2
Int. Cl. D25—*01*



213,554
FLOOR COVERING OR SIMILAR ARTICLE
Joseph Robert Cecchine, Manville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 19, 1967, Ser. No. 9,845
Term of patent 14 years
U.S. Cl. D18—2
Int. Cl. D25—*01*

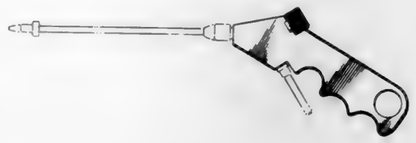


213,555
AQUARIUM FILTER
Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 8,380
Term of patent 14 years
U.S. Cl. D23—4
Int. Cl. D23—*01*

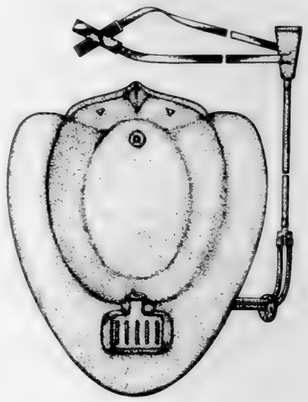




213,556
SPRAY GUN
Walter R. Sheeter, La Habra, Calif., assignor to All-Power Manufacturing Co., Montebello, Calif., a corporation of California
Filed Mar. 25, 1968, Ser. No. 11,109
Term of patent 14 years
U.S. Cl. 23—17
Int. Cl. D23—*01*

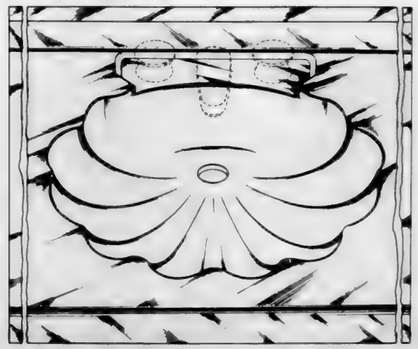


213,557
PORTABLE BIDET
Georgia Di Pasquale, 205 Birchwood Road, New Milford, N.J. 07646
Filed Apr. 24, 1968, Ser. No. 11,596
Term of patent 14 years
U.S. Cl. D23—51
Int. Cl. D23—*02*





213,558
BASIN
Richard C. Colborn, % Cultured Marble Products, 1241 E. Main St., Santa Paula, Calif. 93060
Filed Apr. 7, 1967, Ser. No. 6,587
Term of patent 14 years
U.S. Cl. D23—58
Int. Cl. D23—*02*

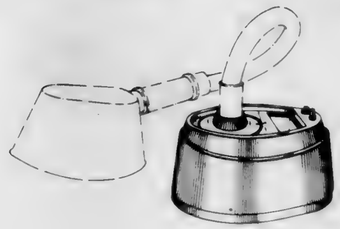


213,559
TRAILER ROOFTOP AIR-CONDITIONER COVER
Benjamin C. Baugh and Don Bruce Cleveland, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Mar. 14, 1968, Ser. No. 10,972
Term of patent 14 years
U.S. Cl. D23—142
Int. Cl. D23—*04*

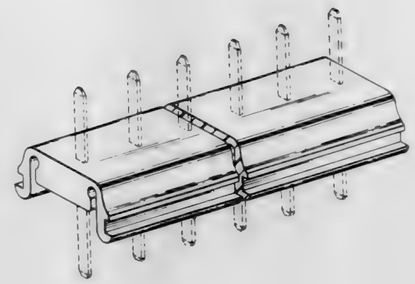




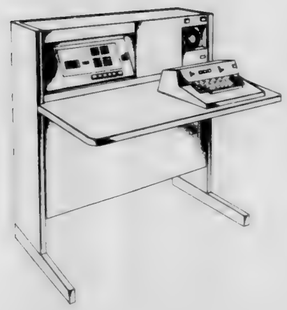
213,560
FACIAL VAPORIZER
Eugene R. Luedtke, Reedsburg, Wis., assignor to Hanks-craft Company, Reedsburg, Wis., a corporation of Wisconsin
Filed Apr. 8, 1968, Ser. No. 11,353
Term of patent 14 years
U.S. Cl. D23—148
Int. Cl. D23—*04;* D28—*03*



213,561
ELECTRICAL CONNECTOR HOUSING OR SIMILAR ARTICLE
Clair Wilson Snyder, Jr., Hellam, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 25, 1968, Ser. No. 11,611
Term of patent 14 years
U.S. Cl. D26—1
Int. Cl. D13—*03*

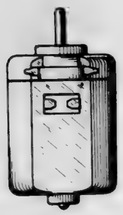


213,562
DATA INSCRIBER OR THE LIKE
Seton Cottier and John J. Natoli, Woodstock, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 22, 1967, Ser. No. 9,882
Term of patent 14 years
U.S. Cl. D26—5
Int. Cl. D14—*02*



213,563
ELECTRIC MOTOR OR SIMILAR ARTICLE
Takaichi Mabuchi, Tokyo, Japan, assignor to Tokyo Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Mar. 6, 1968, Ser. No. 10,875
Claims priority, application Japan Sept. 20, 1967
Term of patent 14 years
U.S. Cl. D26—5
Int. Cl. D13—*01*

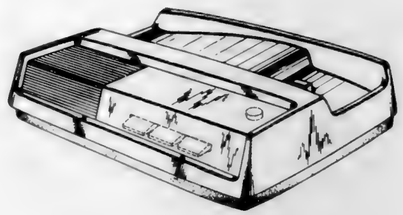




213,564
UTILITY POLE
James R. Baccanti, 3230 Santa Monica, Fullerton, Calif. 92632
Filed May 21, 1968, Ser. No. 12,025
Term of patent 14 years
U.S. Cl. D26—12
Int. Cl. D13—*03*



213,565
COMBINED TELEPHONE HANDSET SUPPORT AND EQUIPMENT HOUSING OR SIMILAR ARTICLE
George M. Janda, Westchester, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 9,596
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*03*

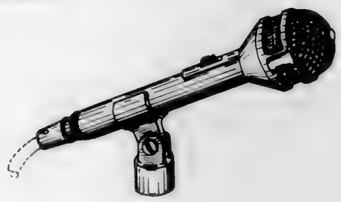


213,566
PHONOGRAPH TONE ARM
William E. Stacy, North Wilbraham, Mass., assignor to The Poly-Choke Company, Inc., East Hartford, Conn., a corporation of Connecticut
Filed Dec. 18, 1967, Ser. No. 9,824
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*01*

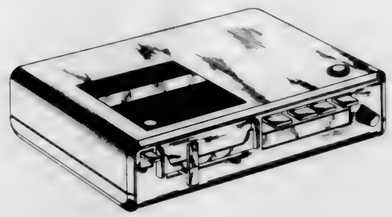




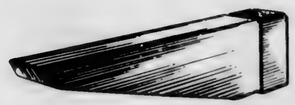
213,567
MICROPHONE
Albert Kahn, Buchanan, Mich., assignor to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 11,028
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*01*



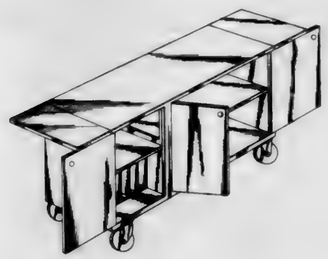
213,568
TRANSCRIBING ADAPTOR OR SIMILAR ARTICLE
Peter Quay Yang, New York, N.Y., assignor to The Gray Manufacturing Company, a corporation of Connecticut
Filed June 4, 1968, Ser. No. 12,206
Term of patent 14 years
U.S. Cl. D26—14
Int. Cl. D14—*01*



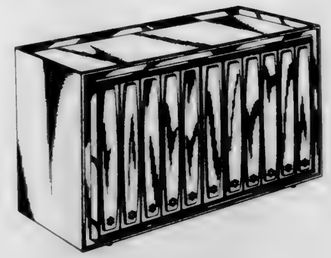
213,569
SHELF SUPPORT
Eugene F. Paine, Empire Building, Springfield, Mo. 65806
Filed May 25, 1966, Ser. No. 2,429
Term of patent 14 years
U.S. Cl. D33—3
Int. Cl. D8—*03*



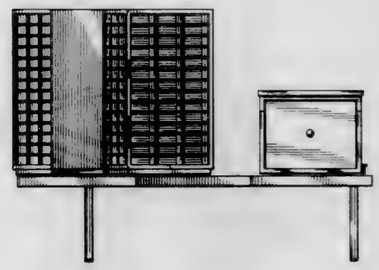
213,570
MOBILE VIDEO TAPE RECORDER CART
Norman R. Selinger, 7727 Groton Road, Bethesda, Md. 20014, and David C. Herbert, 12618 Kornett Lane, Bowie, Md. 20715
Filed Oct. 18, 1967, Ser. No. 9,053
Term of patent 14 years
U.S. Cl. D33—14
Int. Cl. D6—*01*



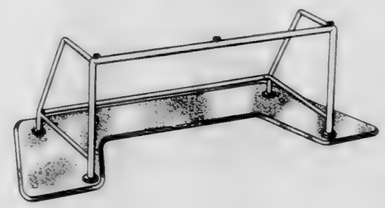
213,571
BATHROOM ACCESSORY CABINET OR SIMILAR ARTICLE
Peter M. Berend, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Sept. 5, 1967, Ser. No. 8,489
Term of patent 14 years
U.S. Cl. D33—16
Int. Cl. D6—*01*



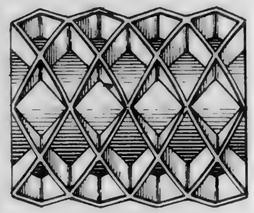
213,572
COMBINED MICROFILM READER STAND AND REEL STORAGE CONSOLE
Norman B. Bodinger, Denver, Colo., assignor to Information Handling Services, Inc., Englewood, Colo., a corporation of Colorado
Filed Aug. 31, 1967, Ser. No. 8,444
Term of patent 14 years
U.S. Cl. D33—19
Int. Cl. D6—*01*



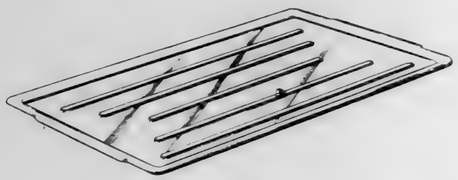
213,573
TOY SOCCER GOAL
Peter Arthur Adolph, Langton Green, Tunbridge Wells, Kent, England
Filed Oct. 16, 1967, Ser. No. 9,013
Claims priority, application Great Britain Sept. 22, 1967
Term of patent 14 years
U.S. Cl. D34—5
Int. Cl. D21—*03*



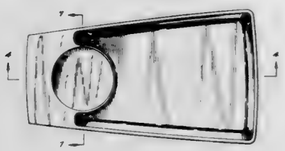
213,574
ROTARY DIE FOR EMBOSSING A BAKERY BUN OR THE LIKE
Louis G. Kuchuris, % Mary Ann Baking Co., 4545 W. Lyndale St. 60639, and Frank E. Ouradnik, 6324 S. Campbell Ave. 60629, both of Chicago, Ill.
Filed Jan. 22, 1968, Ser. No. 10,255
Term of patent 14 years
U.S. Cl. D44—1
Int. Cl. D15—*12*



213,575
MEAT PLATTER
Irving Rubin, 800 Newton St., Chestnut Hill, Mass. 02167
Filed Oct. 30, 1967, Ser. No. 9,211
Term of patent 14 years
U.S. Cl. D44—10
Int. Cl. D7—*01*



213,576
TRAY
David Douglas, 1119 Lincoln Blvd., Manitowoc, Wis. 54220
Filed Mar. 1, 1968, Ser. No. 10,806
Term of patent 14 years
U.S. Cl. D44—10
Int. Cl. D7—*01*



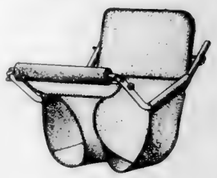
213,577
BEVERAGE SERVER
David Douglas, 1119 Lincoln Blvd., Manitowoc, Wis. 54220
Filed Dec. 21, 1967, Ser. No. 9,873
Term of patent 14 years
U.S. Cl. D44—21
Int. Cl. D7—*01*



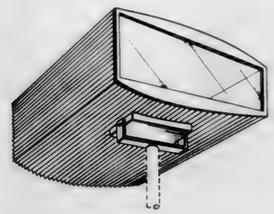
213,578
STIRRER
Otto W. Dieffenbach, Jr., Towson, Md., assignor to Glassips Inc., Baltimore, Md., a corporation of Maryland
Filed Jan. 11, 1968, Ser. No. 10,135
Term of patent 7 years
U.S. Cl. D44—29
Int. Cl. D7—*03*



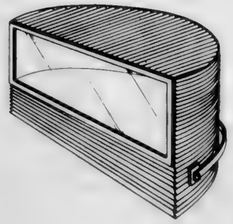
213,579
INFANT SWING SEAT
Fred E. Golding, South Pasadena, Calif., assignor to Aeon Industries, Inc., doing business as Pride Products Company, Glendale, Calif., a corporation of California
Filed June 7, 1967, Ser. No. 7,388
Term of patent 14 years
U.S. Cl. D15—1
Int. Cl. D21—*04;* D6—*01*



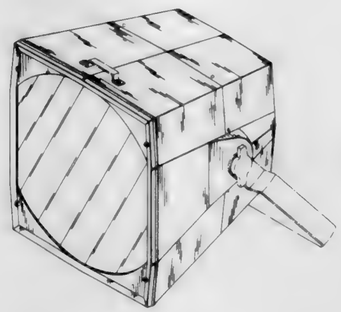
213,580
LIGHTING CASING
Edwin F. Osborne, Jr., Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Original design application Nov. 8, 1967, Ser. No. 9,331. Divided and this application Feb. 28, 1968, Ser. No. 10,773
Term of patent 14 years
U.S. Cl. D48—20
Int. Cl. D26—*03*



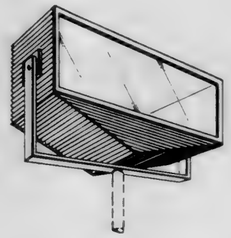
213,581
LIGHTING CASING
Edwin F. Osborne, Jr., Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Original design application Nov. 8, 1967, Ser. No. 9,331. Divided and this application Feb. 28, 1968, Ser. No. 10,774
Term of patent 14 years
U.S. Cl. D48—20
Int. Cl. D26—*03*



213,582
FLOODLIGHT
Donald E. Husby, Fairview Park, Ohio, and Edmund L. Izzi, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Mar. 6, 1968, Ser. No. 10,872
Term of patent 14 years
U.S. Cl. D48—20
Int. Cl. D26—*03*



213,583
LIGHTING CASING
Edwin F. Osborne, Jr. Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Original design application Nov. 8, 1967, Ser. No. 9,331. Divided and this application Feb. 28, 1968, Ser. No. 11,225
Term of patent 14 years
U.S. Cl. D48—20.6
Int. Cl. D26—*03*

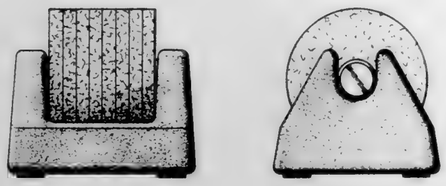


213,584
RECHARGEABLE FLASHLIGHT
Arthur H. Moore, Fairfield, and Joseph G. Bacevius, Bridgeport, Conn., assignors to The Bridgeport Metal Goods Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut
Filed Jan. 15, 1968, Ser. No. 10,153
Term of patent 14 years
U.S. Cl. D48—24
Int. Cl. D26—*04*

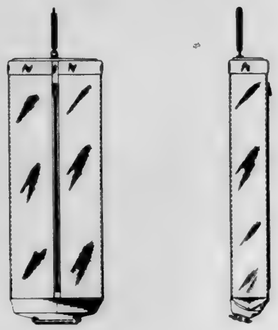




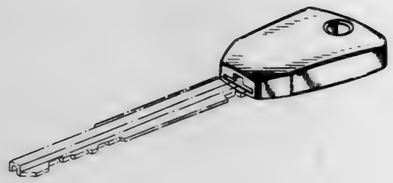
213,585
DEVICE FOR CLEANING SOLDERING IRON TIPS
Ross M. Mehl, La Habra, Calif., assignor to Plato Products Inc., El Monte, Calif., a corporation of California
Filed Apr. 1, 1968, Ser. No. 11,236
Term of patent 14 years
U.S. Cl. D49—9
Int. Cl. D15—*05*



213,586
BAG FOR A VACUUM CLEANER
Sol Howard and Robert Schaaf, Brooklyn, N.Y., assignors to Mil-An Mfg. Corp., Brooklyn, N.Y., a corporation of Kansas
Filed Mar. 13, 1968, Ser. No. 10,944
Term of patent 14 years
U.S. Cl. D49—17.1
Int. Cl. D7—*06*



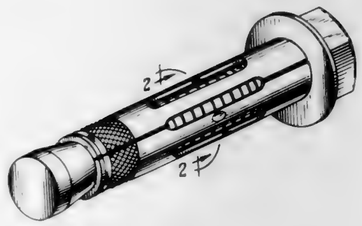
213,587
KEY BOW
Robert K. Unter, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., Rockford, Ill., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 9,833
Term of patent 14 years
U.S. Cl. D50—4
Int. Cl. D8—*03*



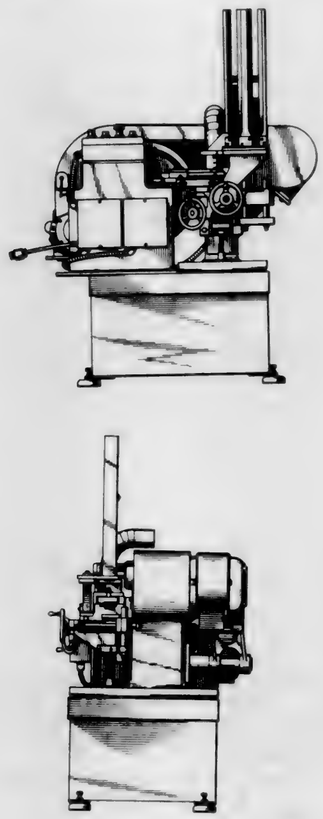
213,588
BATHROOM SCALE
Dana W. Mox, Glenview, Ill., assignor to Hanson Scale Company, a corporation of Illinois
Filed Jan. 15, 1968, Ser. No. 10,155
Term of patent 14 years
U.S. Cl. D52—10
Int. Cl. D12—*08*



213,589
SLEEVE ANCHOR
Thomas G. Bixby, Valparaiso, and Harrison R. Holman, South Bend, Ind., assignors to Phillips Drill Company, Michigan City, Ind., a corporation of Illinois
Filed Apr. 15, 1968, Ser. No. 11,460
Term of patent 14 years
U.S. Cl. D54—9
Int. Cl. D8—*04*



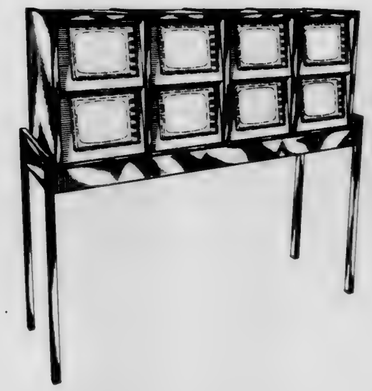
213,590
MACHINE FOR SLOTTING KEY BLANKS
Sam Reisner, Pacific Palisades, Calif., assignor to Osco Corporation, a corporation of California
Filed Oct. 23, 1967, Ser. No. 9,113
Term of patent 14 years
U.S. Cl. D55—1
Int. Cl. D15—*05*



213,591
COMBO ORGAN OR SIMILAR ARTICLE
John G. Gagne, Fort Erie, Ontario, Canada, assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed Oct. 9, 1967, Ser. No. 8,915
Term of patent 14 years
U.S. Cl. D56—2
Int. Cl. D17—*01*



213,592
COMBINED MULTI-TELEVISION RECEIVER UNIT AND SUPPORT STAND THEREFOR
Walter G. Anders, Canton, Ohio, assignor to Diebold Incorporated, Canton, Ohio, a corporation of Ohio
Filed Oct. 9, 1967, Ser. No. 8,935
Term of patent 14 years
U.S. Cl. D56—4
Int. Cl. D14—*03*; D6—*01*



213,593
PIANO CASE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 12, 1968, Ser. No. 10,939
Term of patent 14 years
U.S. Cl. D56—9
Int. Cl. D17—*01*



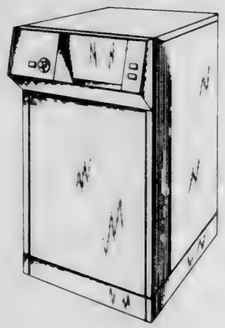
213,594
PAIR OF SUNGLASSES
Richard L. Huggins, Lima, and Roger L. McCracken, Chill, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 1, 1968, Ser. No. 12,574
Term of patent 14 years
U.S. Cl. D57—1
Int. Cl. D16—*08*



213,595
PAIR OF SUN GLASSES
Jean R. Simon, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 1, 1968, Ser. No. 12,576
Term of patent 14 years
U.S. Cl. D57—1
Int. Cl. D16—*08*



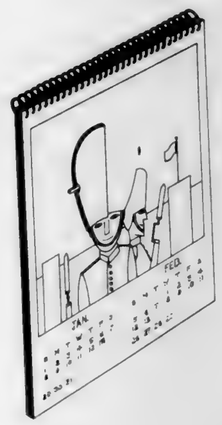
213,596
DISPLAY COPIER FOR DATA PROCESSING SYSTEMS OR THE LIKE
William S. Sheppley, Jr., Rhinebeck, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 26, 1968, Ser. No. 10,707
Term of patent 14 years
U.S. Cl. D61—1
Int. Cl. D14—*02*



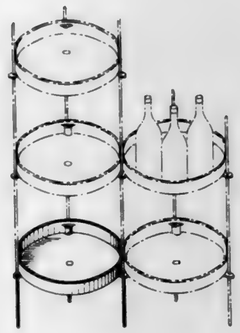
213,597
SURFBOARD BUMPER
William P. Joyce, 18702 Pacific Coast Highway, Malibu, Calif. 90265
Continuation-in-part of design application Ser. No. 6,533, Apr. 5, 1967. This application Feb. 29, 1968, Ser. No. 10,794
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D12—*06*



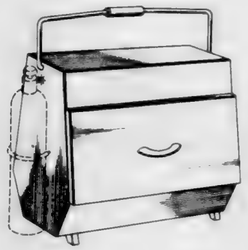
213,598
CALENDAR OR THE LIKE
John R. Christensen, P.O. Box 2382, Green Bay, Wis. 54306
Filed Dec. 29, 1967, Ser. No. 9,979
Term of patent 14 years
U.S. Cl. D74—5
Int. Cl. D19—*03*



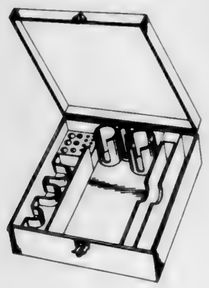
213,599
MODULAR MERCHANDISING STAND OR SIMILAR ARTICLE
Frederick Siebel, Rye, N.Y., assignor to Joseph E. Seagram & Sons, Inc., New York, N.Y., a corporation of Indiana
Filed Aug. 29, 1967, Ser. No. 8,417
Term of patent 14 years
U.S. Cl. D80—9
Int. Cl. D6—*01*



213,600
PORTABLE BROILER
Edwin J. Cowan, 275 Manzanita, Sierra Madre, Calif. 91024
Filed May 16, 1968, Ser. No. 11,964
Term of patent 14 years
U.S. Cl. D81—10
Int. Cl. D7—*04*



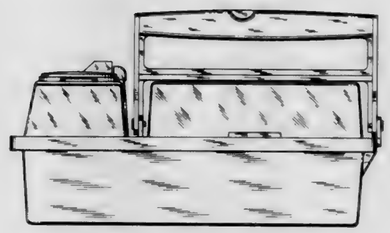
213,601
GUN CLEANING EQUIPMENT CONTAINER
Frederick J. Benke, 1318 S. Broadway, Santa Ana, Calif. 92707
Filed June 12, 1967, Ser. No. 7,443
Term of patent 14 years
U.S. Cl. D87—1
Int. Cl. D22—*99*; D9—*04*



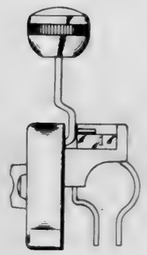
213,602
TIERED PARTS BIN
William D. Taylor, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Nov. 6, 1967, Ser. No. 9,296
Term of patent 14 years
The portion of the term of the patent subsequent to June 25, 1982, has been disclaimed
U.S. Cl. D87—1
Int. Cl. D6—*01*



213,603
CARRYING CASE FOR A CLEANING APPLIANCE
Charles R. Margolies, Oreland, Pa., assignor to Glamorene Products Corporation, Clifton, N.J., a corporation of Delaware
Filed Jan. 12, 1968, Ser. No. 10,142
Term of patent 14 years
U.S. Cl. D87—1
Int. Cl. D3—*99*



213,604
GEAR SHIFTING CONSOLE FOR A BICYCLE
Keizo Shimano, 81 Midorigaoka, Minami-cho, 3-chome, Sakai, Osaka, Japan, and Norio Sato, 414 Takosono-cho, Suita, Osaka, Japan
Filed Dec. 6, 1967, Ser. No. 9,667
Claims priority, application Japan Aug. 11, 1967
Term of patent 7 years
U.S. Cl. D90—1
Int. Cl. D12—*14*

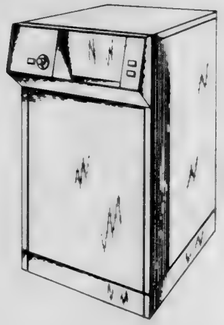




213,595
PAIR OF SUN GLASSES
Jean R. Simon, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 1, 1968, Ser. No. 12,576
Term of patent 14 years
U.S. Cl. D57—1
Int. Cl. D16—*08*



213,596
DISPLAY COPIER FOR DATA PROCESSING SYSTEMS OR THE LIKE
William S. Sheppley, Jr., Rhinebeck, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 26, 1968, Ser. No. 10,707
Term of patent 14 years
U.S. Cl. D61—1
Int. Cl. D14—*02*



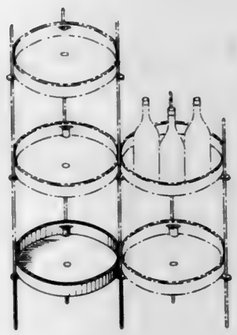
213,597
SURFBOARD BUMPER
William P. Joyce, 18702 Pacific Coast Highway, Malibu, Calif. 90265
Continuation-in-part of design application Ser. No. 6,533, Apr. 5, 1967. This application Feb. 29, 1968, Ser. No. 10,794
Term of patent 14 years
U.S. Cl. D71—1
Int. Cl. D12—*06*



213,598
CALENDAR OR THE LIKE
John R. Christensen, P.O. Box 2382, Green Bay, Wis. 54306
Filed Dec. 29, 1967, Ser. No. 9,979
Term of patent 14 years
U.S. Cl. D74—5
Int. Cl. D19—*03*



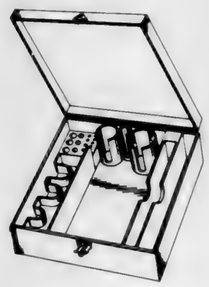
213,599
MODULAR MERCHANDISING STAND OR SIMILAR ARTICLE
Frederick Siebel, Rye, N.Y., assignor to Joseph E. Seagram & Sons, Inc., New York, N.Y., a corporation of Indiana
Filed Aug. 29, 1967, Ser. No. 8,417
Term of patent 14 years
U.S. Cl. D80—9
Int. Cl. D6—*01*



213,600
PORTABLE BROILER
Edwin J. Cowan, 275 Manzanita, Sierra Madre, Calif. 91024
Filed May 16, 1968, Ser. No. 11,964
Term of patent 14 years
U.S. Cl. D81—10
Int. Cl. D7—*04*



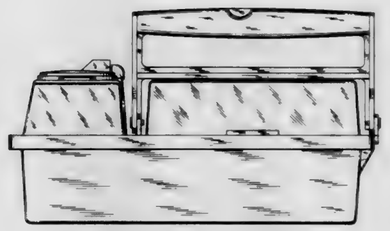
213,601
GUN CLEANING EQUIPMENT CONTAINER
Frederick J. Benke, 1318 S. Broadway, Santa Ana, Calif. 92707
Filed June 12, 1967, Ser. No. 7,443
Term of patent 14 years
U.S. Cl. D87—1
Int. Cl. D22—*99*; D9—*04*



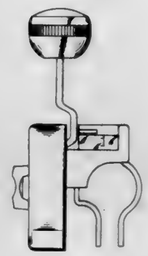
213,602
TIERED PARTS BIN
William D. Taylor, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Nov. 6, 1967, Ser. No. 9,296
Term of patent 14 years
The portion of the term of the patent subsequent to June 25, 1982, has been disclaimed
U.S. Cl. D87—1
Int. Cl. D6—*01*

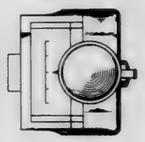


213,603
CARRYING CASE FOR A CLEANING APPLIANCE
Charles R. Margolies, Oreland, Pa., assignor to Glamorene Products Corporation, Clifton, N.J., a corporation of Delaware
Filed Jan. 12, 1968, Ser. No. 10,142
Term of patent 14 years
U.S. Cl. D87—1
Int. Cl. D3—*99*

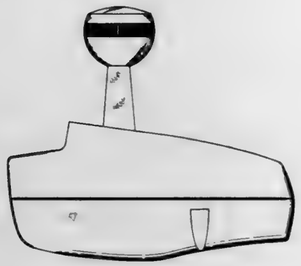


213,604
GEAR SHIFTING CONSOLE FOR A BICYCLE
Keizo Shimano, 81 Midorigaoka, Minami-cho, 3-chome, Sakai, Osaka, Japan, and Norio Sato, 414 Takosono-cho, Suita, Osaka, Japan
Filed Dec. 6, 1967, Ser. No. 9,667
Claims priority, application Japan Aug. 11, 1967
Term of patent 7 years
U.S. Cl. D90—1
Int. Cl. D12—*14*

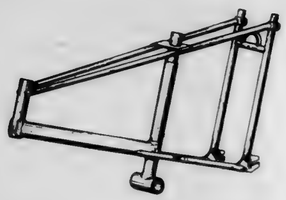




213,605
GEAR SHIFTING CONSOLE FOR A BICYCLE
Keizo Shimano, 81 Midorigaoka, Minami-cho, 3-chome, Sakai, Osaka, Japan, and Norio Sato, 414 Takosono-cho, Suita, Osaka, Japan
Filed Feb. 6, 1968, Ser. No. 10,456
Claims priority, application Japan Aug. 11, 1967
Term of patent 7 years
U.S. Cl. D90—1
Int. Cl. D12—*14, 11, 99*



213,606
BICYCLE FRAME
John McGregor Gordon, Nuthall, Nottingham, and Harry Letherland, Brancote Hill, Nottingham, England, assignors to Raleigh Industries Limited, a corporation of Great Britain
Filed June 7, 1968, Ser. No. 12,255
Claims priority, application Great Britain Dec. 9, 1967
Term of patent 7 years
U.S. Cl. D90—8
Int. Cl. D12—*11*



213,607
SUPPORT FRAME FOR SIGNBOARDS OR THE LIKE
James B. Grady, Delhi Township, Hamilton County, Ohio (504 Overhill Lane, Cincinnati, Ohio 45238)
Filed Sept. 18, 1967, Ser. No. 8,629
Term of patent 14 years
U.S. Cl. D96—12
Int. Cl. D20—*03*



213,608
COAT
Arthur Carew, Sausalito, Calif., assignor to Lilli Ann Corporation, San Francisco, Calif., a corporation of California
Filed May 8, 1968, Ser. No. 11,846
Term of patent 14 years
U.S. Cl. D2—183
Int. Cl. D2—*01*



213,609
COAT
Cosmas C. Giannoulis, Daly City, Calif., assignor to Lilli Ann Corporation, San Francisco, Calif., a corporation of California
Filed May 16, 1968, Ser. No. 11,971
Term of patent 14 years
U.S. Cl. D2—183
Int. Cl. D2—*01*



213,610
COAT
Cosmas C. Giannoulis, Daly City, Calif., assignor to Lilli Ann Corporation, San Francisco, Calif., a corporation of California
Filed May 16, 1968, Ser. No. 11,970
Term of patent 14 years
U.S. Cl. D2—206
Int. Cl. D2—*01*



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 18TH DAY OF MARCH, 1969

Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O. G. 1221. Identification is by serial number of the application.

Aiken, Howard A., and G. C. Oppenlander, to Hercules Inc. Process for dry spinning poly(4-methyl-1-pentene). 762,160, 3–18–69. Cl. 264—210.
Bingley, George W., and A. C. Dowd, to Massey-Ferugson Inc. Backhoe control console. 742,600, 3–18–69, Cl. 37—118.
Brunner, Gordon F., to The Proctor & Gamble Co. Food products having improved flavor. 738,777, 3–18–69, Cl. 99—123.
Brunson, Marion O., and W. D. McGillen. Thermoplastic polymeric tear strips for packaging materials. 626,787, 3–18–69, Cl. 229—51.
Dowd, Allyn C.: *See*—
Bingley, George W., and Dowd. 742,600.
Du Pont de Nemours, E. I., and Co.: *See*—
Irwin, Robert S. 647,320.
Romano, Albert P. 644,485.
Gessler, Albert M., and J. Rehner, Jr. Chemically modified carbon black and rubbery compositions containing same. 3–18–69, Cl. 260—41.5.
Graham, James L. Wide exposure latitude photographic elements. 580,216, 3–18–69, Cl. 96—74.
Hatfield, John R., Jr., and C. E. Sandidge. Method for forming cigarette filter rods. 666,165, 3–18–69, Cl. 156—166.
Hercules Inc.: *See*—
McFarren, Gerald A. 762,159.
Aiken, Howard A., and Oppenlander. 762,160.
Irwin, Robert S., to E. I. du Pont de Nemours and Co. Polymer prepared by the hydrolysis of aromatic polyimides and conversion of the resulting polyamide-acid linkages to form aroyloxypropane-sulfonate dye sites. 647,320, 3–18–69, Cl. 8—55.
Massey-Ferguson Inc.: *See*—
Bingley, George W., and Dowd. 742,600.
McFarren, Gerald A., to Hercules Inc. Process for dry spinning poly(4-methyl)-1-pentene. 762,159, 3–18–69, Cl. 264—210.
McGillen, William D.: *See*—
Brunson, Marion O., and McGillen. 626,787.
Morrell, William E.: *See*—
Morrison, Kyle E., and Morrell. 665,476.
Morrison, Kyle E., and W. E. Morrell. Electrostatic process and apparatus for applying materials to tobacco smoke filter tow. 665,476, 3–18–69, Cl. 117—17.
Newland, Gordon C.: *See*—
Tamblyn, John W., and Newland. 604,120.
Oppenlander, George C.: *See*—
Aiken, Howard A., and Oppenlander. 762,160.
Procter & Gamble Co., The: *See*—
Brunner, Gordon F. 738,777.
Rehner, John, Jr.: *See*—
Gessler, Albert M., and Rehner. 603,791.
Romano, Albert P., to E. I. du Pont de Nemours and Co. Safety inks. 644,485, 3–18–69, Cl. 106—22.
Sandidge, Charles E.: *See*—
Hatfield, John R., Jr., and Sandidge. 666,165.
Tamblyn, John W., and G. C. Newland. Purification of organic chemicals by selective exudation from solid supersaturated solution in another organic material. 604,120, 3–18–69, Cl. 260—94.9.

LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 18TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Snyder, Clair W., Jr. 213,561.
Abbott, Thomas P. Explosion shield. 213,549, 3–18–69, Cl. D14—6.
Adolph, Peter A. Toy soccer goal. 213,573, 3–18–69, Cl. D34—5.
Aeon Industries, Inc.: *See*—
Carpenter, Joseph D., and Golding. 213,550.
Golding, Fred E. 213,579.
All-Power Mfg. Co.: *See*—
Sheeter, Walter R. 213,556.
Amburgey, James M.: *See*—
Koenigsberg, Victor, and Amburgey. 213,544.
Anders, Walter G., to Diebold, Inc. Combined multi-television receiver unit and support stand therefor. 213,592, 3–18–69, Cl. D56—4.
Aquariums Inc.: *See*—
Willinger, Allan H. 213,555.
Automatic Electric Laboratories, Inc.: *See*—
Janda, George M. 213,565.
Baccanti, James R. Utility pole. 213,564, 3–18–69, Cl. D26—12.
Bacevius, Joseph G.: *See*—
Moore, Arthur H., and Bacevius. 213,584.
Baldwin, D. H., Co.: *See*—
White, Winsor D., Jr. 213,593.
Baugh, Benjamin C., and D. B. Cleveland, to The Coleman Co., Inc. Trailer roof-top air conditioner cover. 213,559, 3–18–69, Cl. D23—142.
Bausch & Lomb Inc.: *See*—
Huggins, Richard L., and McCracken. 213,594.
Simon, Jean R. 213,595.
Benke, Frederick J. Gun cleaning equipment container. 213,601, 3–18–69, Cl. D87—1.
Berend, Peter M., to Rubbermaid Inc. Bath room accessory cabinet or similar article. 213,571, 3–18–69, Cl. D33—16.
Bixby, Thomas G., and H. R. Holman, to Phillips Drill Co. Sleeve anchor. 213,589, 3–18–69, Cl. D54—9.
Bodinger, Norman B., to Information Handling Services, Inc. Combined microfilm reader stand and reel storage console. 213,572, 3–18–69, Cl. D33—19.
Bridgeport Metal Goods Mfg. Co., The: *See*—
Moore, Arthur H., and Bacevius. 213,584.
Carew, Arthur, to Lilli Ann Corp. Coat. 213,608, 3–18–69, Cl. D2—183.
Carpenter, Joseph D., and F. E. Golding, to Aeon Industries, Inc. d.b.a. Pride Products Co. Baby walker. 213,550, 3–18–69, Cl. D15—1.
Cecchine, Joseph R., to Johns-Manville Corp. Floor covering or similar article. 213,554, 3–18–69, Cl. D18—2.
Christensen, John R. Calendar or the like. 213,598, 3–18–69, Cl. D74—5.
Cleveland, Don B.: *See*—
Baugh, Benjamin C., and Cleveland. 213,559.
Cohen, Morris. Seat cushion. 213,551, 3–18–69, Cl. D15—8.
Colborn, Richard C. Basin. 213,558, 3–18–69, Cl. D23—38.
Coleman Co., Inc., The: *See*—
Baugh, Benjamin C., and Cleveland. 213,559.
Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 213,542.
Douglas, Livingston C. 213,543.
Koenigsberg, Victor. 213,545.
Koenigsberg, Victor, and Amburgey. 213,544.
Cottier, Seton, and J. J. Natoli, to International Business Machines Corp. Data inscriber or the like. 213,562, 3–18–69, Cl. D26—5.
Cowan, Edwin J. Portable broiler. 213,600, 3–18–69, Cl. D81—10.
Cowan, Murray L., and J. M. Grear, to Textron Inc. Bottle or similar article. 213,541, 3–18–69, Cl. D9—76.
Crown Zellerbach Corp.: *See*—
Redman, John F., Jr. 213,548.
Diebold, Inc.: *See*—
Anders, Walter G. 213,592.
Dieffenbach, Otto W., Jr., to Glassips Inc. Stirrer. 213,578, 3–18–69, Cl. D44—29.
Di Pasquale, Georgia. Portable bidet. 213,557, 3–18–69, Cl. D23—51.
Douglas, David. Tray. 213,576, 3–18–69, Cl. D44—10.
Douglas, David. Beverage server. 213,577, 3–18–69, Cl. D44—21.
Douglas, Livingston C., to Colgate-Palmolive Co. Combined bottle and closure therefor. 213,542, 3–18–69 Cl. D9—145.
Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 213,543, 3–18–69, Cl. D9—149.
Electro-Voice Inc.: *See*—
Kahn, Albert. 213,567.
Esquire, Inc.: *See*—
Osborne, Edwin F., Jr. 213,580.
Osborne, Edwin F., Jr. 213,581.
Osborne, Edwin F., Jr. 213,583.
Gagne, John G., to The Wurlitzer Co. Combo organ or similar article. 213,591, 3–18–69, Cl. D56—2.
Giannoulis, Cosmas C., to Lilli Ann Corp. Coat. 213,609, 3–18–69, Cl. D2—183.

Glannoulis, Cosmas C., to Lilli Ann Corp. Coat. 213,610, 3–18–69, Cl. D2—206.
Glamorene Products Corp.: *See*—
Margolles, Charles R. 213,603.
Classips Inc.: *See*—
Dieffenbach, Otto W., Jr. 213,578.
Golding, Fred E., to Aeon Industries, Inc., d.b.a. Pride Products Co. Infant swing seat. 213,579, 3–18–69, Cl. D15—1.
Golding, Fred E.: *See*—
Carpenter, Joseph D., and Golding. 213,550.
Gordon, John M., and H. Letherland, to Raleigh Industries Ltd. Bicycle frame. 213,606, 3–18–69, Cl. D90—8.
Grady, James B. Support frame for sign boards or the like. 213,607, 3–18–69, Cl. D96—12.
Gray Mfg. Co., The: *See*—
Yang, Peter Q. 213,568.
Grear, James M.: *See*—
Cowan, Murray L., and Grear. 213,541.
Hall, George L., and M. H. Mickey. Stool. 213,552, 3–18–69, Cl. D15—8.
Hankscraft Co.: *See*—
Luedtke, Eugene R. 213,560.
Hanson Scale Co.: *See*—
Mox, Dana W. 213,588.
Herbert, David C.: *See*—
Selinger, Norman R., and Herbert. 213,570.
Holman, Harrison R.: *See*—
Bixby, Thomas G., and Holman. 213,589.
Howard, Sol, and R. Schaaf, to Mil-An Mfg. Corp. Bag for a vacuum cleaner. 213,586, 3–18–69, Cl. D49—17.1.
Huggins, Richard L., and R. L. McCracken, to Bausch & Lomb Inc. Pair of sun glasses. 213,594, 3–18–69, Cl. D57—1.
Husby, Donald E., and E. L. Izzi, to Westinghouse Electric Corp. Floodlight. 213,582, 3–18–69, Cl. D48—20.
Information Handling Services, Inc.: *See*—
Bodinger, Norman B. 213,572.
International Business Machines Corp.: *See*—
Cottier, Seton, and Natoli. 213,562.
Sheppley, William S., Jr. 213,596.
Izzi, Edmund L.: *See*—
Husby, Donald E., and Izzi. 213,582.
Janda, George M., to Automatic Electric Laboratories, Inc. Combined telephone handset support and equipment housing or similar article. 213,565, 3–18–69, Cl. D26—14.
Johns-Manville Corp.: *See*—
Cecchine, Joseph R. 213,554.
Pick, Ernest W. 213,553.
Joyce, William P. Surfboard bumper. 213,597, 3–18–69, Cl. D71—1.
Kahn, Albert, to Electro-Voice Inc. Microphone. 213,567, 3–18–69, Cl. D26—14.
Keystone Consolidated Industries, Inc.: *See*—
Unter, Robert K. 213,587.
Koenigsberg, Victor, to Colgate-Palmolive Co. Bottle or similar article. 213,545, 3–18–69, Cl. D9—169.
Koenigsberg, Victor, and J. M. Amburgey, to Colgate-Palmolive Co. Bottle or similar article. 213,544, 3–18–69, Cl. D9—155.
Kuchuris, Louis G., and F. E. Ouradnik. Rotary die for embossing a bakery bun or the like. 213,574, 3–18–69, Cl. D44—1.
Letherland, Harry: *See*—
Gordon, John M., and Letherland. 213,606.
Lilli Ann Corp.: *See*—
Carew, Arthur. 213,608.
Glannoulis, Cosmas C. 213,609.
Glannoulis, Cosmas C. 213,610.
Luedtke, Eugene R., to Hankscraft Co. Facial vaporizer. 213,560, 3–18–69, Cl. D23—148.
Mabuchi, Takaichi, to Tokyo Kagaku Kabushikikaisha. Electric motor or similar article. 213,563, 3–18–69, Cl. D26—5.
Margolles, Charles R., to Glamorene Products Corp. Carrying case for a cleaning appliance. 213,603, 3–18–69, Cl. D87—1.
McCabe, Francis J. Door. 213,547, 3–18–69, Cl. D13—1.
McCracken, Roger L.: *See*—
Huggins, Richard L., and McCracken. 213,594.
Mehl, Ross M., to Plato Products Inc. Device for cleaning soldering iron tips. 213,585, 3–18–69, Cl. D49—9.
Mickey, Marion H.: *See*—
Hall, George L., and Mickey. 213,552.
Mil-An Mfg. Corp.: *See*—
Howard, Sol, and Schaaf. 213,586.
Moore, Arthur H., and J. G. Bacevius, to The Bridgeport Metal Goods Mfg. Co. Rechargeable flashlight. 213,584, 3–18–69, Cl. D48—24.
Mox, Dana W., to Hanson Scale Co. Bathroom scale. 213,588, 3–18–69, Cl. D52—10.
Natoli, John J.: *See*—
Cottier, Seton, and Natoli. 213,562.
Noel, John A. Plastic cup or the like. 213,546, 3–18–69, Cl. D9—242.
Osborne, Edwin F., Jr., to Esquire, Inc. Lighting casing. 213,580, 3–18–69, Cl. D48—20.
Osborne, Edwin F., Jr., to Esquire, Inc. Lighting casing. 213,581, 3–18–69, Cl. D48—20.
Osborne, Edwin F., Jr., to Esquire, Inc. Lighting casing. 213,583, 3–18–69, Cl. D48—20.6.
Osco Corp.: *See*—
Reisner, Sam. 213,590.
Ouradnik, Frank E.: *See*—
Kuchuris, Louis G., and Ouradnik. 213,574.
Paine, Eugene F. Shelf support. 213,569, 3–18–69, Cl. D33—3.
Phillips Drill Co.: *See*—
Bixby, Thomas G., and Holman. 213,589.
Pick, Ernest W., to Johns-Manville Corp. Wall panel unit. 213,553, 3–18–69, Cl. D18—2.
Plato Products Inc.: *See*—
Mehl, Ross M. 213,585.
Poly-Choke Co., Inc., The: *See*—
Stacy, William E. 213,566.
Pride Products Co.: *See*—
Carpenter, Joseph D., and Golding. 213,550.
Golding, Fred E. 213,579.
Raleigh Industries Ltd.: *See*—
Gordon, John M., and Letherland. 213,606.
Razickas, Paul. Toothbrush. 213,540, 3–18–69, Cl. D4—25.
Redman, John F., Jr., to Crown Zellerbach Corp. Pallet. 213,548, 3–18–69, Cl. D14—3.
Reisner, Sam, to Osco Corp. Machine for slotting key blanks. 213,590, 3–18–69, Cl. D55—1.
Rubbermaid Inc.: *See*—
Berend, Peter M. 213,571.
Taylor, William D. 213,602.
Rubin, Irving. Meat platter. 213,575, 3–18–69, Cl. D44—10.
Ryckman, Peter N., and W. E. Sparks, to Westinghouse Electric Corp. Toothbrush charging unit and holder or the like. 213,539, 3–18–69, Cl. D4—16.
Sato, Norio: *See*—
Shimano, Keizo, and Sato. 213,604.
Shimano, Keizo, and Sato. 213,605.
Schaaf, Robert: *See*—
Howard, Sol, and Schaaf. 213,586.
Seagram, Joseph E., & Sons, Inc.: *See*—
Siebel, Frederick. 213,599.
Selinger, Norman R., and D. C. Herbert. Mobile video tape recorder cart. 213,570, 3–18–69, Cl. D33—14.
Sheeter, Walter R., to All-Power Mfg. Co. Spray gun. 213,556, 3–18–69, Cl. D23—17.
Sheppley, William S., Jr., to International Business Machines Corp. Display copier for data processing systems or the like. 213,596, 3–18–69, Cl. D61—1.
Shimano, Keizo, and N. Sato. Gear shifting console for a bicycle. 213,604, 3–18–69, Cl. D90—1.
Shimano, Keizo, and N. Sato. Gear shifting console for a bicycle. 213,605, 3–18–69, Cl. D90—1.
Siebel, Frederick, to Joseph E. Seagram & Sons, Inc. Modular merchandising stand or similar article. 213,599, 3–18–69, Cl. D80—9.
Simon, Jean R., to Bausch & Lomb Inc. Pair of sun glasses. 213,595, 3–18–69, Cl. D57—1.
Snyder, Clair W., Jr., to AMP Inc. Electrical connector housing or similar article. 213,561, 3–18–69, Cl. D26—1.
Sparks, Walton E.: *See*—
Ryckman, Peter N., and Sparks. 213,539.
Stacy, William E., to The Poly-Choke Co., Inc. Phonograph tone arm. 213,566, 3–18–69, Cl. D26—14.
Taylor, William D., to Rubbermaid Inc. Tiered parts bin. 213,602, 3–18–69, Cl. D87—1.
Textron Inc.: *See*—
Cowan, Murray L., and Grear. 213,541.
Tokyo Kagaku Kabushikikaisha: *See*—
Mabuchi, Takaichi. 213,563.
Unter, Robert K., to Keystone Consolidated Industries, Inc. Key bow. 213,587, 3–18–69, Cl. D50—4.
Westinghouse Electric Corp.: *See*—
Ryckman, Peter N., and Sparks. 213,539.
Husby, Donald E., and Izzi. 213,582.
White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 213,593, 3–18–69, Cl. D56—9.
Willinger, Allan H., to Aquariums Inc. Aquarium filter. 213,555. 3–18–69, Cl. D23—4.
Wurlitzer Co., The: *See*—
Gagne, John G. 213,591.
Yang, Peter Q., to The Gray Mfg. Co. Transcribing adaptor or similar article. 213,568, 3–18–69, Cl. D26—14.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 18TH DAY OF MARCH 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A/S Norsk Aluminium Company: *See*—
Strom, Johan Nikolai, and Heggstad, Gudmund, 3,433,879.
AB Purac: *See*—
Lundin, Eric Gustaf, and Ruhin, Ernst Arne, 3,433,359.
Abel, Edmund, Jr.: *See*—
Cubberley, Harold A., Abel, Edmund, Jr., and Sackett, John E. 3,433,255.
Abex Corporation: *See*—
Ponzar, Fred W., 3,433,293.
Ackeren, Joseph Van, to Koppers Company, Inc. High chambered coke oven. 3,433,714, 03-18-69, Cl. 202-135.
Ackermann, Hans, Frei, Hermann, and Meindl, Hubert, to Geigy, J. R., A.-G. 2,4-Dihalogeno-pyrimidine-5-carbamyl-substituted reactive dyes. 3,433,781, 03-18-69, Cl. 260-146.
Ackermann, Karl, to Bosch, Robert, Elektronik GmbH. Device for recharging power cells and reactivating electrolytic capacitors. 3,434,029, 03-18-69, Cl. 320-001.
Adachi, Kazuo, Kawai, Masahisa, and Hoshikawa, Masakatsu, to Tekkosha Co., Ltd. Process for producing beta crystal phase, 6,13- dihydroquinacridone. 3,433,790, 03-18-69, Cl. 260-279.
Adams, Charles R., Falbe, Jurgen F., and Korte, Friedrich W.A.G.K., to Shell Oil Company. Alkylpyridine production. 3,433,792, 03-18-69, Cl. 260-290.
Adams, Robert T., Levine, Irving E., and Sweeney, William A., to Chevron Research Company. Biodegradable detergent alkylate having improved detergent properties. 3,433,846, 03-18-69, Cl. 260-671.
Addy, Allan. Nestable pallets. 3,433,184, 03-18-69, Cl. 108-053.
Ades, Lewis B., to Sundstrand Corporation. Coolant filter combination. 3,433,361, 03-18-69, Cl. 210-258.
Admiral Corporation: *See*—
Wolff, Robert A., 3,433,894.
Aerojet-General Corporation: *See*—
Doherty, Alfred E., Jr., and Knop, Louis H., 3,432,912.
Henriksen, Erik K., 3,433,039.
Aeroprojects Incorporated: *See*—
Boyd, Charles A., 3,433,226.
Aerospace Corporation, The: *See*—
Birnbaum, Milton, 3,434,072.
Agfa-Gevaert Aktiengesellschaft: *See*—
Wick, Richard, Bestenrainer, Friedrich, and Van Wasielewski, Erwin, 3,433,140.
Agricola, Norman F.: *See*—
Thackeray, William E., 3,433,233.
Air-Mite Devices, Inc.: *See*—
Stryker, Seymour F., 3,433,267.
Air Products and Chemicals, Inc.: *See*—
Klee, David J., 3,433,028.
Ajax Hardware Manufacturing Corp.: *See*—
Gorton, Howard B., and Arias, Henry, Jr., 3,432,879.
Aktieselskabet de Danske Sukkerfabrikker: *See*—
Faaborg-Andersen, Axel Valdemar, and Jensen, Poul, 3,433,598.
Aktieselskabet Paasch & Silkeborg Maskinfabrikker: *See*—
Pedersen, Aksel, 3,433,147.
Akustische u Kino-Gerate Gesellschaft m.b.H.: *See*—
Pless, Ernst, 3,433,905.
Alai, John A., to General Electric Company. Tension string drag structures for planetary entry vehicle. 3,433,435, 03-18-69, Cl. 244-001.
Albertzart, Roy R., Jr., to General Motors Corporation. High magnetic permeability cast alloy. 3,433,685, 03-18-69, Cl. 148-035.
Albiswerk Zurich A.G.: *See*—
Bidese, Werner, 3,433,997.
Albiswerk Zurich AG: *See*—
Welti, Arno, 3,434,141.
Alfa-Laval AB: *See*—
Falkenblad, Nils Tore, and Sjoholm, Claes Bertil, 3,433,454.
Alfs, Hugo: *See*—
Mueller, Walter, Alfs, Hugo, and von der Lippe, Robert 3,433,529.
Algeo, Jerry A., to North American Rockwell Corporation. Frequency-controlled scanning monopulse antenna. 3,434,139, 03-18-69, Cl. 343-778.
Allegrini, Aldo P.: *See*—
Hecklau, Frederick L., and Allegrini, Aldo P. 3,433,704.
Allen Electric & Equipment Company: *See*—
Frankel, Samuel H., 3,433,511.
Allen, Walter C., and Taebel, Wilbert A., to National Beryllia Corp. Dense refractory zirconium boride bodies. 3,433,656, 03-18-69, Cl. 106-057.
Allied Chemical Corporation: *See*—
Apice, Pasquale J., 3,433,854.
Cunningham, William J., and Wolf, Cyrial, 3,433,838.
Yodis, Anthony W., 3,433,718.
Allison, Kenneth C., and Kelver, William L., to GTS Corporation. Multiple tie rod fastener and mounting bracket. 3,433,120, 03-18-69, Cl. 085-036.
Almac Cryogenics, Inc.: *See*—
Hedstrom, Albert V., 3,433,248.
Alon, Alexander: *See*—
Baniel, Avraham, Blumberg, Ruth, and Alon, Alexander 3,433,592.
Alper, Allen M., to Corning Glass Works. Metallurgical furnace. 3,433,471, 03-18-69, Cl. 266-035.
Althaus, Edward J., to Hughes Aircraft Company. Stochastic event simulator. 3,433,934, 03-18-69, Cl. 235-092.
Althoff, Donald G. Tuning device. 3,433,116, 03-18-69, Cl. 084-454.
Amendt, Leroy E.: *See*—
Wiley, Franklyn L., and Amendt, Leroy E. 3,434,113.
American Air Filter Company, Inc.: *See*—
Ernst-Schraner, Theodor, 3,432,999.
American Cyanamid Company: *See*—
D'Errico, Michael Joseph, and Kulick, Russell Joseph, 3,433,658.
D'Errico, Michael Joseph, and Wagner, Frank Larkin, 3,433,659.
McCormick, Jerry Robert Daniel, and Sjolander, Neel Oscar, 3,433,709.
McCormick, Jerry Robert Daniel, Johnson, Sylvia Jennie, and Sjolander, Newell Oscar, 3,433,710.
Wehner, Donald Clifford, 3,433,737.
Winterbottom, Robert, Bitha, Panayota, and Kissman, Henry Marcel, 3,433,834.
American Instrument Co., Inc.: *See*—
Howerton, Hugh K., 3,433,952.
American Machine & Foundry Company: *See*—
Foster, Jack V., 3,434,081.
American Pipe and Construction Co.: *See*—
Huck, George E., 3,432,914.
American Shear Knife Co.: *See*—
Rackoff, Selwyn R., and Dempsey, Martin J., 3,432,902.
American Standard Inc.: *See*—
Kalnin, Ilmar L., 3,433,682.
Parkison, Richard G., 3,433,264.
American Standard, Inc.,: *See*—
Ruggles, Kay L., Gunnerson, Dale B., and Clark, Howard S., 3,433,860.
AMP Incorporated: *See*—
English, William K., 3,434,126.
AMP, Incorporated: *See*—
Hudson, William Jeffrey, Jr., and Gaw, John William, 3,434,097.
Rueger, Herman, 3,434,137.
Schumacher, William Ludlow, 3,434,098.
Amphenol-Borg Electronics Corporation: *See*—
Cummings, Harold K., 3,434,027.
Amsted Industries Incorporated: *See*—
Rodgers, Loyal J., 3,433,473.
Amsterdam Brush Corp.: *See*—
Edelson, Stanley, and O'Brien, George R., 3,432,875.
Anacker, Wilhelm, to International Business Machines Corporation. Scheme for circumventing bad memory cells. 3,434,116, 03-18-69, Cl. 340-172.5
Anderson, Joseph Percival: *See*—
Daly, Brian Bowman, Baker, Alex Gerard James, and Anderson, Joseph Percival 3,433,145.
Anderson, William W., Jr.: *See*—
Sweet, George E., Anderson, William W., Jr., and Miller, Howard B. 3,433,953.
Andre, Stephen N., Hettich, Ronald D., and Megargel, Leland R., to Sylvania Electric Products Inc. Electronically controlled azimuth scanning antenna system. 3,434,142, 03-18-69, Cl. 343-100.
Anocut Engineering Company: *See*—
Petroff, Merlin O., 3,433,728.
Aoshima, Atsushi: *See*—
Yomiyama, Akira, Kato, Tsuneyuki, Aoshima, Atsushi, and Kawanishi, Tokuichiro 3,433,831.
Apice, Pasquale J., to Allied Chemical Corporation. Unsaturated polyester resins prepared from phosphoric acid esters. 3,433,854, 03-18-69, Cl. 260-869.
Appleby, John E. H.: *See*—
Pope, Joseph A., and Appleby, John E. H. 3,433,083.
Apromat, Inc.: *See*—
Giesecke, Henry A., 3,433,556.
Aqua-Chem, Inc.: *See*—
Loebel, Frederick A., 3,433,717.
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L., to United States of America, Interior, Traction (Societe Anonyme). Platinum type electrode for a solid electrolyte fuel cell. 3,433,680, 03-18-69, Cl. 136-120.
Arias, Henry, Jr.: *See*—
Gorton, Howard B., and Arias, Henry, Jr. 3,432,879.
Armco Steel Corporation: *See*—
Fadden, James P., and Moore, Frederick L., 3,433,398.
Armentrout, Arthur L. Well fluid additive and method of making the same. 3,433,740, 03-18-69, Cl. 252-008.5
Armour, Walter B., to National Starch and Chemical Corporation. Water resistant polyvinyl acetate adhesive compositions. 3,433,701, 03-18-69, Cl. 161-198.
Arnegger, Wilhelm: *See*—
Winter, August, Mann, Egon, Pfeiffer, Willi, and Arnegger, Wilhelm 3,433,087.
Arnold, Harold D., to Emerson Electric Co. Slab side motor with an asymmetrical starting winding. 3,433,988, 03-18-69, Cl. 310-166.
Arulpragasam, Jeganandaraj A., and Frye, Harold E., to International Business Machines Corporation. Variable floating point precision. 3,434,114, 03-18-69, Cl. 340-172.5
Arutunoff, Armais, to Reda Pump Company. Oil filled elongated submergible electric motor. 3,433,986, 03-18-69, Cl. 310-087.
Asada, Takeo. Automatic ticket gate. 3,433,475, 03-18-69, Cl. 271-057.
Asahi Breweries Ltd.: *See*—
Takayanagi, Sho, 3,433,148.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Kobayashi, Hidehiko, Ohama, Hiroshi, and Saito, Shizuko, 3,433,773.

Kominami, Naoya, Nakajima, Hitoshi, and Tamura, Nobuhiro, 3,433,820.
Suzuki, Teruhiko, Nomura, Junichi, Kameyama, Daijiro, and Miyoshi, Minoru, 3,433,156.
Yomiyama, Akira, Kato, Tsuneyuki, Aoshima, Atsushi, and Kawanishi, Tokuichiro, 3,433,831.

Ashland Oil & Refining Company: *See—*
Egan, Richard Raymond, and Lampson, Sidney Bruce, 3,433,645.

Ashton Containers Limited, : *See—*
Hawkins, Mervyn Roy, 3,433,400.

Ashton, William Eric, and Weil, Edward D., to Hooker Chemical Corporation. Immobilization of oyster drills in oyster beds. 3,433,877, 03-18-69, Cl. 424-353.

Atkinson, George E.: *See—*
Bitter, Kenneth D., Atkinson, George E., and Fogle, William B. 3,433,082.

Atlantic Richfield Company: *See—*
Capaldi, Eugene C., and Leum, Leonard N., 3,433,844.

Atlantic Richfield Corp.: *See—*
Cymbalisty, Lubomyr M. O., 3,433,245.

Atwood, John G., and Kerr, Edwin L., to Perkin-Elmer Corporation, The. Microphone. 3,433,959, 03-18-69, Cl. 250-199.

Auburn Rubber Company: *See—*
Hodson, Richard J., 3,433,365.

Auer, Aarne Matias: *See—*
Virtanen, Aate R., and Auer, Aarne Matias 3,433,072.

Augunas, Algis G., to General Motors Corporation. Vehicle sunshade fastening means. 3,433,525, 03-18-69, Cl. 296-097.

Aulmann, Dietrich: *See—*
Brinkmeier, Friedhelm, and Aulmann, Dietrich 3,432,982.

Austin, Glenn M.: *See—*
Seiferth, Oscar E., and Austin, Glenn M. 3,432,980.

Auto Union G.m.b.H.: *See—*
Hertel, Karl, 3,433,501.

Autogiro Company of America: *See—*
Stanley, Paul H., 3,433,306.

Automatic Displays, Inc.: *See—*
Fontaine, John G., 3,434,007.

Automatic Electric Laboratories, Inc.: *See—*
Huntley, Christopher R., 3,434,066.
Kowalik, Ronald F., 3,433,904.
Sellenslagh, Emiel H. M., and Van Hoeck, Willy F., 3,433,898.

Automatic Fire Alarm Company: *See—*
Cassell, Joseph L., 3,433,090.

Automatic Timing & Controls, Inc.: *See—*
Houpt, Grover K., and Thomson, Edward T., 3,434,086.

Automation Industries, Inc.: *See—*
Maley, Dale R., 3,433,052.

Avant, William W., to Garrett Corporation, The. Regulator valve mechanism. 3,433,251, 03-18-69, Cl. 137-488.

Avco Corporation: *See—*
ElBindari, Ahmed, 3,433,892.

Avery, Gilbert H.Room air distribution and control damper means in an air conditioning system. 3,433,295, 03-18-69, Cl. 165-035.

Babcock & Wilcox Company, The: *See—*
Ives, Kenneth D., and Rastogi, Vijay, 3,433,060.
Stump, Paul E., 3,433,038.

Babcock & Wilcox Limited: *See—*
Dick, Norman T., 3,433,926.

Bachelder, Albert J., to Polaroid Corporation. Photographic film roll. 3,433,637, 03-18-69, Cl. 096-078.

Bader, William F., Landy, Arney, Jr., and Schmitz, Marvin J., to Minnesota Mining and Manufacturing Company. Electrocardiographic recording system. 3,434,151, 03-18-69, Cl. 346-001.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
Jentzsch, Wolfgang, 3,433,811.

Baer, Ralph H.: *See—*
Durocher, Hector R., Wentworth, James A., and Baer, Ralph H. 3,433,442.

Baez, Edgar R., Heinke, Walter M., and Nelken, Alfred, to Stewart-Warner Corporation. Fiber optics instrument lighting. 3,433,940, 03-18-69, Cl. 240-002.1

Bailey, James R., and Lavigne, Vernon W., to Switchcraft, Inc.Lever switch having means to avoid transient switching. 3,433,906, 03-18-69, Cl. 200-001.

Bailey, John E., to Foxboro Company, The. Magnetic flowmeter apparatus. 3,433,066, 03-18-69, Cl. 073-194.

Bailey, Merrill E.: *See—*
Sauder, Robert A., Christopher, William H., Jr., and Bailey, Merrill E. 3,432,991.

Baird, Leslie L., and Baskerville, Ralph J., to General Electric Company. Contact structure for an electric circuit breaker. 3,433,915, 03-18-69, Cl. 200-166.

Baker, Alex Gerard James: *See—*
Daly, Brian Bowman, Baker, Alex Gerard James, and Anderson, Joseph Percival 3,433,145.

Baker Oil Tools, Inc.: *See—*
Chenoweth, David V., 3,433,174.
Clark, Earnest H., Jr., De Rochemont, John F., and Keithahn, Julian D., 3,433,303.
Crowe, Talmadge L., 3,433,506.

Baker, Paul E., Jones, Stanley B., and Seevers, Delmar O., to Chevron Research Company. Nuclear precession well logging method. 3,434,044, 03-18-69, Cl. 324-000.5

Baldwin, John A., Jr., and Bobeck, Andrew H., to Bell Telephone Laboratories, Incorporated. Magnetic information storage circuits. 3,434,125, 03-18-69, Cl. 340-174.

Baldwin, William E., to General Electric Company. Electrical pulsing circuit with automatic switching means. 3,433,970, 03-18-69, Cl. 307-011.

Ballantyne, David B., and Goring, Maurice T., to General Motors Corporation. Fastener. 3,433,119, 03-18-69, Cl. 085-032.

Ballu, Vincent P. M., to Tecnoma. Atomizing or spraying apparatus. 3,433,393, 03-18-69, Cl. 222-402.

Balunas, Vincent J., Jr., and Hitch, Thomas R., to Bliss, E. W., Company. High-speed multiple-action press. 3,433,048, 03-18-69, Cl. 072-417.

Balzers Patent-und Lizenz-Anstalt: *See—*
Kohler, Marcel, 3,433,297.

Bamford, Clement Henry, Duncan, Frederic James, and Reynolds, Reginald John William, to Imperial Chemical Industries Limited. Polymerisation process. 3,433,774, 03-18-69, Cl. 260-080.

Ban, Thomas E., to McDowell-Wellman Engineering Company. Process for the preparation of hardened, dense heat transfer medium. 3,433,859, 03-18-69, Cl. 264-044.

Baniel, Avraham, Blumberg, Ruth, and Alon, Alexander. Method of purifying phosphoric acid. 3,433,592, 03-18-69, Cl. 023-165.

Banker, Oscar H., to Meyer Products, Inc.Gear pump with takeup for wear. 3,433,168, 03-18-69, Cl. 103-126.

Banta, Edward M., to Petro-Tex Chemical Corporation. Polybutene-1 bearing compositions and method. 3,433,742, 03-18-69, Cl. 252-012.

Barickman, Bert E.Apparatus for the production of molecular and crystal models. 3,433,105, 03-18-69, Cl. 077-062.

Barnard, Walter C.: *See—*
Clearman, Jack F., and Barnard, Walter C. 3,433,363.

Barnes, Lell E.: *See—*
Smith, Edgar J., and Barnes, Lell E. 3,434,132.

Barns, Fred K., to Goodrich, B. F., Company, The. Butt splicer for sheet material. 3,433,690, 03-18-69, Cl. 156-157.

Barogenics, Inc.: *See—*
Boggio, F George, 3,433,382.

Bartholet, Emil J., to Komline-Sanderson Engineering Corp.Balanced rotary valve. 3,433,265, 03-18-69, Cl. 137-625.18

Bartnik, John C., and Moss, Ellsworth R., to Sylvania Electric Products Inc.Shunt feed for increasing amplifier output power. 3,434,070, 03-18-69, Cl. 330-031.

Barton, Ronald Sidney Charles: *See—*
Molins, Desmond Walter, McCombie, Alan Keith, and Barton, Ronald Sidney Charles 3,433,347.

Baskerville, Ralph J.: *See—*
Baird, Leslie L., and Baskerville, Ralph J. 3,433,915.

Bassot, Jacques, and Monpetit, Louis, to Societe des Procedes Modernes d'Injection Sopromi. Electronic control system for fuel injection systems. 3,433,207, 03-18-69, Cl. 123-119.

Batchelor, Dewitt L.Fuel indicating device. 3,434,134, 03-18-69, Cl. 340-244.

Bates, Leonard E., to Reilly, John E.Rocket projectile. 3,433,437, 03-18-69, Cl. 244-003.23

Baublys, Mikas, Sigloch, Eugen, and Stark, Gotthilf, to Firma Stark, Gotthilf. Multispindle machine tool. 3,433,102, 03-18-69, Cl. 077-004.

Baucke, Horst, to Jagenberg-Werke AG. Apparatus for elimination of sheets in cross cutting and similar machines. 3,433,476, 03-18-69, Cl. 271-064.

Bauer, Erich O., Fox, Paul E., and Mac Pherson, William F., to Bell Telephone Laboratories, Incorporated. Method and apparatus for controlling capacitances in multiwire structures. 3,433,858, 03-18-69, Cl. 264-040.

Bauer, Kurt, and Kohler, Alfred, to SWF-Spezialfabrik fur Autozubehor Gustav Rau GmbH. Windshield spray assembly having an adjustable spherical nozzle member. 3,433,416, 03-18-69, Cl. 239-284.

Baumgartner, August, to Zellweger Ltd.Machine for inserting leases in warps. 3,432,897, 03-18-69, Cl. 028-040.

Bausch & Lomb Incorporated: *See—*
Benford, James R., and Korones, Herbert D., 3,433,552.

Bayer, Horst O., and Unger, Victor H., to Rohm & Haas Company. Phosphoric triamidederivatives as herbicides. 3,433,623, 03-18-69, Cl. 071-086.

Bayerl, Joseph James, deDecker, Hendrik Kamiel, and Lee, Ying Kao, to Texas-U.S. Chemical Company. Room temperature curable liquid conjugated diene compositions. 3,433,759, 03-18-69, Cl. 260-033.6

Beadle, Anthony Crisp, and Garner, William, to International Standard Electric Corporation. Carbon filling method and machine. 3,433,276, 03-18-69, Cl. 141-012

Beatrice Foods Co.: *See—*
Tatter, Charles W., and Noznick, Peter P., 3,433,643.

Becker, Floyd K., to Bell Telephone Laboratories, Incorporated. Distortion monitoring by comparing square and cubic law distortion to carrier. 3,434,056, 03-18-69, Cl. 325-065.

Beckerman, Saul. Photographic printing mask. 3,433,563, 03-18-69, Cl. 355-054.

Beckman Instruments, Inc.: *See—*
Blanke, Gordon Clifford, 3,433,936.
Deuringer, Rudolf, 3,433,580.
McCarthy, Roy Arthur, 3,433,937.

Bedford, Burnice D., to General Electric Company. Transformer coupled time ratio controlled circuits. 3,434,030, 03-18-69, Cl. 321-002.

Beecham Group Limited: *See—*
Long, Anthony Alfred Walter, and Nayler, John Herbert Charles, 3,433,784.

Beeson, William Law: *See—*
Mangan, Richard E., and Beeson, William Law 3,433,443.

Behrenz, Wolfgang: *See—*
Heiss, Rudolf, Bocker, Ernst, and Behrenz, Wolfgang 3,433,826.

Bell Telephone Laboratories, Incorporated: *See—*
Baldwin, John A., Jr., and Bobeck, Andrew H., 3,434,125.
Bauer, Erich O., Fox, Paul E., and Mac Pherson, William F., 3,433,858.
Becker, Floyd K., 3,434,056.
Cogelin, Nicholas J., Martin, Smuel M., and Ramsey, Raymond B., 3,433,884.
DeVries, G. John, Jr., 3,433,889.
Hubbard, William M., 3,433,979.
Lenzo, Pascal V., and Spencer, Edward G., 3,433,958.
Munson, Verne E., 3,433,897.
Reinig, Harry, 3,433,901.
Wickliff, Noble E., 3,434,031.
Zieles, Robert S., 3,434,088.

Bell, William T., and Schlumberger Technology Corporation, to Methods for discharging fluent substances into well bores. 3,433,305, 03-18-69, Cl. 166-035.

Bellinger, Victor Stanley. Fishing pole. 3,432,958, 03-18-69, Cl. 043-024.

Bellman, Robert H., and Bermel, Thomas W., to Corning Glass Works. Binary counter. 3,433,408, 03-18-69, Cl. 235-201.

Beloit Corporation: *See—*
Roerig, Arnold J., and Brown, Kenton J., 3,433,392.

Bendix Corporation, The, : *See—*
Hamilton, Allen R., 3,433,550.

Bendix Corporation, The: *See—*
Higgins, Paul T., 3,433,260.
Kremidas, James R., and Kantz, Don B., 3,433,241.
Lewis, Richard J., 3,434,083.
Malkiel, Saul L., 3,433,895.
Scott, Gerald C., 3,433,995.

Benfield, Edward A., to Compak-O-Matic, Inc., Welding apparatus. 3,433,925, 03-18-69, Cl. 219-130.

Benford, James R., and Korones, Herbert D., to Bausch & Lomb Incorporated. Telescopic bow sighting device. 3,433,552, 03-18-69, Cl. 350-010.

Bennes Marrel: *See—*
Chanal, Roger, 3,433,173.

Bennett, Maurice Ronald, to English Electric Valve Company, Limited. Electron beam discharge tubes. 3,434,006, 03-18-69, Cl. 315-030.

Bentley, Kenneth Walter, to Reckitt & Sons Limited. Endoethano nor oripavines and nor thebaines. 3,433,791, 03-18-69, Cl. 260-285.

Benton Harbor Engineering Works, Incorporated: *See—*
Parrett, John T., 3,433,124.

Berg, Edward T.Arrangements for installing fascias, gravel stops and gutters along the edges of roofs. 3,432,976, 03-18-69, Cl. 052-060.

Berkeley Instruments: *See—*
Hawley, Jack S., and Towner, George R., 3,434,136.

Berkl, Josef U., to Hi-Shear Coporation. Gage calibrator. 3,433,931, 03-18-69, Cl. 219-502.

Berleyoung, Walter J., Kreuter, Kenneth G., and Mueller, Klaus P., to Robertshaw Controls Company. Small pneumatic thermostat. 3,433,413, 03-18-69, Cl. 236-082.

Bermel, Thomas W.: *See—*
Bellman, Robert H., and Bermel, Thomas W. 3,433,408.

Bernheim, George W.Photoelectric switch adapter for lantern. 3,433,967, 03-18-69, Cl. 250-239.

Bestenrainer, Friedrich: *See—*
Wick, Richard, Bestenrainer, Friedrich, and Van Wasielewski, Erwin 3,433,140.

Beyen, Werner J., and Caulfield, Henry J., to Texas Instruments, Incorporated. Electro-optic controls for reflex cameras. 3,433,139, 03-18-69, Cl. 095-010.

Bick, Klaus, and Tinnes, Bernhard J., to Paderwerk Gebr. Benteler. Continuous casting appartus with tiltable intermediate ladle. 3,433,288, 03-18-69, Cl. 164-281.

Bidese, Werner, to Albiswerk Zurich A.G.Circuit arrangement for suppressing the intensity of an indicator tube. 3,433,997, 03-18-69, Cl. 315-022.

Bidlack, Jerald D., to Moog Inc.Positive centering servovalve having movable spring backup. 3,433,266, 03-18-69, Cl. 137-625.61

Bijl, Dingeman: *See—*
Nederlof, Bastiaan Klaas, Bijl, Dingeman, and van der Meij, Jan Johannes 3,434,078.

Bilek, Jan: *See—*
Svaty, Vladimir, Bilek, Jan, and Zlatohlavek, Jiri 3,433,271.

Billings, Raymond T.Apparatus for coating elongate work. 3,433,698, 03-18-69, Cl. 156-540.

Binks Research and Development Corporation: *See—*
Ensale, Bruno Eugen, 3,433,415.

Bioengineonics, Inc., : *See—*
Pinto, Olympio F., 3,433,222.

Birkemeier, Henry Paul, to International Telephone and Telegraph Corporation. Rotating vane machine couplings. 3,433,166, 03-18-69, Cl. 103-118.

Birnbaum, Milton, to Aerospace Corporation, The. Continuous wave laser arrangement. 3,434,072, 03-18-69, Cl. 331-094.5

Biskup, John: *See—*
Migdol, Norman R., and Biskup, John 3,433,700.

Bitha, Panayota: *See—*
Winterbottom, Robert, Bitha, Panayota, and Kissman, Henry Marcel 3,433,834.

Bitter, Kenneth D., Atkinson, George E., and Fogle, William B., to Black and Decker Manufacturing, Company, The. Transmission and selector mechanism for alternate hammer and hammer-drill power tool. 3,433,082, 03-18-69, Cl. 074-022.

Bivans Corporation: *See—*
Bivans, Elbert L., 3,432,984.

Bivans, Elbert L., to Bivans Corporation. Stuffer for traveling cartons. 3,432,984, 03-18-69, Cl. 053-120.

Bjorkum, Svein: *See—*
Henrikaen, Jan-Erik, and Bjorkum, Svein 3,433,882.

Black and Decker Manufacturing, Company, The: *See—*
Bitter, Kenneth D., Atkinson, George E., and Fogle, William B., 3,433,082.

Black, Robert B.Aspirating cartridge syringe with gas actuation. 3,433,223, 03-18-69, Cl. 128-218.

Black, Robert B.Gas actuated hypodermic syringe. 3,433,224, 03-18-69, Cl. 128-218.

Black, Robert L., Jr., and Lee, Charles D., Jr., to Parks-Cramer Company. Textile machine tending and cleaning apparatus. 3,432,877, 03-18-69, Cl. 015-312.

Black, William A. P., Dewar, Eric T., and Rutherford, David, to United States of America, Agriculture. Method of precipitating polyvalent cations. 3,433,738, 03-18-69, Cl. 210-054.

Blackburn Electronic Production Controls Ltd.: *See—*
Pickles, Norman, 3,433,188.

Blanding, Leonard C., Meyer, Hans J., and Liebler, Kenneth A., to Lear Siegler, Inc.Dynamic gas film bearing structure. 3,433,538, 03-18-69, Cl. 308-009.

Blanke, Gordon Clifford, to Beckman Instruments, Inc.Electronic integrator. 3,433,936, 03-18-69, Cl. 235-183.

Blatter, Franciscus Petrus Albertus, to Chemische Fabriek L. van der Grinten N.V.Cooling means for an exposure cylinder of photoprinting apparatus. 3,433,566, 03-18-69, Cl. 355-110.

Blaw-Knox Company: *See—*
Remmar, Robert A., and Schuetz, James W., 3,433,046.

Bliss, E. W., Company: *See—*
Kraft, Derald Henry, 3,433,512.

Bliss, E. W., Company: *See—*
Balunas, Vincent J., Jr., and Hitch, Thomas R., 3,433,048.
Cruger, Robert W., Petransky, William E., and Weiss, Melvin I., 3,433,438.
Hufford, James Howard, 3,433,971.

Blumberg, Ruth: *See—*
Baniel, Avraham, Blumberg, Ruth, and Alon, Alexander 3,433,592.

Blunk, Boyde W., and Owen, Frank, III, to M&K Leasing Co.Cotton retrieving attachment. 3,433,004, 03-18-69, Cl. 056-119.

Bobeck, Andrew H.: *See—*
Baldwin, John A., Jr., and Bobeck, Andrew H. 3,434,125.

Bocker, Ernst: *See—*
Heiss, Rudolf, Bocker, Ernst, and Behrenz, Wolfgang 3,433,826.

Boczar, William J., and Davis, William C., to Motorola, Inc.Heat conductive mounting base for a semiconductor device. 3,434,018, 03-18-69, Cl. 317-234.

Bodner, Albert J.: *See—*
Morway, Arnold J., and Bodner, Albert J. 3,433,743.

Boeing Company, The: *See—*
Brame, Frank H., and Fisher, Charles B., 3,433,439.
Patteson, Harold W., 3,432,996.

Boes, Gunther. Heating system. 3,433,414, 03-18-69, Cl. 237-008.

Boese, Arthur H.Aerial toy. 3,432,962, 03-18-69, Cl. 046-086.

Boggio, F George, to Barogenics, Inc.Pre-stressed segmented containers or pressure vessels. 3,433,382, 03-18-69, Cl. 220-003.

Bohn, Martin C., Brady, John F., Spinello, John O., and Rice, Kenneth G., to Chicago Clutch Manufacturing Co., Inc.Self adjusting clutch release bearing assmbly. 3,433,341, 03-18-69, Cl. 192-111.

Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Eck, Gerhard, 3,433,543.

Bollee, Boudewijn, to North American Philips Company, Inc.Electrostatic synchronous motors. 3,433,981, 03-18-69, Cl. 310-006.

Boller, John A., to Landis Tool Company. Wheelbase swivelling means. 3,432,970, 03-18-69, Cl. 051-049.

Bolt, Reggie M.Valve for semifluid material. 3,433,466, 03-18-69, Cl. 259-153.

Bomar, Horace L.: *See—*
Sprague, Frederick L., 3,433,430.

Bombaci, Vincent A.Rods and tubular connectors having means for limiting rod isertion. 3,432,960, 03-18-69, Cl. 046-029.

Bomberger, Howard B., Jr., to Crucible Steel Company of America. Method of adding oxygen to titanium and titanium alloys. 3,433,626, 03-18-69, Cl. 075-010.

Bongenaar, Willem, Gieles, Joannes Paulus Maria, and Slob, Arie, to North American Philips Company, Inc.Low output impedance majority logic inverting circuit. 3,433,978, 03-18-69, Cl. 307-214.

Booy, Max Lorenz, Coe, Benjamin Franklin, and Stutler, Stephen Charles, to Du Pont deNemours, E. I., and Company. Method of measuring metering accuracy of a spinneret. 3,433,055, 03-18-69, Cl. 073-037.5

Borden, Inc.: *See—*
Boyne, William J., Little, Jack R., and Wagner, Ulrich, 3,432,993.

Borden, James H.: *See—*
Charman, Walter M., Jr., and Borden, James H. 3,433,452.

Bordner, Paul G., to Crane Plastics, Inc.Combination interlocked and weather seal strip arrangement for relatively slidable closure members. 3,432,966, 03-18-69, Cl. 049-368.

Borel, Ronald F., to General Electric Company. Fuel delivery system. 3,433,016, 03-18-69, Cl. 060-039.28

Borg-Warner Corporation: *See—*
Jednacz, Thomas C., and Schmittle, Karl V., 3,434,032.
Kurtz, Curtis E., 3,433,035.
Newton, Alwin B., 3,433,025.
Wiese, Winfred J., 3,433,489.

Borges, Eberhard. Method of and apparatus for detecting faults in subsurface strata. 3,433,321, 03-18-69, Cl. 181-000.5

Bosch, Robert, Elektronik GmbH: *See—*
Ackermann, Karl, 3,434,029.

Bosch, Robert, GmbH: *See—*
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen, 3,433,101.

Boswell, George A., to Du Pont de Nemours, E. I., and Company. 1-Adamantyl and 1-adamantylmethyl carbonates of testoterone and selected derivatives. 3,433,813, 03-18-69, Cl. 260-397.4

Bottum, Edward W., and Rockwell, Frank H., to Refrigeration Research, Incorporated. Method of applying a non-ferrous corrosion resistant coating to refrigeration components. 3,432,910, 03-18-69, Cl. 029-458.

Boucraut, Michel, and Toth, Imre, to Institut de Recherches de la Siderugie Francais. Treatment of pulverulent materials. 3,433,624, 03-18-69, Cl. 075-001.

Bouzereau, Daniel Emile Henri, to Centre de Recherches De Pont-A-Mousson. Machine for stoppering bottles. 3,432,989, 03-18-69, Cl. 053-264.

Bowden, John H., and Terry, Clifford T., to Wyandotte Chemicals Corporation. Process for the preparation of granular calcium chloride. 3,433,863, 03-18-69, Cl. 264-140.

Bowman, Harry R., Thompson, Stanley G., Hyde, Earl K., and Jared, Richard C., to United States of America, Atomic Energy Commission. Semiconductor X-ray emission spectrometer. 3,433,954, 03-18-69, Cl. 250-083.3

Boyd, Charles A., to Aeroprojects Incorporated. Vibratory catheterization apparatus and method of using. 3,433,226, 03-18-69, Cl. 128-305.

Boyne, William J., Little, Jack R., and Wagner, Ulrich, to Borden, Inc., and Uniroyal, Inc.Inhibition of polymer disposition in acetylene extraction systems. 3,432,993, 03-18-69, Cl. 055-064.

Brac Ltd.: *See—*
Tschudin, Oswald, 3,433,984.

Brade, James N., to Harrison, Mc Gregor and Guest Limited. Three point independently controlled mower frame mounting. 3,433,000, 03-18-69, Cl. 056-025.

Brade, James N., to Harrison, Mc Gregor and Guest Limited. Adjustable pitch break back type of reciprocating knife mower frame mount. 3,433,001, 03-18-69, Cl. 056-025.

Bradt, Gordon E.Chord-forming device for stringed instrument. 3,433,112, 03-18-69, Cl. 084-317.

Brady, John F.: *See—*
Bohn, Martin C., Brady, John F., Spinello, John O., and Rice, Kenneth G. 3,433,341.

Brady, Laurence M., and Lindgren, Milton F., to General Motors Corporation. Planetary gearing. 3,433,100, 03-18-69, Cl. 074-801.

Brame, Frank H., and Fisher, Charles B., to Boeing Company, The. Sectional articulated fuselage forebody for high-speed aircraft. 3,433,439, 03-18-69, Cl. 244-120.

Brancart, Claude P.: *See—*
Sheets, Herman E., and Brancart, Claude P. 3,433,163.

Brasseur, Jacques Marc, to Societe Anonyme des Automobiles Simca. Automobile door internal handle assembly. 3,433,519, 03-18-69, Cl. 292-336.3

Brasseur, Jacques, to Societe Anonyme Dite Societe des Automobiles Simca. Locking sliding door. 3,433,036, 03-18-69, Cl. 070-099.

Braudeau, Pierre, and Maillet, Alfred M. A., to La Soudure Electrique Languepin. Apparatus for electrically treating workpieces with electrodes. 3,433,919, 03-18-69, Cl. 219-069.

Braun, Eugene R.: *See—*
Heyberger, Werner, and Braun, Eugene R. 3,433,331.

Braun, Eugene R., to Eaton Yale & Towne Inc.Hoist overload preventing device. 3,433,332, 03-18-69, Cl. 188-134.

Braun, Robert A., to Du Pont de Nemours, E. I., and Company. Hexasubstituted-2-sila-1,3-dioxolanes. 3,433,819, 03-18-69, Cl. 260-448.8

Braxton, Henry G., Jr., and Lajiness, Evelyn J., to Ethyl Corporation. Halovinyl mercurials as plant defoliants. 3,433,621, 03-18-69, Cl. 071-070.

Brazell, James W., Perkins, James T., Jr., and White, Edwin L., to Southern Iron and Equipment Company, Inc.Gantry cranes. 3,433,366, 03-18-69, Cl. 212-014.

Brechner, Stanley, Malakoff, Meyer, and Rieger, Martin M., to Warner-Lambert Pharmaceutical Company. Two phase fast breaking foam pressurized hair waving composition. 3,433,868, 03-18-69, Cl. 424-047.

Brennan, William R.: *See—*
Moore, Ralph W., and Brennan, William R. 3,433,606.

Bresnahan, Robert A., to Dentists' Supply Company of New York, The. Chair base having porous air discharge unit and method of making the same. 3,433,320, 03-18-69, Cl. 180-124.

Breton, Guy, to Velan Engineering Ltd. Steam trap with relief valve. 3,433,412, 03-18-69, Cl. 236-059.

Bretschneider, Gunther: *See—*
Knorre, Helmut, Bretschneider, Gunther, and Sauer, Heinrich 3,433,605.

Brewer, Nathaniel, and Wilson, Francis B., to GPE Controls, Inc.Motion-transmitting linkage. 3,433,133, 03-18-69, Cl. 092-100.

Brickner, Joseph L., to Precision Winding Company, Inc.Magnetic field sensing and measuring apparatus. 3,434,047, 03-18-69, Cl. 324-043.

Brierley, Thomas Albert, to Dunlop Tire and Rubber Corporation. 3,432,888, 03-18-69, Cl. 018-044.

Briggs, Warren S.: *See—*
Magee, John S., Jr., and Briggs, Warren S. 3,433,747.
Magee, John S., Jr., and Briggs, Warren S. 3,433,748.

Brinkmeier, Friedhelm, and Aulmann, Dietrich, to Windmoller & Holscher. Method and apparatus for applying closure heat-seals to filled plastic bags. 3,432,982, 03-18-69, Cl. 053-040.

Bristol Siddeley Engines Limited: *See—*
Gardiner, Terence Edward Gouvenot, and Fuller, John Rodney Dyson, 3,433,244.

British Iron and Steel Research Association, The: *See—*
Lysakowski, Edward, and Kenny, John, 3,432,884.

Brockmuller, Wolfgang, Hartlapp, Gerhard, and Weizenkorn, Horst-Heinrich, to Knapsack Aktiengesellschaft. Process for the manufacture of condensed alkali metal phosphates. 3,433,585, 03-18-69, Cl. 023-106.

Broeker, Elmer W., and Pearce, Shairyl I., to Caterpillar Tractor Co.Safety override for hydraulic cable control unit. 3,433,017, 03-18-69, Cl. 060-052.

Broken Hill Proprietary Company Limited, The: *See—*
Urane, David, 3,433,628.

Bronnes, Robert L., Sweet, Richard C., and Hughes, Ray C., to North American Philips Company, Inc.Method of joining a semi-conductor to a base. 3,432,913, 03-18-69, Cl. 029-472.7

Brooke, Donald C.: *See—*
Carnahan, Paul E., and Brooke, Donald C. 3,433,996.

Brorson, Donald L.: *See—*
Magnuson, Raymond A., and Brorson, Donald L. 3,433,549.

Broughton, Donald B., to Universal Oil Products Company. Solvent disperse phase extraction of aromatic hydrocarbons. 3,433,735, 03-18-69, Cl. 208-325.

Brousseau, Roy D.: *See—*
Brousseau, Roy D., and Kogstrom, Carl W., 3,434,149.

Brousseau, Roy D., and Kogstrom, Carl W., said Kogstrom assor to said Brousseau. Method and recorder for making time studies. 3,434,149, 03-18-69, Cl. 346-001.

Brown, Alfred Winsor: *See—*
Marzocchi, Alfred, and Brown, Alfred Winsor 3,433,689.

Brown, Cicero C.Under-reaming tool. 3,433,313, 03-18-69, Cl. 178-270.

Brown, Floyd R., and Floehr, Walter L., to Unitcast Corporation. Weight-steered water sled. 3,433,201, 03-18-69, Cl. 115-070.

Brown, George C., and Klang, Daniel M., to Potter Instrument Company, Inc.Rewind control circuit. 3,433,426, 03-18-69, Cl. 242-055.12

Brown, George C., and Moritz, Frederick G., to Potter Instrument Company, Inc.Rewind conrol circuit. 3,433,427, 03-18-69, Cl. 242-055.12

Brown, Gordon R.: *See—*
Law, Kenneth J., and Brown, Gordon R. 3,434,048.

Brown, Harmon W.: *See—*
Erickson, Raymond A., and Brown, Harmon W. 3,433,945.

Brown, Kenton J.: *See—*
Roerig, Arnold J., and Brown, Kenton J. 3,433,392.

Brown, Robert J., Kowalewski, John J., and Moughty, John J., to Consolidated Foods Corporation,. Airflow-electric coupling. 3,434,092, 03-18-69, Cl. 339-016.

Broyden, Robert H., to Caterpillar Tractor Co.Positive indexing cranking system. 3,433,968, 03-18-69, Cl. 240-037.

Brudney, Harry, to Dollac division, Jacoby-Bender, Inc.Controllable winking eye. 3,432,963, 03-18-69, Cl. 046-169.

Brule, Roger, to Roussel-UcLaf. Process for treating fatigue with calcium glucose-1-phosphate. 3,433,869, 03-18-69, Cl. 424-180.

Bruni, Hansrudolf, and Nyffenegger, Heinz, to Cementfabrik Holderbank-Wildegg AG.Permeability cell. 3,433,056, 03-18-69, Cl. 073-038.

Brunner, Robert F., and Garrett, Wayne O.Ejector and mold plate attachment for plastic molding machines. 3,433,450, 03-18-69, Cl. 249-067.

Bruno, Anthony J., Jr.: *See—*
Legal, Casimer C., Jr., Richmond, Alvin, and Bruno, Anthony J., Jr. 3,433,617.

Brunson, Amber N., to Brunson Instrument Company. Focal plane micrometer for reading the scales of engineering instruments. 3,433,571, 03-18-69, Cl. 356-139.

Brunson Instrument Company: *See—*
Brunson, Amber N., 3,433,571.

Brunson, Marion Otis, to Eastman Kodak Company. Amulsifiable polyolefin composition and process for its preparation. 3,433,777, 03-18-69, Cl. 260-088.2

Brunswick Corporation: *See—*
Huck, William F., and Urban, Joseph, 3,433,479.

Bryan, John L., Jr.: *See—*
Ray, Richard Louis, Segura, Marnell A., and Bryan, John L., Jr. 3,433,775.

Bucklin, Edward P., Jr., Pollack, Werner, and Carlson, Carl O., to National Cash Register Company, The. Optical character reading system. 3,434,110, 03-18-69, Cl. 340-146.3

Bucyrus-Erie Company: *See—*
Novotny, Carl F., and Mork, George W., 3,433,367.

Budde, Paul B., and Tolkmith, Henry, to Dow Chemical Company, The. Phosphinothioic amides. 3,433,798, 03-18-69, Cl. 260-309.

Buehler, Gebruder: *See—*
Stillhard, Bruno, and Tobler, Walter, 3,433,256.

Buensod-Stacey Corporation: *See—*
Warren, Robert M., Jr., 3,433,410.

Buescher, James E.: *See—*
Stapleton, Fred E., and Buescher, James E. 3,434,104.

Buffalo Forge Company: *See—*
Neal, Maynard J., 3,433,164.

Buiting, Francis P.: *See—*
Waseleski, Joseph W., Jr., Buiting, Francis P., and Kulwicki, Bernard M. 3,434,089.

Bullard, E. D., Company: *See—*
Raschke, Herbert A., 3,433,522.

Bunn, Dorrance P., Jr., Jones, Henry B., and Nagle, Richard E., to Texaco Inc.Method and apparatus for fluid catalytic cracking. 3,433,733, 03-18-69, Cl. 208-150.

Burdyn, Ralph F., and Nelson, Murrell D., to Mobil Oil Corporation. Process for recovering valuable components from drilling fluid. 3,433,312, 03-18-69, Cl. 175-066.

Burgarella, John P., to Polaroid Corporation. Shutter control system for photographic apparatus. 3,433,138, 03-18-69, Cl. 095-010.

Burnett & Rolfe Limited: *See—*
Ruddick, Maurice, 3,433,371.

Burnham, Virgil Allan, and Munroe, Richard Warren, to Maremont Corporation. Ribbon forming and handling mechanism. 3,432,890, 03-18-69, Cl. 019-150.

Burr, George Sterling, to Instron Corporation. Movable crosshead loading device. 3,433,061, 03-18-69, Cl. 073-095.

Buschhorn, Floyd E., to Van Dale Corporation. Bunk feeder. 3,433,204, 03-18-69, Cl. 110-052.

Butcher, John Anthony Weeks, Pullum, Geoffrey George, and Willson, Michael John, to International Standard Electric Corporation. Speech immunity voice frequency signalling systems. 3,433,902, 03-18-69, Cl. 179-084.

Butte Knitting Mills, Div. of Johnathan Logan, Inc.: *See—*
Willis, David M., 3,433,432.

Buzbee, Lloyd R., and Ecke, George G., to Koppers Company, Inc.Preparation of 2,3-dichloro-1,4- naphthoquinone from naphthalene. 3,433,812, 03-18-69, Cl. 260-396.

Byrd, Theodore E., to Motorola, Inc.Semiconductor controlled rectifier device. 3,434,022, 03-18-69, Cl. 317-235.

Bystricky, Karl: *See—*
Vockenhuber, Karl, and Bystricky, Karl 3,433,559.

Byttebier, Carlos, to Sika Holding A.G.,. Machine for cleaning a joint in a work of concrete. 3,432,969, 03-18-69, Cl. 051-008.

C.A.V. Limited: *See—*
Kemp, Kenneth Albert Walters, 3,433,159.
Kemp, Kenneth Albert Walters, 3,433,160.

C. G. Conn Ltd.: *See—*
Southard, James S., 3,433,880.

Cabion, Paul J., and Feje, Jules A., to South African Inventions Development Corporation. Antenna feed with polarization selectivity. 3,434,147, 03-18-69, Cl. 343-756.

Cabot Corporation: *See—*
Jordan, Merrill E., and Hardy, John F., 3,433,660.

Cahn, Jean, and Denis, Jean-Claude. Mental performance with potassium N-acetyl DL aminosuccinate. 3,433,875, 03-18-69, Cl. 424-319.

Cale, Albert D., Jr.: *See—*
Dawson, Norman D., and Cale, Albert D., Jr. 3,433,802.

California Computer Products, Inc.: *See—*
Wiley, Franklyn L., and Amendt, Leroy E., 3,434,113.

Caltrider, Paul G., and Hayes, Harold B., to Lilly, Eli, and Company. Process for tylosin production. 3,433,711, 03-18-69, Cl. 195-114.

Campbell, John Stewart, to Imperial Chemical Industries Limited. Process for producing hydrogen peroxide and an alkali metal perborate. 3,433,582, 03-18-69, Cl. 023-060.

Campbell, Trevor G., to Caterpillar Tractor Co.Swing away cutting edge for ejector buckets. 3,433,377, 03-18-69, Cl. 214-767.

Canadian Industries, Limited: *See—*
Trudel, Gerald Joseph, 3,433,809.

Canepa, Michele, to Olivetti-General Electric S.p.A.,. Magnetic transfluxor matrix information storage device. 3,434,129, 03-18-69, Cl. 340-174.

Capaldi, Eugene C., and Leum, Leonard N., to Atlantic Richfield Company. Vinyladamantane preparation. 3,433,844, 03-18-69, Cl. 260-666.

Caprioli, Daniel P.Scraper. 3,432,871, 03-18-69, Cl. 015-104.04

Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario, to Pirelli S.p.A.Apparatus for manufacturing pneumatic tires. 3,433,695, 03-18-69, Cl. 156-401.

Carey, Andrew J., and Gilbert, Chalmers W., to Westinghouse Air Brake Company. Automatic vehicle door control system. 3,433,373, 03-18-69, Cl. 214-063.

Carley, Donald R., to Radio Corporation of America. High frequency, high power transistor having overlay electrode. 3,434,019, 03-18-69, Cl. 317-235.

Carlson, Carl O.: *See—*
Bucklin, Edward P., Jr., Pollack, Werner, and Carlson, Carl O. 3,434,110.

Carlson, Edgar, and Wynne, Francis E., Jr., to Gulf Research & Development Company. Method for the recovery of normal paraffins by urea adduction. 3,433,734, 03-18-69, Cl. 208-308.

Carnahan, Paul E., and Brooke, Donald C., to Westinghouse Electric Corporation. Storage system. 3,433,996, 03-18-69, Cl. 315-012.

Carrier Corporation: *See—*
Leonard, Louis H., Jr., 3,433,296.

Carrieri, Louis F., and Skinner, Norton D., to U S. Industries, Inc.Multispeed driving mechanisms. 3,433,086, 03-18-69, Cl. 074-364.

Carroll, Arley Gene. Stabilizing assembly for hoist. 3,433,447, 03-18-69, Cl. 248-352.

Carson, Elizabeth Landis: *See—*
Raamussen, Chris Royce, Carson, Elizabeth Landis, and Mohrbacher, Richard Joseph 3,433,797.

Carter, William L.Calorie-gram indicator and alarm. 3,433,406, 03-18-69, Cl. 235-128.

Carter, William L.Weight control aid. 3,433,407, 03-18-69, Cl. 235-128.

Caruthers, Willim H., Jr., and Pennington, Louis E., to Reynolds Metals Company. Cryogenic constructions and methods for making the same. 3,433,384, 03-18-69, Cl. 220-014.

Casco Products Corporation: *See—*
Horwitt, Laurence G., 3,433,928.
Krenke, Vincent G., 3,433,969.

Case Institute of Technology: *See—*
Mergler, Harry W., 3,433,065.

Case, J. I., Company: *See—*
Larsen, Gary V., 3,433,230.
Lehmann, Harold Adolf, 3,433,240.
Omon, Gene L., 3,433,502.

Case, John H.Means for cleaning cotton lint. 3,432,892, 03-18-69, Cl. 019-203.

Cassell, Joseph L., to Automatic Fire Alarm Company. Cam construction. 3,433,090, 03-18-69, Cl. 074-567.

Castellano, Thomas A.Chess game, apparatus with changeable board. 3,433,482, 03-18-69, Cl. 273-131.

Caterpillar Tractor Co.: *See—*
Broeker, Elmer W., and Pearce, Shairyl I., 3,433,017.
Broyden, Robert H., 3,433,968.
Campbell, Trevor G., 3,433,377.
Ireland, Gerald B., and Witzenburg, Marion J., 3,433,985

Caulfield, Henry J.: *See—*
Beyen, Werner J., and Caulfield, Henry J. 3,433,139.

Cavagnero, Erman V., Sheffield, Wilbur L., and Morro, Joseph L., to Torrington Manufacturing Company, The. Spring winding machine. 3,433,041, 03-18-69, Cl. 072-138.

Cavalier, Gilbert, to Institut de Recherches de la Siderugie Francaise. Coupling member for ultrasonic scanning device. 3,433,059, 03-18-69, Cl. 073-071.5

Cavitt, Stanley B., to Jefferson chemical Company, Inc.Method for the preparation of dioxenes and dioxadienes. 3,433,806, 03-18-69, Cl. 260-340.6

CCT Cinema Camera Technik AG: *See—*
Jacobsen, Jan Louis Wulff, 3,433,561.

Cekada, Joseph, Jr., and Weyenberg, Donald R., to Dow Corning Corporation. Colloidal silsesquioxanes and methods for making same. 3,433,780, 03-18-69, Cl. 260-029.2

Celanese Corporation: *See—*
Chenevey, Edward C., and Conciatori, Anthony B., 3,433,772.
Hamilton, Robert L., and Quynn, Richard G., 3,433,861.

Cementfabrik Holderbank-Wildegg AG.: *See—*
Bruni, Hansrudolf, and Nyffenegger, Heinz, 3,433,056.

Central Brass & Aluminum Foundry: *See—*
Goehler, Elmer E., 3,433,018.

Central Quality Industries, Inc.: *See—*
Eichholz, Arthur H., 3,432,939.

Central Research Laboratories, Inc.: *See—*
Eisert, Gerald A., and Haaker, Lester W., 3,433,370.

Centre de Recherches De Pont-A-Mousson: *See—*
Bouzereau, Daniel Emile Henri, 3,432,989.

Centre Nationale de la Recherche Scientifique,Ministere de l'Education Nationale, Republique Francaise: *See—*
Chapiro, Adolphe, and Jendrychowska-Bonamour, Anna-Maria, 3,433,724.

Ceskoslovenska Akademie Ved: *See—*
Duchek, Ladislav, and Hasenohrl, Jan, 3,433,360.

Cesta, Frank. Replaceable heels for shoes. 3,432,945, 03-18-69, Cl. 036-036.

Chanal, Roger, to Bennes Marrel. Hydraulic pumps and motors having axial pistons and inclined swashplated. 3,433,173, 03-18-69, Cl. 103-162.

Chaney, John L.Thermometer. 3,433,076, 03-18-69, Cl. 073-374.

Chang, Yi-Chung, and Colijn, Hendrik, to United States Steel Corporation. Apparatus for controlling flow of liquid from a container. 3,433,472, 03-18-69, Cl. 266-038.

Chapiro, Adolphe, and Jendrychowska-Bonamour, Anna-Maria, to Centre Nationale de la Recherche Scientifique, Ministere de l'Education Nationale, Republique Francaise. Grafting of acrylonitrile and styrene onto poly- vinyl chloride using high energy radiation. 3,433,724, 03-18-69, Cl. 204-159.17

Charlesworth, Paul L., and Haslam, Alan A., to Petrocarbon Developments Limited. Hydrogen purification with condensate wash and hydrogen addition to condensate. 3,433,027, 03-18-69, Cl. 062-023.

Charman, Walter M., Jr., and Borden, James H., to Oglebay Norton Company. Hot top panel insert unit. 3,433,452, 03-18-69, Cl. 249-201.

Chaska Chemical Company, Inc.: *See—*
Poppitz, Harold A., 3,433,417.

Chelner, Herbert, to Whittaker Corporation,. Compound strain gage structure. 3,434,090, 03-18-69, Cl. 338-004.

Chemical Construction Corporation: *See—*
Christensen, Axel, and Kuo, Chi Sheng, 3,433,600.

Chemische Fabriek L. van der Grinten N.V.: *See—*
Blatter, Franciscus Petrus Albertus, 3,433,566.

Chemische Werke Huls Aktiengesellschaft: *See—*
Seeliger, Wolfgang, and Nehring, Rudolf, 3,433,756.

Chen, Tsuan-Tong. Revolving foldable bookstand. 3,433,364, 03-18-69, Cl. 211-042.

Chenevey, Edward C., and Conciatori, Anthony B., to Celanese Corporation. Process for preparing polybenzimidazoles. 3,433,772, 03-18-69, Cl. 260-078.4

Chenoweth, David V., to Baker Oil Tools, Inc.Subsurface well intermitter. 3,433,174, 03-18-69, Cl. 103-232.

Cherrin, Abe: *See—*
Cherrin, Phil, 3,432,951.

Cherrin, Archie: *See—*
Cherrin, Phil, 3,432,951.

Cherrin, Lem: *See—*
Cherrin, Phil, 3,432,951.

Cherrin, Phil, 1/5 each to Cherrin, Abe Cherrin, Lem Cherrin, Archie, and Cherrin, Sam, estate of. Compartmented container. 3,432,951, 03-18-69, Cl. 040-107.

Cherrin, Sam: *See—*
Cherrin, Phil, 3,432,951.

Chess, Frank G., to Nashua Corporation. Label applicator. 3,433,697, 03-18-69, Cl. 156-489.

Chevron Research Company: *See—*
Adams, Robert T., Levine, Irving E., and Sweeney, William A., 3,433,846.
Baker, Paul E., Jones, Stanley B., and Seevers, Delmar O., 3,434,044.

Chevron Research Corporation: *See—*
Wilkes, John B., 3,433,830.

Chicago Clutch Manufacturing Co., Inc.: *See—*
Bohn, Martin C., Brady, John F., Spinello, John O., and Rice, Kenneth G., 3,433,341.

Childers, Homer D.: *See—*
Murray, Jack T., and Childers, Homer D. 3,433,903.

Chirota, William W., Holzwarth, Robert W., and Shewchuck, Thomas, to Ford Motor Company. Direct electrical harness switching. 3,433,916, 03-18-69, Cl. 200-166.

Chisholm, John P.Matrix navigation system. 3,434,140, 03-18-69, Cl. 343-006.

Choffart, Pierre, to Compagnie Generale d'Electricite. Tight cover for a semiconductor device. 3,433,885, 03-18-69, Cl. 174-052.

Chomicki, John S., to International Business Machines Corporation. Timed operation sequence controller. 3,434,115, 03-18-69, Cl. 340-172.5

Christensen, Axel, and Kuo, Chi Sheng, to Chemical Construction Corporation. Apparatus for exothermic catalytic reactions. 3,433,600, 03-18-69, Cl. 023-288.

Christensen, Carl O., to Roll-Rite Corporation. Universal caster. 3,433,500, 03-18-69, Cl. 280-079.2

Christensen, Conrad L.Ski pole wrist strap. 3,433,495, 03-18-69, Cl. 280-011.37

Christenson, Kenneth M.: *See—*
Wollensak, John C., Zutaut, David W., and Christenson, Kenneth M. 3,433,618.

Christopher, William H., Jr.: *See—*
Sauder, Robert A., Christopher, William H., Jr., and Bailey, Merrill E 3,432,991.

Chu, David C., and Ting, Lee-Sen, to Hewlett-Packard Company. Automatic-gain-controlled amplifier having a level indicator. 3,434,065, 03-18-69, Cl. 330-002.

Ciba Limited: *See—*
Rickenbacher, Hans Rudolf, 3,433,810.

Ciric, Julius, and Reid, Luther J., Jr., to Mobil Oil Corporation. Method of preparing faujasite-type crystalline zeolites. 3,433,589, 03-18-69, Cl. 023-113.

Cities Service Athabasca, Inc.: *See—*
Cymbalisty, Lubomyr M. O., 3,433,245.

Citizen Tokei Kabushiki Kaisha: *See—*
Iwasawa, Hiroshi, Isekil, Hajime, and Hirano, Hiroshi, 3,433,011.

CkD Blansko, narodni podnik: *See—*
Hosnedl, Vaclav, and Nechleba, Miroslav, 3,433,165.

Clariex Corporation: *See—*
Neiger, Benjamin B., 3,433,962.

Clark, David, Company, Incorporated: *See—*
Flagg, John E., 3,432,861.

Clark, Earnest H., Jr., De Rochemont, John F., and Keithahn, Julian D., to Baker Oil Tools, Inc.Rotationally set well packer. 3,433,303, 03-18-69, Cl. 166-184.

Clark Equipment Company: *See—*
Cook, Charles J., 3,433,455.
Jordan, Wayne W., 3,433,376.
McIntoeh, Richard F., 3,433,324.
McIntosh, Richard F., 3,433,325.

Clark, Harold A., and Vanwert, Bernard. Blends of liquid vinyl unsaturated hydrocarbon polymers with organopolysiloxanes. 3,433,760, 03-18-69, Cl. 260-037.

Clark, Howard S.: *See—*
Ruggles, Kay L., Gunnerson, Dale B., and Clark, Howard S. 3,433,860.

Clearman, Jack F., and Barnard, Walter C., to Whirlpool Corporation. Dish holding rack. 3,433,363, 03-18-69, Cl. 211-041.

Clements, Herbert A., to S.S.S. Patents Limited. Clutch arrangement. 3,433,338, 03-18-69, Cl. 192-067.

Cleveland Controls, Inc.: *See—*
Pravda, Milton Frank, 3,433,910.

Close, Albert R., to Ford Motor Company. Seat back latch mechanism. 3,433,524, 03-18-69, Cl. 296-065.

Coe, Benjamin Franklin: *See—*
Booy, Max Lorenz, Coe, Benjamin Franklin, and Stutler, Stephen Charles 3,433,055.

Cogelin, Nicholas J., Martin, Smuel M., and Ramsey, Raymond B., said Martin assor to Western Electric Company. Incorporated,and said Cogelia and said Ramsey assors to Bell Telephone Laboratories, Incorporated. Electrical wire structure. 3,433,884, 03-18-69, Cl. 174-049.

Cohen, Samuel L.Dispensing container. 3,433,546, 03-18-69, Cl. 312-071.

Coker, Jesse E.: *See—*
Zanowick, Richard L., Coker, Jesse E., and Morritz, Fred L. 3,433,684.
Cole, Richard I., Holcroft, Donald E., Milligan, Edward A., and Greenhalgh, Samuel, to Scott Paper Company. Transpiration drying and embossing of wet paper webs. 3,432,936, 03-18-69, Cl. 034-006.
Coleman-Fox, Inc.: *See—*
Coleman, James T., and Fox, James William, 3,433,480.
Coleman, James T., and Fox, James William, to Coleman-Fox, Inc. Portable running ropes. 3,433,480, 03-18-69, Cl. 273-055.
Colijn, Hendrik: *See—*
Chang, Yi-Chung, and Colijn, Hendrik 3,433,472.
Collins, Lowell J., to Grace Machinery Corporation,. Automatic means and method for producing cheese curd. 3,433,648, 03-18-69, Cl. 099-116.
Collum, Theodore J. Fire alarm. 3,434,133, 03-18-69, Cl. 340-227.1
Cominco Ltd: *See—*
Liang, Sou Chu, and Shaw, George, 3,433,627.
Commercial Radio-Sound Corp.: *See—*
Schneider, Arthur W., 3,434,040.
Commissariat a l'Energie Atomique: *See—*
Guth, Jean-Louis, and Wey, Raymond, 3,433,736.
Commonwealth Scientific and Industrial ResearchOrganization: *See—*
Walsh, Alan, and Sullivan, John V., 3,433,963.
Communications Patents Limited: *See—*
Gabriel, Ralph P., and Kinross, Rupert I., 3,433,890.
Compagnie Generale d'Electricite: *See—*
Choffart, Pierre, 3,433,885.
Compak-O-Matic, Inc.,: *See—*
Benfield, Edward A., 3,433,925.
Comstock, Alfred E., and Wilcox, Burdsal Gardner, to Safeway Stores, Incorporated. Apparatus for cutting block-like articles. 3,433,278, 03-18-69, Cl. 146-078.
Conciatori, Anthony B.: *See—*
Chenevey, Edward C., and Conciatori, Anthony B. 3,433,772.
Consolidated Foods Corporation, : *See—*
Brown, Robert J., Kowalewski, John J., and Moughty, John J., 3,434,092.
Downey, David F., Le Baigue, Jacques L., and Ohlson, Bengt E., 3,432,997.
Downey, David F., 3,432,998.
Container Corporation of America: *See—*
Nuttall, Wallace H., 3,433,694.
Conti, Aldo. Wire grinding machine. 3,432,971, 03-18-69, Cl. 051-080.
Continental Can Company, Inc.: *See—*
Krizka, Jerry A., and Fox, James F., 3,433,391.
Control Data Corporation, : *See—*
Horton, Gilbert, Ruth, Wayne A., and Cox, Clarence, 3,433,107.
Controls Company of America: *See—*
Stone, Thomas W., 3,433,990.
Cook, Charles J., to Clark Equipment Company. Spring biased valve. 3,433,455, 03-18-69, Cl. 251-321.
Cook, Edward G., to Crest Ultrasonics Corp. Method and apparatus for resonating small piezoelectric crystals at low frequencies. 3,433,462, 03-18-69, Cl. 259-001.
Cooke, Brian Alfred, and Gourlay, George, to Imperial Chemical Industries Limited. Ion-exchange material from halogenated polyethylene. 3,433,755, 03-18-69, Cl. 260-002.2
Cooke, Robert R., and Roudebush, Richard M., to Procter & Gamble Company, The. Cocoa-flavored liquid oil compositions. 3,433,649, 03-18-69, Cl. 099-118.
Cooper, Herbert Warren, to Westinghouse Electric Corporation. Precision interferometer navigation system. 3,434,144, 03-18-69, Cl. 343-108.
Cooper, Joseph H.: *See—*
Seeloff, Melvin M., and Cooper, Joseph H. 3,433,537.
Coote, John M., to Cutler-Hammer Inc. Multifield comparator adjustable to compare any combinations of fields and to provide selectable bases of comparison. 3,434,109, 03-18-69, Cl. 340-146.2
Copony, Edward L., Pedroli, Walter E., and Hermann, Robert, to Symington Wayne Corporation. Ticket printing device for dispenser. 3,434,155, 03-18-69, Cl. 346-043.
Cordis Corporation: *See—*
Keller, John Walter, Jr., 3,433,228.
Corella, Arthur P.: *See—*
Schneider, William S., and Corella, Arthur P. 3,432,986.
Corneil, Ernest R. Peristaltic fluid pump. 3,433,171, 03-18-69, Cl. 103-149.
Cornell Aeronautical Laboratory Inc.: *See—*
Robinson, Thomas L., 3,433,677.
Corning Glass Works: *See—*
Alper, Allen M., 3,433,471.
Bellman, Robert H., and Bermel, Thomas W., 3,433,408.
Dockerty, Stuart M., 3,433,613,
Cornish, Cornell D., to United States of America, Atomic Energy Commission. Stellarator having multipole magnets. 3,433,705, 03-18-69, Cl. 176-003.
Cory Corporation: *See—*
Karlen, Harvey R., and Eisendrath, David C., 3,433,149.
Cotten, Richard M. Pedal board for musical instrument. 3,433,881, 03-18-69, Cl. 084-001.17
Cox, Clarence: *See—*
Horton, Gilbert, Ruth, Wayne A., and Cox, Clarence 3,433,107.
Cox, James R. Drift detector. 3,434,062, 03-18-69, Cl. 328-163.
Cragston Industries, Inc.: *See—*
Stanton, Frank, 3,433,110.
Craig, Thomas Moodie. Fluid machines. 3,433,167, 03-18-69, Cl. 103-125.
Cram, Robert D.: *See—*
Emanuelson, Roy M., and Cram, Robert D. 3,433,947.
Crane Plastics, Inc.: *See—*
Bordner, Paul G., 3,432,966.
Crawford Fitting Company: *See—*
Crihfield, Richard P., and Dodge, Harry G., 3,433,042.
Cree, David, and Wenzel, Guss E., to United States of America, National Aeronautics and Space Administration. Amplifier drift tester. 3,434,064, 03-18-69, Cl. 330-002.
Cremer, Joseph: *See—*
Harnisch, Heinz, Cremer, Joseph, and Schulte, Friedrich 3,433,586.
Crest Ultrasonics Corp.: *See—*
Cook, Edward G., 3,433,462.
Crihfield, Richard P., and Dodge, Harry G., to Crawford Fitting Company. Tube clamp for a tube bending tool. 3,433,042, 03-18-69, Cl. 072-159.
Cripe, Alan R., to United Aircraft Corporation. Resilient stabilizing railway truck assembly. 3,433,177, 03-18-69, Cl. 105-199.
Crocker, Bryant W., and Schmid, Frederick, to United States of America, Army. Method for eliminating hot tear cracks in castings. 3,433,282, 03-18-69, Cl. 164-053.
Croft, Charles P., and Long, William W., III, to Pangborn Corporation, The. Liquid nitrogen deflashing apparatus. 3,432,968, 03-18-69, Cl. 051-008.
Crouse-Hinds Company: *See—*
Curtis, Richard F., 3,434,016.
Hall, William B., 3,433,941.
Crouzet: *See—*
Jullien-Davin, Jean, 3,433,091.
Crowe, Talmadge L., to Baker Oil Tools, Inc. High temperature extension joint. 3,433,506, 03-18-69, Cl. 285-187.
Crown Zellerbach Corporation: *See—*
Harthauer, Ellsworth A., Talbot, Alfred B., and Weis, Rudolf R., 3,433,136.
Crucible Steel Company of America: *See—*
Bomberger, Howard B., Jr., 3,433,626.
Cruger, Robert W., Petransky, William E., and Weiss, Melvin I., to Bliss, E. W., Company. Aircraft launching device. 3,433,438, 03-18-69, Cl. 244-063.
Crylor: *See—*
Lombard, Francis, and Juillard, Pierre, 3,433,866.
Csupor, Denis, to Maierform Trust Reg. Bows of ships. 3,433,194, 03-18-69, Cl. 114-056.
Cubberley, Harold A., Abel, Edmund, Jr., and Sackett, John E., to Service Recorder Company, The. Valve assembly. 3,433,255, 03-18-69, Cl. 137-510.
Cummings, Alan F., to North American Rockwell Corporation. Flexible aerodynamic body. 3,433,441, 03-18-69, Cl. 244-138.
Cummings, Harold K., to Amphenol-Borg Electronics Corporation. Self-reversing synchronous motor. 3,434,027, 03-18-69, Cl. 318-282.
Cunningham, Eldon R., to General Electric Company. Dynamoelectric machine winding circuit controlling switch assembly. 3,433,908, 03-18-69, Cl. 200-080.
Cunningham, William J., and Wolf, Cyrial, to Allied Chemical Corporation. Purification of perhaloacetones. 3,433,838, 03-18-69, Cl. 260-593.
Curtis Development & Mfg., Co.: *See—*
Hancock, Lyle J., and Miller, Robert E., 3,434,103.
Curtis, Richard F., to Crouse-Hinds Company. Traffic signal system. 3,434,016, 03-18-69, Cl. 317-123.
Custance, Raymond J. Motorized friction drive mower. 3,433,002, 03-18-69, Cl. 056-026.
Cutler-Hammer Inc.: *See—*
Coote, John M., 3,434,109.
Cymbalisty, Lubomyr M. O., 30% to Cities Service Athabasca, Inc. 30% to Imperial Oil Limited 30% to Atlantic Richfield Corp., and 10% to Royalite Oil Company. Discharge valve pulsator system. 3,433,245, 03-18-69, Cl. 137-242.
d/b/a a partnership: *See—*
Lothman, Mary F., 3,433,939.
D'Errico, Michael Joseph, and Kulick, Russell Joseph, to American Cyanamid Company. Warm water-dilutable paste rosin size and process for the manufacture thereof. 3,433,658, 03-18-69, Cl. 106-123.
D'Errico, Michael Joseph, and Wagner, Frank Larkin, to American Cyanamid Company. Paste rosin size containing fortifying agent. 3,433,659, 03-18-69, Cl. 106-238.
Dahlgren, Lennart G. O. Mechanisms for camera shutters. 3,433,085, 03-18-69, Cl. 074-089.19
Dahlgren, Victor F.: *See—*
Tally, Sidney K., Dahlgren, Victor F., and Stearns, Thomas H. 3,433,888.
Dahms, James Bowen, and Edmonds, Byron Priestly, to PPG Industries, Inc. Method of solution mining potassium chloride. 3,433,530, 03-18-69, Cl. 299-004.
Dai Nippon Seito Kabushiki KaishaNitto Institute of Chemical Research, The: *See—*
Matsubayashi, Tadao, and Suzuki, Yahiko, 3,433,707.
Daly, Brian Bowman, Baker, Alex Gerard James, and Anderson, Joseph Percival, to Woods of Colchester Limited. Impellers, especially for ventilators. 3,433,145, 03-18-69, Cl. 098-043.
Darschewski, Kurt: *See—*
Naeser, Gerhard, Wessel, Otto, and Darschewski, Kurt 3,433,049.
Davis, Earl C. Trailer coupler. 3,433,503, 03-18-69, Cl. 280-512.
Davis, Howard C., and Trumbull, Harold E., to Xerox Corporation,. Pressure producing means for reproduction machine. 3,433,154, 03-18-69, Cl. 101-132.
Davis, William C.: *See—*
Boczar, William J., and Davis, William C. 3,434,018.
Davis, William W., and Pohm, Arthur V., to Sperry Rand Corporation. Parametric amplifiers cascaded in a transmission line arrangement. 3,433,975, 03-18-69, Cl. 307-088.
Dawson, Gordon Bertram. Means for conveying coal in mines. 3,433,348, 03-18-69, Cl. 198-089.
Dawson, John W., to Pfund, Charles E. Automobile signal. 3,434,108, 03-18-69, Cl. 340-074.
Dawson, Norman D., to Robins, A. H., Company, Incorporated. 1-Aryl-3(N-lower alkylamino)pyrrolidines. 3,433,801, 03-18-69, Cl. 260-326.3
Dawson, Norman D., and Cale, Albert D., Jr., to Robins, A. H., Company, Incorporated. 3-(N-lower-alkylanilino)pyrrolidines. 3,433,802, 03-18-69, Cl. 260-326.5
Day, Harry E. Mounting and actuating means for control devices. 3,433,907, 03-18-69, Cl. 200-047.
DCA Food Industries Inc.: *See—*
Fries, Edward W., 3,433,150.
de Bos, Leo Tan: *See—*
Mullen, James William, and de Bos, Leo Tan 3,433,152.
De Crevoisier, Michel: *See—*
Duport, Jacques P., and De Crevoisier, Michel 3,433,014.

de Groot, Dirk Cornelis: *See—*
Van Damme-van Weele, Marina Adriana, and de Groot, Dirk Cornelis 3,433,590.
De Laval Separator Company, The: *See—*
Nelson, Kurt, 3,433,249.
De Penti, Kenneth L.: *See—*
Metzger, William J., and De Penti, Kenneth L. 3,433,369.
De Ritter, Elmer, and Raymond, Joseph Edward, to Hoffmann-La Roche, Inc. Palatable, free-flowing, non-agglomerating caffeine powder. 3,433,872, 03-18-69, Cl. 424-253.
De Rochemont, John F.: *See—*
Clark, Earnest H., Jr., De Rochemont, John F., and Keithahn, Julian D. 3,433,303.
Dean, Derek John, to Weston Instruments, Inc.,. Moving coil electrical instrument having a magnetic shunt movable transversely in a flux leakage path. 3,434,054, 03-18-69, Cl. 324-151.
Dean, Duff L., to Triple D Industries, Inc.,. Apparatus for testing boat fenders. 3,433,050, 03-18-69, Cl. 073-011.
deDecker, Hendrik Kamiel: *See—*
Bayerl, Joseph James, deDecker, Hendrik Kamiel, and Lee, Ying Kao 3,433,759.
DeHaes, Louis Maria, to Gevaert Photo-Producten N.V. Diffusion transfer process. 3,433,634, 03-18-69, Cl. 096-029.
Dehn, John S., and Glass, John Arnold, to Monsanto Company. Purification process. 3,433,841, 03-18-69, Cl. 260-643.
Deigaard, Frank N., and Olson, Arthur W. Hedge trimming machine. 3,433,005, 03-18-69, Cl. 056-235.
Dempsey, Martin J.: *See—*
Rackoff, Selwyn R., and Dempsey, Martin J. 3,432,902.
Denis, Jean-Claude: *See—*
Cahn, Jean, and Denis, Jean-Claude 3,433,875.
Dennen, Russell J. Adjustable finger ring with means for maintaining adjustment. 3,433,032, 03-18-69, Cl. 063-015.65
Dentists' Supply Company of New York, The. *See—*
Bresnahan, Robert A., 3,433,320.
DeRose, Ralph A., to International Telephone and Telegraph Corporation. Programming switch. 3,434,095, 03-18-69, Cl. 339-018.
Detrixhe, Arvid J. Rotary plow. 3,433,706, 03-18-6, Cl. 172-067.
Deuringer, Rudolf, to Beckman Instruments, Inc. Ozone scavenger. 3,433,580, 03-18-69, Cl. 023-002.
Deutsche Gold- und Silber-Scheideanstalt vormalsRoessler: *See—*
Reinhardt, Helmut, and Nauroth, Peter, 3,433,593.
Deutsch, Peter R.: *See—*
Poux, Charles A., and Deutsch, Peter R. 3,432,887.
Deutsche Gold- und Silber Scheideanstalt vormalsRoessler: *See—*
Knorre, Helmut, Bretschneider, Gunther, and Sauer, Heinrich, 3,433,605.
Deutsche Gold- und Silber-Scheideanstaltvormals Roessler: *See—*
Herzog, Hans, and Kabisch, Gerhard, 3,433,358.
Devins, James T., and Quisenberry, Robert E., to Texaco Inc. Method of controlling selectivity in an aromatic hydrocarbon dealkylation process. 3,433,848, 03-18-69, Cl. 260-672.
DeVries, G. John, Jr., to Bell Telephone Laboratories, Incorporated. Reciprocating electric connecting system. 3,433,889, 03-18-69, Cl. 174-069.
Dewar, Eric T.: *See—*
Black, William A. P., Dewar, Eric T., and Rutherford, David 3,433,738.
Diamond Crystal Salt Company, : *See—*
Hidden, William P., 3,432,990.
Diamond, Holton W. Frozen dessert and method of making the same. 3,433,651, 03-18-69, Cl. 099-136.
Diamond Shamrock Corporation: *See—*
Reese, William D., 3,433,691.
Diamond, William E., and Perry, George W., to Mobil Oil Corporation. Versatile marine structure. 3,433,024, 03-18-69, Cl. 061-046.5
Dick, Norman T., to Babcock & Wilcox Limited. Electro-slag welding. 3,433,926, 03-18-69, Cl. 219-137
Dickey, David V.: *See—*
Shively, Richard P., and Dickey, David V. 3,434,128.
Dickinson, George Alfred, Morgan, John Henry, Thomas, James Edward Celfyn, and Oxley, Brian William, to Pilkington Brothers Limited. Apparatus and method for manufacture of float glass with restricted lateral spread. 3,433,612, 03-18-69, Cl. 065-099.
Dickinson, George Alfred, and Preston, Anthony, to Pilkington Brothers Limited. Apparatus for manufacturing flat glass. 3,433,614, 03-18-69, Cl. 065-182.
Dietz, Albert: *See—*
Wilson, William L., Lott, Harry, Jr., and Dietz, Albert 3,433,594.
Dinges, Karl: *See—*
Muller, Erwin, and Dinges, Karl 3,433,835.
Dingwall, Robert P., to International Business Machines Corporation. Pulse width sensitive magnetic head with associated binary identification circuit. 3,434,131, 03-18-69, Cl. 340-174.1
Dio, Juro: *See—*
Yamada, Kazuyoshi, Wakazaki, Hiroshi, and Dio, Juro 3,433,197.
Dockerty, Stuart M., to Corning Glass Works. Sheet glass forming apparatus with means to transform vertical flows into a horizontal flow. 3,433,613, 03-18-69, Cl. 065-145.
Dodge, Harry G.: *See—*
Crihfield, Richard P., and Dodge, Harry G. 3,433,042.
Doerwang, Joseph F.: *See—*
Sommer, Don A., and Doerwang, Joseph F. 3,433,356.
Dogadko, Peter, and Hufton, Arthur G., to Motorola, Inc. Triggering circuit. 3,433,208, 03-18-69, Cl. 123-148.
Doherty, Alfred E., Jr., and Knop, Louis H., to Aerojet-General Corporation. Explosive seam bonding method and machine. 3,432,912, 03-18-69, Cl. 029-470.1
Doi, Juro: *See—*
Yamada, Kazuyoshi, and Doi, Juro 3,433,198.
Dollac division, Jacoby-Bender, Inc.: *See—*
Brudney, Harry, 3,432,963.
Domestic Lace Mfg., Inc.: *See—*
Traumuller, Martin, 3,433,034.
Doolittle, Paul A. Decorative female hair piece. 3,433,235, 03-18-69, Cl. 132-053.
Dorfelt, Christoph, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the preparation of diacetyl compounds. 3,433,829, 03-18-69, Cl. 260-496.
Dover Corporation: *See—*
Wilson, Fred A., and Moore, Glenn E., 3,433,387.
Dow Cemical Company, The: *See—*
Grinstead, Robert R., 3,433,604.
Dow Chemical Company, The: *See—*
Budde, Paul B., and Tolkmith, Henry, 3,433,798.
Horsley, Lee H., 3,433,824.
Swanson, Norman, Kirk, Richard O., and Woodward, George E., 3,433,832.
Dow Corning Corporation: *See—*
Cekada, Joseph, Jr., and Weyenberg, Donald R., 3,433,780.
Gergle, Richard C., and Merricks, James A., 3,433,667.
Downey, David F., to Consolidated Foods Corporation,. End closure for disposable vacuum cleaner dust bag. 3,432,998, 03-18-69, Cl. 055-367.
Downey, David F., Le Baigue, Jacques L., and Ohlson, Bengt E., to Consolidated Foods Corporation,. End closure for a disposable vacuum cleaner dust bag. 3,432,997, 03-18-69, Cl. 055-367.
Downing, Hubert B. Child's clothes rack. 3,433,445, 03-18-69, Cl. 248-291.
Dowty Hydraulic Units Limited, : *See—*
Flint, John C. E., 3,433,453.
Doyle, Edward A.: *See—*
Stevens, Donald E., and Doyle, Edward A. 3,432,937.
Doyle, Richard M., to Fastener Corporation. Electrically operated reciprocating tool. 3,434,026, 03-18-69, Cl. 318-125.
Doyle, William C., Jr., to Tenneco Chemicals, Inc. Treatment of tall oil fatty acids. 3,433,815, 03-18-69, Cl. 260-419.
Doyle, William Francis, to Stewarts and Lloyds Limited. Weld backing member and method of forming welded joints in metallic members or between metallic members. 3,432,915, 03-18-69, Cl. 029-491.
Drabik, Walter, to General Motors Corporation. Traction motor axle bearing dust guard. 3,433,541, 03-18-69, Cl. 308-036.1
Drager, Otto Heinaich: *See—*
van der Smissen, Carl Ernst, 3,433,653.
Dreiske, Erwin J., and Saudinattis, Emanuel, to Zenith Radio Corporation. Protection circuit for horizontal output transistor. 3,434,005, 03-18-69, Cl. 315-027.
Drennan, James G., to Owens-Illinois, Inc. Apparatus for handling beverage bottles. 3,433,523, 03-18-69, Cl. 294-087.2
Driskell, Thomas, to Thomas Industries Inc. Lighting fixture with quickly removable ballast assembly. 3,433,887, 03-18-69, Cl. 174-063.
Du Pont de Nemours, E. I., and Company: *See—*
Boswell, George A., 3,433,813.
Braun, Robert A., 3,433,819.
Dutton, Hubert Wallace, Jr., and Lees, Ray Frank, 3,433,857.
Gage, Thomas B., 3,433,008.
Meagher, Robert, 3,432,896.
Myers, Neil O., 3,433,007.
Du Pont de Nemours, E. I., and Company, : *See—*
Pinney, Baden McDowall, 3,433,463.
Du Pont de Nemours, E. I., and Company: *See—*
Vasta, Joseph A., 3,433,771.
Du Pont deNemours, E. I., and Company: *See—*
Booy, Max Lorenz, Coe, Benjamin Franklin, and Stutler, Stephen Charles, 3,433,055.
Dual Manufacturing & Engineering, Inc.: *See—*
Re, Frank M., 3,433,527.
Duchek, Ladislav, and Hasenohrl, Jan, to Ceskoslovenska Akademie Ved. Filtering apparatus. 3,433,360, 03-18-69, Cl. 210-249.
Duck, Edward William, and Thornber, Michael Neil, to International Synthetic Rubber Company Limited. Process for the polymerization of butadiene in the presence of a catalyst system comprising an organo Ni or Co compound, a chloride of Sn or Ga and an organolithium compound. 3,433,778, 03-18-69, Cl. 260-094.3
Duddy, Joseph C., to E&B Incorporated. Battery electrode having thin deposit of meta- dimitrobenzene on graphite fabric and a method for making it. 3,433,673, 03-18-69, Cl. 136-022.
Duke, Doyal P.: *See—*
Swafford, Kenneth L., Duke, Doyal P., and Hazelwood, Roy E. 3,433,464.
Duncan Electric Company, Inc.: *See—*
Milligan, James W., 3,434,084.
Duncan, Frederic James: *See—*
Bamford, Clement Henry, Duncan, Frederic James, and Reynolds, Reginald John William 3,433,774.
Dunlop Company Limited, The: *See—*
Osborne, Alan P., 3,433,664.
Dunlop Tire and Rubber Corporation: *See—*
Brierley, Thomas Albert, 3,432,888.
Dunnavant, William R.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,433,818.
Dunnavant, William R.: United States of America, National Aeronautics and Space Administration, Administrator, 3,433,818.
Duport, Jacques P., and De Crevoisier, Michel, to Societe Grenobloise d'Etudes et d'Applications Hydrauliques. Device for the production of energy in bursts. 3,433,014, 03-18-69, Cl. 060-012.
Durand, Pierre, to Richier. Collapsible crane. 3,433,368, 03-18-69, Cl. 212-046.
Durney, George P., to ILC Industries, Inc.,. Tubular connectors for pressure suit. 3,432,860, 03-18-69, Cl. 002-002.
Durocher, Hector R., Wentworth, James A., and Baer, Ralph H., to Sanders Associates, Inc. Parachute dereefing system. 3,433,442, 03-18-69, Cl. 244-152.
Dursch, Walter, Landauer, Franz, Reuter, Martin, and Weckler, Gerhard, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Dye leveller containing an anionic or non-ionic detergent with a foam depressant mixture of an alkyl ester of an alkanoic acid, an alkyl phosphate, and a fatty acid or soap. 3,433,574, 03-18-69, Cl. 008-089.

Dutton, Hubert Wallace, Jr., and Lees, Ray Frank, to Du Pont de Nemours, E. I., and Company. Method and apparatus for forming nonwoven sheets. 3,433,857, 03-18-69, Cl. 264-024.

Dvorak, Ludvik: *See—*
Jurik, Rudolf, and Dvorak, Ludvik 3,432,869.

Dykzeul, Theodore J., to Robertshaw Controls Company. Electric terminal. 3,434,100, 03-18-69, Cl. 339-196.

Dymo Industries, Inc.: *See—*
Mullen, James William, and de Bos, Leo Tan, 3,433,152.

Dynamit Nobel Aktiengesellschaft: *See—*
Joch, Erich, 3,433,157.

Dzierzanowski, Frank J.: *See—*
Haden, Walter L., Jr., and Dzierzanowski, Frank J. 3,433,587.

E&B Incorporated: *See—*
Duddy, Joseph C., 3,433,673.

E&B Incorporated, : *See—*
Johnson, Martin H., and Spellman, Patrick J., 3,433,679.

E&B Incorporated: *See—*
Ockermn, John B., 3,433,678.

Earle, Ralph H., Schmalz, Alfred C., and Soucek, Charles A., to Hercules, Incorporated. Polyolefin compositions containing a basic polyamide dye site additive. 3,433,853, 03-18-69, Cl. 260-857.

Earle, Roger T., Jr., and Sumey, Ivan E., to General Electric Company. Gas turbine engine rotors. 3,433,020, 03-18-69, Cl. 060-226.

Eastman Kodak Company: *See—*
Brunson, Marion Otis, 3,433,777.
Goffe, Charles Allen, 3,433,639.
Hagemeyer, Hugh J., Jr., and Edwards, Marvin B., 3,433,855.
Hediger, Edwin A., 3,433,350.
Lieser, Ernst, Simon, Horst, Mueller, Edwin, and Steisslinger, Kurt, 3,433,143.
Simon, Horst, 3,432,967.

Eaton Yale & Towne Inc.: *See—*
Braun, Eugene R., 3,433,332.
Heyberger, Werner, and Braun, Eugene R., 3,433,331.

Ebertz, Helmut: *See—*
Ruhle, Hans, and Ebertz, Helmut 3,433,141.

Eck, Gerhard, to Bolkow Gesellschaft mit beschrankter Haftung. Axial thrust bearing having rotatable needle cage. 3,433,543, 03-18-69, Cl. 308-235.

Ecke, George G.: *See—*
Buzbee, Lloyd R., and Ecke, George G. 3,433,812.

Eckelmann, Herman J., Jr.Push-pull amplfiers. 3,434,067, 03-18-69, Cl. 330-015.

Edelson, Stanley, and O'Brien, George R., to Amsterdam Brush Corp.Paint brush and hanger therefor. 3,432,875, 03-18-69, Cl. 015-246.

Edison Instruments, Inc.: *See—*
Scarpa, Thomas J., 3,433,461.

Edmonds, Byron Priestly: *See—*
Dahms, James Bowen, and Edmonds, Byron Priestly 3,433,530.

Educational Research Council of Great Cleveland: *See—*
Merkel, Stephen L., 3,432,943.

Edwards, Andrew S., to General Motors Corporation. Washer nozzle assembly. 3,432,876, 03-18-69, Cl. 015-250.04

Edwards, Marvin B.: *See—*
Hagemeyer, Hugh J., Jr., and Edwards, Marvin B. 3,433,855.

Egan, Richard Raymond, and Lampson, Sidney Bruce, to Ashland Oil & Refining Company. Ethoxylated monoglycerides in baked goods. 3,433,645, 03-18-69, Cl. 099-090.

Ege, William W., Jr., to Essex Wire Corporation. Encapsulated reed switch relay construction. 3,434,079, 03-18-69, Cl. 335-151.

Eggenberger, Ulrich, and Neuenschwander, Karl A., to Gebruder Buhler. Pressure-type diecasting machine with screw threaded adjustment of mold halves. 3,433,290, 03-18-69, Cl. 164-303.

Ehman, George L.Container opening means. 3,433,386, 03-18-69, Cl. 220-048.

Ehrlich, Robert: *See—*
Young, Archie R., II, and Ehrlich, Robert 3,433,817.

Eichholz, Arthur H., to Central Quality Industries, Inc.Portable clothes dryer. 3,432,939, 03-18-69, Cl. 034-151.

Eichler, Dieter: *See—*
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen 3,433,101.

Eisendrath, David C.: *See—*
Karlen, Harvey R., and Eisendrath, David C. 3,433,149.

Eisenlohr, Karl Heinz, and Wirth, Hans, to Metallgesellschaft Akt.Process for recovering pure aromatics. 3,433,849, 03-18-69, Cl. 260-674.

Eisert, Gerald A., and Haaker, Lester W., to Central Research Laboratories, Inc.Clamp-on load hook. 3,433,370, 03-18-69, Cl. 214-001.

Elbert, Raymond J., and Farrier, Ernest G., to Union Carbide Corporation. Process for producing porous metal bodies. 3,433,632, 03-18-69, Cl. 075-222.

ElBindari, Ahmed, to Avco Corporation. Composite electrical conductor. 3,433,892, 03-18-69, Cl. 174-126.

Electrical control circuitry for use in: *See—*
Giuffrida, Philip, 3,433,572.

Electro-Mechanisms, Inc.: *See—*
Tally, Sidney K., Dahlgren, Victor F., and Stearns, Thomas H., 3,433,888.

Electronic Associates Inc.: *See—*
Schmidt, Raymond A., Wilhelm, Frederick A., Jr., and Kayle, William W., 3,434,111.

Electronics Corporation of America: *See—*
Lewis, Robert E., 3,434,099.

Elektriska Svetsningsaktiebolaget: *See—*
Henriksen, Jan-Erik, and Bjorkum, Svein, 3,433,882.

Elias, Jiri: *See—*
Pospisil, Frantisek, and Elias, Jiri 3,433,433.

Elitex Zavody textilniho Strojirenstivi: *See—*
Svaty, Vladimir, Bilek, Jan, and Zlatohlavek, Jiri, 3,433,271.

Elliott Brothers (London) Limited: *See—*
Gemmell, Douglas B., 3,433,125.

Ellis, Lonnie T.Apparatus with color coded board and chance means. 3,433,483, 03-18-69, Cl. 273-134.

Emanuel, Giovanni, and Zucca, Carlo, to Soc. Acc. Emanuel di G. e R. Emanuel & C.Washing plant for vehicles. 3,432,870, 03-18-69, Cl. 015-021.

Emanuelson, Roy M., and Cram, Robert D., to High Voltage Engineering Corporation. Electron beam accelerator with shielding means and electron beam interlocked. 3,433,947, 03-18-69, Cl. 250-049.5

Emerald Pacific Enterprises, Inc.: *See—*
Tanguay, Raymond J., 3,433,481.

Emerson Electric Co.: *See—*
Arnold, Harold D., 3,433,988.
Miller, Floyd Y., 3,432,908.

Engelhard Hanovia of Canada Limited: *See—*
Hardwick, Geoffrey H. E., 3,433,946.

Engelhard Minerals & Chemicals Corporation, : *See—*
Haden, Walter L., Jr., and Dzierzanowski, Frank J., 3,433,587.
Hecklau, Frederick L., and Allegrini, Aldo P., 3,433,704.
Sommer, Don A., and Doerwang, Joseph F., 3,433,356.

Englesson, Sixten, to Stenberg-Flygt AB. Centrifugal pump with slip coupling. 3,433,162, 03-18-69, Cl. 103-087.

English Electric Company Limited, The: *See—*
Feenan, John, Jacks, Eric, and Murphy, John Eric, 3,432,923.
Morris, David Joseph, 3,433,973.

English Electric Valve Company, Limited: *See—*
Bennett, Maurice Ronald, 3,434,006.

English, William K., to AMP Incorporated. Odd number magnetic core counter. 3,434,126, 03-18-69, Cl. 340-174.

Enssle, Bruno Eugen, to Binks Research and Development Corporation. Hydraulic systems. 3,433,415, 03-18-69, Cl. 239-126.

Entoleter, Inc.: *See—*
Guenther, Wolfgang Peter, 3,433,422.

Enz, Robert W.Apparatus for excavating tunnels. 3,433,532, 03-18-69, Cl. 299-031.

Epifanio, Joseph, Sr.Fuel-line system for an internal-combustion engine. 3,433,608, 03-18-69, Cl. 048-180.

Eppler, Daniel, to Thomas & Betts Co., Inc., The. Strap applying tool. 3,433,275, 03-18-69, Cl. 140-093.2

Equipment Manufacturing, Inc.: *See—*
Galloway, Victor A., 3,433,372.

Erck, Richard K.Sash plug. 3,432,883, 03-18-69, Cl. 016-197.

Erdman, Charles A., to Venus Esterbrook Corporation. Recorder having stylus pressure adjustment assembly. 3,434,159, 03-18-69, Cl. 346-139.

Erickson, Donald O.Concrete wall and wall panel construction. 3,432,978, 03-18-69, Cl. 052-227.

Erickson, Raymond A., and Brown, Harmon W., to Varian Associates. Electrically adjustable slits and mass spectrometers using same. 3,433,945, 03-18-69, Cl. 250-041.9

Ericsson, Eric R., to Telefonaktiebolaget L M Ericsson. Push button switch. 3,433,914, 03-18-69, Cl. 200-159.

Erikson, Herman E., to Polaroid Corporation. Photographic products and processes. 3,433,950, 03-18-69, Cl. 250-065.

Erke, Frederick C.Enclosure for a flatbed trailer or truck body. 3,433,470, 03-18-69, Cl. 296-028.

Ernst-Schraner, Theodor, to American Air Filter Company, Inc.Gas filter holding device. 3,432,999, 03-18-69, Cl. 055-490.

Eskimo Pie Corporation: *See—*
Fox, Lester John, 3,433,261.

Espinosa, Robert J., to Varian Associates. Non-resonant stub supports for slow wave circuits. 3,433,999, 03-18-69, Cl. 315-003.5

Essex Wire Corporation: *See—*
Ege, William W., Jr., 3,434,079.

Esso Research and Engineering Company: *See—*
Maggart, Ronald C., Rothenberg, Don H., and Heinrich, Raymond L., 3,433,661.
Morway, Arnold J., and Bodner, Albert J., 3,433,743.
Passannante, Anthony J., and Stogryn, Eugene L., 3,433,776.
Ray, Richard Louis, Segura, Marnell A., and Bryan, John L., Jr., 3,433,775.

Ethyl Corporation: *See—*
Braxton, Henry G., Jr., and Lajiness, Evelyn J., 3,433,621.
Keblys, Kestutis A., 3,433,851.
Keblys, Kestutis A., 3,433,852.
Plonsker, Larry, and Wright, Norman R., 3,433,619.
Plonsker, Larry, and Wright, Norman R., 3,433,620.
Plonsker, Larry, and Wright, Norman R., 3,433,622.
Stephens, Ruth E., Hirschler, Daniel A., Jr., and Lamb, Frances W., 3,433,581.
Wollensak, John C., Zutaut, David W., and Christenson, Kenneth M., 3,433,618.

Evans Products Company: *See—*
Sharp, Floyd M., 3,433,179.
Shook, Jackson A., 3,433,180.

Evensen, Ingwald M.Method of making a paint roller. 3,433,693, 03-18-69, Cl. 156-242.

Evesque, Roger A., to Seaquist Valve Co., Div. of Pittsburgh Railways Co.Aerosol valve having swirl chamber. 3,433,419, 03-18-69, Cl. 239-470.

Executive Line, Ic., The: *See—*
Jack, Charles W., 3,432,942.

F & E Manufacturing Company: *See—*
James, George A., 3,433,132.

Faaborg-Andersen, Axel Valdemar, and Jensen, Poul, to Aktieselskabet de Danske Sukkerfabrikker. Lixiviating apparatus. 3,433,598, 03-18-69, Cl. 023-270.

Fabricacion de Maquinas: *See—*
Martin, John, 3,433,615.

Fadden, James P., and Moore, Frederick L., to Armco Steel Corporation. Magnetic bridle unit for winding steel strip. 3,433,398, 03-18-69, Cl. 226-093.

Fain, Jacob M., and McDonnell, Edward, to Twenty Nine Fifteenth Street Corporation. Novel water-repellent compositions. 3,433,750, 03-18-69, Cl. 260-002.

Falbe, Jurgen F.: *See—*
Adams, Charles R., Falbe, Jurgen F., and Korte, Friedrich W.A.G.K. 3,433,792.

Falkenblad, Nils Tore, and Sjoholm, Claes Bertil, to Alfa-Laval AB. Plug-type valve. 3,433,454, 03-18-69, Cl. 251-331.

Fanner Manufacturing Co., The,: *See—*
Waite, Harry T., Jr., 3,433,103.

Fanning, William J., to Western Electric Company, Incorporated. Capacitor winding apparatus. 3,432,901, 03-18-69, Cl. 029-025.42

Farbenfabriken Bayer Aktiengesellschaft: *See—*
Hausweiler, Arnold, and Scherhag, Bernhard, 3,433,822.
Heiss, Rudolf, Bocker, Ernst, and Behrenz, Wolfgang, 3,433,826.
Muller, Erwin, and Dinges, Karl, 3,433,835.
Rover, Martin, Luth, Erwin, Schmitz, Lambert, and Linsert, Friedrich, 3,433,424.

Farbwerke Hoechst Aktiengesellschaft vormalsMeister Lucius & Bruning: *See—*
Dorfelt, Christoph, 3,433,829.
Dursch, Walter, Landauer, Franz, Reuter, Martin, and Weckler, Gerhard, 3,433,574.

Fareri, Elizabeth L., McGuire, Robert J., and Strange, Harold O., to Gulf Research & Development Company. Quaternary ammonium salts of esters of salicylic acid as rust inhibitors. 3,433,607, 03-18-69, Cl. 044-063.

Farkas, Ferenc Karoly, Walbridge, Derek John, and Foot, John Rodney, to Imperial Chemical Industries Limited. Paint composition including a dispersant having a solvatable chain-like component. 3,433,753, 03-18-69, Cl. 260-022.

Farouche, Philip, to General Electric Company. Hinge structure. 3,432,882, 03-18-69, Cl. 016-171.

Farran, Edward John, and Farran, Frederick John. Device for making shish-kabobs. 3,433,151, 03-18-69, Cl. 099-441.

Farran, Frederick John: *See—*
Farran, Edward John, and Farran, Frederick John 3,433,151.

Farrier, Ernest G.: *See—*
Elbert, Raymond J., and Farrier, Ernest G. 3,433,632.

Fastener Corporation: *See—*
Doyle, Richard M., 3,434,026.

Fawkham Developments Limited: *See—*
Thyer, Edward G. S., 3,433,467.

Fechant, Louis Joseph, to La Telemecanique Electrique. Deformable loom apparatus for measuring alternating currents. 3,434,052, 03-18-69, Cl. 324-127.

Federal Sign and Signal Corporation, : *See—*
Logan, Richard W., 3,433,459.

Feenan, John, Jacks, Eric, and Murphy, John Eric, to English Electric Company Limited, The. Method of manufacturing fuse elements from strip material for cartridge fuse links. 3,432,923, 03-18-69, Cl. 029-623.

Feighofen, Hans, to Haller, John. Expansible connector. 3,433,514, 03-18-69, Cl. 287-124.

Feje, Jules A.: *See—*
Cabion, Paul J., and Feje, Jules A. 3,434,147.

Feldkirchner, Harlan L., Linden, Henry R., Khan, Amanullah R., and Todesca, Flaminio, to Institute of Gas Technology. Steam-reforming of hydrocarbons for production of high methane content gas. 3,433,610, 03-18-69, Cl. 048-214.

Fellner & Ziegler G.m.b.H.: *See—*
Koecher, Walter, 3,433,186.

Fellows, Harrison E.Pneumatic impact-molding machine with shuttle hopper. 3,433,285, 03-18-69, Cl. 164-193.

Felten & Cuilleaume Carlswerk Aktiengesellschaft: *See—*
Hahne, Karl Heinz, 3,433,883.

Field, Robert O., and Schamel, Clyde H., to General Motors Corporation. Headlining retainer. 3,433,526, 03-18-69, Cl. 296-137.

Firma Stark, Gotthilf: *See—*
Baublys, Mikas, Sigloch, Eugen, and Stark, Gotthilf, 3,433,102.

Fischer, Donald G., and Jones, Clifford W., to Square D Company. Lay-in duct having side-bracing and wire- retaining means. 3,433,270, 03-18-69, Cl. 138-162.

Fischer, Elias: *See—*
Knaggs, Edward A., Nussbaum, Marvin L., and Fischer, Elias 3,433,745.
Knaggs, Edward A., and Fischer, Elias 3,433,746.

Fisher, Charles B.: *See—*
Brame, Frank H., and Fisher, Charles B. 3,433,439.

Fisher, Mark E.: *See—*
Tuck, Robert M., and Fisher, Mark E. 3,433,096.

Fisher, Robert E., Kofman, Rijkent W., Reichert, Ernest D., and Visser, Reinold H., to Up-Right, Inc.Method for making a joint for hardened aluminum tubing. 3,432,916, 03-18-69, Cl. 029-516.

Flagg, John E., to Clark, David, Company, Incorporated. Ear protector. 3,432,861, 03-18-69, Cl. 002-209.

Flambeau Plastics Corporation: *See—*
Hulterstrum, Harold D., 3,433,510.

Flat Societa per Azioni: *See—*
Sola, Giuseppe, 3,433,172.

Fleming, Robert B., to General Electric Company. Heat exchanger of porous metal. 3,433,299, 03-18-69, Cl. 165-135.

Flint, John C. E., to Dowty Hydraulic Units Limited,. Fluid seals. 3,433,453, 03-18-69, Cl. 251-282.

Floehr, Walter L., to Midland-Ross Corporation. Railway hopper gate flexible operating assembly. 3,433,178, 03-18-69, Cl. 105-282.

Floehr, Walter L.: *See—*
Brown, Floyd R., and Floehr, Walter L. 3,433,201.

Fluid Controls, Inc.: *See—*
Tomer, Lewis P., 3,433,253.

FMC Corporation: *See—*
Haley, Harold A., 3,432,886.

Fogle, William B.: *See—*
Bitter, Kenneth D., Atkinson, George E., and Fogle, William B. 3,433,082.

Foltz, Robert E., to Lawrence Brothers, Inc.Latch assembly. 3,433,518, 03-18-69, Cl. 292-238.

Fontaine, John G., to Automatic Displays, Inc.Electrical control means for a changeable exhibitor. 3,434,007, 03-18-69, Cl. 315-119.

Foot, John Rodney: *See—*
Farkas, Ferenc Karoly, Walbridge, Derek John, and Foot, John Rodney 3,433,753.

Ford, Johnny S.License plate holder. 3,432,954, 03-18-69, Cl. 040-202.

Ford Motor Company: *See—*
Chirota, William W., Holzwarth, Robert W., and Shewchuck, Thomas, 3,433,916.
Close, Albert R., 3,433,524.
McLean, Arthur F., 3,433,319.
Nilsaen, Ole K., 3,434,009.
Rhodes, Eugene E., and Kurz, Alvin M., 3,433,044.
Sebestyen, Thomas M., 3,433,263.
Voorheis, Wylie J., 3,433,242.

Forkner, John F., to Philco-Ford Corporation. Rapid acting laser Q switch. 3,434,073, 03-18-69, Cl. 331-094.5

Fort Howard Paper Company: *See—*
Monyette, Donald C., and Wolske, Dean L., 3,433,544.

Foster, Jack V., to American Machine & Foundry Company. Armature retainer for relays with clapper type armature. 3,434,081, 03-18-69, Cl. 335-203.

Fox, James F.: *See—*
Krizka, Jerry A., and Fox, James F. 3,433,391.

Fox, James William: *See—*
Coleman, James T., and Fox, James William 3,433,480.

Fox, Leonard Haydn, to Raleigh Industries Limited. Epicyclic change speed gear hubs. 3,433,097, 03-18-69, Cl. 074-750.

Fox, Lester John, to Eskimo Pie Corporation. Flow control device. 3,433,261, 03-18-69, Cl. 137-608.

Fox, Paul E.: *See—*
Bauer, Erich O., Fox, Paul E., and Mac Pherson, William F. 3,433,858.

Foxboro Company, The: *See—*
Bailey, John E., 3,433,066.
Olsen, Everett O., 3,434,120.

Francis, Arthur B., to Varian Associates. Holder and positioning mechanism for the plates of a multiple beam interferometer. 3,433,569, 03-18-69, Cl. 356-109.

Frank, Robert G., and Semmel, John W., Jr., to General Electric Company. High temperature alloy. 3,433,631, 03-18-69, Cl. 075-171.

Frankel, Samuel H., to Allen Electric & Equipment Company. Joint for outside rear view mirrors. 3,433,511, 03-18-69, Cl. 287-014.

Franklin Electric Company, Inc.: *See—*
Hansen, Omar, Jr., Littlefield, Carl, and Haddix, Allen R., 3,432,987.

Franklin Gno Corporation: *See—*
Wernlund, Roger F., 3,434,150.

Frascati, Frank P., to Texaco Inc.Vacuum control system. 3,433,254, 03-18-69, Cl. 137-505.16

Frei, Hermann: *See—*
Ackermann, Hans, Frei, Hermann, and Meindl, Hubert 3,433,781.

Freiberger, Ronald D., to General Motors Corporation. Automotive comfort control system with vacuum hold. 3,433,130, 03-18-69, Cl. 091-447.

Freibsberg, Karl-Otto: *See—*
Kramer, Josef, Irmscher, Klaus, Halpaap, Herbert, and Freibsberg, Karl-Otto 3,433,805.

Freitag, Glenn W., to General Motors Corporation. Engine overspeed control. 3,433,209, 03-18-69, Cl. 123-198.

Frequency Control Corporation: *See—*
George, James, 3,433,944.

Freund, Thomas: *See—*
Morrison, Stanley R., Sancier, Kenneth M., and Freund, Thomas 3,433,964.

Frick, German, to North American Philips Company, Inc.A.C. bridge circuit for determining the optimum operating condition of a D.C. generator. 3,434,055, 03-18-69, Cl. 324-158.

Friedman, Lester, to Weston Chemical Corporation. Halogen and hydroxy containing phosphonates. 3,433,856, 03-18-69, Cl. 260-932.

Fries, Edward W., to DCA Food Industries Inc.Food processing machine. 3,433,150, 03-18-69, Cl. 099-403.

Fruehauf Corporation: *See—*
Heimann, Fred G., 3,432,979.

Frye, George J., to Tektronix, Inc.Time domain reflectometry system having a current source for locating discontinuities in a transmission line. 3,434,049, 03-18-69, Cl. 324-052.

Frye, Harold E.: *See—*
Arulpragasam, Jeganandaraj A., and Frye, Harold E. 3,434,114.

Fuji Shashin Film Kabushiki Kaisha: *See—*
Honjo, Satoru, 3,433,951.
Ohi, Reiichi, Ikeda, Teppei, and Hibino, Choji, 3,433,638.

Fujishashin Film Kabushiki Kaisha: *See—*
Nishio, Fumihiko, Nakazawa, Yoshiyuki, and Nasu, Kintaro, 3,433,640.

Fujita, Takehisa, to Nippon Conveyor Co., Ltd.Transport apparatus particularly for conveying personnel. 3,433,176, 03-18-69, Cl. 104-020.

Fuller, John Rodney Dyson: *See—*
Gardiner, Terence Edward Gouvenot, and Fuller, John Rodney Dyson 3,433,244.

Fusco, Raffaello, and Tenconi, Franco, to Warner-Lambert Pharmaceutical Company,. S-benzoyloxymethyl-thiamines. 3,433,789, 03-18-69, Cl. 260-256.5

Gabriel, Ralph P., and Kinross, Rupert I., to Communications Patents Limited. Signal transmission cable. 3,433,890, 03-18-69, Cl. 174-116.

Gage, Thomas B., to Du Pont de Nemours, E. I., and Company. Bulked yarn. 3,433,008, 03-18-69, Cl. 057-153.

Gagnon, William L., Scalise, Dominic Theodore, and Smith, Bob H., to United States of America, Atomic Energy Commission. Pulse line having components coaxially interconnected and confined with large surface area conductors. 3,433,977, 03-18-69, Cl. 307-106.

Gaissert, Heinz, and Hiller, Johannes, to International Standard Electric Corporation. Line-spacing apparatus. 3,433,345, 03-18-69, Cl. 197-114.

Galat, Alexander. Calcium aspirin dialkylsulfoxides. 3,433,827, 03-18-69, Cl. 260-480.

Gallo, Charles F., to Xerox Corporation. Negative corona discharge system using alternating electric fields across the air gap. 3,433,948, 03-18-69, Cl. 250-049.5

Galloway, Victor A., to Equipment Manufacturing, Inc.Sheet material palletizing apparatus. 3,433,372, 03-18-69, Cl. 214-006.

Gambs, Paul Frederic Marie. Ophthalmological slit lamp. 3,433,560, 03-18-69, Cl. 351-014.

Gang, Robert E., to Varian Associates. Magnets having logarithmic curved pole caps for producing uniform fields above saturation. 3,434,085, 03-18-69, Cl. 335-297.

Gange, Robert A., to Radio Corporation of America. Cryoelectric memory system. 3,434,121, 03-18-69, Cl. 340-173.1

Ganske, Warren L., Stein, Jolyon A., Gidlow, Rolf G., and McCarron, Fred H., to Pillsbury Company, The. Instant drink mix. 3,433,644, 03-18-69, Cl. 099-078.

Garber, Thomas, and Kelleher, William L., to Hewlett-Packard Company. Universal AC or DC to DC converter. 3,434,034, 03-18-69, Cl. 321-043.

Gardiner, Terence Edward Gouvenot, and Fuller, John Rodney Dyson, to Bristol Siddeley Engines Limited. Variable area duct. 3,433,244, 03-18-69, Cl. 137-221.

Gareis, Alfred: *See—*
Perlick, Albert, and Gareis, Alfred 3,432,903.

Garner, William: *See—*
Beadle, Anthony Crisp, and Garner, William 3,433,276.

Garrett Corporation, The: *See—*
Avant, William W., 3,433,251.

Garrett, Wayne O.: *See—*
Brunner, Robert F., and Garrett, Wayne O. 3,433,450.

Garrett, William. Process for applying designs to the surface of the hair. 3,433,232, 03-18-69, Cl. 132-007.

Gas Council, The: *See—*
Percival, George, and Yarwood, Thomas Alan, 3,433,609.

Gaw, John William: *See—*
Hudson, William Jeffrey, Jr., and Gaw, John William 3,434,097.

Gebruder Buhler: *See—*
Eggenberger, Ulrich, and Neuenschwander, Karl A., 3,433,290.

Geering, Emil J., to Hooker Chemical Corporation. Pesticidal use of benzothiophenes and benzothienothiophenes. 3,433,874, 03-18-69, Cl. 424-275.

Geigy Chemical Corporation: *See—*
Margot, Alfred, 3,433,641.

Geigy, J. R., A.-G.: *See—*
Ackermann, Hans, Frei, Hermann, and Meindl, Hubert, 3,433,781.

Geipel, Lothar Ernst, to Stauffer Chemical Company. Method for the production of silicone gums. 3,433,765, 03-18-69, Cl. 260-046.5

Gelinas, Ralph J., to Marine Swimming Pool Equipment Company. Pool cleaner embodying combination jet suction, self-undulating hose. 3,433,237, 03-18-69, Cl. 134-168.

Geller, William, to General Telephone & Electronics, Laboratories, Incorporated. Horizontal deflection circuit. 3,434,003, 03-18-69, Cl. 315-027.

Geluk, Hendrik Willem, to North American Philips Company, Inc. Method of producing adamantane-2-one. 3,433,837, 03-18-69, Cl. 260-586.

Gemmell, Douglas B., to Elliott Brothers (London) Limited. Multiple channel servo systems. 3,433,125, 03-18-69, Cl. 091-363.

General Binding Corporation: *See—*
Staats, Henry N., and Winkelmann, John F., 3,433,688.

General Dynamics Corporation: *See—*
Sheets, Herman E., and Brancart, Claude P., 3,433,163.

General Electric Company: *See—*
Alai, John A., 3,433,435.
Baird, Leslie L., and Baskerville, Ralph J., 3,433,915.
Baldwin, William E., 3,433,970.
Bedford, Burnice D., 3,434,030.
Borel, Ronald F., 3,433,016.
Cunningham, Eldon R., 3,433,908.
Earle, Roger T., Jr., and Sumey, Ivan E., 3,433,020.
Farouche, Philip, 3,432,882.
Fleming, Robert B., 3,433,299.
Frank, Robert G., and Semmel, John W., Jr., 3,433,631.
Kast, Howard B., 3,433,021.
Kennedy, George Charles, 3,433,730.
Larsen, John E., 3,432,907.
Lesk, Israel Arnold, 3,434,023.
Rieke, Richard J., 3,433,217.
Watters, Robert L., 3,434,063.
Weininger, Joseph L., and Rouse, Thomas O., 3,433,722.
Wolf, Irving W., 3,433,721.
Zysk, Stephen, and MacKenzie, Burton T., Jr., 3,433,891.

General Electric Company Limited, The: *See—*
Hutchison, Ronald Thomas James, and Jenkins, Stuart Mc Ewen, 3,433,912.
Rodgers, Gerald Patrick, 3,434,127.

General Foods Corporation: *See—*
Slock, Harry W., and Touher, Paul B., 3,433,650.

General Mills, Inc.: *See—*
Savre, Graydon, and Wernecke, Lloyd C., 3,433,646.

General Motors Corporation: *See—*
Albertzart, Roy R., Jr., 3,433,685.
Augunas, Algis G., 3,433,525.
Ballantyne, David B., and Goring, Maurice T., 3,433,119.
Brady, Laurence M., and Lindgren, Milton F., 3,433,100.
Drabik, Walter, 3,433,541.
Edwards, Andrew S., 3,432,876.
Field, Robert O., and Schamel, Clyde H., 3,433,526.
Freiberger, Ronald D., 3,433,130.
Freitag, Glenn W., 3,433,209.
Horvath, Robert A., 3,433,535.
Jacobs, James W., 3,433,030.
Kleinstuck, Werner, and Heger, Klaus, 3,433,019.
McDonald, John W., 3,433,292.
Miller, James L., 3,432,938.
Nigh, Carl L., 3,433,539.
Phillips, William V., 3,433,094.
Rademacher, Gustav F., 3,433,515.
Rademacher, Gustav F., 3,434,012.
Schaefer, Robert H., 3,433,098.
Skelley, John W., and Grandel, Leonard F., 3,433,088.
Skinner, Kenneth R., 3,433,536.
Stein, Frank S., 3,433,676.
Thompson, William B., 3,433,127.
Tuck, Robert M., 3,433,095.
Tuck, Robert M., and Fisher, Mark E., 3,433,096.
Webbere, Fred J., and Williams, Robert G., 3,433,284.

General Precision Systems Inc.: *See—*
Smith, Edgar J., and Barnes, Lell E., 3,434,132.

General Telephone & Electronics, Laboratories, Incorporated: *See—*
Geller, William, 3,434,003.

Genesco, Inc.: *See—*
Rice, James D., 3,432,928.

Genevay, Noel C. Rotary orthoptic instrument. 3,433,219, 03-18-69, Cl. 128-076.5

George, James, to Frequency Control Corporation. Detector for molecular or atomic beam apparatus. 3,433,944, 03-18-69, Cl. 250-041.3

Georgian, Vlasios. 6-Methylsulfonylandrostenes. 3,433,786, 03-18-69, Cl. 260-239.5

Gerarde, Horace W. Cholinesterase test. 3,433,712, 03-18-69, Cl. 195-127.

Gergle, Richard C., and Merricks, James A., to Dow Corning Corporation. Polishing cloth. 3,433,667, 03-18-69, Cl. 117-161.

Gerlitz, Reuben A., to Law Blower Company,. Fan inlet shroud. 3,433,403, 03-18-69, Cl. 230-132.

Gevaert Photo-Producten N.V.: *See—*
DeHaes, Louis Maria, 3,433,634.

Gewiss, Lucien-Victor, to Marc Wood Materials Societe Anonyme Pour la Promotion des Echanges Techniques Internationaux. Method for forming herringbone configurations for sandwich structures. 3,433,692, 03-18-69, Cl. 156-197.

Geyer, Howard M., to Pneumo Dynamics Corporation. Cable tension regulator. 3,433,089, 03-18-69, Cl. 074-501.5

Gibson, Charles B., Jr., to Tektronix Inc. Camera tube apparatus. 3,433,994, 03-18-69, Cl. 315-010.

Gibson, Robert G., Hughes, David R., and Leavenworth, Richard L., to International Business Machines Corporation. Automatic transmission speed selection control for a data transmission system. 3,434,117, 03-18-69, Cl. 340-172.5

Gidlow, Rolf G.: *See—*
Ganske, Warren L., Stein, Jolyon A., Gidlow, Rolf G., and McCarron, Fred H. 3,433,644.

Gieles, Joannes Paulus Maria: *See—*
Bongenaar, Willem, Gieles, Joannes Paulus Maria, and Slob, Arie 3,433,978.

Giesecke, Henry A., to Apromat, Inc. Insertable diaphragm rings for optical, converging lens systems to reduce diffraction vignetting. 3,433,556, 03-18-69, Cl. 350-162.

Gilbert, Chalmers W.: *See—*
Carey, Andrew J., and Gilbert, Chalmers W. 3,433,373.

Gilbert, Chalmers W., and Popp, Ralph, to Westinghouse Air Brake Company. Pilot line synchronized phase selective track circuit. 3,433,942, 03-18-69, Cl. 246-034.

Gilbert, Wayne C. Automatic cutting depth regulator for shank-type cultivators and the like. 3,433,307, 03-18-69, Cl. 172-004.

Giletta, Dario: *See—*
Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario 3,433,695.

Gilmont, Roger, Instruments, Inc.: *See—*
Gilmont, Roger, 3,433,077.

Gilmont, Roger, to Gilmont, Roger, Instruments, Inc. Compensated syringe manometer. 3,433,077, 03-18-69, Cl. 073-401.

Giuffrida, Philip, to Electrical control circuitry for use in. combustion supervision systems. 3,433,572, 03-18-69, Cl. 431-031.

Giulie, Joe D., to Icore Industries. Segregating device. 3,433,343, 03-18-69, Cl. 193-031.

Glass, John Arnold: *See—*
Dehn, John S., and Glass, John Arnold 3,433,841.

Glasser, Albert D.: *See—*
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L. 3,433,680.

Glesmann, Herbert C., to Omsteel Industries, Inc. Vehicle-mounted implement. 3,432,949, 03-18-69, Cl. 037-044.

Global Marine, Inc.: *See—*
Koot, Nick, and Nold, Robert W., 3,433,531.

Globe Union Inc.: *See—*
Lello, Giles S., 3,433,674.

Go, Ting Sin: *See—*
Segar, Thomas W., and Go, Ting Sin 3,433,584.

Goebel, Gregory, and Ketterer, Stanley J., to Singer Company, The. Knit stitch machines. 3,433,191, 03-18-69, Cl. 112-166.

Goehler, Elmer E., to Central Brass & Aluminum Foundry. Self-compensating servo system control unit. 3,433,018, 03-18-69, Cl. 060-054.5

Goetzewerke Friedrich Goetze A.G.: *See—*
Meyer, Franz Josef, 3,432,931.
Teucher, Siegfried, and Kling, Hans, 3,433,490.

Goffe, Charles Allen, to Eastman Kodak Company. Photographic emulsion containing a block polymer sensitized with saponin. 3,433,639, 03-18-69, Cl. 096-107.

Goldfarb, Adolph E. Animated jigsaw puzzle toy. 3,432,961, 03-18-69, Cl. 046-037.

Goodrich, B. F., Company, The: *See—*
Barns, Fred K., 3,433,690.

Goring, Maurice T.: *See—*
Ballantyne, David B., and Goring, Maurice T. 3,433,119.

Gorton, Howard B., and Arias, Henry, Jr., to Ajax Hardware Manufacturing Corp. Latching hinge. 3,432,879, 03-18-69, Cl. 016-145.

Gourlay, George: *See—*
Cooke, Brian Alfred, and Gourlay, George 3,433,755.

Gowen, Edward F., Jr., Ollis, Raymond, Jr., and Walker, Richard A., to Standard Pressed Steel Co. High fatigue bolt thread. 3,433,117, 03-18-69, Cl. 085-001.

GPE Controls, Inc.: *See—*
Brewer, Nathaniel, and Wilson, Francis B., 3,433,133.

Grace Machinery Corporation,: *See—*
Collins, Lowell J., 3,433,648.

Grace, W. R., & Co.: *See—*
Legal, Casimer C., Jr., Richmond, Alvin, and Bruno, Anthony J., Jr., 3,433,617.
Magee, John S., Jr., and Briggs, Warren S., 3,433,747.
Magee, John S., Jr., and Briggs, Warren S., 3,433,748.
Maselli, James M., 3,433,767.

Graetz, Edward A. Rotary pump or motor. 3,433,169, 03-18-69, Cl. 103-136.

Granberg, Mauritz L., and Stoffel, Jerome J., to Sperry Rand Corporation. Constant velocity beam deflection control responsive to digital signals defining length and endpoints of vectors. 3,434,135, 03-18-69, Cl. 340-324.

Grandel, Leonard F.: *See—*
Skelley, John W., and Grandel, Leonard F. 3,433,088.

Grantom, Charles A., to King Oil Tools. Self-adjusting packing assembly. 3,433,488, 03-18-69, Cl. 277-009.

Greenbaum, Sheldon B., to Hooker Chemical Corporation. Controlling insects with furoyloxyalkenyl thio phosphates. 3,433,865, 03-18-69, Cl. 424-203.

Greenberger, Joseph I., to United Engineering and Foundry Company. Dummy bar device for continuous casting machine. 3,433,287, 03-18-69, Cl. 164-274.

Greenhalgh, Samuel: *See—*
Cole, Richard I., Holcroft, Donald E., Milligan, Edward A., and Greenhalgh, Samuel 3,432,936.

Greer, Edward M., to Greer Hydraulics, Inc. Pressure vessel. 3,433,268, 03-18-69, Cl. 138-030.

Greer Hydraulics, Inc.: *See—*
Greer, Edward M., 3,433,268.

Grimaldi, Pierre, to Societe de Prospection Electrique Schlumberger S.A. Flowmeter apparatus for measuring flow rate and direction. 3,433,070, 03-18-69, Cl. 073-229.

Grinstead, Robert R., to Dow Cemical Company, The. Calcium chloride and boric acid extraction from magnesium chloride brines using diols and catechols. 3,433,604, 03-18-69, Cl. 023-312.

Grout, Edward C.: *See—*
Hiers, James E., and Grout, Edward C. 3,433,259.

GTS Corporation: *See—*
Allison, Kenneth C., and Kelver, William L., 3,433,120.

Guenther, Wolfgang Peter, to Entoleter, Inc. Method and apparatus for rotary processing and classification. 3,433,422, 03-18-69, Cl. 241-061.

Gulf Research & Development Company: *See—*
Carlson, Edgar, and Wynne, Francis E., Jr., 3,433,734.
Fareri, Elizabeth L., McGuire, Robert J., and Strunge, Harold O., 3,433,607.

Gunn, John B., to International Business Machines Corporation. Parametric computers and method of operating same. 3,433,974, 03-18-69, Cl. 307-088.

Gunnerson, Dale B.: *See—*
Ruggles, Kay L., Gunnerson, Dale B., and Clark, Howard S. 3,433,860.

Gunnink, Harry J. Container. 3,433,399, 03-18-69, Cl. 229-005.6

Guth, Jean-Louis, and Wey, Raymond, to Commissariat a l'Energie Atomique. Processes for eliminating from a solution anions derived from hydracids and oxacids. 3,433,736, 03-18-69, Cl. 210-037.

Gutman, Arnold D., and Orr, Jack P., to Stauffer Chemical Company. Method of killing pests by application of an O,O, diloweralkyl phosphorodithioyl methyl- substituted mercaptoacetate. 3,433,870, 03-18-69, Cl. 424-216.

Haag, Albrecht, to Kienzle Uhrenfabriken G.m.b.H. Clockwork with torsional or flexible oscillator. 3,433,009, 03-18-69, Cl. 058-023.

Haaker, Lester W.: *See—*
Eisert, Gerald A., and Haaker, Lester W. 3,433,370.

Haas, Howard C., to Polaroid Corporation. Photographic products and processes. 3,433,633, 03-18-69, Cl. 096-003.

Habra, Joseph H., to United States of America, National Aeronautics and Provisions of 42 U.S.C. 2457(d). Multiple varactor frequency doubler. 3,434,037, 03-18-69, Cl. 321-069.

Hach, Frank, Jr., to Harris Calorific Company, The. Cutting torch tip assembly. 3,433,418, 03-18-69, Cl. 239-422.

Haddix, Allen R.: *See—*
Hansen, Omar, Jr., Littlefield, Carl, and Haddix, Allen R. 3,432,987.

Haden, Walter L., Jr., and Dzierzanowski, Frank J., to Engelhard Minerals & Chemicals Corporation,. Method for preparing crystalline zeolite catalyst. 3,433,587, 03-18-69, Cl. 023-112.

Haefele, Henry A., and Reid, Orland B., to Singer Company, The. Apparatus for automatially producing diapers, towels and the like. 3,433,187, 03-18-69, Cl. 112-002.

Haertling, Gene H.: *See—*
Land, Cecil E., and Haertling, Gene H. 3,434,122.

Hagemeyer, Hugh J., Jr., and Edwards, Marvin B., to Eastman Kodak Company. Propylene-diolefinic hydrocarbon block copolymers and process for preparing same. 3,433,855, 03-18-69, Cl. 260-878.

Hagihara, Noboru, to Toa Valve Co., Ltd. Pop safety valve. 3,433,250, 03-18-69, Cl. 137-469.

Hahn, Harald, and Halama, Henry J., to United States of America, Atomic Energy Commission. Compensation of phase drift on long cables. 3,434,061, 03-18-69, Cl. 328-155.

Hahne, Karl Heinz, to Felten & Cuilleaume Carlswerk Aktiengesellschaft. Cable construction. 3,433,883, 03-18-69, Cl. 174-028.

Haigh, Brian, to Organon Inc. Medication dispensing means. 3,433,352, 03-18-69, Cl. 206-042.

Halama, Henry J.: *See—*
Hahn, Harald, and Halama, Henry J. 3,434,061.

Halcon International, Inc.: *See—*
Monroe, Paul S., 3,432,905.

Haley, Harold A., to FMC Corporation. Tubular film extrusion apparatus. 3,432,886, 03-18-69, Cl. 018-014.

Hall, William B., to Crouse-Hinds Company. Lighting unit. 3,433,941, 03-18-69, Cl. 240-041.36

Haller, John: *See—*
Feighofen, Hans, 3,433,514.

Halliburton Company: *See—*
Homrig, Horace J., 3,433,071.
Wilson, Robert O., and Lorenzino, Paul, Jr., 3,434,046.

Halpaap, Herbert: *See—*
Kramer, Josef, Irmscher, Klaus, Halpaap, Herbert, and Freibaberg, Karl-Otto 3,433,805.

Halsey, Homer P., to Reserve Mining Company. Automatic iron ore assayer. 3,433,057, 03-18-69, Cl. 073-061.

Halstead, Donald B. Strip packaging machine for nails and other similar articles. 3,432,985, 03-18-69, Cl. 053-140.

Hamahata, Sinichi, to Kanegafuchi Boseki Kabushiki Kaisha. Apparatus for exchanging bobbins in textile machine. 3,433,006, 03-18-69, Cl. 057-053.

Hambly, Wesley G., and von Langendorff, Vitmur, to Trico Products Corporation. Windshield wiper arm. 3,433,513, 03-18-69, Cl. 287-053.

Hamco Machines and Electronics Corporstion: *See—*
Heinrich, Robert G., 3,432,973.

Hames, William A.: *See—*
Scheitlin, Thomas G., Hames, William A., and Koch, Alan J. 3,433,031.

Hamilton, Allen R., to Bendix Corporation, The,. Power supply for ionic vacuum device. 3,433,550, 03-18-69, Cl. 316-028.

Hamilton, Joel A., to Polarod Corporation. Photographic film assemblage. 3,433,636, 03-18-69, Cl. 096-076.

Hamilton, Lyle A., and Landis, Phillip S., to Mobil Oil Corporation. Production of aromatic nitriles from cyanogen halide and an aromatic compound using an alumino-silicate catalyst. 3,433,821, 03-18-69, Cl. 260-465.

Hamilton, Robert L., and Quynn, Richard G., to Celanese Corporation. Production of dyed, shaped oxymethylene polymers. 3,433,861, 03-18-69, Cl. 264-078.

Hancock, Lyle J., and Miller, Robert E., to Curtis Development & Mfg., Co. Electrical terminal with captive screw. 3,434,103, 03-18-69, Cl. 339-272.

Hanes, James W. E., to Ventura Tool Company. Flexible connectors. 3,433,504, 03-18-69, Cl. 285-093.

Hansen, Omar, Jr., Littlefield, Carl, and Haddix, Allen R., to Franklin Electric Company, Inc. Wrapping machine. 3,432,987, 03-18-69, Cl. 053-210.

Hansen, Wilford N., to North American Rockwell Corporation. Multiple attenuated total reflection apparatus and method. 3,433,570, 03-18-69, Cl. 356-128.

Hanyu, Susumu, to Janome Sewing Machine Co., Ltd. Pattern cam selecting arrangement. 3,433,092, 03-18-69, Cl. 074-568.

Hardin, William W., to International Business Machines Corporation. Apparatus for reading marks on documents. 3,433,933, 03-18-69, Cl. 235-061.11

Hardwick, Geoffrey H. E., to Engelhard Hanovia of Canada Limited. Ultraviolet radiation fluid sterilizer having means for discharging the fluid free of contamination. 3,433,946, 03-18-69, Cl. 250-043.

Hardy, John F.: *See—*
Jordan, Merrill E., and Hardy, John F. 3,433,660.

Harnisch, Heinz, Cremer, Joseph, and Schulte, Friedrich, to Knapsack Aktiengesellschaft. Process for the manufacture of magnesium hydrogenphosphate trihydrate. 3,433,586, 03-18-69, Cl. 023-109.

Harper, Cecil R. Ripper tooth mounting for earth working machines. 3,433,310, 03-18-69, Cl. 172-471.

Harrington, Richard H., and Henkel, Michael A., to International Business Machines Corporation. Printer with swiveling pushrods. 3,433,153, 03-18-69, Cl. 101-093.

Harris Calorific Company, The: *See—*
Hach, Frank, Jr., 3,433,418.

Harris, Gerald R. Machine tool control system. 3,433,972, 03-18-69, Cl. 307-038.

Harris-Intertype Corporation: *See—*
Norton, Robert K., 3,433,155.

Harrison, Mc Gregor and Guest Limited: *See—*
Brade, James N., 3,433,000.
Brade, James N., 3,433,001.

Hart, Paul Anton Herman, to North American Philips Company, Inc. Incoherent microwave generator including a gas discharge tube. 3,434,071, 03-18-69, Cl. 331-078.

Hartbauer, Ellsworth A., Talbot, Alfred B., and Weis, Rudolf R., to Crown Zellerbach Corporation. Method and apparatus for accumulating individual plastic webs into stacks. 3,433,136, 03-18-69, Cl. 093-008.

Hartlapp, Gerhard: *See—*
Brockmuller, Wolfgang, Hartlapp, Gerhard, and Weizenkorn, Horst-Heinrich 3,433,585.

Harvey, Wildon T., and Zaayenga, Ralph, to Sun Oil Company. Method of coating fibrous materials with wax. 3,433,665, 03-18-69, Cl. 117-120.

Haselden, Andrew George Philip. Hose reels and mountings therefor. 3,433,247, 03-18-69, Cl. 137-355.26

Hasenohrl, Jan: *See—*
Duchek, Ladislav, and Hasenohrl, Jan 3,433,360.

Hashimoto, Norishige: *See—*
Yotsuzuka, Masaru, Keshi, Akizo, Hashimoto, Norishige, Kodama, Katsuhisa, and Nakahara, Shigenobu 3,433,751.

Haslam, Alan A.: *See—*
Charlesworth, Paul L., and Haslam, Alan A. 3,433,027.

Hastings Dynamold Corporation: *See—*
Jones, Cordis W., and Hinman, Clinton R., 3,433,123.

Hausweiler, Arnold, and Scherhag, Bernhard, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of acrylonitrile. 3,433,822, 03-18-69, Cl. 260-465.3

Hawkes, Edward N.: *See—*
Somekh, George S., and Hawkes, Edward N. 3,433,788.

Hawkins, Eldon W., to United States of America, Navy. Phase sensitive modulator and demodulator utilizing a single transformer. 3,434,075, 03-18-69, Cl. 332-043.

Hawkins, Mervyn Roy, to Ashton Containers Limited,. Transportable container. 3,433,400, 03-18-69, Cl. 229-014.

Hawley, Jack S., and Towner, George R., to Berkeley Instruments. Digital data system. 3,434,136, 03-18-69, Cl. 340-347.

Hayakawa Denki Kogyo Kabushiki Kaisha: *See—*
Inoguchi, Toshio, Niwa, Ichihiko, and Nakazawa, Katsuro, 3,433,602.

Hayes, Harold B.: *See—*
Caltrider, Paul G., and Hayes, Harold B. 3,433,711.

Hayner, Paul F., and Sharpe, Lawrence W., to Sanders Associates, Inc. Hydraulic feedback system. 3,433,126, 03-18-69, Cl. 091-367.

Hayner, Paul F., and Sharpe, Lawrence W. Hydraulic feedback system. 3,433,128, 03-18-69, Cl. 091-384.

Hayner, Paul F., and Sharpe, Lawrence W., to Sanders Associates, Inc. Hydromechanical positioning system. 3,433,129, 03-18-69, Cl. 091-384.

Hazelwood, Roy E.: *See—*
Swafford, Kenneth L., Duke, Doyal P., and Hazelwood, Roy E. 3,433,464.

Heath, Walter S., and Megargel, Leland R., to Sylvania Electric Products Inc. TEM mode faraday rotator. 3,434,077, 03-18-69, Cl. 333-024.1

Hecklau, Frederick L., and Allegrini, Aldo P., to Engelhard Minerals & Chemicals Corporation,. Attapulgite clay paper filler and method of forming newsprint therewith. 3,433,704, 03-18-69, Cl. 162-181.

Hediger, Edwin A., to Eastman Kodak Company. Conveyor. 3,433,350, 03-18-69, Cl. 198-177.

Hedquist, Olaf A. Apparatus for securing pigtails to foil wrapped condensers or the like. 3,433,920, 03-18-69, Cl. 219-079.
Hedstrom, Albert V., to Almac Cryogenics, Inc. Mechanical dispensing means for cryogenic liquids. 3,433,248, 03-18-69, Cl. 137-386.
Hedwin Corporation: *See—*
Speas, Charles A., and Jordan, Charles T., 3,433,867.
Heger, Klaus: *See—*
Kleinstuck, Werner, and Heger, Klaus 3,433,019.
Heggstad, Gudmund: *See—*
Strom, Johan Nikolai, and Heggstad, Gudmund 3,433,879.
Heimann, Fred G., to Fruehauf Corporation. Insulated wall construction. 3,432,979, 03-18-69, Cl. 052-309.
Hein, Erhard Armin. Method of recovering starch from plant materials. 3,433,668, 03-18-69, Cl. 127-067.
Heinke, Walter M.: *See—*
Baez, Edgar R., Heinke, Walter M., and Nelken, Alfred 3,433,940.
Heinrich, Raymond L.: *See—*
Maggart, Ronald C., Rothenberg, Don H., and Heinrich, Raymond L. 3,433,661.
Heinrich, Robert G., to Hamco Machines and Electronics Corporation. Precision cutting apparatus. 3,432,973, 03-18-69, Cl. 051-108.
Heiss, Rudolf, Bocker, Ernst, and Behrenz, Wolfgang, to Farbenfabriken Bayer Aktiengesellschaft. Alkexyphenyl-N-methyl carbamic acid ester. 3,433,826, 03-18-69, Cl. 260-479.
Henderson, Zack L., to Monsanto Company. Anchoring system for synthetic surface materials. 3,433,137, 03-18-69, Cl. 094-007.
Henkel, Michael A.: *See—*
Harrington, Richard H., and Henkel, Michael A. 3,433,153.
Henriksen, Erik K., to Aerojet-General Corporation. Method and apparatus of forming intagral ribs on tubes. 3,433,039, 03-18-69, Cl. 072-056.
Henriksen, Jan-Erik, and Bjorkum, Svein, to Elektriska Svetsningsaktiebolaget. Composite welding hose. 3,433,882, 03-18-69, Cl. 174-015
Henry, Andrew G., and Rekolt, Herman. Tank. 3,433,246, 03-18-69, Cl. 137-351.
Henry Hanger & Display Fixture Corp. of Calif., The: *See—*
Spitz, Bernard, 3,433,335.
Hensley, Arthur J., 2/3 to Lochen, R. L. U-bolt clamp. 3,432,893, 03-18-69, Cl. 024-135.
Hercules, Incorporated: *See—*
Earle, Ralph H., Schmalz, Alfred C., and Soucek, Charles A., 3,433,853.
Hermann, Robert: *See—*
Copony, Edward L., Pedroli, Walter E., and Hermann, Robert 3,434,155.
Hertel, Karl, to Auto Union G.m.b.H. Vehicular steering device. 3,433,501, 03-18-69, Cl. 280-096.
Herzog, Hans, and Kabisch, Gerhard, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Method of separating suspended unsupported noble metal catalysts from hydrogenated liquids. 3,433,358, 03-18-69, Cl. 210-065.
Hess, Howard V., and McCoy, Frederic C., to Texaco Inc. Process for removal of salts from aqueous solutions with solid methylenedianiline. 3,433,583, 03-18-69, Cl. 023-089.
Hettich, Ronald D.: *See—*
Andre, Stephen N., Hettich, Ronald D., and Megargel, Leland R. 3,434,142.
Hewlett-Packard Company: *See—*
Chu, David C., and Ting, Lee-Sen, 3,434,065.
Garber, Thomas, and Kelleher, William L., 3,434,034.
Oliver, Bernard M., 3,434,002.
Heyberger, Werner, and Braun, Eugene R., to Smit, J. K. & Sons, Diamond Tools Limited Eaton Yale & Towne Inc. Diamond drill bit Hoist overload preventing device. 3,433,331, 03-18-69, Cl. 188-134.
Hi-Shear Coporation: *See—*
Berkl, Josef U., 3,433,931.
Hibino, Choji: *See—*
Ohi, Reiichi, Ikeda, Teppei, and Hibino, Choji 3,433,638.
Hidden, William P., to Diamond Crystal Salt Company,. Fluted package sealing apparatus. 3,432,990, 03-18-69, Cl. 053-373.
Hiers, James E., and Grout, Edward C., to Union Tank Car Company. Water softening valve. 3,433,259, 03-18-69, Cl. 137-599.1
Higgins, Paul T., to Bendix Corporation, The. Integrated circuits and methods of manufacture. 3,433,260, 03-18-69, Cl. 137-608.
High Voltage Engineering Corporation: *See—*
Emanuelson, Roy M., and Cram, Robert D., 3,433,947.
Highberger, John H., and Whitmore, Robert A., to United Shoe Machinery Corporation. Methods of extruding collagen. 3,433,864, 03-18-69, Cl. 264-202.
Higonnet, Rene A., and Moyroud, Louis M. Type composing apparatus. 3,433,404, 03-18-69, Cl. 234-005.
Hill, Uno T., to Inland Steel Company. Pickling bath control apparatus and method. 3,433,670, 03-18-69, Cl. 134-010.
Hille Engineering Company Limited, The: *See—*
Wilson, Alexander Ian, 3,433,045.
Hiller, Johannes: *See—*
Gaissert, Heinz, and Hiller, Johannes 3,433,345.
Hindersinn, Raymond R.: *See—*
Ilardo, Charles S., and Hindersinn, Raymond R. 3,433,654.
Hinman, Clinton R.: *See—*
Jones, Cordis W., and Hinman, Clinton R. 3,433,123.
Hinterholzer, Hans. Brake attachment for ski. 3,433,494, 03-18-69, Cl. 280-011.13
Hinton, John L.: *See—*
Murray, George W., 3,433,330.
Hirano, Hiroshi: *See—*
Iwasawa, Hiroshi, Isekil, Hajime, and Hirano, Hiroshi 3,433,011.
Hirota, Hozumi, to Matsushita Electric Industrial Co. Magnetic permeability material. 3,433,630, 03-18-69, Cl. 075-170.
Hirschhorn, Harry J., and Rachford, John G., to Midwesco-Enterprise, Inc. Railroad switch heater. 3,433,943, 03-18-69, Cl. 246-428.
Hirschler, Daniel A., Jr.: *See—*
Stephens, Ruth E., Hirschler, Daniel A., Jr., and Lamb, Frances W. 3,433,581.
Hirst, Archie John, to Metalstik Limited. Vehicle suspension systems. 3,433,493, 03-18-69, Cl. 280-006.
Hitachi, Ltd.: *See—*
Tonooka, Hidenori, and Okano, Kinpei, 3,433,542.
Hitch, Thomas R.: *See—*
Balunas, Vincent J., Jr., and Hitch, Thomas R. 3,433,048.
Hittel, Robert. Crypt form. 3,433,451, 03-18-69, Cl. 249-183.
Hoaglund, Paul A., to International Computer Appliances Corp.,. Add-a-drawer filing cabinet. 3,433,547, 03-18-69, Cl. 312-111.
Hodler, Fritz. Venting of pressure molding apparatus. 3,433,291, 03-18-69, Cl. 164-305.
Hodson, Richard J., to Auburn Rubber Company. Disposable display stand. 3,433,365, 03-18-69, Cl. 211-059.
Hoekstra, James, to Universal Oil Products Company. Process for the hydrogenation of trans, cis- 1,5-cyclodecadiene to cis-cyclodecene. 3,433,842, 03-18-69, Cl. 260-666.
Hoekstra, James, to Universal Oil Products Company. Selective hydrogenation of trans, Cis-1,5- cyclodecadiene to cis-cyclodecene. 3,433,843, 03-18-69, Cl. 260-666.
Hoffmann-La Roche Inc.: *See—*
Vogler, Karl, 3,433,779.
Hoffmann-La Roche, Inc.: *See—*
De Ritter, Elmer, and Raymond, Joseph Edward, 3,433,872.
Hofmann, Charles F., to Westinghouse Electric Corporation. Crack-resistant casting composition. 3,434,087, 03-18-69, Cl. 336-096.
Hofmann, Charles F., and Keto, August I., to Westinghouse Electric Corporation. Cast electrical bushing. 3,433,893, 03-18-69, Cl. 174-153.
Hofmeyer, Alloyd J. Circulating heater. 3,433,212, 03-18-69, Cl. 126-110.
Hofstein, Steven R., to Radio Corporation of America. Insulated gate field effect transistor. 3,434,021, 03-18-69, Cl. 317-235.
Hoke Manufacturing Company, Inc.: *See—*
Teeters, Wilbur O., 3,433,508.
Holcomb, Gaylord E. Automatic line rewinder. 3,433,431, 03-18-69, Cl. 242-107.
Holcroft, Donald E.: *See—*
Cole, Richard I., Holcroft, Donald E., Milligan, Edward A., and Greenhalgh, Samuel 3,432,936.
Holladay, Harry P., and Salyer, Ival O., to Monsanto Company. Ethylene/vinyl acetate polyblends with polymers of 1-olefins. 3,433,573, 03-18-69, Cl. 008-055.
Holle, Arthur W. Flooring material of unsaturated polyester resin aluminum oxide grit and catalyst and methods of application. 3,433,761, 03-18-69, Cl. 260-040.
Hollinger, Roderich, and Wendtlandt, Wolf, to Osterreichische Stickstoffwerke Aktiengesellschaft. Basicsubstituted dithienylmethyl- and thienylphenylmethyl- ethers and a process of making same. 3,433,804, 03-18-69, Cl. 260-332.3
Holmen, Reynold E., to Minnesota Mining and Manufacturing Company. Derivatives of bisphenolic substituted carboxylic acids. 3,433,766, 03-18-69, Cl. 260-047.
Holroyd, Frank Edward, and Stepanski, Theodore J. Chuck. 3,433,492, 03-18-69, Cl. 279-002.
Holt, Hugh M., Kelsey, Eugene L., and Mills, Stacey M., to United States of America, National Aeronautics and Space Administration and Space Administration. Transient-compensated SCR inverter. 3,434,033, 03-18-69, Cl. 321-011.
Holzwarth, Robert W.: *See—*
Chirota, William W., Holzwarth, Robert W., and Shewchuck, Thomas 3,433,916.
Homrig, Horace J., to Halliburton Company. Flowmeters. 3,433,071, 03-18-69, Cl. 073-231.
Honel, Herbert, to Vianova Kunstharz Aktiengesellschaft. Process for the production of synthetic resins hardenable by multiesterification. 3,433,754, 03-18-69, Cl. 260-022.
Honeywell Inc.: *See—*
Kautz, Murrell F., 3,433,074.
Lenz, John O., 3,433,040.
Stauffer, Norman L., Shafer, Donald E., and Tyler, Tommy N., 3,434,158.
Honjo, Mikio, and Imai, Kin-Ichi, to Takeda Chemical Industries, Ltd. Method for the production of ribonucleoside-5'- phosphate. 3,433,783, 03-18-69, Cl. 260-211.5
Honjo, Satoru, to Fuji Shashin Film Kabushiki Kaisha. Copying process. 3,433,951, 03-18-69, Cl. 250-065.
Honore, Etienne A. H., and Torcheux, Emile L. G., to Societe d'Etude et d'Application des Techniques Nounelles. Apparatus for determining the radiolocation of a movable part. 3,434,143, 03-18-69, Cl. 343-105.
Hooker Chemical Corporation: *See—*
Ashton, William Eric, and Weil, Edward D., 3,433,877.
Geering, Emil J., 3,433,874.
Greenbaum, Sheldon B., 3,433,865.
Ilardo, Charles S., and Hindersinn, Raymond R., 3,433,654.
Jack, Walter Q., and Johnson, Loyd V., 3,433,702.
Hooks, Haywood, Jr.: *See—*
Ottmann, Gerhard F., and Hooks, Haywood, Jr. 3,433,803.
Hopkins, Richard S. Joining of metal sheets so that when said joined sheets are viewed from one side, the illusion is created that they form one continuous metal sheet. 3,432,909, 03-18-69, Cl. 029-401.
Horsley, Lee H., to Dow Chemical Company, The. Process for making glycol esters. 3,433,824, 03-18-69, Cl. 260-476.
Horton, Gilbert, Ruth, Wayne A., and Cox, Clarence, to Control Data Corporation,. Rounded corner card cutter. 3,433,107, 03-18-69, Cl. 083-117.
Horvath, Robert A., to General Motors Corporation. Dual flywheel anti-lock sensing unit. 3,433,535, 03-18-69, Cl. 303-021.
Horwitt, Laurence G., to Casco Products Corporation. Cigar lighter. 3,433,928, 03-18-69, Cl. 219-267.
Hoshikawa, Masakatsu: *See—*
Adachi, Kazuo, Kawai, Masahisa, and Hoshikawa, Masakatsu 3,433,790.
Hosnedl, Vaclav, and Nechleba, Miroslav, to CkD Blansko, narodni podnik. Hydraulic apparatus. 3,433,165, 03-18-69, Cl. 103-097.
Hough, Ralph L., and Schwartz, Robert T., to United States of America, Air Force. Method of making metal or metalloid carbide yarn by decomposing the respective chloride in the presence of carbon yarn. 3,433,725, 03-18-69, Cl. 204-164.
Houpt, Grover K., and Thomson, Edward T., to Automatic Timing & Controls, Inc. Gauging transducer. 3,434,086, 03-18-69, Cl. 336-030.
Houtman, Johannes Paulus Willem, to North American Philips Company, Inc. Method and an apparatus for the radio gas chromatographic analysis of a mixture of different components. 3,433,053, 03-18-69, Cl. 073-023.1

Howerton, Hugh K., to American Instrument Co., Inc. Spectrophotofluorometer having correction means providing substantially equal energy effects in response at different excitation wave lengths. 3,433,952, 03-18-69, Cl. 250-071.
Hubbard, William M., to Bell Telephone Laboratories, Incorporated. Majority power sensor. 3,433,979, 03-18-69, Cl. 307-235.
Hubbell, Harvey, Incorporated: *See—*
Misencik, John, and Lee, Sung C., 3,434,039.
Huber, Ludwig Konrad, to Pennsalt Chemicals Corporation. Chlorinated parabanic acids. 3,433,799, 03-18-69, Cl. 260-309.5
Huck, George E., to American Pipe and Construction Co. Method and apparatus for fabricating thin- walled large diameter steel pipe cylinders. 3,432,914, 03-18-69, Cl. 029-477.3
Huck, William F., and Urban, Joseph, to Brunswick Corporation. Bowling scoring apparatus. 3,433,479, 03-18-69, Cl. 273-054.
Hudson, William Jeffrey, Jr., and Gaw, John William, to AMP, Incorporated. Vacuum tube termination. 3,434,097, 03-18-69, Cl. 339-089.
Huff, Herbet G., and Shelly, Donald J., to Kelvinator, Inc.,. Shutter for window in oven door. 3,433,213, 03-18-69, Cl. 126-197.
Hufford, James Howard, to Bliss, E. W., Company. AC-DC common load switch. 3,433,971, 03-18-69, Cl. 307-018.
Hufnagel, Andrew, to Westinghouse Air Brake Company. Fail-safe vital relay contact arrangement. 3,433,917, 03-18-69, Cl. 200-166.
Hufton, Arthur G.: *See—*
Dogadko, Peter, and Hufton, Arthur G. 3,433,208.
Hughes Aircraft Company: *See—*
Althaus, Edward J., 3,433,934.
O'Brien, Lawrence H., and Jamison, Richard S., 3,434,148.
Hughes, David R.: *See—*
Gibson, Robert G., Hughes, David R., and Leavenworth, Richard L. 3,434,117.
Hughes, Ray C.: *See—*
Bronnes, Robert L., Sweet, Richard C., and Hughes, Ray C. 3,432,913.
Hulterstrum, Harold D., to Flambeau Plastics Corporation. Swivel joint structure. 3,433,510, 03-18-69, Cl. 287-012.
Humphrey, David H. Adjustable catch. 3,433,517, 03-18-69, Cl. 292-074.
Hunkar, Denes B. Automatic sample changer and measurer for radioactive materials with pulsating gas purging. 3,433,956, 03-18-69, Cl. 250-106.
Huntley, Christopher R., to Automatic Electric Laboratories, Inc. Low-distortion bias-controlled transistor amplifier. 3,434,066, 03-18-69, Cl. 330-013.
Hupfer, Harold Matthew, to Whirlpool Corporation. Adjustable caster with anti-tip device. 3,432,878, 03-18-69, Cl. 016-032.
Hurick, Richard A.: *See—*
Oellerich, Werner B., and Hurick, Richard A. 3,432,932.
Hutchison, Ronald Thomas James, and Jenkins, Stuart Mc Ewen, to General Electric Company Limited, The. Vibration resistant switch utilizing an elongated stationary contact co-acting with a planar movable apertured contact. 3,433,912, 03-18-69, Cl. 200-083.
Hyde, Earl K.: *See—*
Bowman, Harry R., Thompson, Stanley G., Hyde, Earl K., and Jared, Richard C. 3,433,954.
Hyden, Seymour, Scarano, Louis, and Wilbert, Godfrey, to Nepera Chemical Co., Inc. Tricyclic ester derivatives of pyridine carbox- ylates and process for their production. 3,433,795, 03-18-69, Cl. 260-295.5
I-T-E Circuit Breaker Company: *See—*
Jensen, Otto, 3,433,911.
Stancil, Birley, deceased, (by Stancil, Pearl, executrix), 3,434,102.
Zocholl, Stanley E., 3,434,011.
Icore Industries: *See—*
Giulie, Joe D., 3,433,343.
Iida, Yoshio: *See—*
Nishimoto, Kazuyuki, and Iida, Yoshio 3,433,749.
Ikeda, Teppei: *See—*
Ohi, Reiichi, Ikeda, Teppei, and Hibino, Choji 3,433,638.
Ilardo, Charles S., and Hindersinn, Raymond R., to Hooker Chemical Corporation. Fire retardant bituminous compositions. 3,433,654, 03-18-69, Cl. 106-015.
ILC Industries, Inc.,: *See—*
Durney, George P., 3,432,860.
Imai, Kazutami, Tano, Tatsuo, and Noro, Hiroo, to Tomoji Murata. Process of recovering manganese from manganese ores. 3,433,629, 03-18-69, Cl. 075-101.
Imai, Kin-Ichi: *See—*
Honjo, Mikio, and Imai, Kin-Ichi 3,433,783.
Imperial Chemical Industries Limited: *See—*
Bamford, Clement Henry, Duncan, Frederic James, and Reynolds, Reginald John William, 3,433,774.
Campbell, John Stewart, 3,433,582.
Cooke, Brian Alfred, and Gourlay, George, 3,433,755.
Farkas, Ferenc Karoly, Walbridge, Derek John, and Foot, John Rodney, 3,433,753.
Moyse, James Albert, and Sagar, Harold, 3,433,666.
Imperial Oil Limited: *See—*
Cymbalisty, Lubomyr M. O., 3,433,245.
Inami, Mamoru: *See—*
Kawaguchi, Toshihiko, and Inami, Mamoru 3,433,487.
Inland Steel Company: *See—*
Hill, Uno T., 3,433,670.
Inoguchi, Toshio, Niwa, Ichihiko, and Nakazawa, Katsuro, to Hayakawa Denki Kogyo Kabushiki Kaisha. Method for growing single crystals. 3,433,602, 03-18-69, Cl. 023-300.
Institut de Recherches de la Siderugie Francais: *See—*
Boucraut, Michel, and Toth, Imre, 3,433,624.
Institut de Recherches de la Siderugie Francaise: *See—*
Cavalier, Gilbert, 3,433,059.
Institute of Gas Technology: *See—*
Feldkirchner, Harlan L., Linden, Henry R., Khan, Amanullah R., and Todesca, Flaminio, 3,433,610.
Instron Corporation: *See—*
Burr, George Sterling, 3,433,061.
International Business Machines Corporation: *See—*
Anacker, Wilhelm, 3,434,116.
Arulpragasam, Jeganandaraj A., and Frye, Harold E., 3,434,114.
Chomicki, John S., 3,434,115.
Dingwall, Robert P., 3,434,131.
Gibson, Robert G., Hughes, David R., and Leavenworth, Richard L., 3,434,117.
Gunn, John B., 3,433,974.
Hardin, William W., 3,433,933.
Harrington, Richard H., and Henkel, Michael A., 3,433,153.
Jensen, Donald F., 3,433,257.
Lahr, Roy J., 3,433,564.
Marinace, John C., 3,433,686.
Tibbetts, Raymond E., and Wilczynski, Janusz S., 3,433,558.
International Computer Appliances Corp.,: *See—*
Hoaglund, Paul A., 3,433,547.
International Harvester Company: *See—*
Ward, Gerald G., 3,433,118.
International Standard Electric Corporation: *See—*
Beadle, Anthony Crisp, and Garner, William, 3,433,276.
Butcher, John Anthony Weeks, Pullum, Geoffrey George, and Willson, Michael John, 3,433,902.
Gaissert, Heinz, and Hiller, Johannes, 3,433,345.
Mengelberg, Volker, 3,434,080.
Sandbank, Carl Peter, 3,434,008.
International Synthetic Rubber Company Limited: *See—*
Duck, Edward William, and Thornber, Michael Neil, 3,433,778.
International Telephone and Telegraph Corporation: *See—*
Birkemeier, Henry Paul, 3,433,166.
DeRose, Ralph A., 3,434,095.
Ray, William Alton, 3,433,262.
Internationella Siporex Aktiebolaget: *See—*
Olsson, Karl Gustav, 3,433,322.
Ionics, Incorporated: *See—*
Parsi, Edgardo J., and McGriff, Stuart G., 3,433,726.
Ireland, Gerald B., and Witzenburg, Marion J., to Caterpillar Tractor Co. Cooling means for high speed heavy duty dyanamoelectric machines. 3,433,985, 03-18-69, Cl. 310-052.
Irgens, Finn T., to Outboard Marine Corporation. Lawn mower. 3,433,498, 03-18-69, Cl. 280-047.11
Irmscher, Klaus: *See—*
Kramer, Josef, Irmscher, Klaus, Halpaap, Herbert, and Freibsberg, Karl-Otto 3,433,805.
Isekil, Hajime: *See—*
Iwasawa, Hiroshi, Isekil, Hajime, and Hirano, Hiroshi 3,433,011.
Ishibashi, Michio: *See—*
Kaname, Yuichi, Nagata, Takashi, Ishibashi, Michio, and Tsujimoto, Hiroshi 3,433,982.
Ishida, Toyo. Blackboard. 3,432,944, 03-18-69, Cl. 035-066.
Ives, Kenneth D., and Rastogi, Vijay, to Babcock & Wilcox Company, The. Strain gage transducer assembly. 3,433,060, 03-18-69, Cl. 073-088.5
Ivester, Andrew S., to Polaroid Corporation. Aperture trim means for a photoflash exposure control system. 3,433,144, 03-18-69, Cl. 095-064.
Iwasawa, Hiroshi, Isekil, Hajime, and Hirano, Hiroshi, to Citizen Tokei Kabushiki Kaisha. Barrel spring. 3,433,011, 03-18-69, Cl. 058-086.
Jack, Charles W., to Executive Line, Ic., The. Conversion device. 3,432,942, 03-18-69, Cl. 035-031.
Jack, Walter Q., and Johnson, Loyd V., to Hooker Chemical Corporation. Woodpulp bleaching process. 3,433,702, 03-18-69, Cl. 162-087.
Jackman, Claude A., and Turner, Elbert L., to Sylvania Electric Products Inc. Automatic locking receiver. 3,434,057, 03-18-69, Cl. 325-423.
Jacks, Eric: *See—*
Feenan, John, Jacks, Eric, and Murphy, John Eric 3,432,923.
Jackson, Wilbur F., to Robertshaw Controls Company. Unitary thermostatic control device with dual temperature sensors. 3,433,411, 03-18-69, Cl. 236-021.
Jackson, Wilbur F., and Wright, John W., to Robertshaw Controls Company. Combined temperature and pressure controlled valve. 3,433,409, 03-18-69, Cl. 236-009.
Jacobs, James W., to General Motors Corporation. Automatic liquid freezer. 3,433,030, 03-18-69, Cl. 062-186.
Jacobsen, Jan Louis Wulff, to CCT Cinema Camera Technik AG. Stereo moving picture camera. 3,433,561, 03-18-69, Cl. 352-060.
Jacobson, Walter E., to Revere Corporation of America. Flexible structure for yieldably withstanding forces. 3,433,064, 03-18-69, Cl. 073-141.
Jaeger, Karl, and Scheffel, Werner, to Linde Aktiengesellschaft. Adsorption tower. 3,432,995, 03-18-69, Cl. 055-179.
Jagenberg-Werke AG: *See—*
Baucke, Horst, 3,433,476.
James, Emrys C., to Radio Corporation of America. Write verification for a recording system. 3,434,156, 03-18-69, Cl. 346-074.
James, George A., to F & E Manufacturing Company. Vacuum motor. 3,433,132, 03-18-69, Cl. 092-048.
Jamison, Richard S.: *See—*
O'Brien, Lawrence H., and Jamison, Richard S. 3,434,148.
Jammet, Jean Firmin, to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Leakproof electrochemical cell and method of making same. 3,433,681, 03-18-69, Cl. 136-133.
Janome Sewing Machine Co., Ltd.: *See—*
Hanyu, Susumu, 3,433,092.
Janssen, Peter Johannes Hubertus: *See—*
Smeulers, Wouter, and Janssen, Peter Johannes Hubertus 3,434,004.
Jaquith, Howard R., and Norton, Stanley G., Jr., to Sybron Corporation. Process control instrument having signal booster. 3,433,239, 03-18-69, Cl. 137-085.
Jared, Richard C.: *See—*
Bowman, Harry R., Thompson, Stanley G., Hyde, Earl K., and Jared, Richard C. 3,433,954.
Jarman-Williamson Company: *See—*
Leitzel, Ammon M., 3,433,497.
Jarvis, Jay P.: *See—*
Vartanian, Edwin S., and Jarvis, Jay P. 3,432,955.
Jednacz, Thomas C., and Schmittle, Karl V., to Borg-Warner Corporation. Rectifier system with integral cycle control. 3,434,032, 03-18-69, Cl. 321-005.
Jefferson chemical Company, Inc.: *See—*
Cavitt, Stanley B., 3,433,806.
Jeffery, Walter S., to Kaluim Chemicals Limited. Prevention of sulfate scale formation. 3,433,603, 03-18-69, Cl. 023-300.

Jeffery, Warren C., and Teague, Sidney P., to McWane Cast Iron Pipe Company. Pipe coupling. 3,433,509, 03-18-69, Cl. 285-374.

Jendrychowska-Bonamour, Anna-Maria: *See—*
Chapiro, Adolphe, and Jendrychowska-Bonamour, Anna-Maria 3,433,724.

Jenkins, Alexander, and Weber, Eugen, to Wright, H. Dudley, and Leclerc, Robert Ernest. Method of forming articles from thermoelastically deformable materials. 3,433,862, 03-18-69, Cl. 264-097.

Jenkins, Stuart Mc Ewen: *See—*
Hutchison, Ronald Thomas James, and Jenkins, Stuart Mc Ewen 3,433,912.

Jensen, Donald F., to International Business Machines Corporation. Diaphragm type fluid logic latch. 3,433,257, 03-18-69, Cl. 137-561.

Jensen, Niels H., and Smith, Hubert C., to Lukens Steel Company. Apparatus for casting slab type ingots. 3,433,286, 03-18-69, Cl. 164-274.

Jensen, Otto, to I-T-E Circuit Breaker Company. Differential pressure actuated switch with high speed latch means. 3,433,911, 03-18-69, Cl. 200-083.

Jensen, Poul: *See—*
Faaborg-Andersen, Axel Valdemar, and Jensen, Poul 3,433,598.

Jentzsch, Wolfgang, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 1,4-diaminoanthraquinone. 3,433,811, 03-18-69, Cl. 260-378.

Jeschke, Richard R.: *See—*
MacPhee, Paul A., Wanielista, Walter, and Jeschke, Richard R. 3,433,567.

Joch, Erich, to Dynamit Nobel Aktiengesellschaft. Practice projectile. 3,433,157, 03-18-69, Cl. 102-092.7

Johannes Menschner Textilmaschinenfabrik: *See—*
Minten, Hans, 3,432,988.

Johannes Menschner, Textilmaschinenfabrik: *See—*
Minten, Hans, 3,432,981.

Johnson, Arnold R., to Western Electric Company0, Incorporated. Data processing apparatus. 3,433,938, 03-18-69, Cl. 235-193.

Johnson, Carl W.: *See—*
Voss, Joseph A., and Johnson, Carl W. 3,433,225.

Johnson, Floyd O., to Varian Associates. Waveguide window having circulating fluid of critical loss tangent for dampening unwanted mode. 3,434,076, 03-18-69, Cl. 333-098.

Johnson, Loyd V.: *See—*
Jack, Walter Q., and Johnson, Loyd V. 3,433,702.

Johnson, Martin H., and Spellman, Patrick J., to E&B Incorporated,. Primary alkaline cell. 3,433,679, 03-18-69, Cl. 136-102.

Johnson, Nicky M., to Varian Associates. Electrographic recorder employing an analog-to- digital converter having a dual comparator means defining the dead zone. 3,434,154, 03-18-69, Cl. 346-032.

Johnson, Sylvia Jennie: *See—*
McCormick, Jerry Robert Daniel, Johnson, Sylvia Jennie, and Sjolander, Newell Oscar 3,433,710.

Johnston, Donald S.Process for producing fish steaks. 3,433,647, 03-18-69, Cl. 099-111.

Johnston, James David, to Pfizer, Chas., & Co., Inc.Schiff bases of 2-formylquinoxaline 1,4-dioxides as growth promoters and systemic and non-systemic infection control agents in animals. 3,433,871, 03-18-69, Cl. 424-250.

Jones, Clifford W.: *See—*
Fischer, Donald G., and Jones, Clifford W. 3,433,270.

Jones, Cordis W., and Hinman, Clinton R., to Hastings Dynamold Corporation. Hydraulic drive system. 3,433,123, 03-18-69, Cl. 091-036.

Jones, Donald Allen, to Thermo Radiant Ovens Pty. Ltd.Apparatus for removing articles from containers by suction. 3,433,375, 03-18-69, Cl. 214-309.

Jones, Henry B.: *See—*
Bunn, Dorrance P., Jr., Jones, Henry B., and Nagle, Richard E. 3,433,733.

Jones, John Haskell, to Melpar, Inc.Plating process for printed circuit boards. 3,433,719, 03-18-69, Cl. 204-015.

Jones, Robert E., and Robinson, Samuel A., to Merck & Co., Inc.Aminopropoxymethylfurans and intermediates therefor. 3,433,807, 03-18-69, Cl. 260-347.7

Jones, Robert L., to North American Rockwell Corporation. Differential amplifier having a feedback path including a differential current generator. 3,434,069, 03-18-69, Cl. 330-030.

Jones, Stanley B.: *See—*
Baker, Paul E., Jones, Stanley B., and Seevers, Delmar O. 3,434,044.

Jordan, Charles T.: *See—*
Speas, Charles A., and Jordan, Charles T. 3,433,867.

Jordan, Merrill E., and Hardy, John F., to Cabot Corporation. Spray drying carbon black. 3,433,660, 03-18-69, Cl. 106-307.

Jordan, Wayne W., to Clark Equipment Company. Combination facing for clamp device. 3,433,376, 03-18-69, Cl. 214-653.

Juillard, Pierre: *See—*
Lombard, Francis, and Juillard, Pierre 3,433,866.

Jullien-Davin, Jean, to Crouzet. Deformable cam. 3,433,091, 03-18-69, Cl. 074-568.

Juneau, Paul W., Jr., to United States of America, Air Force. Curing system for ethoxyline resins consisting of a solution of phosphomolybdic acid and a hydroxy phosphate ester. 3,433,769, 03-18-69, Cl. 260-058.

Jurik, Rudolf, and Dvorak, Ludvik, to SVIT narodni podnik. Method of making a summer shoe. 3,432,869, 03-18-69, Cl. 012-145.

Justin Belt Company: *See—*
Nyberg, Stanley A., and Yost, Joe, 3,432,895.

Kabisch, Gerhard: *See—*
Herzog, Hans, and Kabisch, Gerhard 3,433,358.

Kabushiki Kaisha Daikin Seisakusho: *See—*
Murakami, Kiyoharu, 3,433,340.

Kaczorowski, John, Jr.: *See—*
Nordahl, John G., and Kaczorowski, John, Jr. 3,434,041.

Kaczorowski, John, Jr., to Weston Instruments, Inc.Linear conductance switch. 3,434,042, 03-18-69, Cl. 323-074.

Kadah, Hassan B.Panel mount. 3,434,013, 03-18-69, Cl. 317-099.

Kadelbach, Volker: *See—*
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen 3,433,101.

Kahn, Samuel J., to Universal Oil Products Company. Continuous alkylation process. 3,433,847, 03-18-69, Cl. 260-671.

Kalina, Robert F., and Verenski, Lawrence E., to Western Electric Company, Incorporated. Capacitor with closures at end of arbor hole therein and method of making the same. 3,434,024, 03-18-69, Cl. 317-260.

Kallenborn, John, to PPG Industries, Inc.Machine for end finding of strand. 3,433,423, 03-18-69, Cl. 242-035.5

Kalnin, Ilmar L., to American Standard Inc.Silicon coated graphite. 3,433,682, 03-18-69, Cl. 148-006.3

Kaluim Chemicals Limited: *See—*
Jeffery, Walter S., 3,433,603.

Kameyama, Daijiro: *See—*
Suzuki, Teruhiko, Nomura, Junichi, Kameyama, Daijiro, and Miyoshi, Minoru 3,433,156.

Kampf, William C., to Tote-Cart Company. Cart construction. 3,433,496, 03-18-69, Cl. 280-33.99

Kaname, Yuichi, Nagata, Takashi, Ishibashi, Michio, and Tsujimoto, Hiroshi, to Matsushita Electric Industrial Co., Ltd.Piezoelectric ceramic resonators. 3,433,982, 03-18-69, Cl. 310-008.2

Kanda, Masao, to Shigeru Kawai. Pin plate for a piano. 3,433,111, 03-18-69, Cl. 084-188.

Kanegafuchi Boseki Kabushiki Kaisha: *See—*
Hamahata, Sinichi, 3,433,006.

Kantz, Don B.: *See—*
Kremidas, James R., and Kantz, Don B. 3,433,241.

Karkalits, Olin C., Jr., to Petro-Tex Chemical Corporation. Preparation of unsaturated hydrocarbons. 3,433,850, 03-18-69, Cl. 260-680.

Karlen, Harvey R., and Eisendrath, David C., to Cory Corporation. Brewing apparatus. 3,433,149, 03-18-69, Cl. 099-282.

Karrberg, Gustaf H.Apparatus for threading or screwing together the ends of helical springs. 3,433,274, 03-18-69, Cl. 140-088.

Kast, Howard B., to General Electric Company. Control system having output variably responsive to two signal inputs. 3,433,021, 03-18-69, Cl. 060-242.

Kato, Tsuneyuki: *See—*
Yomiyama, Akira, Kato, Tsuneyuki, Aoshima, Atsushi, and Kawanishi, Tokuichiro 3,433,831.

Kauffman, Harry D., to Park-Ohio Industries, Inc.Ground detector. 3,433,918, 03-18-69, Cl. 219-010.77

Kautz, Murrell F., to Honeywell Inc.Bulb retainer. 3,433,074, 03-18-69, Cl. 073-343.

Kawaguchi, Toshihiko, and Inami, Mamoru, to Victor Company of Japan, Limited. Piezoelectro-acoustic stereophonic pick-up. 3,433,487, 03-18-69, Cl. 274-037.

Kawaharazaki, Yoichi, to Victor Company of Japan, Limited. Pickup arm control mechanism in an automatic record player. 3,433,486, 03-18-69, Cl. 274-015.

Kawai, Masahisa: *See—*
Adachi, Kazuo, Kawai, Masahisa, and Hoshikawa, Masakatsu 3,433,790.

Kawakami, Yohei: *See—*
Suzuki, Kozaburo, Seki, Toshio, and Kawakami, Yohei 3,433,763.

Kawanishi, Tokuichiro: *See—*
Yomiyama, Akira, Kato, Tsuneyuki, Aoshima, Atsushi, and Kawanishi, Tokuichiro 3,433,831.

Kawchitch, Claude Edward, to Loy, Bros. Proprietary Limited. Container closure. 3,433,380, 03-18-69, Cl. 215-040.

Kayle, William W.: *See—*
Schmidt, Raymond A., Wilhelm, Frederick A., Jr., and Kayle, William W. 3,434,111.

Kearns, Norvan O., and Steinmetz, Rolland J.Spring biased shock absorbing bumper. 3,433,520, 03-18-69, Cl. 293-085.

Keblys, Kestutis A., to Ethyl Corporation. Dehydrogenation process with catalyst pretreating for C_6-C_{14} alkenes. 3,433,851, 03-18-69, Cl. 260-683.3

Keblys, Kestutis A., to Ethyl Corporation. Process for C_6-C_{14} alkenes by pretreatment of phosphate catalysts. 3,433,852, 03-18-69, Cl. 260-683.3

Keeleric, George F.Dynamic electrode for electrolytic machining apparatus. 3,433,727, 03-18-69, Cl. 204-224.

Keillor, John M., and Smith, Oliver T., to Union Camp Corporation,. Shock absorbing container. 3,433,353, 03-18-69, Cl. 206-046.

Keistman, Arnold R., and Weakley, Robert H., to United Aircraft Corporation,. Electromagnetic actuator. 3,433,983, 03-18-69, Cl. 310-015.

Keithahn, Julian D.: *See—*
Clark, Earnest H., Jr., De Rochemont, John F., and Keithahn, Julian D. 3,433,303.

Kelco Company: *See—*
McNeely, William H., 3,433,708.

Kelleher, William L.: *See—*
Garber, Thomas, and Kelleher, William L. 3,434,034.

Keller, John Walter, Jr., to Cordis Corporation. Multimode cardiac pacer. 3,433,228, 03-18-69, Cl. 128-422.

Kelsey, Eugene L.: *See—*
Holt, Hugh M., Kelsey, Eugene L., and Mills, Stacey M. 3,434,033.

Kelsey-Hayes Company: *See—*
Swift, Harvey C., 3,433,328.
Swift, Harvey C., 3,433,333.

Kelver, William L.: *See—*
Allison, Kenneth C., and Kelver, William L. 3,433,120.

Kelvinator, Inc.,: *See—*
Huff, Herbet G., and Shelly, Donald J., 3,433,213.

Kemp, Kenneth Albert Walters, to C.A.V. Limited. Liquid fuel injection pumps. 3,433,159, 03-18-69, Cl. 103-002.

Kemp, Kenneth Albert Walters, to C.A.V. Limited. Liquid fuel pumping apparatus. 3,433,160, 03-18-69, Cl. 103-037.

Kendall, Flrence P.: *See—*
Kendall, Henry O., and Kendall, Flrence P. 3,433,221.

Kendall, Henry O., and Kendall, Flrence P.Shoulder supported arm sling. 3,433,221, 03-18-69, Cl. 128-094.

Kennard, Thomas A.Fluid conduit valve. 3,433,252, 03-18-69, Cl. 137-496.

Kennedy, George Charles, to General Electric Company. Electrically conductive tool and method for making. 3,433,730, 03-18-69, Cl. 204-291.

Kennedy, Thomas: *See—*
Parkinson, Peter, Kennedy, Thomas, and William , John 3,434,025.

Kenny, John: *See—*
Lysakowski, Edward, and Kenny, John 3,432,884.

Kerr, Edwin L.: *See—*
Atwood, John G., and Kerr, Edwin L. 3,433,959.

Kershner, Osborn A., to Lambert Brake Corporation,. Disc brake and lining disc assembly. 3,433,334, 03-18-69, Cl. 188-218.

Kerstetter, Donald R., to Sylvania Electric Products Inc.Method of making a pencil type indirectly heated cathode. 3,432,900, 03-18-69, Cl. 029-025.17

Kerwin, James F., to Smith Kline & French Laboratories. 6-Spirooxiraneprogesterones. 3,433,787, 03-18-69, Cl. 260-239.55

Keshi, Akizo: *See—*
Yotsuzuka, Masaru, Keshi, Akizo, Hashimoto, Norishige, Kodama, Katsuhisa, and Nakahara, Shigenobu 3,433,751.

Kesolits, Thomas J., to United States of America, Army. Bipolar to two-level binary code translator. 3,434,059, 03-18-69, Cl. 328-117.

Keto, August I.: *See—*
Hofmann, Charles F., and Keto, August I. 3,433,893.

Kettenbach, Edward L.Surgical drains. 3,433,227, 03-18-69, Cl. 128-350.

Ketterer, Stanley J.: *See—*
Goebel, Gregory, and Ketterer, Stanley J. 3,433,191.

Kezerian, Charles, Wallace, Edwin G., and Kopucki, Adam F., to Stauffer Chemical Company. Stabilized polypropylene compositions containing a phenolic antioxidant and a tert-alkyl ester of thiodisuccinic acid. 3,433,762, 03-18-69, Cl. 260-045.8

Khan, Amanullah R.: *See—*
Feldkirchner, Harlan L., Linden, Henry R., Khan, Amanullah R., and Todesca, Flaminio 3,433,610.

Kienzle Apparate G.m.b.H.: *See—*
Vogtlin, Karl, 3,434,152.

Kienzle Uhrenfabriken G.m.b.H.: *See—*
Haag, Albrecht, 3,433,009.
Siefert, Roland, and Odenbach, Heinz, 3,433,012.

Kilby, Jack S., to Texas Instruments, Incorporated. Capacitor for miniature electronic circuits or the like. 3,434,015, 03-18-69, Cl. 317-101.

Kincaid, Jack M., to Petro-Tex Chemical Corporation. Polybutene-1 compositions containing lubricants and method of use therefor. 3,433,741, 03-18-69, Cl. 252-012.

King, Geoffrey, to Marconi Company Limited, The. Irises. 3,433,142, 03-18-69, Cl. 095-012.20

King Oil Tools: *See—*
Grantom, Charles A., 3,433,488.

Kinross, Rupert I.: *See—*
Gabriel, Ralph P., and Kinross, Rupert I. 3,433,890.

Kirk, Richard O.: *See—*
Swanson, Norman, Kirk, Richard O., and Woodward, George E. 3,433,832.

Kirschke, John A.Jet-propelled hydraulic pipeline cleaner with a skid, tangential jet and cleaning head. 3,432,872, 03-18-69, Cl. 015-104.12

Kissman, Henry Marcel: *See—*
Winterbottom, Robert, Bitha, Panayota, and Kissman, Henry Marcel 3,433,834.

Kjelstrom, Elmer, deceased (by Kjelstrom, Leonard Taylor, executor). Drum assembly. 3,433,115, 03-18-69, Cl. 084-411.

Kjelstrom, Leonard Taylor: *See—*
Kjelstrom, Elmer, deceased (by Kjelstrom, Leonard Taylor, executor) 3,433,115.

Klang, Daniel M.: *See—*
Brown, George C., and Klang, Daniel M. 3,433,426.

Klee, David J., to Air Products and Chemicals, Inc Cryogenic fluid conveying system. 3,433,028, 03-18-69, Cl. 062-045.

Kleinewefers, Joh., Sons: *See—*
Suss, Hans G., 3,432,894.

Kleinstuck, Werner, and Heger, Klaus, to General Motors Corporation. Hydraulic brake systems for motor vehicles. 3,433,019, 03-18-69, Cl. 060-054.5

Kling, Hans: *See—*
Teucher, Siegfried, and Kling, Hans 3,433,490.

Klugmann, Rafael. Combination wig and fall construction. 3,433,234, 03-18-69, Cl. 132-053.

Knaggs, Edward A., and Fischer, Elias, to Stephan Chemical Company. Dry cleaning detergent composition. 3,433,746, 03-18-69, Cl. 252-153.

Knaggs, Edward A., Nussbaum, Marvin L., and Fischer, Elias, to Stephan Chemical Company. Dry cleaning detergent composition. 3,433,745, 03-18-69, Cl. 252-153.

Knapp-Monarch Company: *See—*
Knapp, Robert S., 3,433,930.

Knapp, Robert S., to Knapp-Monarch Company. Broiler with removable heating cartridge. 3,433,930, 03-18-69, Cl. 219-386.

Knapsack Aktiengesellschaft: *See—*
Brockmuller, Wolfgang, Hartlapp, Gerhard, and Weizenkorn, Horst-Heinrich, 3,433,585.
Harniach, Heinz, Cremer, Joseph, and Schulte, Friedrich, 3,433,586.

Knop, Louis H.: *See—*
Doherty, Alfred E., Jr., and Knop, Louis H. 3,432,912.

Knorre, Helmut, Bretschneider, Gunther, and Sauer, Heinrich, to Deutsche Gold- und Silber Scheideanstalt vormals Roessler. Production of alkali metal borohydrides. 3,433,605, 03-18-69, Cl. 023-361.

Kobayashi, Hidehiko, Ohama, Hiroshi, and Saito, Shizuko, to Asahi Kasei Kogyo Kabushiki Kaisha. Novel copolymer. 3,433,773, 03-18-69, Cl. 260-078.5

Koch, Alan J.: *See—*
Scheitlin, Thomas G., Hames, William A., and Koch, Alan J. 3,433,031.

Koch, Henry A., and Long, Robert L.Wheel washing apparatus. 3,433,236, 03-18-69, Cl. 134-045.

Koch Industries, Inc.,: *See—*
Michael, Vesta Fletcher, 3,433,696.

Kodama, Katsuhisa: *See—*
Yotsuzuka, Masaru, Keshi, Akizo, Hashimoto, Norishige, Kodama, Katsuhisa, and Nakahara, Shigenobu 3,433,751.

Koecher, Walter, to Fellner & Ziegler G.m.b.H.Rotary drum furnace for incinerating rubbish. 3,433,186, 03-18-69, Cl. 110-014.

Kofman, Rijkent W.: *See—*
Fisher, Robert E., Kofman, Rijkent W., Reichert, Ernest D., and Visser, Reinold H. 3,432,916.

Kogstrom, Carl W.: *See—*
Brousseau, Roy D., and Kogstrom, Carl W. 3,434,149.

Kohler, Alfred: *See—*
Bauer, Kurt, and Kohler, Alfred 3,433,416.

Kohler General, Inc.: *See—*
Stevens, Donald E., and Doyle, Edward A., 3,432,937.

Kohler, Marcel, to Balzers Patent-und Lizenz-Anstalt. Selectively cooled motive fluid trap for a vacuum steam pump. 3,433,297, 03-18-69, Cl. 165-040.

Kohli, Willy, and Meroz, Charles, to Singer, Jean, & Cie S.A.Timepiece dial. 3,433,013, 03-18-69, Cl. 058-127.

Kohls, Dennis E., Moe, Donald L., and Reece, Harry W., to Reece Construction Co., Inc.Method and apparatus for handling bulk cement. 3,433,315, 03-18-69, Cl. 177-151.

Komatsu, Akira: *See—*
Moroe, Tatsuo, Komatsu, Akira, Matsui, Takeshi, and Ueda, Kuniuki 3,433,839.

Kominami, Naoya, Nakajimu, Hitoshi, and Tamura, Nobuhiro, to Asahi Kasei Kogyo Kabushiki Kaisha. Preparation of aromatic nitriles from substituted benzenes, HCN and oxygen in the presence of copper cyanide. 3,433,820, 03-18-69, Cl. 260-465.

Komline-Sanderson Engineering Corp.: *See—*
Bartholet, Emil J., 3,433,265.

Koninklijke Industrieele Maatschappij Noury & vander Lande N.V.: *See—*
Maltha, Pieter R. A., and Tijssen, Stephanus B., 3,433,825.

Koot, Nick, and Nold, Robert W., to Global Marine, Inc.Method and apparatus for undersea mining. 3,433,531, 03-18-69, Cl. 299-008.

Kopacki, Adam F.: *See—*
Kezerian, Charles, Wallace, Edwin G., and Kopacki, Adam F. 3,433,762.

Koppers Company, Inc.: *See—*
Ackeren, Joseph Van, 3,433,714.
Buzbee, Lloyd R., and Ecke, George G., 3,433,812.
Stewart, Warren A., 3,432,974.
Tucker, Linwood G., 3,433,716.
Van Ackeren, Joseph, 3,433,715.

Korones, Herbert D.: *See—*
Benford, James R., and Korones, Herbert D. 3,433,552.

Korte, Friedrich W.A.G.K.: *See—*
Adams, Charles R., Falbe, Jurgen F., and Korte, Friedrich W.A.G.K. 3,433,792.

Korvas, Zdenek: *See—*
Svoboda, Antonin, Oblonsky, Jan, and Korvas, Zdenek 3,434,118.

Kotelnikov, Anatoly Feofanovich: *See—*
Moldavsky, Felix Grigorievich, and Kotelnikov, Anatoly Feofanovich 3,433,379.

Koudelka, Vladimir, to Naradi narodni podnik. Reversing pawl mechanism. 3,433,329, 03-18-69, Cl. 188-082.2

Kouril, Jaroslav, to Vyskumny ustav mechanizacie a automatizacie. Ultrasonic treating method and apparatus. 3,433,669, 03-18-69, Cl. 134-001.

Kovach, Stephen M., Sanford, Robert A., and Young, David W., to Sinclair Research, Inc.Process of solubilizing, via hydrogenation, alpha-methylstyrene polymers and product obtained thereby product obtained thereby. 3,433,845, 03-18-69, Cl. 260-667.

Kowalewski, John J.: *See—*
Brown, Robert J., Kowalewski, John J., and Moughty, John J. 3,434,092.

Kowalik, Ronald F., to Automatic Electric Laboratories, Inc.Semiconductor transducer. 3,433,904, 03-18-69, Cl. 179-110.

Kraft, Derald Henry, to Bliss, E. W.,Company. Shaft mounting. 3,433,512, 03-18-69, Cl. 287-052.05

Kramer, Josef, Irmscher, Klaus, Halpaap, Herbert, and Freibsberg, Karl-Otto, to Merck, E., A.G.Water-soluble flavanoid derivatives. 3,433,805, 03-18-69, Cl. 260-340.5

Krauer, Otto Albert, Voigt, Herbert Frederick, and Schor, Harvey Ronald, to Otis Elevator Company. Elevator control system. 3,433,326, 03-18-69, Cl. 187-029.

Kreiser, Thomas Harry, to Miles Laboratories, Inc.Separation and recovery of oligonucleotides. 3,433,782, 03-18-69, Cl. 260-211.5

Kremidas, James R., and Kantz, Don B., to Bendix Corporation, The. Pressure limiting device. 3,433,241, 03-18-69, Cl. 137-112.

Krenke, Vincent G., to Casco Products Corporation. Delayed action circuit controller. 3,433,969, 03-18-69, Cl. 307-010.

Kreuter, Kenneth G.: *See—*
Berleyoung, Walter J., Kreuter, Kenneth G., and Mueller, Klaus P. 3,433,413.

Kristal, Robert M.Combination paperweight and letter opener. 3,432,926, 03-18-69, Cl. 030-294.

Krizka, Jerry A., and Fox, James F., to Continental Can Company, Inc.Dispensing container with collapsible compartment. 3,433,391, 03-18-69, Cl. 222-095.

Kubichan, Robert E.: *See—*
Saunders, Arnold E., and Kubichan, Robert E. 3,433,611.

Kulick, Russell Joseph: *See—*
D'Errico, Michael Joseph, and Kulick, Russell Joseph 3,433,658.

Kulwicki, Bernard M.: *See—*
Waseleski, Joseph W., Jr., Buiting, Francis P., and Kulwicki, Bernard M. 3,434,089.

Kunert, Werner. Fluid level measuring device. 3,433,073, 03-18-69, Cl. 073-313.

Kuo, Chi Sheng: *See—*
Christensen, Axel, and Kuo, Chi Sheng 3,433,600.

Kupsis, Visvaldis, and Morgan, Royston P., to Youngstown Sheet and Tube Company, The. Production of tin plate. 3,433,720, 03-18-69, Cl. 204-034.

Kurtz, Curtis E., to Borg-Warner Corporation. Hydraulic transmission for fabric-treating machines. 3,433,035, 03-18-69, Cl. 068-023.

Kurz, Alvin M.: *See—*
Rhodes, Eugene E., and Kurz, Alvin M. 3,433,044.

Kusel, Edward J., and Mankin, Robert S.Handrail mounting means. 3,433,460, 03-18-69, Cl. 256-065.

La Soudure Electrique Languepin: *See—*
Braudeau, Pierre, and Maillet, Alfred M. A., 3,433,919.

La Telemecanique Electrique: *See—*
Fechant, Louis Joseph, 3,434,052.

Labbatt, John Limited: *See—*
Letch, Harry George, and Powell, Leonard Cyril, 3,433,966.

Lahr, Roy J., to International Business Machines Corporation. Vacuum transparency holder and optics. 3,433,564, 03-18-69, Cl. 355-076.

Lajiness, Evelyn J.: *See—*
Braxton, Henry G., Jr., and Lajiness, Evelyn J. 3,433,621.

Lamb, Frances W.: *See—*
Stephens, Ruth E., Hirschler, Daniel A., Jr., and Lamb, Frances W. 3,433,581.

Lambert Brake Corporation,: *See—*
Kershner, Osborn A., 3,433,334.
Lamby, Edward J.: *See—*
Muhlberger, Robert A., and Lamby, Edward J. 3,433,768.
Lampson, Sidney Bruce: *See—*
Egan, Richard Raymond, and Lampson, Sidney Bruce 3,433,645.
Land, Cecil E., and Haertling, Gene H., to United States of America, Atomic Energy Commission. Multiremanence ferroelectric ceramic memory element. 3,434,122, 03-18-69, Cl. 340-173.2
Landauer, Franz: *See—*
Durach, Walter, Landauer, Franz, Reuter, Martin, and Weckler, Gerhard 3,433,574.
Landis, Phillip S.: *See—*
Hamilton, Lyle A., and Landis, Phillip S. 3,433,821.
Landis Tool Company: *See—*
Boller, John A., 3,432,970.
Snyder, Glenn M., 3,432,972.
Landy, Arney, Jr.: *See—*
Bader, William F., Landy, Arney, Jr., and Schmitz, Marvin J. 3,434,151.
Larsen, Gary V., to Case, J. I., Company. Stone trap for combines. 3,433,230, 03-18-69, Cl. 130-027.
Larsen, John E., to General Electric Company. Apparatus for altering the configuration of electrically conductive turns of inductive devices. 3,432,907, 03-18-69, Cl. 029-205.
Larson, Ralph H., to United States of America, Air Force,. Pneumatic acceleration sensor. 3,433,080, 03-18-69, Cl. 073-515.
Lasko, George A., to Woolsey Marine Industries, Inc.Batten for sails. 3,433,199, 03-18-69, Cl. 114-102.
Lasko, George A.Telescopic poles with locking means for picking up line. 3,433,521, 03-18-69, Cl. 294-019.
Latta, Lee M.Cooking apparatus. 3,433,211, 03-18-69, Cl. 126-025.
Latter, Charles F., to Rosengarten, Philip D.Filment winding machine. 3,433,434, 03-18-69, Cl. 242-158.
Laughlin, John R., and Soworowski, David R., to Park-Ohio Industries, Inc.Quenching device for an induction heating apparatus. 3,433,469, 03-18-69, Cl. 266-004.
Lavigne, Vernon W.: *See—*
Bailey, James R., and Lavigne, Vernon W. 3,433,906.
Lavoie, Raymond E., Jr.: *See—*
Sharkey, John F., and Lavoie, Raymond E., Jr. 3,433,203.
Law Blower Company,: *See—*
Gerlitz, Reuben A., 3,433,403.
Law, K. J., Engineers, Inc.: *See—*
Law, Kenneth J., and Brown, Gordon R., 3,434,048.
Law, Kenneth J., and Brown, Gordon R., to Law, K. J., Engineers, Inc.Eddy current apparatus for testing the hardness of a ferromagnetic material. 3,434,048, 03-18-69, Cl. 324-034.
Lawless, Merritt B.Automatic emergency signaling system for a vehicle. 3,434,106, 03-18-69, Cl. 340-055.
Lawrence Brothers, Inc.: *See—*
Foltz, Robert E., 3,433,518.
Lawton, Emil A., and Weber, John Q., to North American Rockwell Corporation. Method of preparing difluoramine and preparing tetrafluorohydrazine therefrom. 3,433,595, 03-18-69, Cl. 023-205.
Le Baigue, Jacques L.: *See—*
Downey, David F., Le Baigue, Jacques L., and Ohlson, Bengt E. 3,432,997.
Le Compte, Frank M., to Tingley Rubber Corporation. Boat fender. 3,433,200, 03-18-69, Cl. 114-219.
Le Suer, William M., to Lubrizol Corporation, The. Reaction product of phosphosulfurized hydrocarbon and alkylene polycarboxylic acid or acid derivatives and lubricating oil containing the same. 3,433,744, 03-18-69, Cl. 252-046.7
Leach, John M.Material handling conveyors. 3,433,349, 03-18-69, Cl. 198-177.
Leaman, Wilbur K., to Mobil Oil Corporation. Catalytic hydrocracking process and steam regeneration of catalyst to produce hydrogen. 3,433,732, 03-18-69, Cl. 208-111.
Lear Siegler, Inc.: *See—*
Blanding, Leonard C., Meyer, Hans J., and Liebler, Kenneth A., 3,433,538.
Leavenworth, Richard L.: *See—*
Gibson, Robert G., Hughes, David R., and Leavenworth, Richard L. 3,434,117.
Leavitt, William R., to Rowe Industries Inc.Brush retaining means for an electric motor. 3,433,989, 03-18-69, Cl. 310-239.
Lebelle, Jean Louis. Pile driver and extractor with rotating eccentric masses of variable weights. 3,433,311, 03-18-69, Cl. 173-049.
Leclerc, Robert Ernest: *See—*
Jenkins, Alexander, and Weber, Eugen, 3,433,862.
Lee, Charles D., Jr.: *See—*
Black, Robert L., Jr., and Lee, Charles D., Jr. 3,432,877.
Lee, Sung C.: *See—*
Misencik, John, and Lee, Sung C. 3,434,039.
Lee, Ying Kao: *See—*
Bayerl, Joseph James, deDecker, Hendrik Kamiel, and Lee, Ying Kao 3,433,759.
Leeds, Winthrop M., to Westinghouse Electric Corporation. Gas-blast circuit interrupter. 3,433,913, 03-18-69, Cl. 200-148.
Lees, Ray Frank: *See—*
Dutton, Hubert Wallace, Jr., and Lees, Ray Frank 3,433,857.
Leflet, Herbert A., Jr.: *See—*
Wampler, David M., and Leflet, Herbert A., Jr. 3,433,616.
Legal, Casimer C., Jr., Richmond, Alvin, and Bruno, Anthony J., Jr., to Grace, W. R., & Co.Process for preparing an ammoniated phosphate slurry fertilizer. 3,433,617, 03-18-69, Cl. 071-043.
Lehmann, Harold Adolf, to Case, J. I., Company. Hydraulic pressure relief valve unit. 3,433,240, 03-18-69, Cl. 137-108.
Leitzel, Ammon M., to Jarman-Williamson Company. Enclosed leg golf cart suspension. 3,433,497, 03-18-69, Cl. 280-040.
Lello, Giles S., to Globe Union Inc.Storage battery plates and method of manufacture. 3,433,674, 03-18-69, Cl. 136-026.
Lemelson, Jerome H.Record card scanning apparatus. 3,434,130, 03-18-69, Cl. 340-174.1
Lemon, George Edward. Screwdown control for metal rolling mills. 3,433,037, 03-18-69, Cl. 072-035.
Lennox Industries, Inc.: *See—*
McCready, Raymond G., 3,434,028.
Lenz, John O., to Honeywell Inc.Tube forming apparatus. 3,433,040, 03-18-69, Cl. 072-085.
Lenzo, Pascal V., and Spencer, Edward G., to Bell Telephone Laboratories, Incorporated. Optical channel separation by deflection. 3,433,958, 03-18-69, Cl. 250-199.
Leonard, Louis H., Jr., to Carrier Corporation. Heating and cooling system. 3,433,296, 03-18-69, Cl. 165-039.
Leak, Israel Arnold, to General Electric Company. Semiconductor switching devices with a tunnel junction diode in series with the gate electrode. 3,434,023, 03-18-69, Cl. 317-235.
Letch, Harry George, and Powell, Leonard Cyril, to Labbatt, John Limited. Alarm system for detecting fallen bottles on a conveyor. 3,433,966, 03-18-69, Cl. 250-223.
Leum, Leonard N.: *See—*
Capaldi, Eugene C., and Leum, Leonard N. 3,433,844.
Levine, Irving E.: *See—*
Adams, Robert T., Levine, Irving E., and Sweeney, William A. 3,433,846.
Lewis, Richard J., to Bendix Corporation, The. Electric torque motor with adjustable slotted pole pieces. 3,434,083, 03-18-69, Cl. 335-230.
Lewis, Robert E., to Electronics Corporation of America. Connector structure. 3,434,099, 03-18-69, Cl. 339-176.
Liang, Sou Chu, and Shaw, George, to Cominco Ltd. Zone refining. 3,433,627, 03-18-69, Cl. 075-065.
Libbey-Owens-Ford Glass Company: *See—*
Wampler, David M., and Leflet, Herbert A., Jr., 3,433,616.
Libby, Ross C., to Ohio State University Board of Trustees, The. High speed, wide frequency range feedback circuit. 3,434,074, 03-18-69, Cl. 331-183.
Liebel, Henry L., to Paper Extrusions Co.Resilient angle member. 3,433,354, 03-18-69, Cl. 206-046.
Liebler, Kenneth A.: *See—*
Blanding, Leonard C., Meyer, Hans J., and Liebler, Kenneth A. 3,433,538.
Lieser, Ernst, Simon, Horst, Mueller, Edwin, and Steisslinger, Kurt, to Eastman Kodak Company. Photographic camera. 3,433,143, 03-18-69, Cl. 095-031.
Lilly, Eli, and Company: *See—*
Caltrider, Paul G., and Hayes, Harold B., 3,433,711.
Lincoln Electric Company Limited: *See—*
Sevenco, Alexander Jura, 3,433,924.
Linde Aktiengesellschaft: *See—*
Jaeger, Karl, and Scheffel, Werner, 3,432,995.
Linden, Henry R.: *See—*
Feldkirchner, Harlan L., Linden, Henry R., Khan, Amanullah R., and Todesca, Flaminio 3,433,610.
Lindgren, Milton F.: *See—*
Brady, Laurence M., and Lindgren, Milton F. 3,433,100.
Linsert, Friedrich: *See—*
Rover, Martin, Luth, Erwin, Schmitz, Lambert, and Linsert, Friedrich 3,433,424.
Little, Jack R.: *See—*
Boyne, William J., Little, Jack R., and Wagner, Ulrich 3,432,993.
Littlefield, Carl: *See—*
Hansen, Omar, Jr., Littlefield, Carl, and Haddix, Allen R. 3,432,987.
Litton Systems, Inc.: *See—*
Newhoff, Harry Robert, 3,434,051.
Shively, Richard P., and Dickey, David V., 3,434,128.
Ljungberg, Ture Anders. Device for the accurate measurement of large distances with an unsupported flexible measuring tape. 3,432,930, 03-18-69, Cl. 033-137.
Lochen, R. L.: *See—*
Hensley, Arthur J., 3,432,893.
Lockheed Aircraft Corporation: *See—*
Painter, Giles W., and Parry, Hugh J., 3,434,060.
Pusateri, Anthony J., Jr., 3,434,096.
Loebel, Frederick A., to Aqua-Chem, Inc.Multistage flash still with vapor compression plant. 3,433,717, 03-18-69, Cl. 202-173.
Loepfe, Erich. Weft controller. 3,433,273, 03-18-69, Cl. 139-371.
Logan, Richard W., to Federal Sign and Signal Corporation,. Load handling apparatus. 3,433,459, 03-18-69, Cl. 254-139.1
Lokey, Burke P., and Rein, Charles R., to West Virginia Pulp and Paper Company. Bag inspection method and apparatus therefor. 3,433,135, 03-18-69, Cl. 093-008.
Lombard, Francis, and Juillard, Pierre, to Crylor. Production of a network of polyacrylonitrile filaments. 3,433,866, 03-18-69, Cl. 264-210.
Long, Anthony Alfred Walter, and Nayler, John Herbert Charles, to Beecham Group Limited. Penicillins substituted with heterocyclic groups. 3,433,784, 03-18-69, Cl. 260-239.1
Long, Robert L.: *See—*
Koch, Henry A., and Long, Robert L. 3,433,236.
Long, William W., III: *See—*
Croft, Charles P., and Long, William W., III 3,432,968.
Longuski, Robert N., and Zaske, Robert E., to Round Tool Co., Inc.Chuck jaws. 3,433,491, 03-18-69, Cl. 279-002.
Lorber, Gerd: *See—*
Wachter, Otto, and Lorber, Gerd 3,433,122.
Lorenzino, Paul, Jr.: *See—*
Wilson, Robert O., and Lorenzino, Paul, Jr. 3,434,046.
Lothman, Mary F., to Sieloff, Kenneth A., and Sieloff, Dorothy L., d/b/a a partnership. Decorative night light. 3,433,939, 03-18-69, Cl. 240-010.
Lott, Harry, Jr.: *See—*
Wilson, Willi[illegible], Lott, Harry, Jr., and Dietz, Albert 3,433,594.
Lovingham, Josep[illegible] Thiokol Chemical Corporation. Control for adjusting proportions of b[illegible]lants. 3,433,022, 03-18-69, Cl. 060-258.
Lowery, Deborah Jo[illegible]
Lowery, James I., 3,[illegible]2,868.
Lowery, James I., 10% each to Lowery, Ronald James, Lowery, Deborah Joy, and Lowery, Peggy Ann. Float-equipped wading boots with propelling fins. 3,432,868, 03-18-69, Cl. 009-343.
Lowery, Peggy Ann: *See—*
Lowery, James I., 3,432,868.

Lowery, Ronald James,: *See—*
Lowery, James I., 3,432,868.
Loy, Bros. Proprietary Limited: *See—*
Kawchitch, Claude Edward, 3,433,380.
Lubrizol Corporation, The: *See—*
Le Suer, William M., 3,433,744.
Lukashok, Milton. Curtain system including elasticized top curtain panels and support for same. 3,433,281, 03-18-69, Cl. 160-330.
Lukens Steel Company: *See—*
Jensen, Niels H., and Smith, Hubert C., 3,433,286.
Lundin, Eric Gustaf, and Rubin, Ernst Arne, to AB Purac. Installations for the purification of liquids. 3,433,359, 03-18-69, Cl. 210-199.
Luth, Erwin: *See—*
Rover, Martin, Luth, Erwin, Schmitz, Lambert, and Linsert, Friedrich 3,433,424.
Lysakowski, Edward, and Kenny, John, to British Iron and Steel Research Association, The. Vane-type powder feeder. 3,432,884, 03-18-69, Cl. 018-009.
Lyshkow, Norman A., to Precision Scientific Company. Colorimetric reagent for analysis of sulfur dioxide in air. 3,433,597, 03-18-69, Cl. 023-232.
M&K Leasing Co.: *See—*
Blunk, Boyde W., and Owen, Frank, III, 3,433,004.
Mac Pherson, William F.: *See—*
Bauer, Erich O., Fox, Paul E., and Mac Pherson, William F. 3,433,858.
MacKenzie, Burton T., Jr.: *See—*
Zysk, Stephen, and MacKenzie, Burton T., Jr. 3,433,891.
MacLeod, Norman Jamieson, to Plasser, Franz Bahnbaumaschienen. Railway track lifting and tamping machines. 3,433,175, 03-18-69, Cl. 104-007.
Macovski, Albert, to Stanford Research Institute. Electrostatic printing head. 3,434,157, 03-18-69, Cl. 346-074.
MacPhee, Paul A., Wanelista, Walter, and Jeschke, Richard R., to Robertson Photo-Mechanix, Inc.Contact screen application to vacuum film holder. 3,433,567, 03-18-69, Cl. 355-076.
Magee, John S., Jr., and Briggs, Warren S., to Grace, W. R., & Co.Method of preparing petroleum cracking catalysts. 3,433,747, 03-18-69, Cl. 252-433.
Magee, John S., Jr., and Briggs, Warren S., to Grace, W. R., & Co.Process for forming silica-alumina hydrocarbon conversion catalysts. 3,433,748, 03-18-69, Cl. 252-453.
Maggart, Ronald C., Rothenberg, Don H., and Heinrich, Raymond L., to Esso Research and Engineering Company. Plasticizer compositions consisting of polynuclear aromatic compounds. 3,433,661, 03-18-69, Cl. 106-316.
Magnuson, Raymond A., and Brorson, Donald L., to Vogel-Peterson Co.Unit wall closet. 3,433,549, 03-18-69, Cl. 312-245.
Maierform Trust Reg.: *See—*
Csupor, Denis, 3,433,194.
Maillet, Alfred M. A.: *See—*
Braudeau, Pierre, and Maillet, Alfred M. A. 3,433,919.
Malakoff, Meyer: *See—*
Brechner, Stanley, Malakoff, Meyer, and Rieger, Martin M. 3,433,868.
Malbec, Edouard. Universal rotary volumetric-pulsation machine. 3,433,170, 03-18-69, Cl. 103-149.
Malco Manufacturing Company, Inc.: *See—*
Walter, George, 3,434,091.
Walter, George, 3,434,094.
Maley, Dale R., to Automation Industries, Inc.Material tester. 3,433,052, 03-18-69, Cl. 073-015.
Malkiel, Saul L., to Bendix Corporation, The. n-Leaf rose pattern optical radiation sensor and tracker system. 3,433,895, 03-18-69, Cl. 178-007.2
Mallory, P. R., & Co., Inc.: *See—*
Zaborney, John F., 3,433,351.
Maltha, Pieter R. A., and Tijssen, Stephanus B., to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V.Esters of 4,4-ditert.butylperoxypentanoic acid. 3,433,825, 03-18-69, Cl. 260-478.
Mandrel Industries, Inc.: *See—*
Stapleton, Fred E., and Buescher, James E., 3,434,104.
Mangan, Richard E., and Beeson, William Law. Collapsible shelf for use with a railing or the like. 3,433,443, 03-18-69, Cl. 248-214.
Mankin, Robert S.: *See—*
Kusel, Edward J., and Mankin, Robert S. 3,433,460.
Mann, Egon: *See—*
Winter, August, Mann, Egon, Pfeiffer, Willi, and Arnegger, Wilhelm 3,433,087.
Mannesmann Aktiengesellschaft: *See—*
Naeser, Gerhard, Wessel, Otto, and Darschewski, Kurt, 3,433,049.
Schrewe, Hans, 3,433,289.
Manson, Andrew John, and Phillips, Donald K., to Sterling Drug Inc.15,16-Disubstituted aromatic steroids, intermediates and processes. 3,433,785, 03-18-69, Cl. 260-239.5
Marc Wood Materials Societe Anonyme Pour la Promotiondes Echanges Techniques Internationaux: *See—*
Gewiss, Lucien-Victor, 3,433,692.
Marconi Company Limited, The: *See—*
King, Geoffrey, 3,433,142.
Nightingale, 3,433,238.
Marechal, Guy N. L. J., to North American Philips Company, Inc.Parametric amplifier. 3,433,976, 03-18-69, Cl. 307-088.3
Maremont Corporation: *See—*
Burnham, Virgil Allan, and Munroe, Richard Warren, 3,432,890.
West, Paul Bemis, 3,432,891.
Margot, Alfred, to Geigy Chemical Corporation. Animal feeds containing phthalazinone derivatives as growth promoters. 3,433,641, 03-18-69, Cl. 099-002.
Marinace, John C., to International Business Machines Corporation. Process of bonding chips in a substrate recess by epitaxial growth of the bonding material. 3,433,686, 03-18-69, Cl. 148-175.
Marine Swimming Pool Equipment Company: *See—*
Gelinas, Ralph J., 3,433,237.
Marino, Santo. Fish lure. 3,432,957, 03-18-69, Cl. 043-017.1
Markle, Richard A.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,433,818.
Markle, Richard A.: United States of America, National Aeronautics and Space Administration, Administrator, 3,433,818.
Marshall, John Donald: *See—*
Sprague, Frederick L., 3,433,430.
Marti, Fritz, to Portescap, Le Porte-Echappement Universel S.A.Ratchet mechanism. 3,433,093, 03-18-69, Cl. 074-578.
Martin, John, to Fabricacion de Maquinas. Machinery support. 3,433,615, 03-18-69, Cl. 065-193.
Martin, Samuel R., and McKibbin, John T., to Singer Company, The. Clutch apparatus. 3,433,339, 03-18-69, Cl. 192-084.
Martin, Smuel M.: *See—*
Cogelin, Nicholas J., Martin, Smuel M., and Ramsey, Raymond B. 3,433,884.
Marzocchi, Alfred, and Brown, Alfred Winsor, to Owens Corning Fiberglas Corporation. Method of building reinforced tire construction. 3,433,689, 03-18-69, Cl. 156-096.
Maschinenfabrik Moenninghoff: *See—*
Mueller, Walter, Alfs, Hugo, and von der Lippe, Robert, 3,433,529.
Maselli, James M., to Grace, W. R., & Co.Phosphonitrilic laminating and molding resins employing Mg(OH) as a curing catalyst. 3,433,767, 03-18-69, Cl. 260-051.
Matsubayashi, Tadao, and Suzuki, Yahiko, to Dai Nippon Seito Kabushiki Kaisha Nitto Institute of Chemical Research, The. Method for the preparation of riboflavin. 3,433,707, 03-18-69, Cl. 195-028.
Matsui, Takeshi: *See—*
Moroe, Tatsuo, Komatsu, Akira, Matsui, Takeshi, and Ueda, Kuniaki 3,433,839.
Matsushita Electric Industrial Co.: *See—*
Hirota, Hozumi, 3,433,630.
Matsushita Electric Industrial Co., Ltd.: *See—*
Kaname, Yuichi, Nagata, Takashi, Ishibashi, Michio, and Tsujimoto, Hiroshi, 3,433,982.
Nishimoto, Kazuyuki, and Iida, Yoshio, 3,433,749.
Matsushita Electronics Corporation: *See—*
Sakai, Yuji, and Nakayama, Ryoichi, 3,433,896.
Mattey, Robert A., to United States of America, Navy. Ball release mechanism. 3,433,436, 03-18-69, Cl. 244-001.
Matthews, James J.Apparatus for removing insulation. 3,433,106, 03-18-69, Cl. 081-009.5
Mattson, Roger P.Self-evacuating fluid sampling device. 3,433,216, 03-18-69, Cl. 128-002.
Mayer, Oscar, Co., Inc.: *See—*
Seiferth, Oscar E., and Austin, Glenn M., 3,432,980.
Mc Bee, Earl T., to Purdue Research Foundation. Fungicidal composition containing 3α,4,7,7α- tetrahydro-2,3,3α,4,5,6,7,7α, -octahalo-4,7-methanoindene 1,8-dione diimine and method of using the same. 3,433,876, 03-18-69, Cl. 424-325.
Mc Kee, Donald A., to United States of America, Atomic Energy Commission. Circuits for an electrical RMS measuring instrument. 3,434,053, 03-18-69, Cl. 324-132.
McCarron, Fred H.: *See—*
Ganske, Warren L., Stein, Jolyon A., Gidlow, Rolf G., and McCarron, Fred H. 3,433,644.
McCarthy, Roy Arthur, to Beckman Instruments, Inc.Time shared integration circuit. 3,433,937, 03-18-69, Cl. 235-183.
McCaskill, Louie Millard. Apparatus for engaging and re-orienting conveyed articles. 3,433,346, 03-18-69, Cl. 198-033.
McClure, Roger N.: *See—*
Montgomery, Vernon H., and McClure, Roger N. 3,433,283.
McCombie, Alan Keith: *See—*
Molins, Desmond Walter, McCombie, Alan Keith, and Barton, Ronald Sidney Charles 3,433,347.
McCormick, Jerry Robert Daniel, Johnson, Sylvia Jennie, and Sjolander, Newell Oscar, to American Cyanamid Company. Process for the preparation of 7-chloro-5- hydroxytetracycline. 3,433,710, 03-18-69, Cl. 195-080.
McCormick, Jerry Robert Daniel, and Sjolander, Neel Oscar, to American Cyanamid Company. Biological transformation of 7-6- deoxytetracyclines to tetracyclines. 3,433,709, 03-18-69, Cl. 195-080.
McCoy, Frederic C.: *See—*
Hess, Howard V., and McCoy, Frederic C. 3,433,583.
McCready, Raymond G., to Lennox Industries, Inc.Compressor motor time delay circuit. 3,434,028, 03-18-69, Cl. 318-484.
McDonald, James Alexander, to Radio Corporation of America. Stabilization of television deflection circuits. 3,434,000, 03-18-69, Cl. 315-027.
McDonald, John W., to General Motors Corporation. Locking mechanism for diecasting. 3,433,292, 03-18-69, Cl. 164-343.
McDonnell, Edward: *See—*
Fain, Jacob M., and McDonnell, Edward 3,433,750.
McDowell-Wellman Engineering Company: *See—*
Ban, Thomas E., 3,433,859.
McEver, Robert M., Jr., to Schlumberger Technology Corporation. Valve system for a well packer. 3,433,301, 03-18-69, Cl. 166-128.
McGriff, Stuart G.: *See—*
Parsi, Edgardo J., and McGriff, Stuart G. 3,433,726.
McGuire, Robert J.: *See—*
Fareri, Elizabeth L., McGuire, Robert J., and Strange, Harold O. 3,433,607.
McIntosh, Richard F., to Clark Equipment Company. Method and means for adjusting and assembling lift truck uprights. 3,433,324, 03-18-69, Cl. 187-009.
McIntosh, Richard F., to Clark Equipment Company. Method and means for adjusting and assembling lift truck uprights. 3,433,325, 03-18-69, Cl. 187-009.
McKibbin, John T.: *See—*
Martin, Samuel R., and McKibbin, John T. 3,433,339.
McLean, Arthur F., to Ford Motor Company. Four wheel driven gas turbine vehicle with clutch-controlled drive to front axle. 3,433,319, 03-18-69, Cl. 180-044.
McMahon, Joseph F., to Princeton Chemical Research, Inc.Production of nitriles. 3,433,823, 03-18-69, Cl. 260-465.3
McNabb, Louis, A., to Mech-Tronics Corporation. Electronic beam welding machine. 3,433,923, 03-18-69, Cl. 219-121.
McNabb, Louis A., to Mech-Tronics Corporation. Electron beam welding machine. 3,433,922, 03-18-69, Cl. 219-121.
McNamara, Kenneth, to Western Electric Company, Incorporated. Fixture for securing an electrical contact with a support shell. 3,432,906, 03-18-69, Cl. 029-203.
McNeely, William H., to Kelco Company. Proces for producing a polysaccharide. 3,433,708, 03-18-69, Cl. 195-031.

McNeil Laboratories, Inc.: *See—*
Rasmussen, Chris Royce, Carson, Elizabeth Landis, and Mohrbacher, Richard Joseph, 3,433,797.

McPherson Instrument Corporation, : *See—*
McPherson, Paul M., 3,433,557.

McPherson, Paul M., to McPherson Instrument Corporation,. Mounting for interchangeable gratings. 3,433,557, 03-18-69, Cl. 350-162.

McWane Cast Iron Pipe Company: *See—*
Jeffery, Warren C., and Teague, Sidney P., 3,433,509.

Meagher, Robert, to Du Pont de Nemours, E. I., and Company. Felting needles. 3,432,896, 03-18-69, Cl. 028-004.

Mech-Tronics Corporation: *See—*
McNabb, Louis, A., 3,433,923.
McNabb, Louis A., 3,433,922.

Mechanics for Electronics: *See—*
Montagu, Jean I., 3,434,082.

Meder, George A.Fishing reel display bracket. 3,433,446, 03-18-69, Cl. 248-316.

Megargel, Leland R.: *See—*
Heath, Walter S., and Megargel, Leland R. 3,434,077.
Andre, Stephen N., Hettich, Ronald D., and Megargel, Leland R. 3,434,142.

Mehltretter, Charles L.: *See—*
Zagoren, Bonnie L., Otey, Felix H., and Mehltretter, Charles L. 3,433,752.

Mehner, Wolf, to Metallgesellschaft Aktiengesellschaft. Liquid-liquid extractor. 3,433,599, 03-18-69, Cl. 023-270.5

Meierhofer, Hugo. Carriage for transporting warps. 3,433,499, 03-18-69, Cl. 280-079.1

Meindl, Hubert: *See—*
Ackermann, Hans, Frei, Hermann, and Meindl, Hubert 3,433,781.

Melpar, Inc.: *See—*
Jones, John Haskell, 3,433,719.
Murray, Jack T., and Childers, Homer D., 3,433,903.

Mengelberg, Volker, to International Standard Electric Corporation. Electromagnetic reed relay having metal foils underneath and above the excitation winding. 3,434,080, 03-18-69, Cl. 335-154.

Menzi, Ernst, to Menzi, Ernst. Power shovel. 3,433,374, 03-18-69, Cl. 214-138.

Menzi, Ernst: *See—*
Menzi, Ernst, 3,433,374.

Mercer, Gordon E.Automatic balancer. 3,433,534, 03-18-69, Cl. 301-005.

Merck & Co., Inc.: *See—*
Jones, Robert E., and Robinson, Samuel A., 3,433,807.

Merck, E., A.G.: *See—*
Kramer, Josef, Irmscher, Klaus, Halpaap, Herbert, and Freibsberg, Karl-Otto, 3,433,805.

Mergler, Harry W., 1/10 to Case Institute of Technology. Marine speedometer and odometer. 3,433,065, 03-18-69, Cl. 073-187.

Merkel, Stephen L., to Educational Research Council of Great Cleveland. Mathematics teaching device. 3,432,943, 03-18-69, Cl. 035-031.

Meroz, Charles: *See—*
Kohli, Willy, and Meroz, Charles 3,433,013.

Merricks, James A.: *See—*
Gergle, Richard C., and Merricks, James A. 3,433,667.

Metallgesellschaft Akt.: *See—*
Eisenlohr, Karl Heinz, and Wirth, Hans, 3,433,849.

Metallgesellschaft Aktiengesellschaft: *See—*
Mehner, Wolf, 3,433,599.

Metalstik Limited: *See—*
Hirst, Archie John, 3,433,493.

Methods for discharging fluent substances into: *See—*
Bell, William T., and Schlumberger Technology Corporation, 3,433,305.

Metivier, Joseph Emile. Bayonet closure for container. 3,433,385, 03-18-69, Cl. 220-040.

Metzger, William J., and De Penti, Kenneth L., to Midland-Ross Corporation. Railway car coupler anti-creep mechanism. 3,433,369, 03-18-69, Cl. 213-148.

Meyer, Franz Josef, to Goetzewerke Friedrich Goetze A.G.Measuring arrangement. 3,432,931, 03-18-69, Cl. 033-169.

Meyer, Hans J.: *See—*
Blanding, Leonard C., Meyer, Hans J., and Liebler, Kenneth A. 3,433,538.

Meyer Products Inc.: *See—*
Peitl, Josef, 3,432,946.

Meyer Products, Inc.: *See—*
Banker, Oscar H., 3,433,168.
Peitl, Josef, 3,432,947.

Michael, Vesta Fletcher, to Koch Industries, Inc.,. Apparatus for making filament reinforced plastic pipe. 3,433,696, 03-18-69, Cl. 156-425.

Michaelis, Henry L., and Michaelis, Larry D.Agricultural implement working depth gauge. 3,433,309, 03-18-69, Cl. 172-430.

Michaelis, Larry D.: *See—*
Michaelis, Henry L., and Michaelis, Larry D. 3,433,309.

Michel, Max, and Papee, Denis, to Produits Chimiques Pechiney-Saint-Gobain. Method for the preparation of 4 angstrom units zeolites. 3,433,588, 03-18-69, Cl. 023-113.

Michelson, Charles, to Teverama S.A.Color cinematographic film. 3,433,562, 03-18-69, Cl. 352-234.

Microform Data Systems, Inc.,: *See—*
Roush, Leslie M., 3,433,565.

Midland-Ross Corporation: *See—*
Floehr, Walter L., 3,433,178.
Metzger, William J., and De Penti, Kenneth L., 3,433,369.
Schnitzspahn, Emil, 3,433,429.

Midwesco-Enterprise, Inc.: *See—*
Hirschhorn, Harry J., and Rachford, John G., 3,433,943.

Miele, Anthony. Clothes hangers. 3,433,397, 03-18-69, Cl. 223-091.

Migdol, Norman R., and Biskup, John. Cellular foam composition and process for its preparation. 3,433,700, 03-18-69, Cl. 161-160.

Miles Laboratories, Inc.: *See—*
Kreiser, Thomas Harry, 3,433,782.

Milewski, Victor, and Yogus, William, to Valeron Corporation, The. Adjustable dovetail boring bar. 3,433,104, 03-18-69, Cl. 077-058.

Miller Brewing Company: *See—*
Nakayama, Tommy, and Westermann, Donald H., 3,433,642.

Miller, Floyd Y., to Emerson Electric Co.Pipe assembling and disassembling tool. 3,432,908, 03-18-69, Cl. 029-237.

Miller, Howard B.: *See—*
Sweet, George E., Anderson, William W., Jr., and Miller, Howard B. 3,433,953.

Miller, Howard R., to Union Carbide Corporation. Method for establishing and closing an arc weld. 3,433,927, 03-18-69, Cl. 219-137.

Miller, James L., to General Motors Corporation. Clothes dryer control system. 3,432,938, 03-18-69, Cl. 034-045.

Miller, Robert E.: *See—*
Hancock, Lyle J., and Miller, Robert E. 3,434,103.

Milligan, Edward A.: *See—*
Cole, Richard I., Holcroft, Donald E., Milligan, Edward A., and Greenhalgh, Samuel 3,432,936.

Milligan, James W., to Duncan Electric Company, Inc.Method of magnetizing magnets for a repulsion type of suspension. 3,434,084, 03-18-69, Cl. 335-284.

Mills, Stacey M.: *See—*
Holt, Hugh M., Kelsey, Eugene L., and Mills, Stacey M. 3,434,033.

Minchom, Raphael Isaac. Demonstration of magnetic phenomena. 3,432,941, 03-18-69, Cl. 035-019.

Miner, Robert G.: *See—*
Schroder, Albert W., and Miner, Robert G. 3,433,243.

Mining Progress Inc.,: *See—*
Webster, Frederick, 3,433,533.

Minnesota Mining and Manufacturing Company: *See—*
Bader, William F., Landy, Arney, Jr., and Schmitz, Marvin J., 3,434,151.
Holmen, Reynold E., 3,433,766.
Riedesel, Richard G., 3,433,703.
Smith, Werter Pierce, 3,433,355.
Snelling, Charles D., 3,433,929.
Wedekind, Albert D., 3,434,093.

Minott, Peter O., to United States of America, National Aeronautics and Space Administration. Retrodirective optical system. 3,433,960, 03-18-69, Cl. 250-199.

Minten, Hans, to Johannes Menschner, Textilmaschinenfabrik. Method of and apparatus for packing, preferably of textile laps or bales in double plastic films. 3,432,981, 03-18-69, Cl. 053-033.

Minten, Hans, to Johannes Menschner Textilmaschinenfabrik. Apparatus for packing, preferably of round or flat laps or bales in plastic film packings. 3,432,988, 03-18-69, Cl. 053-229.

Mirrlees National Limited: *See—*
Pope, Joseph A., and Appleby, John E. H., 3,433,083.

Misencik, John, and Lee, Sung C., to Hubbell, Harvey, Incorporated. Phase controlled alternating current circuit. 3,434,039, 03-18-69, Cl. 323-022.

Mitsubishi Denki Kabushiki Kaisha: *See—*
Ukawa, Akira, 3,433,323.

Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Yamada, Kazuyoshi, Wakazaki, Hiroshi, and Dio, Juro, 3,433,197.

Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Yamada, Kazuyoshi, and Doi, Juro, 3,433,198.

Miyoshi, Minoru: *See—*
Suzuki, Teruhiko, Nomura, Junichi, Kameyama, Daijiro, and Miyoshi, Minoru 3,433,156.

Mizuno, Akira. Throttle operated brake holder. 3,433,336, 03-18-69, Cl. 192-003.

Mobil Oil Corporation: *See—*
Burdyn, Ralph F., and Nelson, Murrell D., 3,433,312.
Ciric, Julius, and Reid, Luther J., Jr., 3,433,589.
Diamond, William E., and Perry, George W., 3,433,024.
Hamilton, Lyle A., and Landis, Phillip S., 3,433,821.
Leaman, Wilbur K., 3,433,732.
Moore, Ralph W., and Brennan, William R., 3,433,606.

Moe, Donald L.: *See—*
Kohls, Dennis E., Moe, Donald L., and Reece, Harry W. 3,433,315.

Mohrbacher, Richard Joseph: *See—*
Rasmussen, Chris Royce, Carson, Elizabeth Landis, and Mohrbacher, Richard Joseph 3,433,797.

Moldavsky, Felix Grigorievich, and Kotelnikov, Anatoly Feofanovich. Glass preserving jars. 3,433,379, 03-18-69, Cl. 215-040.

Moline, Orlando G., to North American Rockwell Corporation. Inspection method and means. 3,433,062, 03-18-69, Cl. 073-104.

Molins, Desmond Walter, McCombie, Alan Keith, and Barton, Ronald Sidney Charles, to Molins Machine Company Limited. Apparatus for feeding cigarettes. 3,433,347, 03-18-69, Cl. 198-069.

Molins Machine Company Limited: *See—*
Molins, Desmond Walter, McCombie, Alan Keith, and Barton, Ronald Sidney Charles, 3,433,347.

Monaco, Anthony T., to Motorola, Inc.Tuner mechanism. 3,433,081, 03-18-69, Cl. 074-010.8

Monpetit, Louis: *See—*
Bassot, Jacques, and Monpetit, Louis 3,433,207.

Monroe, Paul S., to Halcon International, Inc.Method of fabricating heat transfer tubing. 3,432,905, 03-18-69, Cl. 029-157.3

Monsanto Company: *See—*
Dehn, John S., and Glass, John Arnold, 3,433,841.
Henderson, Zack L., 3,433,137.
Holladay, Harry P., and Salyer, Ival O., 3,433,573.
Oliver, George D., 3,433,731.
Rogstad, Vernon R., and Sims, Robert W., 3,434,045.
Stevens, Harry M., 3,433,601.

Montagu, Jean I., to Mechanics for Electronics. Limited rotation transducer having permanently magnetized rotor. 3,434,082, 03-18-69, Cl. 335-229.

Montecatini Edison S.p.A.: *See—*
Saccardo, Pietro, and Smai, Franco, 3,433,591.

Montgomery, Lawrence C.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,433,662.

Montgomery, Lawrence C.: United States of America, National Aeronautics and Space Administration, Administrator, 3,433,662.

Montgomery, Vernon H., and McClure, Roger N., to Ohio Ferro-Alloys Corporation. Method of reducing friability of ferro-alloys. 3,433,283, 03-18-69, Cl. 164t069.

Monyette, Donald C., and Wolske, Dean L., to Fort Howard Paper Company. Adapter to provide multiple size capability for paper towel cabinet. 3,433,544, 03-18-69, Cl. 312-039.

Moog Inc.: *See—*
Bidlack, Jerald D., 3,433,266.

Moore, Edward J., to Moretrench Corporation. Method and apparatus for removing dispersed liquids from the ground. 3,432,992, 03-18-69, Cl. 055-051.

Moore, Frank D., to U. S. Stoneware, Inc.,. Vibratory mill and its operation. 3,433,421, 03-18-69, Cl. 241-030.

Moore, Frederick L.: *See—*
Fadden, James P., and Moore, Frederick L. 3,433,398.

Moore, George E., to Watson Manufacturing Company, Inc.Filing cabinet. 3,433,548, 03-18-69, Cl. 312-184.

Moore, Glenn E.: *See—*
Wilson, Fred A., and Moore, Glenn E. 3,433,387.

Moore, Ralph W., and Brennan, William R., to Mobil Oil Corporation. Blending method and apparatus. 3,433,606, 03-18-69, Cl. 044-002.

Morelli, Frank A.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,433,662.

Morelli, Frank A.: United States of America, National Aeronautics and Space Administration, Administrator, 3,433,662.

Moretrench Corporation: *See—*
Moore, Edward J., 3,432,992.

Morgan, John Henry: *See—*
Dickinson, George Alfred, Morgan, John Henry, Thomas, James Edward Celfyn, and Oxley, Brian William 3,433,612.

Morgan, Royston P.: *See—*
Kupsis, Visvaldis, and Morgan, Royston P. 3,433,720.

Morgan, William R., Jr.Lock for locking window sashes and the like. 3,433,516, 03-18-69, Cl. 292-062.

Moritz, Frederick G.: *See—*
Brown, George C., and Moritz, Frederick G. 3,433,427.

Mork, George W.: *See—*
Novotny, Carl F., and Mork, George W. 3,433,367.

Moroe, Tatsuo, Komatsu, Akira, Matsui, Takeshi, and Ueda, Kuniaki, to Takasago Perfumery Co., Ltd.Process for the production of a mixture of ulicyclic hydroxyaldehydes. 3,433,839, 03-18-69, Cl. 260-598.

Morris, David Joseph, to English Electric Company Limited, The. Magnetic logical device. 3,433,973, 03-18-69, Cl. 307-088.

Morris, Philip Incorporated: *See—*
Mutter, Walter F., 3,433,054.

Morrison, Stanley R., Sancier, Kenneth M., and Freund, Thomas, to Stanford Research Institute. Photoelectrostatic fluid analyzer. 3,433,964, 03-18-69, Cl. 250-218.

Morritz, Fred L.: *See—*
Zanowick, Richard L., Coker, Jesse E., and Morritz, Fred L. 3,433,684.

Morro, Joseph L.: *See—*
Cavagnero, Erman V., Sheffield, Wilbur L., and Morro, Joseph L. 3,433,041.

Morrow, Edward L., to Olin Mathieson Chemical Corporation. Tubular magazine firearm with carrier release and latch. 3,432,956, 03-18-69, Cl. 042-017.

Morton, Glenn B.Method of fabricating aluminum hinge leaves. 3,432,899, 03-18-69, Cl. 029-011.

Morway, Arnold J., and Bodner, Albert J., to Esso Research and Engineering Company. Lubricating grease containing colloidal asbestos. 3,433,743, 03-18-69, Cl. 252-013.

Moss, Ellsworth R.: *See—*
Bartnik, John C., and Moss, Ellsworth R. 3,434,070.

Moss, Theron V.Mop construction. 3,432,873, 03-18-69, Cl. 015-118.

Motorola, Inc.: *See—*
Boczar, William J., and Davis, William C., 3,434,018.
Byrd, Theodore E., 3,434,022.
Dogadko, Peter, and Hufton, Arthur G., 3,433,208.
Monaco, Anthony T., 3,433,081.
Phillips, Robert A., 3,434,035.
Phillips, Robert A., 3,434,036.
Vondran, Daniel J., 3,433,121.

Moughty, John J.: *See—*
Brown, Robert J., Kowalewski, John J., and Moughty, John J. 3,434,092.

Moulton, David McLeod, to Prototech Incorporated. Air-operated electrolytic cell. 3,433,675, 03-18-69, Cl. 136-086.

Moyroud, Louis M.: *See—*
Higonnet, Rene A., and Moyroud, Louis M. 3,433,404.

Moyse, James Albert, and Sagar, Harold, to Imperial Chemical Industries Limited. Treatment of carpets and pile fabrics. 3,433,666, 03-18-69, Cl. 117-139.5

Mueller, Edwin: *See—*
Lieser, Ernst, Simon, Horst, Mueller, Edwin, and Steisslinger, Kurt 3,433,143.

Mueller, Klaus P.: *See—*
Berleyoung, Walter J., Kreuter, Kenneth G., and Mueller, Klaus P. 3,433,413.

Mueller, Oscar G., to Waldorf Paper Products Company. Dispenser valves. 3,433,456, 03-18-69, Cl. 251-339.

Mueller, Walter, Alfs, Hugo, and von der Lippe, Robert, to Maschinenfabrik Moenninghoff. Longwall miner having cutter guided along mine face, curved corner section and side face. 3,433,529, 03-18-69, Cl. 229-001.

Muhlberger, Robert A., and Lamby, Edward J., to Schenectady Chemicals, Inc.Preparation of isocyanate modified resorcinol formaldehyde resin. 3,433,768, 03-18-69, Cl. 260-054.

Muirhead & Co., Limited: *See—*
Sutherland, William Drummond, 3,433,075.

Mullen, James William, and de Bos, Leo Tan, to Dymo Industries, Inc.Apparatus for producing contrast color embossments in plastics. 3,433,152, 03-18-69, Cl. 101-028.

Muller, Eckart. Process for washing filter cakes. 3,433,816, 03-18-69, Cl. 260-419.

Muller, Erwin, and Dinges, Karl, to Farbenfabriken Bayer Aktiengesellschaft. Process for the preparation of phenols containing unsaturated groups. 3,433,835, 03-18-69, Cl. 260-562.

Munroe, Richard Warren: *See—*
Burnham, Virgil Allan, and Munroe, Richard Warren 3,432,890.

Munson, Verne E., to Bell Telephone Laboratories, Incorporated. Voice operated control circuit. 3,433,897, 03-18-69, Cl. 179-006.

Murakami, Kiyoharu, to Kabushiki Kaisha Daikin Seisakusho. Clutch servocontrol apparatus for automotive vehicles. 3,433,340, 03-18-69, Cl. 192-091.

Murphy, John Eric: *See—*
Feenan, John, Jacks, Eric, and Murphy, John Eric 3,432,923.

Murray, George W., 50% to Hinton, John L.Safety device for hydraulic brake systems. 3,433,330, 03-18-69, Cl. 188-151.

Murray, Jack T., and Childers, Homer D., to Melpar, Inc.Frequency compensation system. 3,433,903, 03-18-69, Cl. 179-100.2

Murray, Jacob. Elevating device for trailing wheel assemblies of dump trucks. 3,433,528, 03-18-69, Cl. 298-017.

Musante, Thomas J., to Necessa Products Company. Decorative supporting hook assembly. 3,433,449, 03-18-69, Cl. 248-497.

Muse, Edison, Jr.: *See—*
Nugent, Arthur, 3,433,655.

Musgrove, Johnnie J.Mowing machine. 3,433,003, 03-18-69, Cl. 056-026.

Mutter, Walter F., to Morris, Philip Incorporated. Machine for test smoking cigarettes. 3,433,054, 03-18-69, Cl. 073-028.

Myers, John Leonard, to Porter, H. K., Company, Inc.Recessible electrical service device. 3,433,886, 03-18-69, Cl. 174-057.

Myers, Joseph Albert. Articulated snowplow shoe. 3,432,948, 03-18-69, Cl. 037-042.

Myers, Neil O., to Du Pont de Nemours, E. I., and Company. Slub yarn process and product. 3,433,007, 03-18-69, Cl. 057-140.

N.V. Knoninklijke Nederlandsche Zoutindustrie: *See—*
Van Damme-van Weele, Marina Adriana, and de Groot, Dirk Cornelis, 3,433,590.

N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia: *See—*
Nauta, Wybe T., 3,433,796.

N.V. Lichtdrukpapierfabriek 'De Atlas': *See—*
Nederlof, Bastiaan Klaas, Bijl, Dingeman, and van der Meij, Jan Johannes, 3,434,078.

N.V. Nederlandsche Kabelfabrieben: *See—*
Vermeulen, Wilhelmus Georgius, and Verhoef, Leendert, 3,433,043.

Naegeli, Werner, to Pavena A.G.Process for the manufacture of a draftable staple fiber bund of high density and breaking length. 3,432,889, 03-18-69, Cl. 019-066.

Naeser, Gerhard, Wessel, Otto, and Darschewski, Kurt, to Mannesmann Aktiengesellschaft. Die for the extrusion of heavy metals at high temperatures. 3,433,049, 03-18-69, Cl. 072-467.

Nagai, Toshihiko, : *See—*
Honjo, Satoru 3,433,951.

Nagata, Takashi: *See—*
Kaname, Yuichi, Nagata, Takashi, Ishibashi, Michio, and Tsujimoto, Hiroshi 3,433,982.

Nagle, Richard E.: *See—*
Bunn, Dorrance P., Jr., Jones, Henry B., and Nagle, Richard E. 3,433,733.

Nagler, Stanley E.Shipping bin structure. 3,433,381, 03-18-69, Cl. 217-069.

Nakahara, Shigenobu: *See—*
Yotsuzuka, Masaru, Keshi, Akizo, Hashimoto, Norishige, Kodama, Katsuhisa, and Nakahara, Shigenobu 3,433,751.

Nakajima, Hitoshi: *See—*
Kominami, Naoya, Nakajima, Hitoshi, and Tamura, Nobuhiro 3,433,820.

Nakako, Osamu, to Tokai Loom Works Ltd.Device for automatically unwinding a weft out of a bobbin and an automatic bobbin changing device and a special bobbin therefor. 3,433,272, 03-18-69, Cl. 139-257.

Nakayama, Ryoichi: *See—*
Sakai, Yuji, and Nakayama, Ryoichi 3,433,896.

Nakayama, Tommy, and Westermann, Donald H., to Miller Brewing Company. Frontal chromatographic separation and isomerization of humulone. 3,433,642, 03-18-69, Cl. 099-050.5

Nakazawa, Katsuro: *See—*
Inoguchi, Toshio, Niwa, Ichihiko, and Nakazawa, Katsuro 3,433,602.

Nakazawa, Yoshiyuki: *See—*
Nishio, Fumihiko, Nakazawa, Yoshiyuki, and Nasu, Kintaro 3,433,640.

Nalco Chemical Company: *See—*
Newman, Theodore R., 3,433,739.

Naradi narodni podnik: *See—*
Koudelka, Vladimir, 3,433,329.

Nashua Corporation: *See—*
Chess, Frank G., 3,433,697.

Nasu, Kintaro: *See—*
Nishio, Fumihiko, Nakazawa, Yoshiyuki, and Nasu, Kintaro 3,433,640.

Nasvytis, Algirdas L., to TRW Inc.Multi-roller friction drive with conical preload mechanism. 3,433,099, 03-18-69, Cl. 074-798.

National Beryllia Corp.: *See—*
Allen, Walter C., and Taebel, Wilbert A., 3,433,656.

National Cash Register Company, The: *See—*
Bucklin, Edward P., Jr., Pollack, Werner, and Carlson, Carl O., 3,434,110.
Steinke, James M., 3,433,084.

National Research Development Corporation: *See—*
Whyman, Derek, 3,433,991.

National Starch and Chemical Corporation: *See—*
Armour, Walter B., 3,433,701.

Nauroth, Peter: *See—*
Reinhardt, Helmut, and Nauroth, Peter 3,433,593.

Nauta, Wybe T., to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades- Stheeman & Pharmacia. Ethers of -(2-pyridyl) benzyl alcohols. 3,433,796, 03-18-69, Cl. 260-296.

Nayler, John Herbert Charles: *See—*
Long, Anthony Alfred Walter, and Nayler, John Herbert Charles 3,433,784.

Neal, Maynard J., to Buffalo Forge Company. Motor-pump unit. 3,433,164, 03-18-69, Cl. 103-087.

Necessa Products Company: *See—*
Musante, Thomas J., 3,433,449.
Nechleba, Miroslav: *See—*
Hosnedl, Vaclav, and Nechleba, Miroslav 3,433,165.
Nederlands Organisatie voor Toegepast-Natuurweten-Schappelijk Onderzoek Ten Behoeve Van Nijverheid,Handel en Verkeer: *See—*
Ten Cate, Wilhelm, 3,433,063.
Nederlof, Bastiaan Klaas, Bijl, Dingeman, and van der Meij, Jan Johannes, to N.V. Lichtdrukpapierfabriek 'De Atlas'. Photoprinting apparatus. 3,434,078, 03-18-69, Cl. 095-073.
Nehring, Rudolf: *See—*
Seeliger, Wolfgang, and Nehring, Rudolf 3,433,756.
Neiger, Benjamin B., to Clariex Corporation. Direct current amplifier employing photoelectric chopper with incandescent drivers. 3,433,962, 03-18-69, Cl. 250-209.
Nelken, Alfred: *See—*
Baez, Edgar R., Heinke, Walter M., and Nelken, Alfred 3,433,940.
Nelson, Forrest A., to Varian Associates. Nuclear magnetic resonance probe apparatus having double tuned coil systems for spectrometers employing an internal reference. 3,434,043, 03-18-69, Cl. 324-000.5
Nelson, Kurt, to De Laval Separator Company, The. Liquid level controller. 3,433,249, 03-18-69, Cl. 137-390.
Nelson, Murrell D.: *See—*
Burdyn, Ralph F., and Nelson, Murrell D. 3,433,312.
Nelson, Wilfred W.Prefabricated radiation safe window adjustable for mounting in biological shields of different thickness. 3,433,957, 03-18-69, Cl. 250-108.
Nepera Chemical Co., Inc.: *See—*
Hyden, Seymour, Scarano, Louis, and Wilbert, Godfrey, 3,433,795.
Neuenschwander, Karl A.: *See—*
Eggenberger, Ulrich, and Neuenschwander, Karl A. 3,433,290.
Newhoff, Harry Robert, to Litton Systems, Inc.Crystal controlled transducer coupling circuit. 3,434,051, 03-18-69, Cl. 324-060.
Newman, Barney: *See—*
Newman, Samuel, 3,433,316.
Newman, Samuel, to Newman, Barney. Weighing device. 3,433,316, 03-18-69, Cl. 177-208.
Newman, Theodore R., to Nalco Chemical Company. Iron deposit prevention. 3,433,739, 03-18-69, Cl. 210-058.
Newton, Alwin B., to Borg-Warner Corporation. Air conditioning system. 3,433,025, 03-18-69, Cl. 062-003.
Nigh, Carl L., to General Motors Corporation. Bearing retainer. 3,433,539, 03-18-69, Cl. 308-022.
Nightingale, to Marconi Company Limited, The. Angular position indicators for rotatable shafts. 3,433,238, 03-18-69, Cl. 137-081.5
Nilssen, Ole K., to Ford Motor Company. Electronic ignition system using oscillator controlled capacitor discharge. 3,434,009, 03-18-69, Cl. 315-209.
Nippon Conveyor Co., Ltd.: *See—*
Fujita, Takehisa, 3,433,176.
Nippon Kogaku K. K.: *See—*
Yamada,Takeo, 3,432,922.
Nishimoto, Kazuyuki, and Iida, Yoshio, to Matsushita Electric Industrial Co., Ltd.Glass electrode compositions. 3,433,749, 03-18-69, Cl. 252-521.
Nishimoto, Nobushige: *See—*
Takemoto, Tsunematsu, Ogawa, Shuntaro, and Nishimoto, Nobushige 3,433,814.
Niahio, Fumihiko, Nakazawa, Yoshiyuki, and Nasu, Kintaro, to Fujishashin Film Kabushiki Kaisha. Photographic silver halide light-sensitive material. 3,433,640, 03-18-69, Cl. 096-107.
Nitto Kasei Co., Ltd.: *See—*
Suzuki, Kozaburo, Seki, Toshio, and Kawakami, Yohei, 3,433,763.
Niwa, Ichihiko: *See—*
Inoguchi, Toshio, Niwa, Ichihiko, and Nakazawa, Katsuro 3,433,602.
Nold, Robert W.: *See—*
Koot, Nick, and Nold, Robert W. 3,433,531.
Nolte, Arthur C., to Simpson, Orville, Company, The. Cover hold-down clamp for screening machines. 3,433,357, 03-18-69, Cl. 209-372.
Nomura, Junichi: *See—*
Suzuki, Teruhiko, Nomura, Junichi, Kameyama, Daijiro, and Miyoshi, Minoru 3,433,156.
Nordahl, John G., and Kaczorowski, John, Jr., to Weston Instruments, Inc.Linear conductance switch. 3,434,041, 03-18-69, Cl. 323-074.
Norell, John R., to Phillips Petroleum Company. Carboxylic acid esters derived from 1,2-bis- (3-cyclohexen-1-YL)-ethylene and derivatives thereof. 3,433,828, 03-18-69, Cl. 260-487.
Norley, Ronald R., to Radio Corporation of America. Time switch controlled energizing circuit for automatic degaussing apparatus. 3,433,993, 03-18-69, Cl. 315-008.
Noro, Hiroo: *See—*
Imai, Kazutami, Tano, Tatsuo, and Noro, Hiroo 3,433,629.
North American Philips Company, Inc.: *See—*
Bollee, Boudewijn, 3,433,981.
Bongenaar, Willem, Gieles, Joannes Paulus Maria, and Slob, Arie, 3,433,978.
Bronnes, Robert L., Sweet, Richard C., and Hughes, Ray C., 3,432,913.
Frick, German, 3,434,055.
Geluk, Hendrik Willem, 3,433,837.
Hart, Paul Anton Herman, 3,434,071.
Houtman, Johannes Paulus Willem, 3,433,053.
Marechal, Guy N. L. J., 3,433,976.
Smeulers, Wouter, and Janssen, Peter Johannes Hubertus, 3,434,004.
Swaluw, Harry Leman, 3,433,980.
Thees, Richard, 3,433,987.
Wolber, Jorg, 3,433,998.
North American Rockwell Corporation: *See—*
Algeo, Jerry A., 3,434,139.
Cummings, Alan F., 3,433,441.
Hansen, Wilford N., 3,433,570.
Jones, Robert L., 3,434,069.
Lawton, Emil A., and Weber, John Q., 3,433,595.
Moline, Orlando G., 3,433,062.
Zanowick, Richard L., Coker, Jesse E., and Morritz, Fred L., 3,433,684.
Northern Electric Company Limited: *See—*
Parkinson, Peter, Kennedy, Thomas, and William , John, 3,434,025.
Norton, Robert K., to Harris-Intertype Corporation. Mechanism for applying a coating to a plate. 3,433,155, 03-18-69, Cl. 101-148.
Norton, Stanley G., Jr.: *See—*
Jaquith, Howard R., and Norton, Stanley G., Jr. 3,433,239.
Novotny, Carl F., and Mork, George W., to Bucyrus-Erie Company. Boom back-stop apparatus. 3,433,367, 03-18-69, Cl. 212-039.
Noznick, Peter P.: *See—*
Tatter, Charles W., and Noznick, Peter P. 3,433,643.
Nugent, Arthur, to Muse, Edison, Jr.Sealer and method of sealing liquid systems. 3,433,655, 03-18-69, Cl. 106-033.
Nussbaum, Marvin L.: *See—*
Knaggs, Edward A., Nussbaum, Marvin L., and Fischer, Elias 3,433,745.
Nuttall, Wallace H., to Container Corporation of America. Packaging method. 3,433,694, 03-18-69, Cl. 156-244.
Nyberg, Stanley A., and Yost, Joe, to Justin Belt Company. Adapter for connecting belt buckle with a belt. 3,432,895, 03-18-69, Cl. 024-265.
Nyffenegger, Heinz: *See—*
Bruni, Hansrudolf, and Nyffenegger, Heinz 3,433,056.
O'Brien, George R.: *See—*
Edelson, Stanley, and O'Brien, George R. 3,432,875.
O'Brien, Lawrence H., and Jamison, Richard S., to Hughes Aircraft Company. Microwave power adder circuit. 3,434,148, 03-18-69, Cl. 343-858.
Oblonsky, Jan: *See—*
Svoboda, Antonin, Oblonsky, Jan, and Korvas, Zdenek 3,434,118.
Ochtera, Stanley W.Inflatable wig support. 3,433,395, 03-18-69, Cl. 223-067.
Ockermn, John B., to E&B Incorporated. Seawater battery having magnesium or zinc anode and manganese dioxide cathode. 3,433,678, 03-18-69, Cl. 136-100.
Odenbach, Heinz: *See—*
Siefert, Roland, and Odenbach, Heinz 3,433,012.
Oellerich, Werner B., and Hurick, Richard A.Apparatus for locating center of work spindle. 3,432,932, 03-18-69, Cl. 033-172.
Ogawa, Shuntaro: *See—*
Takemoto, Tsunematsu, Ogawa, Shuntaro, and Nishimoto, Nobushige 3,433,814.
Oglebay Norton Company: *See—*
Charman, Walter M., Jr., and Borden, James H., 3,433,452.
Ohama, Hiroshi: *See—*
Kobayashi, Hidehiko, Ohama, Hiroshi, and Saito, Shizuko 3,433,773.
Ohi, Reiichi, Ikeda, Teppei, and Hibino, Choji, to Fuji Shashin Film Kabushiki Kaisha. Photographic light-sensitive films. 3,433,638, 03-18-69, Cl. 096-084.
Ohio Crankshaft Company, The: *See—*
Osborn, Harry B., Jr., 3,433,683.
Weit, James G., 3,434,010.
Ohio Ferro-Alloys Corporation: *See—*
Montgomery, Vernon H., and McClure, Roger N., 3,433,283.
Ohio State University Board of Trustees, The: *See—*
Libby, Ross C., 3,434,074.
Ohio State University Research Foundation, The: *See—*
Tomlinson, Richard G., 3,433,555.
Ohlson, Bengt E.: *See—*
Downey, David F., Le Baigue, Jacques L., and Ohlson, Bengt E. 3,432,997.
Okano, Kinpei: *See—*
Tonooka, Hidenori, and Okano, Kinpei 3,433,542.
Okubo, Kinji,: *See—*
Honjo, Satoru 3,433,951.
Okuda, Osamu, to Sanyo Electric Company, Ltd.Television linearity control means. 3,434,001, 03-18-69, Cl. 315-027.
Olin Mathieson Chemical Corporation: *See—*
Morrow, Edward L., 3,432,956.
Ottmann, Gerhard F., and Hooks, Haywood, Jr., 3,433,803.
Vartanian, Edwin S., and Jarvis, Jay P., 3,432,955.
Oliver, Bernard M., to Hewlett-Packard Company. Horizontal deflection circuit with monitor winding inductively coupled to yoke. 3,434,002, 03-18-69, Cl. 315-027.
Oliver, George D., to Monsanto Company. Coil decoking in steam cracking by intermittent switch to ethane feed. 3,433,731, 03-18-69, Cl. 208-048.
Olivetti-General Electric S.p.A.,: *See—*
Canepa, Michele, 3,434,129.
Ollis, Raymond, Jr.: *See—*
Gowen, Edward F., Jr., Ollis, Raymond, Jr.and Walker, Richard A. 3,433,117.
Olsen, Everett O., to Foxboro Company, The. Capacitive memory storage device employing magnetizable material as a dielectric. 3,434,120, 03-18-69, Cl. 340-173.
Olson, Arthur W.: *See—*
Deigaard, Frank N., and Olson, Arthur W. 3,433,005.
Olson, Arvid L., Oredson, Henry N., and Torok, Ernest J., to Sperry Rand Corporation. Readout of a planar, apertured thin-ferromagnetic- film by the deflection of electrons passing therethrough. 3,434,124, 03-18-69, Cl. 340-174.
Olsson, Karl Gustav, to Internationella Siporex Aktiebolaget. Monolithic acoustic structural building elcment. 3,433,322, 03-18-69, Cl. 181-033.
Olympus Optical Co., Inc.: *See—*
Saito, Shoichi, 3,433,425.
Omon, Gene L., to Case, J. I., Company. Articulated vehicle. 3,433,502, 03-18-69, Cl. 280-400.
Omsteel Industries, Inc.: *See—*
Glesmann, Herbert C., 3,432,949.
Ondeck, Elmer J.Socket wrench. 3,433,108, 03-18-69, Cl. 081-121.
Onyshkevych, Lubomyr S., to Radio Corporation of America. Magnetic memory employing stress wave. 3,434,119, 03-18-69, Cl. 340-173.
Optische Werke G. Rodenstock: *See—*
Schlegel, Franz, 3,433,551.
Oredson, Henry N.: *See—*
Olson, Arvid L., Oredson, Henry N., and Torok, Ernest J. 3,434,124.
Organon Inc.: *See—*
Haigh, Brian, 3,433,352.
Orr, Jack P.: *See—*
Gutman, Arnold D., and Orr, Jack P. 3,433,870.
Osborn, Harry B., Jr., to Ohio Crankshaft Company, The. Heat treating method. 3,433,683, 03-18-69, Cl. 148-013.2

Osborne, Alan P., to Dunlop Company Limited, The. Bonding textiles to rubbers. 3,433,664, 03-18-69, Cl. 117-076.
Osterreichische Stickstoffwerke Aktiengesellschaft: *See—*
Hollinger, Roderich, and Wendtlandt, Wolf, 3,433,804.
Otey, Felix H.: *See—*
Zagoren, Bonnie L., Otey, Felix H., and Mehltretter, Charles L. 3,433,752.
Otis Elevator Company: *See—*
Krauer, Otto Albert, Voigt, Herbert Frederick, and Schor, Harvey Ronald, 3,433,326.
Ott, Hans, to Sandoz Inc.Certain 7-(2-aminophenyl)-4,5-dihydro thiens [2,3-C] pyridines and derivatives thereof. 3,433,794, 03-18-69, Cl. 260-294.8
Ott, Herbert, LEWA: *See—*
Vetter, Gerhard, 3,433,161.
Ottmann, Gerhard F., and Hooks, Haywood, Jr., to Olin Mathieson Chemical Corporation. Substituted imino-1,3-oxathiols and their preparation. 3,433,803, 03-18-69, Cl. 260-327.
Outboard Marine Corporation: *See—*
Irgens, Finn T., 3,433,498.
Owen, Frank, III: *See—*
Blunk, Boyde W., and Owen, Frank, III 3,433,004.
Owens Corning Fiberglas Corporation: *See—*
Marzocchi, Alfred, and Brown, Alfred Winsor, 3,433,689.
Owens-Illinois, Inc.: *See—*
Drennan, James G., 3,433,523.
Shick, Philip E., 3,433,577.
Swift, Edgar A., 3,433,401.
Thomas, Ian M., 3,433,758.
Owens- Illinois, Inc.: *See—*
Walmsley, Judith A., 3,433,764.
Oxley, Brian William: *See—*
Dickinson, George Alfred, Morgan, John Henry, Thomas, James Edward Celfyn, and Oxley, Brian William 3,433,612.
Pacciarini, Antonio: *See—*
Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario 3,433,695.
Packard, Theodore A.Powered steerable wheel and suspension means for vehicles. 3,433,318, 03-18-69, Cl. 180-026.
Paderwerk Gebr. Benteler: *See—*
Bick, Klaus, and Tinnes, Bernhard J., 3,433,288.
Page, Leo W., to USI Corporation,. Method of making a recording assembly. 3,432,921, 03-18-69, Cl. 029-603.
Painter, Giles W., and Parry, Hugh J., to Lockheed Aircraft Corporation. Damped shock spectrum filter. 3,434,060, 03-18-69, Cl. 328-127.
Pangborn Corporation, The: *See—*
Croft, Charles P., and Long, William W., III, 3,432,968.
Papee, Denis: *See—*
Michel, Max, and Papee, Denis 3,433,588.
Paper Extrusions Co.: *See—*
Liebel, Henry L., 3,433,354.
Park-Ohio Industries, Inc.: *See—*
Kauffman, Harry D., 3,433,918.
Laughlin, John R., and Soworowski, David R., 3,433,469.
Parker, Fate E.Sanding tool. 3,432,975, 03-18-69, Cl. 051-392.
Parker, James Brown, to United States of America, Navy,. Process for preparing 4,5-bis (difluoramino)-imidazolidin-2-one. 3,433,800, 03-18-69, Cl. 260-309.7
Parker, Robert, to United States of America, Atomic Energy Commission. Apparatus for determining mechanical and thermal properties of metals. 3,433,051, 03-18-69, Cl. 073-015.
Parkinson, Peter, Kennedy, Thomas, and William , John, to Northern Electric Company Limited. Drive system employing dual motors. 3,434,025, 03-18-69, Cl. 318-008.
Parkison, Richard G., to American Standard Inc.Noise reduction structure for mixing valve. 3,433,264, 03-18-69, Cl. 137-625.17
Parks-Cramer Company: *See—*
Black, Robert L., Jr., and Lee, Charles D., Jr., 3,432,877.
Parrett, John T., to Benton Harbor Engineering Works, Incorporated. Hydraulic motor. 3,433,124, 03-18-69, Cl. 091-198.
Parry, Hugh J.: *See—*
Painter, Giles W., and Parry, Hugh J. 3,434,060.
Parsi, Edgardo J., and McGriff, Stuart G., to Ionics, Incorporated. Method and apparatus for treating liquid milk products. 3,433,726, 03-18-69, Cl. 204-180.
Passannante, Anthony J., and Stogryn, Eugene L., to Esso Research and Engineering Company. Poly (1,2-divinyl ethylene oxide)-N_2F_4 adduct. 3,433,776, 03-18-69, Cl. 260-088.3
Pasternak, Stephen F., to Peerless of America, Incorporated. Heat exchangers and the method of making same. 3,433,300, 03-18-69, Cl. 165-151.
Patterson, Harold W., to Boeing Company, The. Cavitating vapor extractor. 3,432,996, 03-18-69, Cl. 055-189.
Pavena A.G.: *See—*
Naegeli, Werner, 3,432,889.
Pavlas, Garnet L., to Schlumberger Technology Corporation. Coupling device for use in well tools. 3,433,304, 03-18-69, Cl. 166-226.
Pearce, Shairyl I.: *See—*
Broeker, Elmer W., and Pearce, Shairyl I. 3,433,017.
Pedersen, Aksel, to Aktieselskabet Passch & Silkeborg Maskinfabrikker. Plant for continuous sterilisation of milk. 3,433,147, 03-18-69, Cl. 099-249.
Pedroli, Walter E.: *See—*
Copony, Edward L., Pedroli, Walter E., and Hermann, Robert 3,434,155.
Peerless of America, Incorporated: *See—*
Pasternak, Stephen F., 3,433,300.
Peitl, Josef, to Meyer Products Inc.Lifting and pressure unit for snow plows and the like. 3,432,946, 03-18-69, Cl. 037-042.
Peitl, Josef, to Meyer Products, Inc.Deflector for blown snow over snow plow blades. 3,432,947, 03-18-69, Cl. 037-042.
Pennington, Clifford C.Anti-clog device for air intake on air-cooled gas engines. 3,433,206, 03-18-69, Cl. 123-041.7
Pennington, Louis E.: *See—*
Caruthers, Willim H., Jr., and Pennington, Louis E. 3,433,384.
Pennsalt Chemicals Corporation: *See—*
Huber, Ludwig Konrad, 3,433,799.
Percival, George, and Yarwood, Thomas Alan, to Gas Council, The. Process for the production of gases containing methane from hydrocarbons. 3,433,609, 03-18-69, Cl. 048-214.
Perkin-Elmer Corporation, The: *See—*
Atwood, John G., and Kerr, Edwin L., 3,433,959.
Perkins, James T., Jr.: *See—*
Brazell, James W., Perkins, James T., Jr., and White, Edwin L. 3,433,366.
Perlick, Albert, and Gareis, Alfred, to Vereinigte Deutsche Metallwerke AG. Process of producing sheet metal structures. 3,432,903, 03-18-69, Cl. 029-157.3
Perry, George W.: *See—*
Diamond, William E., and Perry, George W. 3,433,024.
Perry, John T., to Picker Corporation,. X-ray generator with emission control arrangement within the focusing cup. 3,433,955, 03-18-69, Cl. 250-090.
Persson, Karl Rune, to Sprinter-Pack AB. Carton box and blank therefor. 3,433,402, 03-18-69, Cl. 229-033.
Peters, Charles Jack, to Sylvania Electric Products Inc.Light depolarizer. 3,433,553, 03-18-69, Cl. 350-157.
Petersen, Harlie O.Irrigation systems. 3,433,023, 03-18-69, Cl. 061-012.
Peterson, Adolphe C.Variable systems of propulsion for automobiles. 3,433,317, 03-18-69, Cl. 180-007.
Peterson, Alfred Arnold: *See—*
Whiton, Louis C., and Peterson, Alfred Arnold 3,432,994.
Peterson, Karl E., to Western Electric Company, Incorporated. Apparatus and method for indicating defective welds. 3,433,921, 03-18-69, Cl. 219-110.
Peterson, Robert W., to Walker Manufacturing Company. Jack-type weigher with cantilever spring. 3,433,314, 03-18-69, Cl. 177-146.
Peterson, Theodore R.Coin operated time indicating device. 3,433,344, 03-18-69, Cl. 194-084.
Petracek, Francis J., to Rexall Drug and Chemical Company. α-Diaryl α,γ-alkylene glycol-diloweralkylamines. 3,433,836, 03-18-69, Cl. 260-570.
Petransky, William E.: *See—*
Cruger, Robert W., Petransky, William E., and Weiss, Melvin I. 3,433,438.
Petrich, Louis G., to United States of America, Army,. Low profile open-ended waveguide antenna with dielectric disc lens. 3,434,146, 03-18-69, Cl. 343-753.
Petro-Tex Chemical Corporation: *See—*
Banta, Edward M., 3,433,742.
Kartkalits, Olin C., Jr., 3,433,850.
Kincaid, Jack M., 3,433,741.
Petrocarbon Developments Limited: *See—*
Charlesworth, Paul L., and Haslam, Alan A., 3,433,027.
Petroff, Merlin O., to Anocut Engineering Company. Control system for electrolytic machining apparatus. 3,433,728, 03-18-69, Cl. 204-224.
Pfeiffer, Willi: *See—*
Winter, August, Mann, Egon, Pfeiffer, Willi, and Arnegger, Wilhelm 3,433,087.
Pfizer, Chas., & Co., Inc.: *See—*
Johnston, James David, 3,433,871.
Pfleger, Frederick W.Combination counter-timer. 3,433,405, 03-18-69, Cl. 235-091.
Pfleiderer, Friedrich, and Schlichte, Max, to Siemens Aktiengesellschaft. TDM system with means for crosstalk reduction by changing the slot positions of the channels after each frame period. 3,433,899, 03-18-69, Cl. 179-015.
Pfleger, Charles W.Control for heat transfer system. 3,433,029, 03-18-69, Cl. 062-160.
Pfund, Charles E.Automobile light signalling device. 3,434,107, 03-18-69, Cl. 340-074.
Pfund, Charles E.: *See—*
Dawson, John W., 3,434,108.
Phibbs, Clifton E.Laundry carryall or totebasket. 3,433,383, 03-18-69, Cl. 220-008.
Philco-Ford Corporation: *See—*
Forkner, John F., 3,434,073.
Phillips, Donald K.: *See—*
Manson, Andrew John, and Phillips, Donald K. 3,433,785.
Phillips Petroleum Company: *See—*
Norell, John R., 3,433,828.
Poux, Charles A., and Deutsch, Peter R., 3,432,887.
Reid, James A., 3,433,578.
Reinert, Andrew J., and Williams, Ralph P., 3,433,873.
Phillips, Robert A., to Motorola, Inc.Starting circuit for magnetic core voltage inverter system. 3,434,035, 03-18-69, Cl. 321-045.
Phillips, Robert A., to Motorola, Inc.Starting circuit for magnetic core voltage inverter systems. 3,434,036, 03-18-69, Cl. 321-045.
Phillips, William V., to General Motors Corporation. Dual path power transmission. 3,433,094, 03-18-69, Cl. 074-682.
Phlieger, Graydon A., Jr., to United States of America, National Aeronautics and Space Administration. Separation simulator. 3,433,909, 03-18-69, Cl. 200-082.
Picker Corporation,: *See—*
Perry, John T., 3,433,955.
Pickering, Ritha Edva. Prevention of alkali-aggregate reactions in concrete. 3,433,657, 03-18-69, Cl. 206-097.
Pickles, Norman, to Blackburn Electronic Production Controls Ltd.Pattern producing switching device. 3,433,188, 03-18-69, Cl. 112-079.
Picollo, Giacomo. Automatic coin stacking and wrapping machine. 3,432,983, 03-18-69, Cl. 053-052.
Pierce, Everette M., to United States of America, Army. Solid propellant grain with surface bonded burning inhibitor composition of hydroxy-terminated polybutadiene. 3,433,158, 03-18-69, Cl. 102-103.
Pilkington Brothers Limited: *See—*
Dickinson, George Alfred, Morgan, John Henry, Thomas, James Edward Celfyn, and Oxley, Brian William, 3,433,612.
Dickinson, George Alfred, and Preston, Anthony, 3,433,614.
Pillsbury Company, The: *See—*
Ganske, Warren L., Stein, Jolyon A., Gidlow, Rolf G., and McCarron, Fred H., 3,433,644.
Pincus, Bruce R., to United States of America, National Aeronautics and Space Administration. Scanning aspect sensor employing an apertured disc and a commutator. 3,433,961, 03-18-69, Cl. 250-203.
Pingitore, Domenick C., Spagnuolo, Angelo, and Ricci, John N.Presser foot assemblage. 3,433,192, 03-18-69, Cl. 112-235.
Pinney, Baden McDowall, to Du Pont de Nemours, E. I., and Company,. Apparatus for mixing viscous fluids discharging from a screw pump. 3,433,463, 03-18-69, Cl. 259-007.

Pinto, Olympio F., to Bioengionics, Inc.,. Under-water diving equipment. 3,433,222, 03-18-69, Cl. 128-142.2

Pinzke, Herbert. Display stand and method for making same. 3,432,953, 03-18-69, Cl. 040-124.1

Pirelli S.p.A.: *See—*
Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario, 3,433,695.

Piret, Jean, to Societe Anonyme des Automobiles Simca. Hydropneumatic suspensions for motor vehicles. 3,433,474, 03-18-69, Cl. 267-065.

Pittard, Edward W.Automatic poultry feeding device with water sprayed feed mix. 3,433,205, 03-18-69, Cl. 119-051.11

Pittman, Allen G.: *See—*
Whitfield, Robert E., Pittman, Allen G., and Wasley, William L. 3,433,575.

Plasser, Franz Bahnbaumaschienen: *See—*
MacLeod, Norman Jamieson, 3,433,175.

Pless, Ernst, to Akustische u Kino-Gerate Gesellschaft m.b.H.Tape recorder carrying and coupling belt assembly. 3,433,905, 03-18-69, Cl. 179-157.

Plonsker, Larry, and Wright, Norman R., to Ethyl Corporation. Method of defoliating plants with organomercurials. 3,433,619, 03-18-69, Cl. 071-070.

Plonsker, Larry, and Wright, Norman R., to Ethyl Corporation. Method of defoliating plants with organomercurials. 3,433,620, 03-18-69, Cl. 071-070.

Plonsker, Larry, and Wright, Norman R., to Ethyl Corporation. Method of defoliating plants with organomercurials. 3,433,622, 03-18-69, Cl. 071-070.

Pneumo Dynamics Corporation: *See—*
Geyer, Howard M., 3,433,089.

Pohm, Arthur V.: *See—*
Davis, William W., and Pohm, Arthur V. 3,433,975.

Polaroid Corporation: *See—*
Bachelder, Albert J., 3,433,637.
Burgarella, John P., 3,433,138.
Erikson, Herman E., 3,433,950.
Haas, Howard C., 3,433,633.
Hamilton, Joel A., 3,433,636.
Ivester, Andrew S., 3,433,144.
Rogers, Howard G., 3,433,635.

Pollack, Werner: *See—*
Bucklin, Edward P., Jr., Pollack, Werner, and Carlson, Carl O. 3,434,110.

Pollock, Allen E.Method of transplanting. 3,432,950, 03-18-69, Cl. 037-195.

Ponzar, Fred W., to Abex Corporation. Mold for casting railroad car wheels. 3,433,293, 03-18-69, Cl. 164-358.

Poole, Charles W.Hydrofoil device for outboard motors. 3,433,195, 03-18-69, Cl. 114-066.5

Pope, Joseph A., and Appleby, John E. H., to Mirrlees National Limited. Multi-shaft transmission couplings. 3,433,083, 03-18-69, Cl. 074-068.

Popp, Ralph: *See—*
Gilbert, Chalmers W., and Popp, Ralph 3,433,942.

Poppitz, Harold A., to Chaska Chemical Company, Inc.Portable cleaning apparatus. 3,433,417, 03-18-69, Cl. 239-304.

Porter, H. K., Company, Inc.: *See—*
Myers, John Leonard, 3,433,886.

Portescap, Le Porte-Echappement Universel S.A.: *See—*
Marti, Fritz, 3,433,093.

Portnoy, Bernard A.Ligatures or reed-holders for single-reed musical wind instruments. 3,433,113, 03-18-69, Cl. 084-383.

Pospisil, Frantisek, and Elias, Jiri, to Vyzkumny Ustav Bavlnarsky. Clamping device for bobbins and the like. 3,433,433, 03-18-69, Cl. 242-129.51

Potter Instrument Company, Inc.: *See—*
Brown, George C., and Klang, Daniel M., 3,433,426.
Brown, George C., and Moritz, Frederick G., 3,433,427.

Poux, Charles A., and Deutsch, Peter R., to Phillips Petrolcum Company. Molding. 3,432,887, 03-18-69, Cl. 018-19.

Powell, Fred Harding, to Reynolds Metals Company. Metal rolling system. 3,433,047, 03-18-69, Cl. 072-241.

Powell, Leonard Cyril: *See—*
Letch, Harry George, and Powell, Leonard Cyril 3,433,966.

Powers & Eaton Industries, Inc.: *See—*
Sinnott, David J., 3,433,965.

PPG Industries Inc.: *See—*
Wilson, William L., Lott, Harry, Jr., and Dietz, Albert, 3,433,594.

PPG Industries, Inc.: *See—*
Dahms, James Bowen, and Edmonds, Byron Priestly, 3,433,530.
Kallenborn, John, 3,433,423.
Saunders, Arnold E., and Kubichan, Robert E., 3,433,611.

Pratt, Robert W.Desk appointment calendar. 3,432,952, 03-18-69, Cl. 040-117.

Pravda, Milton Frank, to Cleveland Controls, Inc.Fluid actuated switching device. 3,433,910, 03-18-69, Cl. 200-083.

Precision Scientific Company: *See—*
Lyahkow, Norman A., 3,433,597.

Precision Winding Company, Inc.: *See—*
Brickner, Joseph L., 3,434,047.

Preston, Anthony: *See—*
Dickinson, George Alfred, and Preston, Anthony 3,433,614.

Price, Robert S., to United States of America, Navy. Method of repairing low-noise transmission cable. 3,433,687, 03-18-69, Cl. 156-047.

Princeton Chemical Research, Inc.: *See—*
McMahon, Joseph F., 3,433,823.

Procter & Gamble Company, The: *See—*
Cooke, Robert R., and Roudebush, Richard M., 3,433,649.

Produits Chimiques Pechiney-Saint-Gobain: *See—*
Michel, Max, and Papee, Denis, 3,433,588.

Proskuryakov, Lev Mikhailovich, and Zizin, Valentin Grigorievich. Apparatus for producing hydrogen and oxygen. 3,433,729, 03-18-69, Cl. 204-278.

Prototech Incorporated: *See—*
Moulton, David McLeod, 3,433,675.

Pullum, Geoffrey George: *See—*
Butcher, John Anthony Weeks, Pullum, Geoffrey George, and Willson, Michael John 3,433,902.

Purdue Research Foundation: *See—*
Mc Bee, Earl T., 3,433,876.

Pusateri, Anthony J., Jr., to Lockheed Aircraft Corporation. Coupling. 3,434,096, 03-18-69, Cl. 339-044.

Puster, Louis M., to Reynolds Metals Company,. Liquid dispenser and charging gas container therefor. 3,433,389, 03-18-69, Cl. 222-003.

Putsch, Peter Ulrich, Werner, Paul, and Reinmoller, Gustav Adolf. Adjustable two part hinge fitting, especially for seats of a motor vehicle. 3,432,880, 03-18-69, Cl. 016-146.

Putsch, Peter Ulrich, Werner, Paul, and Reinmoller, Gustav Adolf. Hinge fitting for adjustably connecting a seat and a backrest to each other, especially for motor vehicles. 3,432,881, 03-18-69, Cl. 016-146.

Quisenberry, Robert E.: *See—*
Devins, James T., and Quisenberry, Robert E. 3,433,848.

Quynn, Richard G.: *See—*
Hamilton, Robert L., and Quynn, Richard G. 3,433,861.

Rabus, Friedrich: *See—*
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen 3,433,101.

Rachford, John G.: *See—*
Hirschhorn, Harry J., and Rachford, John G. 3,433,943.

Rackoff, Selwyn R., and Dempsey, Martin J., to American Shear Knife Co.Roll assembly for reducing work and roll for such assembly. 3,432,902, 03-18-69, Cl. 029-125.

Rademacher, Gustav F., to General Motors Corporation. High temperature-pressure metal-to-glass seal constructions. 3,433,515, 03-18-69, Cl. 287-189.365

Rademacher, Gustav F., to General Motors Corporation. Glow igniter. 3,434,012, 03-18-69, Cl. 317-098.

Radio Corporation: *See—*
Williams, Robert A., 3,434,123.

Radio Corporation of America: *See—*
Carley, Donald R., 3,434,019.
Gange, Robert A., 3,434,121.
Hofstein, Steven R., 3,434,021.
James, Emrys C., 3,434,156.
McDonald, James Alexander, 3,434,000.
Norley, Ronald R., 3,433,993.
Onyshkevych, Lubomyr S., 3,434,119.
Rolke, William, 3,433,932.
Rosenzweig, Ronald, 3,432,920.
Taynton, Ralph, 3,434,014.
Winder, Robert O., 3,434,058.
Yen, Richard H., 3,434,112.

Rainey, Don E.Display and vending apparatus. 3,433,545, 03-18-69, Cl. 312-042.

Raleigh Industries Limited: *See—*
Fox, Leonard Haydn, 3,433,097.

Ramsey, Raymond B.: *See—*
Cogelin, Nicholas J., Martin, Smuel M., and Ramsey, Raymond B. 3,433,884.

Raschke, Herbert A., to Bullard, E. D., Company. Pivotally mounted sling stirrup bail. 3,433,522, 03-18-69, Cl. 294-082.

Rasmussen, Chris Royce, Carson, Elizabeth Landis, and Mohrbacher, Richard Joseph, to McNeil Laboratories, Inc.2-(Phenyl-2-pyridyl-hydroxymethyl)-6-phenyl-6-(2- pyridyl)-fulvene, derivatives thereof and dimers thereof. 3,433,797, 03-18-69, Cl. 260-296.

Rastogi, Vijay: *See—*
Ives, Kenneth D., and Rastogi, Vijay 3,433,060.

Ray, Richard Louis, Segura, Marnell A., and Bryan, John L., Jr., to Esso Research and Engineering Company. Process of making butyl rubber whereby a broad molecular weight distribution is obtained under controlled condations. 3,433,775, 03-18-69, Cl. 260-085.3

Ray, William Alton, to International Telephone and Telegraph Corporation. Bilevel pressure regulating valve. 3,433,262, 03-18-69, Cl. 137-614.19

Raymond, Francois Henri, to Societe F.R.B.Insulating support for electrical connectors. 3,434,101, 03-18-69, Cl. 339-207.

Raymond, Joseph Edward: *See—*
De Ritter, Elmer, and Raymond, Joseph Edward 3,433,872.

Raytheon Company: *See—*
Rosvold, Warren C., 3,432,919.

Re, Frank M., to Dual Manufacturing & Engineering, Inc.Reclining mechanism for T cushion chair. 3,433,527, 03-18-69, Cl. 297-085.

Reckitt & Sons Limited: *See—*
Bentley, Kenneth Walter, 3,433,791.

Reda Pump Company: *See—*
Arutunoff, Armais, 3,433,986.

Reece Construction Co., Inc.: *See—*
Kohls, Dennis E., Moe, Donald L., and Reece, Harry W., 3,433,315.

Reece, Harry W.: *See—*
Kohls, Dennis E., Moe, Donald L., and Reece, Harry W. 3,433,315.

Reese, William D., to Diamond Shamrock Corporation. Borated dextrin-silicate adhesives. 3,433,691, 03-18-69, Cl. 156-195.

Refrigeration Research, Incorporated: *See—*
Bottum, Edward W., and Rockwell, Frank H., 3,432,910.

Regis, Pierre A.Braking surface for the rims of bicycle wheels. 3,433,327, 03-18-69, Cl. 188-024.

Reichardt, Wolfgang: *See—*
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen 3,433,101.

Reichert, Ernest D.: *See—*
Fisher, Robert E., Kofman, Rijkent W., Reichert, Ernest D., and Visser, Reinold H. 3,432,916.

Reid, Hugh T.Gravity-flow calciner and process for calcining carbonaceous solids. 3,433,713, 03-18-69, Cl. 201-034.

Reid, James A., to Phillips Petroleum Company. Biocidal washing composition and method. 3,433,578, 03-18-69, Cl. 021-053.

Reid, Luther J., Jr.: *See—*
Ciric, Julius, and Reid, Luther J., Jr. 3,433,589.

Reid, Orland B.: *See—*
Haefele, Henry A., and Reid, Orland B. 3,433,187.

Reilly, John E.: *See—*
Bates, Leonard E., 3,433,437.

Rein, Charles R.: *See—*
Lokey, Burke P., and Rein, Charles R. 3,433,135.

Reinert, Andrew J., and Williams, Ralph P., to Phillips Petroleum Company. Compositions and methods for controlling birds. 3,433,873, 03-18-69, Cl. 424-263.

Reinhardt, Helmut, and Nauroth, Peter, to Deustche Gold- und Silber-Scheideanstalt vormals Roessler. Process for producing finely-divided precipitated silica. 3,433,593, 03-18-69, Cl. 023-182.

Reinig, Harry, to Bell Telephone Laboratories, Incorporated. Apparatus for controlling the establishment of call connections in a distributed line concentrator system. 3,433,901, 03-18-69, Cl. 179-018.

Reinmoller, Gustav Adolf: *See—*
Putsch, Peter Ulrich, Werner, Paul, and Reinmoller, Gustav Adolf 3,432,880.
Putsch, Peter Ulrich, Werner, Paul, and Reinmoller, Gustav Adolf 3,432,881.

Reish, Percy J.Iternal thread gauge. 3,432,935, 03-18-69, Cl. 033-199.

Rekolt, Herman: *See—*
Henry, Andrew G., and Rekolt, Herman 3,433,246.

Remmar, Robert A., and Schuetz, James W., to Blaw-Knox Company. Roll changing mechanism for rolling mills. 3,433,046, 03-18-69, Cl. 072-239.

Renn, Madeline S., and Renn, Neil R.Puzzle. 3,433,485, 03-18-69, Cl. 273-157.

Renn, Neil R.: *See—*
Renn, Madeline S., and Renn, Neil R. 3,433,485.

Republic Steel Corporation: *See—*
Reusser, Hans E., 3,433,280.

Reserve Mining Company: *See—*
Halsey, Homer P., 3,433,057.

Reusser, Hans E., to Republic Steel Corporation. Locknut. 3,433,280, 03-18-69, Cl. 151-021.

Reuter, Martin: *See—*
Durach, Walter, Landauer, Franz, Reuter, Martin, and Weckler, Gerhard 3,433,574.

Revere Corporation of America: *See—*
Jacobson, Walter E., 3,433,064.

Rexall Drug and Chemical Company: *See—*
Petracek, Francis J., 3,433,836.

Reynolds Metals Company: *See—*
Caruthers, Willim H., Jr., and Pennington, Louis E., 3,433,384.
Powell, Fred Harding, 3,433,047.

Reynolds Metals Company, : *See—*
Puster, Louis M., 3,433,389.

Reynolds, Reginald John William: *See—*
Bamford, Clement Henry, Duncan, Frederic James, and Reynolds, Reginald John William 3,433,774.

Rhodes, Eugene E., and Kurz, Alvin M., to Ford Motor Company. Method for forming heat exchange element. 3,433,044, 03-18-69, Cl. 072-186.

Ribeiro, Sergio T., and Ujhelyi, Gabor K., to United States of America, Navy. Electro-optical modulation of radiation pattern using curved electrodes. 3,433,554, 03-18-69, Cl. 350-160.

Ribley, Charles H.Foldable sawbuck. 3,433,277, 03-18-69, Cl. 143-091.

Ricci, John N.: *See—*
Pingitore, Domenick C., Spagnuolo, Angelo, and Ricci, John N. 3,433,192.

Rice, James D., to Genesco, Inc.Shoe fitting. 3,432,928, 03-18-69, Cl. 033-003.

Rice, Kenneth G.: *See—*
Bohn, Martin C., Brady, John F., Spinello, John O., and Rice, Kenneth G. 3,433,341.

Richier: *See—*
Durand, Pierre, 3,433,368.

Richmond, Alvin: *See—*
Legal, Casimer C., Jr., Richmond, Alvin, and Bruno, Anthony J., Jr. 3,433,617.

Richmond, James W., and Scott, Donald R., to Sunbeam Corporation. Electric clock. 3,433,010, 03-18-69, Cl. 058-053.

Rickenbacher, Hans Rudolf, to Ciba Limited. 1-Amino(or hydroxy)-4-phenylureido- anthraquinones. 3,433,810, 03-18-69, Cl. 260-377.

Riedesel, Richard G., to Minnesota Mining and Manufacturing Company. Method of forming paper from synthetic fibers having a skeletal structure. 3,433,703, 03-18-69, Cl. 162-157.

Rieger, Martin M.: *See—*
Brechner, Stanley, Malakoff, Meyer, and Rieger, Martin M. 3,433,868.

Rieke, Richard J., to General Electric Company. Respiration monitor. 3,433,217, 03-18-69, Cl. 128-002.08

Riley, James E., and Williams, Billy B., to Texas Instruments, Incorporated. Method of making a capacitor by vacuum depositing manganese oxide as the electrolytic layer. 3,432,918, 03-18-69, Cl. 029-570.

Rinehart, Robert E., to Uniroyal, Inc.Furfuryl alcohol isomerization. 3,433,808, 03-18-69, Cl. 260-347.8

Roberts, Marvin E., to Wills, B. C., & Company. Security box. 3,433,185, 03-18-69, Cl. 109-055.

Roberts, Rodman P.Convertible vaulting piece and inclined plane. 3,433,477, 03-18-69, Cl. 272-064.

Robertshaw Controls Company: *See—*
Berleyoung, Walter J., Kreuter, Kenneth G., and Mueller, Klaus P., 3,433,413.
Dykzeul, Theodore J., 3,434,100.
Jackson, Wilbur F., and Wright, John W., 3,433,409.
Jackson, Wilbur F., 3,433,411.

Robertson Photo-Mechanix, Inc.: *See—*
MacPhee, Paul A., Wanielista, Walter, and Jeschke, Richard R., 3,433,567.

Robinette, Hillary, Jr.: *See—*
Stanley, Robert K., and Robinette, Hillary, Jr. 3,432,898.

Robins, A. H., Company, Incorporated: *See—*
Dawson, Norman D., 3,433,801.
Dawson, Norman D., and Cale, Albert D., Jr., 3,433,802.

Robinson, Robert William. Cyclone purifier. 3,433,362, 03-18-69, Cl. 210-512.

Robinson, Samuel A.: *See—*
Jones, Robert E., and Robinson, Samuel A. 3,433,807.

Robinson, Thomas L., to Cornell Aeronautical Laboratory Inc.Flexible sheet thin-film photovoltaic generator. 3,433,677, 03-18-69, Cl. 136-089.

Rockwell, Frank H.: *See—*
Bottum, Edward W., and Rockwell, Frank H. 3,432,910.

Rodgers, Gerald Patrick, to General Electric Company Limited, The. Magnetic storage apparatus employing high permeability auxiliary core. 3,434,127, 03-18-69, Cl. 340-174.

Rodgers, Leonard John, to Rolls-Royce Limited. Method and apparatus for installing jet engines. 3,432,911, 03-18-69, Cl. 029-464.

Rodgers, Loyal J., to Amsted Industries Incorporated. Pneumatic spring. 3,433,473, 03-18-69, Cl. 267-064.

Rodgers, Wayne, V.: *See—*
Schneider, William S., and Corella, Arthur P., 3,432,986.

Roerig, Arnold J., and Brown, Kenton J., to Beloit Corporation. High pressure chip transfer valve. 3,433,392, 03-18-69, Cl. 222-189.

Rogers, Howard G., to Polaroid Corporation. Photographic process and product. 3,433,635, 03-18-69, Cl. 096-029.

Rogstad, Vernon R., and Sims, Robert W., to Monsanto Company. Low-volume chamber for electrical potential measurements. 3,434,045, 03-18-69, Cl. 324-030.

Rohm & Haas Company: *See—*
Bayer, Horst O., and Unger, Victor H., 3,433,623.

Rohto Pharmaceutical Co., Ltd.: *See—*
Takemoto, Tsunematsu, Ogawa, Shuntaro, and Nishimoto, Nobushige, 3,433,814.

Rola, Arthur E., to Wilco Machine Work, Inc.Clipper. 3,433,109, 03-18-69, Cl. 083-401.

Rolke, William, to Radio Corporation of America. Punched card reader. 3,433,932, 03-18-69, Cl. 235-061.11

Roll-Rite Corporation: *See—*
Christensen, Carl O., 3,433,500.

Rolls-Royce Limited: *See—*
Rodgers, Leonard John, 3,432,911.

Ronceray, Andree Jacqueline Laure: *See—*
Ronceray, Robert Andre Marcel, deceased (by Ronceray, Pierre Robert Ronceray, Lena Sarah, Ronceray, Andree Jacqueline Laure, and Ronceray, Francoise Monique Mary, heirs) 3,432,940.

Ronceray, Francoise Monique Mary: *See—*
Ronceray, Robert Andre Marcel, deceased (by Ronceray, Pierre Robert Ronceray, Lena Sarah, Ronceray, Andree Jacqueline Laure, and Ronceray, Francoise Monique Mary, heirs) 3,432,940.

Ronceray, Lena Sarah, : *See—*
Ronceray, Robert Andre Marcel, deceased (by Ronceray, Pierre Robert Ronceray, Lena Sarah, Ronceray, Andree Jacqueline Laure, and Ronceray, Francoise Monique Mary, heirs) 3,432,940.

Ronceray, Pierre Robert : *See—*
Ronceray, Robert Andre Marcel, deceased (by Ronceray, Pierre Robert Ronceray, Lena Sarah, Ronceray, Andree Jacqueline Laure, and Ronceray, Francoise Monique Mary, heirs) 3,432,940.

Ronceray, Robert Andre Marcel, deceased (by Ronceray, Pierre Robert Ronceray, Lena Sarah, Ronceray, Andree Jacqueline Laure, and Ronceray, Francoise Monique Mary, heirs). Elevator-cooler apparatus for pulverized materials such as foundry sands. 3,432,940, 03-18-69, Cl. 034-189

Rosemount Engineering Company: *See—*
Werner, Frank D., and Sathyakumar, Rajabushanam, 3,433,068.

Rosengarten, Philip D.: *See—*
Latter, Charles F., 3,433,434.

Rosenzweig, Ronald, to Radio Corporation of America. Semiconductor devices and methods of making them. 3,432,920, 03-18-69, Cl. 029-578.

Ross, Donald J.Medicament container cap. 3,433,378, 03-18-69, Cl. 215-006.

Rosvold, Warren C., to Raytheon Company. Method of making semiconductor diodes. 3,432,919, 03-18-69, Cl. 029-578.

Rothenberg, Don H.: *See—*
Maggart, Ronald C., Rothenberg, Don H., and Heinrich, Raymond L. 3,433,661.

Roudebush, Richard M.: *See—*
Cooke, Robert R., and Roudebush, Richard M. 3,433,649.

Round Tool Co., Inc.: *See—*
Longuski, Robert N., and Zaske, Robert E., 3,433,491.

Rouse, Thomas O.: *See—*
Weininger, Joseph L., and Rouse, Thomas O. 3,433,722.

Roush, Leslie M., to Microform Data Systems, Inc.,. Micro-filming process. 3,433,565, 03-18-69, Cl. 355-077.

Roussel-UcLaf: *See—*
Brule, Roger, 3,433,869.

Rover, Martin, Luth, Erwin, Schmitz, Lambert, and Linsert, Friedrich, to Farbenfabriken Bayer Aktiengesellschaft. Apparatus for successively drawing off, measuring, balling and separating a thread. 3,433,424, 03-18-69, Cl. 242-047.

Rowe Industries Inc.: *See—*
Leavitt, William R., 3,433,989.

Royalite Oil Company: *See—*
Cymbalisty, Lubomyr M. O., 3,433,245.

Rubin, Ernst Arne: *See—*
Lundin, Eric Gustaf, and Rubin, Ernst Arne 3,433,359.

Ruddick, Maurice, to Burnett & Rolfe Limited. Tipplers for turning over beer kegs and like containers. 3,433,371, 03-18-69, Cl. 214-001.

Rueger, Herman, to AMP, Incorporated. Housing for indicating lamp or other electrical components. 3,434,137, 03-18-69, Cl. 340-381.

Ruggiero, Edward M., to Texas Instruments, Incorporated. Ohmic contacts consisting of a first level of molybdenum-gold mixture of gold and vanadium and a second level of molybdenum-gold. 3,434,020, 03-18-69, Cl. 317-235.

Ruggles, Kay L., Gunnerson, Dale B., and Clark, Howard S., to American Standard, Inc., Method for manufacturing a sink and vanity top combination. 3,433,860, 03-18-69, Cl. 264-071.

Ruhle, Hans, and Ebertz, Helmut, to Zeiss Ikon Aktiengesellschaft. Direct-viewfinder. 3,433,141, 03-18-69, Cl. 095-011.

Rumble, Carl V.Pressure applicator for bonding an article to a thin material. 3,433,699, 03-18-69, Cl. 156-580.

Runnion, Ace M.Sterilizer cabinet. 3,433,579, 03-18-69, Cl.

Russell, Kenneth Sinclair. Grease extracting ventilating apparatus. 3,433,146, 03-18-69, Cl. 098-115.

Ruth, Wayne A.: *See—*
Horton, Gilbert, Ruth, Wayne A., and Cox, Clarence 3,433,107.

Rutherford, David: *See—*
Black, William A. P., Dewar, Eric T., and Rutherford, David 3,433,738.

S&A Electronics, Inc.: *See—*
Wells, Donald H., 3,434,145.

S.S.S. Patents Limited: *See—*
Clements, Herbert A., 3,433,338.
Saccardo, Pietro, and Smai, Franco, to Montecatini Edison S.p.A.Process for the production of chlorine and potassium sulfate. 3,433,591, 03-18-69, Cl. 023-121.
Sackett, A. J., & Sons Co., The: *See—*
Sackett, Walter J., Sr., 3,433,269.
Sackett, John E.: *See—*
Cubberley, Harold A., Abel, Edmund, Jr., and Sackett, John E. 3,433,255.
Sackett, Walter J., Sr., to Sackett, A. J., & Sons Co., The. Rapid access closure system for housing. 3,433,269, 03-18-69, Cl. 138-092.
Sada, Maszo: *See—*
Shima, Takesaburo, Sawaki, Yoshitsugu, Tokunaga, Katsuyoshi, Sada, Maszo, and Takimoto, Tetuji 3,433,840.
Safeway Stores, Incorporated: *See—*
Comstock, Alfred E., and Wilcox, Burdsal Gardner, 3,433,278.
Sagar, Harold: *See—*
Moyse, James Albert, and Sagar, Harold 3,433,666.
Sagi, Zsigmond L., to Singer Company, The. Skip-stitch mechaniam for household zigzag sewing machines. 3,433,190, 03-18-69, Cl. 112-158.
Saito, Shizuko: *See—*
Kobayashi, Hidehiko, Ohama, Hiroshi, and Saito, Shizuko 3,433,773.
Saito, Shoichi, to Olympus Optical Co., Inc.Tape driving device. 3,433,425, 03-18-69, Cl. 242-055.12
Sakai, Yuji, and Nakayama, Ryoichi, to Matsushita Electronics Corporation. Television receiver high voltage power supply protection circuit. 3,433,896, 03-18-69, Cl. 178-007.3
Salter, Horace R.One-way freewheeling clutch. 3,433,337, 03-18-69, Cl. 192-046.
Saltz, Ira: *See—*
Yarme, Howard, and Saltz, Ira 3,433,183.
Salyer, Ival O.: *See—*
Holladay, Harry P., and Salyer, Ival O. 3,433,573.
Sancier, Kenneth M.: *See—*
Morrison, Stanley R., Sancier, Kenneth M., and Freund, Thomas 3,433,964.
Sandbank, Carl Peter, to International Standard Electric Corporation. Solid state scanning system. 3,434,008, 03-18-69, Cl. 315-169.
Sanders Associates, Inc.: *See—*
Durocher, Hector R., Wentworth, James A., and Baer, Ralph H., 3,433,442.
Hayner, Paul F., and Sharpe, Lawrence W., 3,433,126.
Hayner, Paul F., and Sharpe, Lawrence W., 3,433,129.
Sandoz Inc.: *See—*
Ott, Hans, 3,433,794.
Sanford, Robert A.: *See—*
Kovach, Stephen M., Sanford, Robert A., and Young, David W. 3,433,845.
Sano, Norimasa, to Yasui Sangyo Company, Ltd.Pneumatic and hydraulic jack for garage use. 3,433,458, 03-18-69, Cl. 254-093.
Sanyo Electric Company, Ltd.: *See—*
Okuda, Osamu, 3,434,001.
Sarong, Inc.: *See—*
Tuschman, Moe, 3,433,229.
Sass, Hans G., to Kleinewefers, Joh., Sons. Fabric stretching device. 3,432,894, 03-18-69, Cl. 026-052.
Sathyakumar, Rajabushanam: *See—*
Werner, Frank D., and Sathyakumar, Rajabushanam 3,433,068.
Satzinger, Gerhard, to Warner-Lambert Pharmaceutical Company. Substituted benzanilide. 3,433,833, 03-18-69, Cl. 260-588.
Sauder, Robert A., Christopher, William H., Jr., and Bailey, Merrill E., to Sauder Tank Company, Inc.Method and apparatus for treating fluid streams containing gas, water and water-in-oil emulsions. 3,432,991, 03-18-69, Cl. 055-042.
Sauder Tank Company, Inc.: *See—*
Sauder, Robert A., Christopher, William H., Jr., and Bailey, Merrill E., 3,432,991.
Saudinattis, Emanuel: *See—*
Dreiske, Erwin J., and Saudinattis, Emanuel 3,434,005.
Sauer, Heinrich: *See—*
Knorre, Helmut, Bretschneider, Gunther, and Sauer, Heinrich 3,433,605.
Saunders, Arnold E., and Kubichan, Robert E., to PPG Industries, Inc.Strengthening glass by multiple alkali ion exchange. 3,433,611, 03-18-69, Cl. 065-030.
Savre, Graydon, and Wernecke, Lloyd C., to General Mills, Inc.Culinary batters. 3,433,646, 03-18-69, Cl. 099-092.
Sawaki, Yoshitsugu: *See—*
Shima, Takesaburo, Sawaki, Yoshitsugu, Tokunaga, Katsuyoshi, Sada, Maszo, and Takimoto, Tetuji 3,433,840.
Scalise, Dominic Theodore: *See—*
Gagnon, William L., Scalise, Dominic Theodore, and Smith, Bob H. 3,433,977.
Scarano, Louis: *See—*
Hyden, Seymour, Scarano, Louis, and Wilbert, Godfrey 3,433,795.
Scarpa, Thomas J., to Edison Instruments, Inc.High-frequency ultrasonic generators. 3,433,461, 03-18-69, Cl. 259-001.
Schaefer, Robert H., to General Motors Corporation. Transmission having speed responsive manual selector valve blockers for forward and reverse speeds. 3,433,098, 03-18-69, Cl. 074-752.
Schamel, Clyde H.: *See—*
Field, Robert O., and Schamel, Clyde H. 3,433,526.
Schatteman, Etienne Arthur Marie, to Staar, S.A.Stop system for tape decks. 3,433,428, 03-18-69, Cl. 242-055.13
Scheffel, Werner: *See—*
Jaeger, Karl, and Scheffel, Werner 3,432,995.
Scheider, Carl: *See—*
Schneider, William S., and Corella, Arthur P., 3,432,986.
Scheitlin, Thomas G., Hames, William A., and Koch, Alan J., to Whirlpool Corporation. Removable unitary refrigeration system. 3,433,031, 03-18-69, Cl. 062-448.
Schenck, Hermann, and Wenzel, Werner. Process of producing high-strength ore pellets. 3,433,625, 03-18-69, Cl. 075-005.
Schenectady Chemicals, Inc.: *See—*
Muhlberger, Robert A., and Lamby, Edward J., 3,433,768.
Scherhag, Bernhard: *See—*
Hausweiler, Arnold, and Scherhag, Bernhard 3,433,822.
Schiegel, Franz, to Optische Werke G. Rodenstock. Telescopic objective for infrared radiation. 3,433,551, 03-18-69, Cl. 350-002.
Schlichte, Max: *See—*
Pfleiderer, Friedrich, and Schlichte, Max 3,433,899.
Schlichte, Max, to Siemens Aktiengesellschaft. Centralized digit receiver system for a plurality of time multiplex communication systems. 3,433,900, 03-18-69, Cl. 179-015.
Schlosshauer, Herbert, and Wahl, Horst, to Telefunken A.G.Semiconductor device. 3,434,017, 03-18-69, Cl. 317-234.
Schlumberger Technology Corporation: *See—*
Bell, William T., and Schlumberger Technology Corporation 3,433,305.
Schlumberger Technology Corporation: *See—*
McEver, Robert M., Jr., 3,433,301.
Pavlas, Garnet L., 3,433,304.
Schwartz, Robert J., 3,434,105.
Shore, James B., 3,433,302.
Schmalz, Alfred C.: *See—*
Earle, Ralph H., Schmalz, Alfred C., and Soucek, Charles A. 3,433,853.
Schmid, Frederick: *See—*
Crocker, Bryant W., and Schmid, Frederick 3,433,282.
Schmidt, Hermann. Sine plate assembly. 3,432,934, 03-18-69, Cl. 033-174.
Schmidt, Peter Jurgen: *See—*
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen 3,433,101.
Schmidt, Raymond A., Wilhelm, Frederick A., Jr., and Kayle, William W., to Electronic Associates Inc.Program interrupt system. 3,434,111, 03-18-69, Cl. 340-172.5
Schmidt sche Heissdampf Gesellschaft m.b.H.: *See—*
Vollhardt, Frohmut, 3,433,298.
Schmittle, Karl V.: *See—*
Jednacz, Thomas C., and Schmittle, Karl V. 3,434,032.
Schmitz, Lambert: *See—*
Rover, Martin, Luth, Erwin, Schmitz, Lambert, and Linnert, Friedrich 3,433,424.
Schmitz, Marvin J.: *See—*
Bader, William F., Landy, Arney, Jr., and Schmitz, Marvin J. 3,434,151.
Schneider,Arthur W., to Commercial Radio-Sound Corp.Power control apparatus. 3,434,040, 03-18-69, Cl. 323-074.
Schneider, John C.Fluid-tight shaft seal assembly. 3,433,540, 03-18-69, Cl. 308-036.1
Schneider, William S., and Corella, Arthur P., 25% to Rodgers, Wayne, V., and 10% to Scheider, Carl. Packaging machine of the form-and-fill type. 3,432,986, 03-18-69, Cl. 053-179.
Schnitz, Ples E.Blow gun and missile toy having folding wings. 3,433,210, 03-18-69, Cl. 124-012.
Schnitzspahn, Emil, to Midland-Ross Corporation. Film winding apparatus. 3,433,429, 03-18-69, Cl. 242-065.
Scholl, Hermann, Rabus, Friedrich, Eichler, Dieter, Kadelbach, Volker, Reichardt, Wolfgang, and Schmidt, Peter Jurgen, to Boach, Robert, GmbH. Electronic arrangement for shifting gears in motor vehicles. 3,433,101, 03-18-69, Cl. 074-866.
Scholl, James E., to United States of America, Navy. Application of shaped charge to earth anchor. 3,432,977, 03-18-69, Cl. 052-098.
Scholzel, Karl, to Werner Greutert. Storage battery having positive and negative electrode in direct contact. 3,433,671, 03-18-69, Cl. 136-006.
Scholzel, Karl, to Werner Greutert. Electrical battery. 3,433,672, 03-18-69, Cl. 136-006.
Schor, Harvey Ronald: *See—*
Krauer, Otto Albert, Voigt, Herbert Frederick, and Schor, Harvey Ronald 3,433,326.
Schrewe, Hans, to Mannesmann Aktiengesellschaft. Guide means for the casting in a continuous casting machine. 3,433,289, 03-18-69, Cl. 164-282.
Schroder, Albert W., and Miner, Robert G., to Trane Company, The. Steam trap. 3,433,243, 03-18-69, Cl. 137-183.
Schuetz, James W.: *See—*
Remmar, Robert A., and Schuetz, James W. 3,433,046.
Schulte, Friedrich: *See—*
Harnisch, Heinz, Cremer, Joseph, and Schulte, Friedrich 3,433,586.
Schumacher, William Ludlow, to AMP, Incorporated. Separable electrical connector housing assemblies. 3,434,098, 03-18-69, Cl. 339-091.
Schwartz, Robert J., to Schlumberger Technology Corporation. Well logging systems. 3,434,105, 03-18-69, Cl. 340-018.
Schwartz, Robert T.: *See—*
Hough, Ralph L., and Schwartz, Robert T. 3,433,725.
Schwartz, Theodoore F.Urinal. 3,432,865, 03-18-69, Cl. 004-110.
Schwartz, Theodore F.Urinals for use by humans when in supine position. 3,432,863, 03-18-69, Cl. 004-110.
Schwartz, Theodore F.Urinal. 3,432,864, 03-18-69, Cl. 004-110.
Schwartz, Theodore F.Disposable urinal. 3,432,866, 03-18-69, Cl. 004-110.
Scott, Donald R.: *See—*
Richmond, James W., and Scott, Donald R. 3,433,010.
Scott & Fetzer Company, The,: *See—*
Woolley, Lee A., 3,432,925.
Scott, Gerald C., to Bendix Corporation, The. Image contrast control. 3,433,995, 03-18-69, Cl. 315-011.
Scott Paper Company: *See—*
Cole, Richard I., Hoicroft, Donald E., Milligan, Edward A., and Greenhalgh, Samuel, 3,432,936.
Seamon, A & L, Inc.: *See—*
Seamon, Al, 3,433,279.
Seamon, Al, to Seamon, A & L, Inc.Article of leather goods having foldable multi- card holder. 3,433,279, 03-18-69, Cl. 150-039.
Seaquist Valve Co., Div. of Pittsburgh Railways Co.: *See—*
Evesque, Roger A., 3,433,419.
Searle, G. D., & Co.: *See—*
Yonan, Peter, 3,433,793.
Sebastyen, Thomas M., to Ford Motor Company. Speed limiting device. 3,433,263, 03-18-69, Cl. 137-624.15
Seeburg Corporation, The: *See—*
Seme, Frank J., 3,433,114.
Seeliger, Wolfgang, and Nehring, Rudolf, to Chemische Werke Huls Aktiengesellschaft. Process for the production of high molecular weight esters of a carboxylic acid. 3,433,756, 03-18-69, Cl. 260-022.

Seeloff, Melvin M., to Taylor-Winfield Corporation, The. Workpiece feeder having magazine escapement means. 3,433,388, 03-18-69, Cl. 221-274.
Seeloff, Melvin M., and Cooper, Joseph H., to Taylor-Winfield Corporation, The. Particle freebearing assembly. 3,433,537, 03-18-69, Cl. 308-006.
Seevers, Delmar O.: *See—*
Baker, Paul E., Jones, Stanley B., and Seevers, Delmar O. 3,434,044.
Segar, Thomas W., and Go, Ting Sin, to St. Paul Ammonia Products, Inc.Production of potassium nitrate from calcium nitrate. 3,433,584, 03-18-69, Cl. 023-102.
Segura, Marnell A.: *See—*
Ray, Richard Louis, Segura, Marnell A., and Bryan, John L., Jr. 3,433,775.
Seiferth, Oscar E., and Austin, Glenn M., to Mayer, Oscar, Co., Inc.Method and apparatus for making a clip and seal package. 3,432,980, 03-18-69, Cl. 053-014.
Seki, Toshio: *See—*
Suzuki, Kozaburo, Seki, Toshio, and Kawakami, Yohei 3,433,763.
Sellenslagh, Emiel H. M., and Van Hoeck, Willy F., to Automatic Electric Laboratories, Inc.Telephone pulse metering system. 3,433,898, 03-18-69, Cl. 179-007.
Seme, Frank J., to Seeburg Corporation, The. Slide control arrangement. 3,433,114, 03-18-69, Cl. 084-394.
Semmel, John W., Jr.: *See—*
Frank, Robert G., and Semmel, John W., Jr. 3,433,631.
Service Recorder Company, The: *See—*
Cubberley, Harold A., Abel, Edmund, Jr., and Sackett, John E., 3,433,255.
Sevenco, Alexander Jura, to Lincoln Electric Company Limited. Electric arc welding apparatus. 3,433,924, 03-18-69, Cl. 219-123.
Sevin, Leonce J., to Texas Instruments, Incorporated. Integrated circuit amplifier utilizing field- effect transistors having parallel reverse connected diodes as bias circuits therefor. 3,434,068, 03-18-69, Cl. 330-019.
Shafer, Donald E.: *See—*
Stauffer, Norman L., Shafer, Donald E., and Tyler, Tommy N. 3,434,158.
Sharkey, John F., and Lavoie, Raymond E., Jr.Reflective indicator device. 3,433,203, 03-18-69, Cl. 116-028.
Sharp, Arnold G., Shultz, William S., and Sullivan, James R., to Woods Hole Oceanographic Institution. Impact-energized sound source. 3,433,202, 03-18-69, Cl. 116-027.
Sharp, Floyd M., to Evans Products Company. Freight bracing apparatus. 3,433,179, 03-18-69, Cl. 105-369.
Sharpe, Lawrence W.: *See—*
Hayner, Paul F., and Sharpe, Lawrence W. 3,433,126.
Hayner, Paul F., and Sharpe, Lawrence W. 3,433,128.
Hayner, Paul F., and Sharpe, Lawrence W. 3,433,129.
Shaw, George: *See—*
Liang, Sou Chu, and Shaw, George 3,433,627.
Sheets, Herman E., and Brancart, Claude P., to General Dynamics Corporation. Pump. 3,433,163, 03-18-69, Cl. 103-087.
Sheffield, Wilbur L.: *See—*
Cavagnero, Erman V., Sheffield, Wilbur L., and Morro, Joseph L. 3,433,041.
Shell Oil Company: *See—*
Adams, Charles R., Falbe, Jurgen F., and Korte, Friedrich W.A.G.K., 3,433,792.
Sheller-Globe Corporation, : *See—*
Sturrock, Alex T., 3,433,757.
Shelly, Donald J.: *See—*
Huff, Herbet G., and Shelly, Donald J. 3,433,213.
Sherman, Herbert. Apparatus for computation particularly adapted for producing a measure of transit time and the like. 3,433,935, 03-18-69, Cl. 235-183.
Shewchuck, Thomas: *See—*
Chirota, William W., Holzwarth, Robert W., and Shewchuck, Thomas 3,433,916.
Shick, Philip E., to Owens-Illinois, Inc.Vapor phase corrosion inhibition. 3,433,577, 03-18-69, Cl. 021-002.5
Shigeru Kawai: *See—*
Kanda, Masao, 3,433,111.
Shima, Takeo, and Yamada, Hisashi, to Teijin Limited. Addition of diaryl ester to polycondensation step of polyesterification process. 3,433,770, 03-18-69, Cl. 260-075.
Shima, Takesaburo, Sawaki, Yoshitsugu, Tokunaga, Katsuyoshi, Sada, Maszo, and Takimoto, Tetuji, to Sumitomo Chemical Company, Ltd.Process for recovering acrolein by quenching, absorption and plural distillation. 3,433,840, 03-18-69, Cl. 260-604.
Shively, Richard P., and Dickey, David V., to Litton Systems, Inc.Coincident current memory. 3,434,128, 03-18-69, Cl. 340-174.
Shook, Jackson A., to Evans Products Company. Freight bracing device. 3,433,180, 03-18-69, Cl. 105-376.
Shore, James B., to Schlumberger Technology Corporation. Apparatus for discharging fluent substances into well bores. 3,433,302, 03-18-69, Cl. 166-162.
Shostak, Arnold A., to United States of America, Navy. Radiating horn antenna with sound modulated lens. 3,434,138, 03-18-69, Cl. 343-754.
Shultz, William S.: *See—*
Sharp, Arnold G., Shultz, William S., and Sullivan, James R. 3,433,202.
Siefert, Roland, and Odenbach, Heinz, to Kienzle Uhrenfabriken G.m.b.H.Coupling detaining clock hand or pointer and its spindle. 3,433,012, 03-18-69, Cl. 058-126.
Sieloff, Dorothy L.,: *See—*
Lothman, Mary F., 3,433,939.
Sieloff, Kenneth A.: *See—*
Lothman, Mary F., 3,433,939.
Siemens Aktiengesellschaft: *See—*
Pfleiderer, Friedrich, and Schlichte, Max, 3,433,899.
Schlichte, Max, 3,433,900.
Sigloch, Eugen: *See—*
Baublys, Mikas, Sigloch, Eugen, and Stark, Gotthilf 3,433,102.
Sika Holding A.G.,: *See—*
Byttebier, Carlos, 3,432,969.
Silverman, Daniel. Method and apparatus for everting under pressure a tubular probe into a body cavity. 3,433,214, 03-18-69, Cl. 128-002.
Silverman, Daniel. Apparatus for placing in and retrieving a tubular probe from a body conduit. 3,433,215, 03-18-69, Cl. 128-002.
Simon, Horst, to Eastman Kodak Company. Movable cover with locking and detenting means. 3,432,967, 03-18-69, Cl. 049-386.
Simon, Horst: *See—*
Lieser, Ernst, Simon, Horst, Mueller, Edwin, and Steinslinger, Kurt 3,433,143.
Simpson, Orville, Company, The: *See—*
Nolte, Arthur C., 3,433,357.
Sims, Robert W.: *See—*
Rogstad, Vernon R., and Sims, Robert W. 3,434,045.
Sinclair Research, Inc.: *See—*
Kovach, Stephen M., Sanford, Robert A., and Young, David W., 3,433,845.
Singer Company, The: *See—*
Goebel, Gregory, and Ketterer, Stanley J., 3,433,191.
Haefele, Henry A., and Reid, Orland B., 3,433,187.
Martin, Samuel R., and McKibbin, John T., 3,433,339.
Sagi, Zsigmond L., 3,433,190.
Takahashi, Jin, 3,433,193.
Weisz, William, 3,433,189.
Singer-General Precision, Inc.: *See—*
Skalski, Clement A., and Stiles, John C., 3,433,568.
Singer, Jean, & Cie S.A.: *See—*
Kohli, Willy, and Meroz, Charles, 3,433,013.
Sinnott, David J., to Powers & Eaton Industries, Inc.Photoelectric apparatus for providing information about the width of matrices in a line casting machines. 3,433,965, 03-18-69, Cl. 250-219.
Siraguasa, Frank. Filter. 3,433,231, 03-18-69, Cl. 131-010.5
Sjoblom, Jorma J., to United States of America, Navy,. Submarine wake simulation generating system for self-propelled submarine target. 3,433,196, 03-18-69, Cl. 114-067.
Sjoholm, Claes Bertil: *See—*
Falkenblad, Nils Tore, and Sjoholm, Claes Bertil 3,433,454.
Sjolander, Neel Oscar: *See—*
McCormick, Jerry Robert Daniel, and Sjolander, Neel Oscar 3,433,709.
Sjolander, Newell Oscar: *See—*
McCormick, Jerry Robert Daniel, Johnson, Sylvia Jennie, and Sjolander, Newell Oscar 3,433,710.
Skalski, Clement A., and Stiles, John C., to Singer-General Precision, Inc.Motion sensing apparatus. 3,433,568, 03-18-69, Cl. 356-106.
Skelley, John W., and Grandel, Leonard F., to General Motors Corporation. Steering column transmission shift control. 3,433,088, 03-18-69, Cl. 074-484.
Skinner, Kenneth R., to General Motors Corporation. Regulated anti-lock braking system. 3,433,536, 03-18-69, Cl. 303-021.
Skinner, Norton D.: *See—*
Carrieri, Louis F., and Skinner, Norton D. 3,433,086.
Slob, Arie: *See—*
Bongenaar, Willem, Gieles, Joannes Paulus Maria, and Slob, Arie 3,433,978.
Slock, Harry W., and Touher, Paul B., to General Foods Corporation. Dry soup mix. 3,433,650, 03-18-69, Cl. 099-124.
Smai, Franco: *See—*
Saccardo, Pietro, and Smai, Franco 3,433,591.
Smeulers, Wouter, and Janssen, Petcr Johannes Hubertus, to North American Philips Company, Inc.Deflection circuit with frequency dependent negative feedback. 3,434,004, 03-18-69, Cl. 315-027.
Smit, J. K. & Sons, Diamond Tools Limited: *See—*
Heyberger, Werner, and Braun, Eugene R., 3,433,331.
Smith, Bob H.: *See—*
Gagnon, William L., Scalise, Dominic Theodore, and Smith, Bob H. 3,433,977.
Smith, Charles M., and Wilson, Robert V., Jr.Hydroponics apparatus. 3,432,965, 03-18-69, Cl. 047-001.2
Smith, Edgar J., and Barnes, Lell E., to General Precision Systems Inc.Indicator error correction apparatus. 3,434,132, 03-18-69, Cl. 340-198.
Smith, Hubert C.: *See—*
Jensen, Niels H., and Smith, Hubert C. 3,433,286.
Smith Kline & French Laboratories: *See—*
Kerwin, James F., 3,433,787.
Smith, Oliver T.: *See—*
Keillor, John M., and Smith, Oliver T. 3,433,353.
Smith, Thomas F.Counterpoised supporting device. 3,433,444, 03-18-69, Cl. 248-279.
Smith, Werter Pierce, to Minnesota Mining and Manufacturing Company. Tape roll and method of making the roll. 3,433,355, 03-18-69, Cl. 206-059.
Sneeden, Ralph J., to United States of America, National Aeronautics and Space Administration. Gas turbine combustion apparatus. 3,433,015, 03-18-69, Cl. 060-039.36
Snelling, Charles D., to Minnesota Mining and Manufacturing Company. Control device. 3,433,929, 03-18-69, Cl. 219-363.
Snyder, Glenn M., to Landis Tool Company. Control means for magnetic face plates. 3,432,972, 03-18-69, Cl. 051-103.
Soc. Acc. Emanuel di G. e R. Emanuel & C.: *See—*
Emanuel, Giovanni, and Zucca, Carlo, 3,432,870.
Societe Anonyme des Automobiles Simca: *See—*
Brasseur, Jacques Marc, 3,433,519.
Piret, Jean, 3,433,474.
Societe Anonyme Dite Societe des Automobiles Simca: *See—*
Brasseur, Jacques, 3,433,036.
Societe d'Etude et d'Application des Techniques Nouelles: *See—*
Honore, Etienne A. H., and Torcheux, Emile L. G., 3,434,143.
Societe de Prospection Electrique Schlumberger S.A.: *See—*
Grimaldi, Pierre, 3,433,070.
Societe des Accumulateurs Fixes et de Traction(Societe Anonyme): *See—*
Jammet, Jean Firmin, 3,433,681.
Societe des Procedes Modernes d'Injection Sopromi: *See—*
Bassot, Jacques, and Monpetit, Louis, 3,433,207.
Societe F.R.B.: *See—*
Raymond, Francois Henri, 3,434,101.
Societe Grenobloise d'Etudes et d'ApplicationsHydrauliques : *See—*
Duport, Jacques P., and De Crevoisier, Michel, 3,433,014.
Sola, Giuseppe, to Fiat Societa per Azioni. Fuel injection pump. 3,433,172, 03-18-69, Cl. 103-154.

Somekh, George S., and Hawkes, Edward N., to Union Carbide Corporation. Process for recovery of amines from aqueous solutions by solvent treatment and distillation. 3,433,788, 03-18-69, Cl. 260-247.

Sommer, Don A., and Doerwang, Joseph F., to Engelhard Minerals & Chemicals Corporation,. Recovery of wire from plastic insulation. 3,433,356, 03-18-69, Cl. 209-164.

Sonntag, George E.Recorder with self-erasing chart. 3,434,153, 03-18-69, Cl. 346-021.

Soucek, Charles A.: *See—*
Earle, Ralph H., Schmalz, Alfred C., and Soucek, Charles A. 3,433,853.

South African Inventions Development Corporation: *See—*
Cabion, Paul J., and Feje, Jules A., 3,434,147.

Southard, James S., to C. G. Conn Ltd.Percussion system. 3,433,880, 03-18-69, Cl. 084-001.17

Southern Iron and Equipment Company, Inc.: *See—*
Brazell, James W., Perkins, James T., Jr., and White, Edwin L., 3,433,366.

Soworowski, David R.: *See—*
Laughlin, John R., and Soworowski, David R. 3,433,469.

Soyland, Ingebret, and Soyland, Kristian. Control systems for hydraulic power units. 3,433,131, 03-18-69, Cl. 091-447.

Soyland, Kristian: *See—*
Soyland, Ingebret, and Soyland, Kristian 3,433,131.

Spagnuolo, Angelo: *See—*
Pingitore, Domenick C., Spagnuolo, Angelo, and Ricci, John N. 3,433,192.

Span, Samuel, and Thum, Walter. Magnetic game board having an intergral, roughly granulated upper surface. 3,433,478, 03-18-69, Cl. 273-001.

Speas, Charles A., and Jordan, Charles T., to Hedwin Corporation. Method of forming mold for dual-chambered container partition. 3,433,867, 03-18-69, Cl. 264-225.

Spellman, Patrick J.: *See—*
Johnson, Martin H., and Spellman, Patrick J. 3,433,679.

Spencer, Edward G.: *See—*
Lenzo, Pascal V., and Spencer, Edward G. 3,433,958.

Sperry Rand Corporation: *See—*
Davis, William W., and Pohm, Arthur V., 3,433,975.
Granberg, Mauritz L., and Stoffel, Jerome J., 3,434,135.
Olson, Arvid L., Oredson, Henry N., and Torok, Ernest J., 3,434,124.

Spinello, John O.: *See—*
Bohn, Martin C., Brady, John F., Spinello, John O., and Rice, Kenneth G. 3,433,341.

Spitz, Bernard, to Henry Hanger & Display Fixture Corp. of Calif., The. Travel bag for garments. 3,433,335, 03-18-69, Cl. 190-043.

Sprague, Frederick L., to Marshall, John Donald, and Bomar, Horace L.Fabric windup mechanism. 3,433,430, 03-18-69, Cl. 242-066.

Springer, Earl W.Turn computer. 3,432,927, 03-18-69, Cl. 033-001.

Sprinter-Pack AB: *See—*
Persson, Karl Rune, 3,433,402.

Square D Company: *See—*
Fischer, Donald G., and Jones, Clifford W., 3,433,270.

St. Clair, Theodore A., to Textron Inc.Meter and side-mounted regulator combination. 3,433,067, 03-18-69, Cl. 073-199.

St. Paul Ammonia Products, Inc.: *See—*
Segar, Thomas W., and Go, Ting Sin, 3,433,584.

Staar, S.A.: *See—*
Schatteman, Etienne Arthur Marie, 3,433,428.

Staats, Henry N., and Winkelmann, John F., to General Binding Corporation. Method of binding a plurality of sheets. 3,433,688, 03-18-69, Cl. 156-085.

Stancil, Birley, deceased, (by Stancil, Pearl, executrix), to I-T-E Circuit Breaker Company. Neutral tubing for panelboards. 3,434,102, 03-18-69, Cl. 339-242.

Stancil, Pearl,: *See—*
Stancil, Birley, deceased, (by Stancil, Pearl, executrix) 3,434,102.

Standard Pressed Steel Co.: *See—*
Gowen, Edward F., Jr., Ollis, Raymond, Jr., and Walker, Richard A., 3,433,117.

Stanford Research Institute: *See—*
Macovski, Albert, 3,434,157.
Morrison, Stanley R., Sancier, Kenneth M., and Freund, Thomas, 3,433,964.

Stanley Aviation Corporation: *See—*
Stanley, Robert M., 3,433,440.

Stanley, Paul H., to Autogiro Company of America. Cambered blade for aircraft sustaining rotor. 3,433,306, 03-18-69, Cl. 170-159.

Stanley, Robert K., and Robinette, Hillary, Jr., to Techniservice Corporation. Process of stuffer-crimping lubricated synthetic fibers. 3,432,898, 03-18-69, Cl. 028-072.

Stanley, Robert M., to Stanley Aviation Corporation. Erector and positioning devices for air crew escape system rocket. 3,433,440, 03-18-69, Cl. 244-137.

Stanton, Frank, to Cragstan Industries, Inc.Wheeled vehicle with a vibratory hammer. 3,433,110, 03-18-69, Cl. 084-102.

Stanton, Robert E.Method for producing hypochlorite solutions and introducing same into confined bodies of water. 3,433,723, 03-18-69, Cl. 204-149.

Stapleton, Fred E., and Buescher, James E., to Mandrel Industries, Inc.Hydrophone cable. 3,434,104, 03-18-69, Cl. 340-007.

Stark, Gotthilf: *See—*
Baublys, Mikas, Sigloch, Eugen, and Stark, Gotthilf 3,433,102.

Stauffer Chemical Company: *See—*
Geipel, Lothar Ernst, 3,433,765.
Gutman, Arnold D., and Orr, Jack P., 3,433,870.
Kezerian, Charles, Wallace, Edwin G., and Kopacki, Adam F., 3,433,762.

Stauffer, Norman L., Shafer, Donald E., and Tyler, Tommy N., to Honeywell Inc.Fiber optics cathode-ray tube recorder. 3,434,158, 03-18-69, Cl. 346-110.

Stearns, Thomas H.: *See—*
Tally, Sidney K., Dahlgren, Victor F., and Stearns, Thomas H. 3,433,888.

Steele, Irvin E.Multi-purpose underground tank. 3,433,258, 03-18-69, Cl. 137-590.

Stein, Frank S., to General Motors Corporation. Thermophotovoltaic energy convertor with photocell mount. 3,433,676, 03-18-69, Cl. 136-089.

Stein, Jolyon A.: *See—*
Ganske, Warren L., Stein, Jolyon A., Gidlow, Rolf G., and McCarron, Fred H. 3,433,644.

Steinke, James M., to National Cash Register Company, The. Mechanism for producing intermittent rotary motion. 3,433,084, 03-18-69, Cl. 074-084.

Steinmetz, Rolland J.: *See—*
Kearns, Norvan O., and Steinmetz, Rolland J. 3,433,520.

Steins, Henry. Piemaking machine. 3,433,181, 03-18-69, Cl. 107-001.

Steisslinger, Kurt: *See—*
Lieser, Ernst, Simon, Horst, Mueller, Edwin, and Steisslinger, Kurt 3,433,143.

Stenberg-Flygt AB: *See—*
Englesson, Sixten, 3,433,162.

Stepanski, Theodore J.: *See—*
Holroyd, Frank Edward, and Stepanski, Theodore J. 3,433,492.

Stephan Chemical Company: *See—*
Knaggs, Edward A., Nussbaum, Marvin L., and Fischer, Elias, 3,433,745.
Knaggs, Edward A., and Fischer, Elias, 3,433,746.

Stephens, Ruth E., Hirschler, Daniel A., Jr., and Lamb, Frances W., to Ethyl Corporation. Oxidation catalysts. 3,433,581, 03-18-69, Cl. 023-002.

Sterling Drug Inc.: *See—*
Manson, Andrew John, and Phillips, Donald K., 3,433,785.

Stevens, Donald E., and Doyle, Edward A., to Kohler General, Inc.Prefoaming method for expanding particulate foamable material. 3,432,937, 03-18-69, Cl. 034-022.

Stevens, Harry M., to Monsanto Company. Condensed phosphorus transfer by recycled turbulent phosphorous stream. 3,433,601, 03-18-69, Cl. 023-293.

Stevens, J. P., & Co., Inc.: *See—*
Tesoro, Giuliana C., 3,433,576.

Stewart, Jesse E.Method of forming and installing a recessed valve stem. 3,432,904, 03-18-69, Cl. 029-157.1

Stewart-Warner Corporation: *See—*
Baez, Edgar R., Heinke, Walter M., and Nelken, Alfred, 3,433,940.

Stewart, Warren A., to Koppers Company, Inc.Method of making an improved vacuum belt. 3,432,974, 03-18-69, Cl. 051-328.

Stewarts and Lloyds Limited: *See—*
Doyle, William Francis, 3,432,915.

Stiel, Karl-Heinz, to Wagner, Gunther, Pelikan-Werke. Implement for transferring pigments. 3,432,874, 03-18-69, Cl. 015-145.

Stiles, John C.: *See—*
Skalski, Clement A., and Stiles, John C. 3,433,568.

Stillhard, Bruno, and Tobler, Walter, to Buehler, Gebruder. Electrohydraulic valve. 3,433,256, 03-18-69, Cl. 137-529.

Stoffel, Jerome J.: *See—*
Granberg, Mauritz L., and Stoffel, Jerome J. 3,434,135.

Stogryn, Eugene L.: *See—*
Passannante, Anthony J., and Stogryn, Eugene L. 3,433,776.

Stone, Thomas W., to Controls Company of America. Electric motor and housing therefor. 3,433,990, 03-18-69, Cl. 310-258.

Strange, Harold O.: *See—*
Fareri, Elizabeth L., McGuire, Robert J., and Strange, Harold O. 3,433,607.

Strom, Johan Nikolai, and Heggstad, Gudmund, to A/S Norsk Aluminium Company. Travelling gantry for operating aluminum electrolysis furnaces. 3,433,879, 03-18-69, Cl. 013-033.

Stroud, Benjamin L.Protection device. 3,432,959, 03-18-69, Cl. 043-084.

Strout, Ella H.,: *See—*
Strout, Leeman F., deceased (by Strout, Ella H., executrix) 3,433,420.

Strout, Leeman F., deceased (by Strout, Ella H., executrix). Spray nozzle and valve. 3,433,420, 03-18-69, Cl. 239-476.

Stryker, Seymour F., to Air-Mite Devices, Inc.Control valve structure with aligned axial port. 3,433,267, 03-18-69, Cl. 137-625.69

Stull, Morton B.Dispensing closure cap. 3,433,394, 03-18-69, Cl. 222-519.

Stump, Paul E., to Babcock & Wilcox Company, The. Cold working metal. 3,433,038, 03-18-69, Cl. 072-042.

Sturrock, Alex T., to Sheller-Globe Corporation,. Non-painted, colored, hard rubber steering wheel. 3,433,757, 03-18-69, Cl. 260-031.4

Stutler, Stephen Charles: *See—*
Booy, Max Lorenz, Coe, Benjamin Franklin, and Stutler, Stephen Charles 3,433,055.

Sullivan, James R.: *See—*
Sharp, Arnold G., Shultz, William S., and Sullivan, James R. 3,433,202.

Sullivan, John V.: *See—*
Walsh, Alan, and Sullivan, John V. 3,433,963.

Sumey, Ivan E.: *See—*
Earle, Roger T., Jr., and Sumey, Ivan E. 3,433,020.

Sumitomo Chemical Company, Ltd.: *See—*
Shima, Takesaburo, Sawaki, Yoshitsugu, Tokunaga, Katsuyoshi, Sada, Maszo, and Takimoto, Tetuji, 3,433,840.

Sun Oil Company: *See—*
Harvey, Wildon T., and Zaayenga, Ralph, 3,433,665.

Sunbeam Corporation: *See—*
Richmond, James W., and Scott, Donald R., 3,433,010.

Sundberg, Yngve, and Svantesson, Erik. Fungicidal composition containing 3α,4,7,7α- Line transmission in arc furnaces. 3,433,878, 03-18-69, Cl. 013-014.

Sundstrand Corporation: *See—*
Ades, Lewis B., 3,433,361.

Sutherland, William Drummond, to Muirhead & Co., Limited. Visual indication of temperature change. 3,433,075, 03-18-69, Cl. 073-356.

Suzuki, Kozaburo, Seki, Toshio, and Kawakami, Yohei, to Nitto Kasei Co., Ltd.Dihydrocarbyl tin maleic acid esters and their use as PVC stabilizers. 3,433,763, 03-18-69, Cl. 260-045.75

Suzuki, Teruhiko, Nomura, Junichi, Kameyama, Daijiro, and Miyoshi, Minoru, to Asahi Kasei Kogyo Kabushiki Kaisha. Combustible blank cartridge. 3,433,156, 03-18-69, Cl. 102-039.

Suzuki, Yahiko: *See—*
Matsubayashi, Tadao, and Suzuki, Yahiko 3,433,707.

Svantesson, Erik: *See—*
Sundberg, Yngve, and Svantesson, Erik 3,433,878.

Svaty, Vladimir, Bilek, Jan, and Zlatohlavek, Jiri, to Elitex Zavody textilniho Strojirenstvi. Shuttle driving appartus for weaving looms. 3,433,271, 03-18-69, Cl. 139-144.

Sverdrup, Edward F.: *See—*
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L. 3,433,680.
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L. 3,433,680.

SVIT narodni podnik: *See—*
Jurik, Rudolf, and Dvorak, Ludvik, 3,432,869.

Svoboda, Antonin, Oblonsky, Jan, and Korvas, Zdenek, to Vyzkumny ustav matematickych stroju. Modular data processing system. 3,434,118, 03-18-69, Cl. 340-172.5

Swafford, Kenneth L., Duke, Doyal P., and Hazelwood, Roy E.Mixing apparatus. 3,433,464, 03-18-69, Cl. 259-008.

Swaluw, Harry Leman, to North American Philips Company, Inc.Plural channel delay line circuit for processing a PAL color television signal. 3,433,980, 03-18-69, Cl. 307-293.

Swanson, Norman, Kirk, Richard O., and Woodward, George E., to Dow Chemical Company, The. Recovery of α-aminocarboxylic acids from sodium chloride solutions. 3,433,832, 03-18-69, Cl. 260-534.

Swartz, Herbert M., to Thomas Textile Co., Inc.Garment pressing apparatus and method. 3,433,396, 03-18-69, Cl. 223-073.

Swearingen, Judson S.Staged isenthalpic - isentropic expansion of gas from a pressurized liquefied state to a terminal storage state. 3,433,026, 03-18-69, Cl. 062-023.

Sweeney, William A.: *See—*
Adams, Robert T., Levine, Irving E., and Sweeney, William A. 3,433,846.

Sweet, George E., Anderson, William W., Jr., and Miller, Howard B., to United States of America, National Aeronautics and Space Administration. Compensating radiometer. 3,433,953, 03-18-69, Cl. 250-083.

Sweet, Richard C.: *See—*
Bronnes, Robert L., Sweet, Richard C., and Hughes, Ray C. 3,432,913.

SWF-Spezialfabrik fur Autozubehor Gustav Rau GmbH: *See—*
Bauer, Kurt, and Kohler, Alfred, 3,433,416.

Swift, Edgar A., to Owens-Illinois, Inc.Bulk carrier. 3,433,401, 03-18-69, Cl. 229-015.

Swift, Harvey C., to Kelsey-Hayes Company. Disk brake assembly and pivotal support means therefor. 3,433,328, 03-18-69, Cl. 188-073.

Swift, Harvey C., to Kelsey-Hayes Company. Adjusting means for disk brakes. 3,433,333, 03-18-69, Cl. 188-196.

Switchcraft, Inc.: *See—*
Bailey, James R., and Lavigne, Vernon W., 3,433,906.

Switlik Parachute Company, Inc.: *See—*
Switlik, Richard, 3,433,342.

Switlik, Richard, to Switlik Parachute Company, Inc.Inflatable evacuation slide. 3,433,342, 03-18-69, Cl. 193-025.

Sybron Corporation: *See—*
Jaquith, Howard R., and Norton, Stanley G., Jr., 3,433,239.

Sylvania Electric Products Inc.: *See—*
Andre, Stephen N., Hettich, Ronald D., and Megargel, Leland R., 3,434,142.
Bartnik, John C., and Moss, Ellsworth R., 3,434,070.
Heath, Walter S., and Megargel, Leland R., 3,434,077.
Jackman, Claude A., and Turner, Elbert L., 3,434,057.
Kerstetter, Donald R., 3,432,900.
Peters, Charles Jack, 3,433,553.

Symington Wayne Corporation: *See—*
Copony, Edward L., Pedroli, Walter E., and Hermann, Robert, 3,434,155.

Szpur, Roman. Magnetic mixing and stirring device. 3,433,465, 03-18-69, Cl. 259-111.

Taebel, Wilbert A.: *See—*
Allen, Walter C., and Taebel, Wilbert A. 3,433,656.

Takahashi, Jin, to Singer Company, The. Adjustable presser devices for sewing machines. 3,433,193, 03-18-69, Cl. 112-235.

Takasago Perfumery Co., Ltd.: *See—*
Moroe, Tatsuo, Komatsu, Akira, Matsui, Takeshi, and Ueda, Kuniaki, 3,433,839.

Takayanagi, Sho, to Asahi Breweries Ltd.Main and after fermentation tank for beer brewery. 3,433,148, 03-18-69, Cl. 099-276.

Takeda Chemical Industries, Ltd.: *See—*
Honjo, Mikio, and Imai, Kin-Ichi, 3,433,783.
Yotsuzuka, Masaru, Keshi, Akizo, Hashimoto, Norishige, Kodama, Katsuhisa, and Nakahara, Shigenobu, 3,433,751.

Takemoto, Tsunematsu, Ogawa, Shuntaro, and Nishimoto, Nobuahige, to Rohto Pharmaceutical Co., Ltd.Method for producing inokosterone and iso- inokosterone. 3,433,814, 03-18-69, Cl. 260-397.25

Takimoto, Tetuji: *See—*
Shima, Takesaburo, Sawaki, Yoshitsugu, Tokunaga, Katsuyoshi, Sada, Maszo, and Takimoto, Tetuji 3,433,840.

Talbot, Alfred B.: *See—*
Hartbauer, Ellsworth A., Talbot, Alfred B., and Weis, Rudolf R. 3,433,136.

Tally, Sidney K., Dahlgren, Victor F., and Stearns, Thomas H., to Electro-Mechanisms, Inc.Dimensionally stable flexible laminate and printed circuits made therefrom. 3,433,888, 03-18-69, Cl. 174-068.5

Tamura, Nobuhiro: *See—*
Kominami, Naoya, Nakajima, Hitoshi, and Tamura, Nobuhiro 3,433,820.

Tancredi, John J., and Zotter, Bruno W., to United States of America, Army. O-type travelin wave tube amplifier having means for counteracting the modulation of the spent beam in the collector electrode region. 3,433,992, 03-18-69, Cl. 315-003.6

Tanguay, Raymond J., to Emerald Pacific Enterprises, Inc.Baseball bat wrappings. 3,433,481, 03-18-69, Cl. 273-072.

Tano, Tatsuo: *See—*
Imai, Kazutami, Tano, Tatsuo, and Noro, Hiroo 3,433,629.

Tatter, Charles W., and Nozmick, Peter P., to Beatrice Foods Co.Acid flavored vegetable powder. 3,433,643, 03-18-69, Cl. 099-059.

Taylor, Herbert L.: *See—*
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L. 3,433,680.

Taylor-Winfield Corporation, The: *See—*
Seeloff, Melvin M., 3,433,388.
Seeloff, Melvin M., and Cooper, Joseph H., 3,433,537.

Taynton, Ralph, to Radio Corporation of America. Packaging of electrical equipment. 3,434,014, 03-18-69, Cl. 317-099.

Teague, Sidney P.: *See—*
Jeffery, Warren C., and Teague, Sidney P. 3,433,509.

Techniservice Corporation: *See—*
Stanley, Robert K., and Robinette, Hillary, Jr., 3,432,898.

Technology Incorporated: *See—*
Trageser, James H., 3,433,069.

Tecnoma: *See—*
Ballu, Vincent P. M., 3,433,393.

Teeters, Wilbur O., to Hoke Manufacturing Company, Inc.Pipe coupling. 3,433,508, 03-18-69, Cl. 285-341.

Teijin Limited: *See—*
Shima, Takeo, and Yamada, Hisashi, 3,433,770.

Tekkosha Co., Ltd.: *See—*
Adachi, Kazuo, Kawai, Masahisa, and Hoshikawa, Masakatsu, 3,433,790.

Tektronix Inc.: *See—*
Gibson, Charles B., Jr., 3,433,994.

Tektronix, Inc.: *See—*
Frye, George J., 3,434,049.

Telefonaktiebolaget L M Ericsson: *See—*
Ericsson, Eric R., 3,433,914.

Telefunken A.G.: *See—*
Schlosshauer, Herbert, and Wahl, Horst, 3,434,017.

Ten Cate, Wilhelm, to Nederlands Organisatie voor Toegepast-Natuurweten - Schappelijk Onderzoek Ten Behoeve Van Nijverheid, Handel en Verkeer. Measuring element for dynamometers. 3,433,063, 03-18-69, Cl. 073-141.

Tenconi, Franco: *See—*
Fusco, Raffaello, and Tenconi, Franco 3,433,789.

Tenneco Chemicals, Inc.: *See—*
Doyle, William C., Jr., 3,433,815.

Terry, Clifford T.: *See—*
Bowden, John H., and Terry, Clifford T. 3,433,863.

Tesoro, Giuliana C., to Stevens, J. P., & Co., Inc.Modification of proteinaceous polymers with carboxylic-carbonic anhydrides. 3,433,576, 03-18-69, Cl. 008-127.5

Teucher, Siegfried, and Kling, Hans, to Goetzewerke Friedrich Goetze A.G.Flat gasket. 3,433,490, 03-18-69, Cl. 277-164.

Teverama S.A.: *See—*
Michelson, Charles, 3,433,562.

Texaco Inc.: *See—*
Bunn, Dorrance P., Jr., Jones, Henry B., and Nagle, Richard E., 3,433,733.
Devins, James T., and Quisenberry, Robert E., 3,433,848.
Frascati, Frank P., 3,433,254.
Hess, Howard V., and McCoy, Frederic C., 3,433,583.

Texas Instruments, Incorporated: *See—*
Beyen, Werner J., and Caulfield, Henry J., 3,433,139.
Kilby, Jack S., 3,434,015.
Riley, James E., and Williams, Billy B., 3,432,918.
Ruggiero, Edward M., 3,434,020.
Sevin, Leonce J., 3,434,068.
Wasceleski, Joseph W., Jr., Buiting, Francis P., and Kulwicki, Bernard M., 3,434,089.

Texas-U.S. Chemical Company: *See—*
Bayerl, Joseph James, deDecker, Hendrik Kamiel, and Lee, Ying Kao, 3,433,759.

Textron Inc.: *See—*
St. Clair, Theodore A., 3,433,067.

Thackeray, William E., 1/2 to Agricola, Norman F.Roller-type hair curler adapted for intercoupling. 3,433,233, 03-18-69, Cl. 046-040.

Thees, Richard, to North American Philips Company, Inc.Rotor without sticking moment. 3,433,987, 03-18-69, Cl. 310-156.

Thermo Electron Engineering Corporation: *See—*
Van Someren, Laurence O., 3,432,917.

Thermo Radiant Ovens Pty. Ltd.: *See—*
Jones, Donald Allen, 3,433,375.

Thiokol Chemical Corporation: *See—*
Lovingham, Joseph J., 3,433,022.

Thomas & Betts Co., Inc., The: *See—*
Eppler, Daniel, 3,433,275.

Thomas, Ian M., to Owens-Illinois, Inc.Method for preparing vanadium oxide-catalyzed organopolysiloxanes. 3,433,758, 03-18-69, Cl. 260-033.4

Thomas Industries Inc.: *See—*
Driskell, Thomas, 3,433,887.

Thomas, James Edward Celfyn: *See—*
Dickinson, George Alfred, Morgan, John Henry, Thomas, James Edward Celfyn, and Oxley, Brian William 3,433,612.

Thomas Textile Co., Inc.: *See—*
Swartz, Herbert M., 3,433,396.

Thompson Bagel Machine Mfg., Corp.: *See—*
Thompson, Meyer, 3,433,182.

Thompson, Meyer, to Thompson Bagel Machine Mfg., Corp.Automatic feeding cut-off and bagel forming machine. 3,433,182, 03-18-69, Cl. 107-069.

Thompson, Stanley G.: *See—*
Bowman, Harry R., Thompson, Stanley G., Hyde, Earl K., and Jared, Richard C. 3,433,954.

Thompson, Vaughan, Limited: *See—*
Thompson, Vaughan, 3,433,078.

Thompson, Vaughan, to Thompson, Vaughan, Limited. Sludge sampler. 3,433,078, 03-18-69, Cl. 073-424.

Thompson, William B., to General Motors Corporation. Power steering system with hydraulic reaction. 3,433,127, 03-18-69, Cl. 091-372.

Thomson, Edward T.: *See—*
Houpt, Grover K., and Thomson, Edward T. 3,434,086.

Thornber, Michael Neil: *See—*
Duck, Edward William, and Thornber, Michael Neil 3,433,778.

Thum, Walter: *See—*
Span, Samuel, and Thum, Walter 3,433,478.

Thyer, Edward G. S., to Fawkham Developments Limited. Transfer valves. 3,433,467, 03-18-69, Cl. 263-021.

Thyer, Edward G. S., to Harrop Ceramic Service Company. Furnace apparatus with a series of hearths. 3,433,468, 03-18-69, Cl. 263-021.

Tibbetts, Raymond E., and Wilczynski, Janusz S., to International Business Machines Corporation. Lens group employed in laser cavities. 3,433,558, 03-18-69, Cl. 350-225.

Tijssen, Stephanus B.: *See—*
Maltha, Pieter R. A., and Tijssen, Stephanus B. 3,433,825.
Timson, William J., to Union Carbide Corporation. Boiling heat transfer system. 3,433,294, 03-18-69, Cl. 165-001.
Ting, Lee-Sen: *See—*
Chu, David C., and Ting, Lee-Sen 3,434,065.
Tingley Rubber Corporation: *See—*
Le Compte, Frank M., 3,433,200.
Tinnes, Bernhard J.: *See—*
Bick, Klaus, and Tinnes, Bernhard J. 3,433,288.
Toa Valve Co., Ltd.: *See—*
Hagihara, Noboru, 3,433,250.
Tobin, Henry G., Jr., and Van Scoyoc, James N., to United Engineering and Foundry Company,. Acoustic flatnes measurement device. 3,433,058, 03-18-69, Cl. 073-067.7
Tobler, Walter: *See—*
Stillhard, Bruno, and Tobler, Walter 3,433,256.
Todesca, Flaminio: *See—*
Feldkirchner, Harlan L., Linden, Henry R., Khan, Amanullah R., and Todesca, Flaminio 3,433,610.
Tokai Loom Works Ltd.: *See—*
Nakako, Osamu, 3,433,272.
Tokunaga, Katsuyoshi: *See—*
Shima, Takesaburo, Sawaki, Yoshitsugu, Tokunaga, Katsuyoshi, Sada, Maszo, and Takimoto, Tetuji 3,433,840.
Tolkmith, Henry: *See—*
Budde, Paul B., and Tolkmith, Henry 3,433,798.
Tomer, Lewis P., to Fluid Controls, Inc.Free delivery controlled return valve. 3,433,253, 03-18-69, Cl. 137-493.
Tomlinson, Richard G., to Ohio State University Research Foundation, The. Optical fuze. 3,433,555, 03-18-69, Cl. 350-160.
Tomoji Murata: *See—*
Imai, Kazutami, Tano, Tatsuo, and Noro, Hiroo, 3,433,629.
Tonooka, Hidenori, and Okano, Kinpei, to Hitachi, Ltd.Multiface cylindrical bearings for guiding rotation of vertical shafts. 3,433,542, 03-18-69, Cl. 308-121.
Torcheux, Emile L. G.: *See—*
Honore, Etienne A. H., and Torcheux, Emile L. G. 3,434,143.
Torok, Ernest J.: *See—*
Olson, Arvid L., Oredson, Henry N., and Torok, Ernest J. 3,434,124.
Torrington Manufacturing Company, The: *See—*
Cavagnero, Erman V., Sheffield, Wilbur L., and Morro, Joseph L., 3,433,041.
Tote-Cart Company: *See—*
Kampf, William C., 3,433,496.
Toth, Imre: *See—*
Boucraut, Michel, and Toth, Imre 3,433,624.
Touher, Paul B.: *See—*
Slock, Harry W., and Touher, Paul B. 3,433,650.
Towner, George R.: *See—*
Hawley, Jack S., and Towner, George R. 3,434,136.
Traction (Societe Anonyme): *See—*
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L., 3,433,680.
Trageser, James H., to Technology Incorporated. Mass flowmeter structure. 3,433,069, 03-18-69, Cl. 073-204.
Trane Company, The: *See—*
Schroder, Albert W., and Miner, Robert G., 3,433,243.
Traumuller, Martin, to Domestic Lace Mfg., Inc.Warp knitting adjustment mechanism. 3,433,034, 03-18-69, Cl. 066-150.
Trico Products Corporation: *See—*
Hambly, Wesley G., and von Langendorff, Vitmar, 3,433,513.
Trimble, Charles H., to Western Electric Company, Incorporated. Method of crimping a sleeve connector. 3,432,924, 03-18-69, Cl. 029-628.
Tripic D Industries, Inc.,: *See—*
Dean, Duff L., 3,433,050.
Trudel, Gerald Joseph, to Canadian Industries, Limited. Tris (2-halo-3,4-epoxybutyl) phosphate. 3,433,809, 03-18-69, Cl. 260-348.
Truhan, Andrew. Radiant energy stability test chamber having air circulating means. 3,433,949, 03-18-69, Cl. 250-051.
Trumbull, Harold E.: *See—*
Davis, Howard C., and Trumbull, Harold E. 3,433,154.
Trumpf & Co.: *See—*
Wachter, Otto, and Lorber, Gerd, 3,433,122.
TRW Inc.: *See—*
Nasvytis, Algirdas L., 3,433,099.
Tschudin, Oswald, to Brac Ltd.Devices for converting rotary vibrations into unidirectional rotary movement. 3,433,984, 03-18-69, Cl. 310-037.
Tsujimoto, Hiroshi: *See—*
Kaname, Yuichi, Nagata, Takashi, Ishibashi, Michio, and Tsujimoto, Hiroshi 3,433,982.
Tuck, C. M. & Associates, Inc.: *See—*
Tufts, William F., 3,433,308.
Tuck, Robert M., to General Motors Corporation. Split power transmission. 3,433,095, 03-18-69, Cl. 074-687.
Tuck, Robert M., and Fisher, Mark E., to General Motors Corporation. Torque converter transmission. 3,433,096, 03-18-69, Cl. 074-731.
Tucker, Linwood G., to Koppers Company, Inc.Apparatus for remotely shifting regenerative coke oven batteries from rich fuel gas heating to lean fuel gas heating. 3,433,716, 03-18-69, Cl. 202-151.
Tufts, William F., to Tuck, C. M. & Associates, Inc.Lawn tool. 3,433,308, 03-18-69, Cl. 172-018.
Turner, Elbert L.: *See—*
Jackman, Claude A., and Turner, Elbert L. 3,434,057.
Tuschman, Moe, to Sarong, Inc.Brassiere. 3,433,229, 03-18-69, Cl. 128-494.
Twenty Nine Fifteenth Street Corporation: *See—*
Fain, Jacob M., and McDonnell, Edward, 3,433,750.
Tyler, Tommy N.: *See—*
Stauffer, Norman L., Shafer, Donald E., and Tyler, Tommy N. 3,434,158
U S Industries, Inc.: *See—*
Carrieri, Louis F., and Skinner, Norton D., 3,433,086.
U. S. Stoneware, Inc.,: *See—*
Moore, Frank D., 3,433,421.
Ueda, Kuniaki: *See—*
Moroe, Tatsuo, Komatsu, Akira, Matsui, Takeshi, and Ueda, Kuniaki 3,433,839.
Ujhelyi, Gabor K.: *See—*
Ribeiro, Sergio T., and Ujhelyi, Gabor K. 3,433,554.
Ukawa, Akira, to Mitsubishi Denki Kabushiki Kaisha. Inflatable escape slideway apparatus. 3,433,323, 03-18-69, Cl. 182-048.
Underwood, William F., to Union Carbide Corporation. Impregnated porous paper webs and method of obtaining same. 3,433,663, 03-18-69, Cl. 117-062.1
Unger, Victor H.: *See—*
Bayer, Horst O., and Unger, Victor H. 3,433,623.
Union Camp Corporation,: *See—*
Keillor, John M., and Smith, Oliver T., 3,433,353.
Union Carbide Corporation: *See—*
Elbert, Raymond J., and Farrier, Ernest G., 3,433,632.
Miller, Howard R., 3,433,927.
Somekh, George S., and Hawkes, Edward N., 3,433,788.
Timson, William J., 3,433,294.
Underwood, William F., 3,433,663.
Union Tank Car Company: *See—*
Hiers, James E., and Grout, Edward C., 3,433,259.
Uniroyal, Inc.: *See—*
Boyne, William J., Little, Jack R., and Wagner, Ulrich, 3,432,993.
Rinehart, Robert E., 3,433,808.
Unitcast Corporation: *See—*
Brown, Floyd R., and Floehr, Walter L., 3,433,201.
United Aircraft Corporation: *See—*
Cripe, Alan R., 3,433,177.
United Aircraft Corporation,: *See—*
Keistman, Arnold R., and Weakley, Robert H., 3,433,983.
United Engineering and Foundry Company: *See—*
Greenberger, Joseph I., 3,433,287.
United Engineering and Foundry Company,: *See—*
Tobin, Henry G., Jr., and Van Scoyoc, James N., 3,433,058.
United Shoe Machinery Corporation: *See—*
Highberger, John H., and Whitmore, Robert A., 3,433,864.
United States of America
Agriculture: *See—*
Black, William A. P., Dewar, Eric T., and Rutherford, David, 3,433,738.
Whitfield, Robert E., Pittman, Allen G., and Wasley, William L., 3,433,575.
Zagoren, Bonnie L., Otey, Felix H., and Mehltretter, Charles L., 3,433,752.
Air Force: *See—*
Hough, Ralph L., and Schwartz, Robert T., 3,433,725.
Juneau, Paul W., Jr., 3,433,769.
Larson, Ralph H., 3,433,080.
Young, Archie R., II, and Ehrlich, Robert, 3,433,817.
Army: *See—*
Crocker, Bryant W., and Schmid, Frederick, 3,433,282.
Kesolits, Thomas J., 3,434,059.
Petrich, Louis G., 3,434,146.
Pierce, Everette M., 3,433,158.
Tancredi, John J., and Zotter, Bruno W., 3,433,992.
Atomic Energy Commission: *See—*
Bowman, Harry R., Thompson, Stanley G., Hyde, Earl K., and Jared, Richard C., 3,433,954.
Cornish, Cornell D., 3,433,705.
Gagnon, William L., Scalise, Dominic Theodore, and Smith, Bob H., 3,433,977.
Hahn, Harald, and Halama, Henry J., 3,434,061.
Land, Cecil E., and Haertling, Gene H., 3,434,122.
Mc Kee, Donald A., 3,434,053.
Parker, Robert, 3,433,051.
Interior: *See—*
Archer, David H., Glasser, Albert D., Sverdrup, Edward F., Sverdrup, Edward F., and Taylor, Herbert L., 3,433,680.
National Aeronautics and Space Administration, Administrator, with respect to an invention of:
Montgomery, Lawrence C., and Morelli, Frank A., 3,433,662, 03-18-69, Cl. 117-006.
Dunnavant, William R., and Markle, Richard A., 3,433,818, 03-18-69, Cl. 260-448.2
National Aeronautics and Space Administration: *See—*
Cree, David, and Wenzel, Guss E., 3,434,064.
Habra, Joseph H., 3,434,037.
Holt, Hugh M., Kelsey, Eugene L., and Mills, Stacey M., 3,434,033.
Minott, Peter O., 3,433,960.
Phlieger, Graydon A., Jr., 3,433,909.
Pincus, Bruce R., 3,433,961.
Sneeden, Ralph J., 3,433,015.
Sweet, George E., Anderson, William W., Jr., and Miller, Howard B., 3,433,953.
Van Schoiack, Michael M. E., 3,434,050.
Wilson, William O., 3,433,079.
Navy: *See—*
Hawkins, Eldon W., 3,434,075.
Mattey, Robert A., 3,433,436.
Parker, James Brown, 3,433,800.
Price, Robert S., 3,433,687.
Ribeiro, Sergio T., and Ujhelyi, Gabor K., 3,433,554.
Scholl, James E., 3,432,977.
Shostak, Arnold A., 3,434,138.
Sjoblom, Jorma J., 3,433,196.
United States Steel Corporation: *See—*
Chang, Yi-Chung, and Colijn, Hendrik, 3,433,472.
Universal Oil Products Company: *See—*
Broughton, Donald B., 3,433,735.
Hoekstra, James, 3,433,842.
Hoekstra, James, 3,433,843.

Kahn, Samuel J., 3,433,847.
Whiton, Louis C., and Peterson, Alfred Arnold, 3,432,994.
Up-Right, Inc.: *See—*
Fisher, Robert E., Kofman, Rijkent W., Reichert, Ernest D., and Visser, Reinold H., 3,432,916.
Urane, David, to Broken Hill Proprietary Company Limited, The. Broken Hill Proprietary Company Limited, The. 3,433,628, 03-18-69, Cl. 075-080.
Urban, Joseph: *See—*
Huck, William F., and Urban, Joseph 3,433,479.
USI Corporation,: *See—*
Page, Leo W., 3,432,921.
Valeron Corporation, The: *See—*
Milewski, Victor, and Yogus, William, 3,433,104.
Van Ackeren, Joseph, to Koppers Company, Inc.Heating high chambered horizontal coke ovens. 3,433,715, 03-18-69, Cl. 202-135.
Van Dale Corporation: *See—*
Buschbom, Floyd E., 3,433,204.
Van Damme-van Weele, Marina Adriana, and de Groot, Dirk Cornelis, to N.V. Koninklijke Nederlandsche Zoutindustrie. Dry stabilized alkali metal dithionite compositions. 3,433,590, 03-18-69, Cl. 023-116.
Van der Ende, Entje T.Hoist device for dump trucks. 3,433,457, 03-18-69, Cl. 254-086.
van der Meij, Jan Johannes: *See—*
Nederlof, Bastiaan Klaas, Bijl, Dingeman, and van der Meij, Jan Johannes 3,434,078.
van der Smissen, Carl Ernst, to Drager, Otto Heinaich. Transparent plastic antifogging viewing glass con- taining a plasticizer which becomes a wetting agent by being hydrolyzed when contacted with water. 3,433,653, 03-18-69, Cl. 106-013.
Van Hoeck, Willy F.: *See—*
Sellendagh, Emiel H. M., and Van Hoeck, Willy F. 3,433,898.
van Leer, Gerard Wouter. Package for foodstuffs. 3,433,652, 03-18-69, Cl. 099-171.
Van Schoiack, Michael M. E., to United States of America, National Aeronautics and Space Administration. High impedance measuring apparatus. 3,434,050, 03-18-69, Cl. 324-057.
Van Scoyoc, James N.: *See—*
Tobin, Henry G., Jr., and Van Scoyoc, James N. 3,433,058.
Van Someren, Laurence O., to Thermo Electron Engineering Corporation. Method of preparing a single crystal for improved electron emission. 3,432,917, 03-18-69, Cl. 029-558.
Van Wasielewski, Erwin: *See—*
Wick, Richard, Bestenrainer, Friedrich, and Van Wasielewski, Erwin 3,433,140.
Vanwert, Bernard: *See—*
Clark, Harold A., and Vanwert, Bernard 3,433,760.
Varian Associates: *See—*
Erickson, Raymond A., and Brown, Harmon W., 3,433,945.
Espinosa, Robert J., 3,433,999.
Francis, Arthur B., 3,433,569.
Gang, Robert E., 3,434,085.
Johnson, Floyd O., 3,434,076.
Johnson, Nicky M., 3,434,154.
Nelson, Forrest A., 3,434,043.
Vartanian, Edwin S., and Jarvis, Jay P., to Olin Mathieson Chemical Corporation. and mounting means therefor Removable cocking handle for a firearm breech bolt. 3,432,955, 03-18-69, Cl. 042-016.
Vasta, Joseph A., to Du Pont de Nemours, E. I., and Company. Polyurethane adhesives based on diisocyanates and epoxy ester-dibasic acid adduct. 3,433,771, 03-18-69, Cl. 260-077.5
VEB Mansfeld Kombinat 'W. Pieck': *See—*
Wagenmann, Rolf, and Wehle, Gunther, 3,433,596.
Velan Engineering Ltd.: *See—*
Breton, Guy, 3,433,412.
Vellekoop, Peter Barrie. Piston for aerosol dispensers. 3,433,134, 03-18-69, Cl. 092-243.
Ventura Tool Company: *See—*
Hanes, James W. E., 3,433,504.
Venus Esterbrook Corporation: *See—*
Erdman, Charles A., 3,434,159.
Ver Nooy, Burton, to Williamson, T. D., Inc.Split T. 3,433,507, 03-18-69, Cl. 285-197.
Vereinigte Deutsche Metallwerke AG: *See—*
Perlick, Albert, and Gareis, Alfred, 3,432,903.
Verenski, Lawrence E.: *See—*
Kalina, Robert F., and Verenski, Lawrence E. 3,434,024.
Verhoef, Leendert: *See—*
Vermeulen, Wilhelmus Georgius, and Verhoef, Leendert 3,433,043.
Vermeulen, Wilhelmus Georgius, and Verhoef, Leendert, to N.V. Nederlandsche Kabelfabrieben. Apparatus for manufacturing a tubular element from a long metal strip. 3,433,043, 03-18-69, Cl. 072-176.
Vette, Carl W.D. C. current regulator. 3,434,038, 03-18-69, Cl. 323-004.
Vetter, Gerhard, to Ott, Herbert, LEWA. Diaphragm pump. 3,433,161, 03-18-69, Cl. 103-044.
Vianova Kunstharz Aktiengesellschaft: *See—*
Honel, Herbert, 3,433,754.
Victor Company of Japan, Limited: *See—*
Kawaguchi, Toshihiko, and Inami, Mamoru, 3,433,487.
Kawaharazaki, Yoichi, 3,433,486.
Virtanen, Aate R., and Auer, Aarne Matias. Gauge for measuring the level of a liquid in a tank. 3,433,072, 03-18-69, Cl. 073-304.
Visitacion, Aniceto R.Shoe-borne, step-actuated noise makers. 3,432,964, 03-18-69, Cl. 046-189.
Visser, Reinold H.: *See—*
Fisher, Robert E., Kofman, Rijkent W., Reichert, Ernest D., and Visser, Reinold H. 3,432,916.
Vockenhuber, Karl, and Bystricky, Karl, said Bystricky assor. to said Vockenhuber. Variable focal length optical system. 3,433,559, 03-18-69, Cl. 350-042.
Vockenhuber, Karl: *See—*
Vockenhuber, Karl, and Bystricky, Karl, 3,433,559.
Vogel-Peterson Co.: *See—*
Magnuson, Raymond A., and Brorson, Donald L., 3,433,549.
Vogler, Karl, to Hoffmann-La Roche Inc.Long-chain aliphatic esters of lysine and other basic amino acids and peptides thereof. 3,433,779, 03-18-69, Cl. 260-112.5
Vogtlin, Karl, to Kienzle Apparate G.m.b.H.Tachographs for automobiles. 3,434,152, 03-18-69, Cl. 346-018.
Voigt, Herbert Frederick: *See—*
Krauer, Otto Albert, Voigt, Herbert Frederick, and Schor, Harvey Ronald 3,433,326.
Vollhardt, Frohmut, to Schmidt sche Heissdampf Gesellschaft m.b.H.Heat exchanger especially for the cooling of hot gases. 3,433,298, 03-18-69, Cl. 165-134.
von der Lippe, Robert: *See—*
Mueller, Walter, Alfs, Hugo, and von der Lippe, Robert 3,433,529.
von Langendorff, Vitmar: *See—*
Hambly, Wesley G., and von Langendorff, Vitmar 3,433,513.
von Wiesenthal, Peter. Off gas firing system. 3,433,218, 03-18-69, Cl. 122-007.
Vondran, Daniel J., to Motorola, Inc.Spring clip fastener. 3,433,121, 03-18-69, Cl. 085-036.
Voorhees, Wylie J., to Ford Motor Company. Fluid bypass and pressure relief valve assembly. 3,433,242, 03-18-69, Cl. 137-119.
Voss, Joseph A., and Johnson, Carl W., said Johnson assor. to said Voss. Hygienic devices and methods of making the same. 3,433,225, 03-18-69, Cl. 128-263.
Voss, Joseph A.: *See—*
Voss, Joseph A., and Johnson, Carl W., 3,433,225.
Vyskumny ustav mechanizacie a automatizacie: *See—*
Kouril, Jaroslav, 3,433,669.
Vyzkumny Ustav Bavlnarsky: *See—*
Pospisil, Frantisek, and Elias, Jiri, 3,433,433.
Vyzkumny ustav matematickych stroju: *See—*
Svoboda, Antonin, Obionsky, Jan, and Korvas, Zdenek, 3,434,118.
Wachter, Otto, and Lorber, Gerd, to Trumpf & Co.Device for machine tools. 3,433,122, 03-18-69, Cl. 090-013.5
Wagenmann, Rolf, and Wehle, Gunther, to VEB Mansfeld Kombinat 'W. Pieck'. Process for obtaining pure selenium. 3,433,596, 03-18-69, Cl. 023-209.
Wagner, Frank Larkin: *See—*
D'Errico, Michael Joseph, and Wagner, Frank Larkin 3,433,659.
Wagner, Gunther, Pelikan-Werke: *See—*
Stiel, Karl-Heinz, 3,432,874.
Wagner, Ulrich: *See—*
Boyne, William J., Little, Jack R., and Wagner, Ulrich 3,432,993.
Wahl, Horst: *See—*
Schlosshauer, Herbert, and Wahl, Horst 3,434,017.
Waite, Harry T., Jr., to Fanner Manufacturing Co., The,. Punching T. 3,433,103, 03-18-69, Cl. 077-038.
Wakazaki, Hiroshi: *See—*
Yamada, Kazuyoshi, Wakazaki, Hiroshi, and Dio, Juro 3,433,197.
Walbridge, Derek John: *See—*
Farkas, Ferenc Karoly, Walbridge, Derek John, and Foot, John Rodney 3,433,753.
Waldorf Paper Products Company: *See—*
Mueller, Oscar G., 3,433,456.
Walker Manufacturing Company: *See—*
Peterson, Robert W., 3,433,314.
Walker, Richard A.: *See—*
Gowen, Edward F., Jr., Ollis, Raymond, Jr., and Walker, Richard A. 3,433,117.
Wallace, Edwin G.: *See—*
Kezerian, Charles, Wallace, Edwin G., and Kopacki, Adam F. 3,433,762.
Wallenmeyer, Delmar E.Game apparatus with removable peg playing piece advancing means. 3,433,484, 03-18-69, Cl. 273-134.
Walmsley, Judith A., to Owens- Illinois, Inc.Art of producing siloxane condensation products. 3,433,764, 03-18-69, Cl. 260-046.5
Walsh, Alan, and Sullivan, John V., to Commonwealth Scientific and Industrial Research Organization. Method and apparatus for production and isolation of photoelectric signals generated by atomic resonance lines. 3,433,963, 03-18-69, Cl. 250-217.
Walter, George, to Malco Manufacturing Company, Inc.Connector. 3,434,091, 03-18-69, Cl. 339-014.
Walter, George, to Malco Manufacturing Company, Inc.Buss strip. 3,434,094, 03-18-69, Cl. 339-017.
Wampler, David M., and Leflet, Herbert A., Jr., to Libbey-Owens-Ford Glass Company. Apparatus for bending glass sheets. 3,433,616, 03-18-69, Cl. 065-289.
Wanielista, Walter: *See—*
MacPhee, Paul A., Wanielista, Walter, and Jeschke, Richard R. 3,433,567.
Ward, Gerald G., to International Harvester Company. Coupling pin protector. 3,433,118, 03-18-69, Cl. 085-008.3
Warner-Lambert Pharmaceutical Company: *See—*
Brechner, Stanley, Malakoff, Meyer, and Rieger, Martin M., 3,433,868.
Warner-Lambert Pharmaceutical Company,: *See—*
Fusco, Raffaello, and Tenconi, Franco, 3,433,789.
Warner-Lambert Pharmaceutical Company: *See—*
Satzinger, Gerhard, 3,433,833.
Warren, Robert M., Jr., to Buensod-Stacey Corporation. Regulator. 3,433,410, 03-18-69, Cl. 236-013.
Waseleski, Joseph W., Jr., Buiting, Francis P., and Kulwicki, Bernard M., to Texas Instruments, Incorporated. Relay with voltage compensation. 3,434,089, 03-18-69, Cl. 337-040.
Wasley, William L.: *See—*
Whitfield, Robert E., Pittman, Allen G., and Wasley, William L. 3,433,575.
Watson, John V.Kelly drive means. 3,433,033, 03-18-69, Cl. 064-023.7
Watson Manufacturing Company, Inc.: *See—*
Moore, George E., 3,433,548.
Watters, Robert L., to General Electric Company. Self quenching negative resistance superregenerative diode detector. 3,434,063, 03-18-69, Cl. 329-205.
Weakley, Robert H.: *See—*
Keistman, Arnold R., and Weakley, Robert H. 3,433,983.

Weatherhead, Albert J., III, to Weatherhead Company, The. Hose fitting for connecting hoses of different sizes. 3,433,505, 03-18-69, Cl. 285-177.

Weatherhead Company, The: *See—*
Weatherhead, Albert J., III, 3,433,505.

Webbere, Fred J., and Williams, Robert G., to General Motors Corporation. Method of casting a pitted surface. 3,433,284, 03-18-69, Cl. 164-111.

Weber, Charles A.Rearview mirror supporting device. 3,433,448, 03-18-69, Cl. 248-476.

Weber, Eugen: *See—*
Jenkins, Alexander, and Weber, Eugen 3,433,862.

Weber, John Q.: *See—*
Lawton, Emil A., and Weber, John Q. 3,433,595.

Webster, Frederick, to Mining Progress Inc.,. Mining machine having rotary cutter mounted for increased vertical and lateral range of cutting. 3,433,533, 03-18-69, Cl. 299-056.

Weckler, Gerhard: *See—*
Dursch, Walter, Lar-bauer, Franz, Reuter, Martin, and Weckler, Gerhard 3,433,574.

Wedekind, Albert D., to Minnesota Mining and Manufacturing Company. Solderless connector for multiple- conductor flat cable. 3,434,093, 03-18-69, Cl. 339-017.

Wehle, Gunther: *See—*
Wagenmann, Rolf, and Wehle, Gunther 3,433,596.

Wehner, Donald Clifford, to American Cyanamid Company. Method of reducing toxicity of waste streams containing organic thiocyanate compounds. 3,433,737, 03-18-69, Cl. 210-049.

Weil, Edward D.: *See—*
Ashton, William Eric, and Weil, Edward D. 3,433,877.

Weiler, Harry H.Adjustment size garment. 3,432,862, 03-18-69, Cl. 002-243.

Weininger, Joseph L., and Rouse, Thomas O., to General Electric Company. Electrolytic method of removing water from a polar solvent. 3,433,722, 03-18-69, Cl. 204-129.

Weis, Rudolf R.: *See—*
Hartbauer, Ellsworth A., Talbot, Alfred B., and Weis, Rudolf R. 3,433,136.

Weiss, Melvin I.: *See—*
Cruger, Robert W., Petransky, William E., and Weiss, Melvin I. 3,433,438.

Weisz, William, to Singer Company, The. Skip-stitch mechanism for household sewing machines. 3,433,189, 03-18-69, Cl. 112-158.

Weit, James G., to Ohio Crankshaft Company, The. Over current protector device for induction heating installation. 3,434,010, 03-18-69, Cl. 317-013.

Weizenkorn, Horst-Heinrich: *See—*
Brockmuller, Wolfgang, Hartlapp, Gerhard, and Weizenkorn, Horst-Heinrich 3,433,585.

Wells, Donald H., to S&A Electronics, Inc.Double loop antenna array with loops perpendicularly and symmetrically arranged with respect to feed lines. 3,434,145, 03-18-69, Cl. 343-726.

Welti, Arno, to Albiswerk Zurich AG. Apparatus for controlling a moving self-guiding object in order to prevent a collision. 3,434,141, 03-18-69, Cl. 343-006.

Wendtlandt, Wolf: *See—*
Hollinger, Roderich, and Wendtlandt, Wolf 3,433,804.

Wentworth, James A.: *See—*
Durocher, Hector R., Wentworth, James A., and Baer, Ralph H. 3,433,442.

Wenzel, Guss E.: *See—*
Cree, David, and Wenzel, Guss E. 3,434,064.

Wenzel, Werner: *See—*
Schenck, Hermann, and Wenzel, Werner 3,433,625.

Wernecke, Lloyd C.: *See—*
Savre, Graydon, and Wernecke, Lloyd C. 3,433,646.

Werner, Frank D., and Sathyakumar, Rajabushanam, to Rosemount Engineering Company. Thermal mass flow sensor. 3,433,068, 03-18-69, Cl. 073-204.

Werner Greutert: *See—*
Scholzel, Karl, 3,433,671.
Scholzel, Karl, 3,433,672.

Werner, Paul: *See—*
Putsch, Peter Ulrich, Werner, Paul, and Reinmoller, Gustav Adolf 3,432,880.
Putsch, Peter Ulrich, Werner, Paul, and Reinmoller, Gustav Adolf 3,432,881.

Wernlund, Roger F., to Franklin Gno Corporation. Apparatus and methods for silently surveying automobile radios. 3,434,150, 03-18-69, Cl. 346-001.

Wessel, Otto: *See—*
Naeser, Gerhard, Wessel, Otto, and Darschewski, Kurt 3,433,049.

West, Paul Bemis, to Maremont Corporation. Sliver gatherer and conveyor. 3,432,891, 03-18-69, Cl. 019-157.

West Virginia Pulp and Paper Company: *See—*
Lokey, Burke P., and Rein, Charles R., 3,433,135.

Westermann, Donald H.: *See—*
Nakayama, Tommy, and Westermann, Donald H. 3,433,642.

Western Electric Company, Incorporated: *See—*
Cogelin, Nicholas J., Martin, Smuel M., and Ramsey, Raymond B., 3,433,884.

Western Electric Company, Incorporated: *See—*
Fanning, William J., 3,432,901.
Kalina, Robert F., and Vereneki, Lawrence E., 3,434,024.
McNamara, Kenneth, 3,432,906.
Peterson, Karl E., 3,433,921.
Trimble, Charles H., 3,432,924.

Western Electric Company0, Incorporated: *See—*
Johnson, Arnold R., 3,433,938.

Westinghouse Air Brake Company: *See—*
Carey, Andrew J., and Gilbert, Chalmers W., 3,433,373.
Gilbert, Chalmers W., and Popp, Ralph, 3,433,942.
Hufnagel, Andrew, 3,433,917.

Westinghouse Electric Corporation: *See—*
Carnahan, Paul E., and Brooke, Donald C., 3,433,996.
Cooper, Herbert Warren, 3,434,144.
Hofmann, Charles F., and Keto, August I., 3,433,893.
Hofmann, Charles F., 3,434,087.
Leeds, Winthrop M., 3,433,913.

Weston Chemical Corporation: *See—*
Friedman, Lester, 3,433,856.

Weston Instruments, Inc., : *See—*
Dean, Derek John, 3,434,054.

Weston Instruments, Inc.: *See—*
Kaczorowski, John, Jr., 3,434,042.
Nordahl, John G., and Kaczorowski, John, Jr., 3,434,041.

Wey, Raymond: *See—*
Guth, Jean-Louis, and Wey, Raymond 3,433,736.

Weyenberg, Donald R.: *See—*
Cekada, Joseph, Jr., and Weyenberg, Donald R. 3,433,780.

Whirlpool Corporation: *See—*
Clearman, Jack F., and Barnard, Walter C., 3,433,363.
Hupfer, Harold Matthew, 3,432,878.
Scheitlin, Thomas G., Hames, William A., and Koch, Alan J., 3,433,031.

White, Edwin L.: *See—*
Brazell, James W., Perkins, James T., Jr., and White, Edwin L. 3,433,366.

Whitfield, Robert E., Pittman, Allen G., and Wasley, William L., to United States of America, Agriculture. Polyurethane associated with fibrous substrate through reaction with polyamide. 3,433,575, 03-18-69, Cl. 008-115.5

Whitmore, Robert A.: *See—*
Highberger, John H., and Whitmore, Robert A. 3,433,864.

Whiton, Louis C., and Peterson, Alfred Arnold, to Universal Oil Products Company. Method for effecting countercurrent contacting of gas and liquid streams. 3,432,994, 03-18-69, Cl. 055-091.

Whittaker Corporation, : *See—*
Chelner, Herbert, 3,434,090.

Whitten, George R., Jr.Gutter and water supply system for swimming pools. 3,432,867, 03-18-69, Cl. 004-172.

Whyman, Derek, to National Research Development Corporation. Plasma arc device with cathode structure comprising plurality of rods. 3,433,991, 03-18-69, Cl. 313-231.

Wick, Richard, Bestenrainer, Friedrich, and Van Wassielewski, Erwin, to Agfa-Gevaert Aktiengesellschaft. Exposure control for photographic camera. 3,433,140, 03-18-69, Cl. 095-010.

Wickliff, Noble E., to Bell Telephone Laboratories, Incorporated. Regulated polyphase rectifying circuits. 3,434,031, 03-18-69, Cl. 321-005.

Wiese, Winfred J., to Borg-Warner Corporation. Mechanical seal with flow control. 3,433,489, 03-18-69, Cl. 277-074.

Wilbert, Godfrey: *See—*
Hyden, Seymour, Scarano, Louis, and Wilbert, Godfrey 3,433,795.

Wilco Machine Work, Inc.: *See—*
Rola, Arthur E., 3,433,109.

Wilcox, Burdsal Gardner: *See—*
Comstock, Alfred E., and Wilcox, Burdsal Gardner 3,433,278.

Wilczynski, Janusz S.: *See—*
Tibbetts, Raymond E., and Wilczynski, Janusz S. 3,433,558.

Wiley, Franklyn L., and Amendt, Leroy E., to California Computer Products, Inc.Methods and systems for providing graphical displays. 3,434,113, 03-18-69, Cl. 340-172.5

Wilhelm, Frederick A., Jr.: *See—*
Schmidt, Raymond A., Wilhelm, Frederick A., Jr., and Kayle, William W. 3,434,111.

Wilkes, John B., to Chevron Research Corporation. Aliphatic dicarboxylic acid purification process. 3,433,830, 03-18-69, Cl. 260-514.

William , John: *See—*
Parkinson, Peter, Kennedy, Thomas, and William , John 3,434,025.

Williams, Billy B.: *See—*
Riley, James E., and Williams, Billy B. 3,432,918.

Williams, Ralph P.: *See—*
Reinert, Andrew J., and Williams, Ralph P. 3,433,873.

Williams, Robert A., to Radio Corporation. Sense amplifier for magnetic memory. 3,434,123, 03-18-69, Cl. 340-174.

Williams, Robert G.: *See—*
Webbere, Fred J., and Williams, Robert G. 3,433,284.

Williamson, T. D., Inc.: *See—*
Ver Nooy, Burton, 3,433,507.

Willis, David M., to Butte Knitting Mills, Div. of Johnathan Logan, Inc.Yarn package support. 3,433,432, 03-18-69, Cl. 242-118.1

Wills, B. C., & Company: *See—*
Roberts, Marvin E., 3,433,185.

Willson, Michael John: *See—*
Butcher, John Anthony Weeks, Pullum, Geoffrey George, and Willson, Michael John 3,433,902.

Wilson, Alexander Ian, to Hille Engineering Company Limited, The. Rolling mill apparatus. 3,433,045, 03-18-69, Cl. 072-239.

Wilson, Francis B.: *See—*
Brewer, Nathaniel, and Wilson, Francis B. 3,433,133.

Wilson, Fred A., and Moore, Glenn E., to Dover Corporation. Breakable attaching means for a vent closure. 3,433,387, 03-18-69, Cl. 220-089.

Wilson, Robert O., and Lorenzino, Paul, Jr., to Halliburton Company. Electronic borehole casing collar locator. 3,434,046, 03-18-69, Cl. 324-034.

Wilson, Robert V., Jr.: *See—*
Smith, Charles M., and Wilson, Robert V., Jr. 3,432,965.

Wilson, William L., Lott, Harry, Jr., and Dietz, Albert, to PPG Industries Inc.Process for preparing pigmentary titanium dioxide. 3,433,594, 03-18-69, Cl. 023-202.

Wilson, William O., to United States of America, National Aeronautics and Space Administration. Rocket chamber leak test fixture. 3,433,079, 03-18-69, Cl. 073-049.8

Winder, Robert O., to Radio Corporation of America. Ring counters employing threshold gates. 3,434,058, 03-18-69, Cl. 328-043.

Windmoller & Holscher: *See—*
Brinkmeier, Friedhelm, and Aulmann, Dietrich, 3,432,982.

Winkelmann, John F.: *See—*
Staats, Henry N., and Winkelmann, John F. 3,433,688.

Winter, August, Mann, Egon, Pfeiffer, Willi, and Arnegger, Wilhelm, to Zahnradfabrik Friedrichshafen Aktiengesellschaft. Transmission shift device. 3,433,087, 03-18-69, Cl. 074-473.

Winterbottom, Robert, Bitha, Panayota, and Kissman, Henry Marcel, to American Cyanamid Company. Nitration of 11 &chloro tetracyclines. 3,433,834, 03-18-69, Cl. 260-559.

Wirth, Hans: *See—*
Eisenlohr, Karl Heinz, and Wirth, Hans 3,433,849.

Witzenburg, Marion J.: *See—*
Ireland, Gerald B., and Witzenburg, Marion J. 3,433,985.

Wolber, Jorg, to North American Philips Company, Inc.Circuit arrangement for frame correction. 3,433,998, 03-18-69, Cl. 315-027.

Wolf, Cyrial: *See—*
Cunningham, William J., and Wolf, Cyrial 3,433,838.

Wolf, Irving W., to General Electric Company. Method of fabricating thin films. 3,433,721, 03-18-69, Cl. 204-038.

Wolff, Robert A., to Admiral Corporation. Audio amplifier circuit. 3,433,894, 03-18-69, Cl. 178-005.8

Wollensak, John C., Zutaut, David W., and Christenson, Kenneth M., to Ethyl Corporation. Method of defoliating plants with organomercurials. 3,433,618, 03-18-69, Cl. 071-070.

Wolske, Dean L.: *See—*
Monyette, Donald C., and Wolske, Dean L. 3,433,544.

Wood, Robert E.Gauge for measuring the thickness of blankets on printing rollers. 3,432,933, 03-18-69, Cl. 033-172.

Woods Hole Oceanographic Institution: *See—*
Sharp, Arnold G., Shultz, William S., and Sullivan, James R., 3,433,202.

Woods of Colchester Limited: *See—*
Daly, Brian Bowman, Baker, Alex Gerard James, and Anderson, Joseph Percival, 3,433,145.

Woodward, George E.: *See—*
Swanson, Norman, Kirk, Richard O., and Woodward, George E. 3,433,832.

Woolley, Lee A., to Scott & Fetzer Company, The,. Method of securing a rivet contact in an aperture of an electrical element. 3,432,925, 03-18-69, Cl. 029-630.

Woolsey Marine Industries, Inc.: *See—*
Lasko, George A., 3,433,199.

Woroble, Joseph. Container-engaging end for powder dispensers. 3,433,390, 03-18-69, Cl. 222-083.5

Wright, H. Dudley: *See—*
Jenkins, Alexander, and Weber, Eugen, 3,433,862.

Wright, John W.: *See—*
Jackson, Wilbur F., and Wright, John W. 3,433,409.

Wright, Norman R.: *See—*
Plonsker, Larry, and Wright, Norman R. 3,433,619.
Plonsker, Larry, and Wright, Norman R. 3,433,620.
Plonsker, Larry, and Wright, Norman R. 3,433,622.

Wyandotte Chemicals Corporation: *See—*
Bowden, John H., and Terry, Clifford T., 3,433,863.

Wynne, Francis E., Jr.: *See—*
Carlson, Edgar, and Wynne, Francis E., Jr. 3,433,734.

Xerox Corporation, : *See—*
Davis, Howard C., and Trumbull, Harold E., 3,433,154.

Xerox Corporation: *See—*
Gallo, Charles F., 3,433,948.

Yamada, Hisashi: *See—*
Shima, Takeo, and Yamada, Hisashi 3,433,770.

Yamada, Kazuyoshi, and Doi, Juro, to Mitsubishi Jukogyo Kabushiki Kaisha. Water-tight seal assembly. 3,433,198, 03-18-69, Cl. 114-077.

Yamada, Kazuyoshi, Wakazaki, Hiroshi, and Dio, Juro, to Mitsubishi Jukogyo Kabushiki Kaisha. Method of cutting the hull of a ship. 3,433,197, 03-18-69, Cl. 114-077.

Yamada,Takeo, to Nippon Kogaku K. K.Method for producing resistances of the multi-layer type. 3,432,922, 03-18-69, Cl. 029-620.

Yarme, Howard, and Saltz, Ira. Table structure. 3,433,183, 03-18-69, Cl. 108-012.

Yarwood, Thomas Alan: *See—*
Percival, George, and Yarwood, Thomas Alan 3,433,609.

Yasui Sangyo Company, Ltd.: *See—*
Sano, Norimasa, 3,433,458.

Yen, Richard H., to Radio Corporation of America. Computer system employing elementary operation memory. 3,434,112, 03-18-69, Cl. 340-172.5

Yodis, Anthony W., to Allied Chemical Corporation. Concentration of nitric acid using lithium nitrate. 3,433,718, 03-18-69, Cl. 203-013.

Yogus, William: *See—*
Milewski, Victor, and Yogus, William 3,433,104.

Yomiyama, Akira, Kato, Tsuneyuki, Aoshima, Atsushi, and Kawanishi, Tokuichiro, to Asahi Kasei Kogyo Kabushiki Kaisha. Separation and purification of acrylic acid from acetic acid by solvent extraction and azeotropic distillation with a two component solvent-entrainer system. 3,433,831, 03-18-69, Cl. 260-526.

Yonan, Peter, to Searle, G. D., & Co.Xanthenylisonipecotonitriles and related compounds. 3,433,793, 03-18-69, Cl. 260-293.4

Yost, Joe: *See—*
Nyberg, Stanley A., and Yost, Joe 3,432,895.

Yotsuzuka, Masaru, Keshi, Akizo, Hashimoto, Norishige, Kodama, Katsuhisa, and Nakahara, Shigenobu, to Takeda Chemical Industries, Ltd.Polyether polyol composition and polyurethane foams produced therefrom. 3,433,751, 03-18-69, Cl. 260-002.5

Young, Archie R., II, and Ehrlich, Robert, to United States of America, Air Force,. Diaylaminodialanes and a process for preparing them. 3,433,817, 03-18-69, Cl. 260-448.

Young, David W.: *See—*
Kovach, Stephen M., Sanford, Robert A., and Young, David W. 3,433,845.

Youngblood, Jack L.Spacer clip for a draftsman's straight edge. 3,432,929, 03-18-69, Cl. 033-107.

Youngstown Sheet and Tube Company, The: *See—*
Kupsis, Vinvaldis, and Morgan, Royston P., 3,433,720.

Zaayenga, Ralph: *See—*
Harvey, Wildon T., and Zaayenga, Ralph 3,433,665.

Zaborney, John F., to Mallory, P. R., & Co., Inc.Circular dispensing device for batteries. 3,433,351, 03-18-69, Cl. 206-037.

Zagoren, Bonnie L., Otey, Felix H., and Mehltretter, Charles L., to United States of America, Agriculture. Process for preparing rigid polyurethane foams of open cell structure. 3,433,752, 03-18-69, Cl. 260-002.5

Zahnradfabrik Friedrichshafen Aktiengesellschaft: *See—*
Winter, August, Mann, Egon, Pfeiffer, Willi, and Arnegger, Wilhelm, 3,433,087.

Zanini, Luigi. Device for the production of a continuous envelope for rods, bars, pipes and the like. 3,432,885, 03-18-69, Cl. 018-013.

Zanowick, Richard L., Coker, Jesse E., and Morritz, Fred L., to North American Rockwell Corporation. Multilayer semiconductor heteroepitaxial structure. 3,433,684, 03-18-69, Cl. 148-033.4

Zaske, Robert E.: *See—*
Longuski, Robert N., and Zaske, Robert E. 3,433,491.

Zeiss Ikon Aktiengesellschaft: *See—*
Ruhle, Hans, and Ebertz, Helmut, 3,433,141.

Zellweger Ltd.: *See—*
Baumgartner, August, 3,432,897.

Zenith Radio Corporation: *See—*
Dreiske, Erwin J., and Saudinattis, Emanuel, 3,434,005.

Zickel, Robert E.Intramedullary rod and cross-nail assembly for treating femur fractures. 3,433,220, 03-18-69, Cl. 128-092.

Zieles, Robert S., to Bell Telephone Laboratories, Incorporated. Coil structure. 3,434,088, 03-18-69, Cl. 336-192.

Zizin, Valentin Grigorievich: *See—*
Proskuryakov, Lev Mikhailovich, and Zizin, Valentin Grigorievich 3,433,729.

Zlatohlavek, Jiri: *See—*
Svaty, Vladimir, Bilek, Jan, and Zlatohlavek, Jiri 3,433,271.

Zocholl, Stanley E., to I-T-E Circuit Breaker Company. Saturating current transformer for static relays. 3,434,011, 03-18-69, Cl. 317-033.

Zotter, Bruno W.: *See—*
Tancredi, John J., and Zotter, Bruno W. 3,433,992.

Zucca, Carlo: *See—*
Emanuel, Giovanni, and Zucca, Carlo 3,432,870.

Zutaut, David W.: *See—*
Wollensak, John C., Zutaut, David W., and Christenson, Kenneth M. 3,433,618.

Zysk, Stephen, and MacKenzie, Burton T., Jr., to General Electric Company. Graded insulated cable. 3,433,891, 03-18-69,

CLASSIFICATION OF PATENTS

ISSUED MARCH 18, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

2— 2 : 3,432,860
209 : 3,432,861
243 : 3,432,862
4—110 : 3,432,863
3,432,864
3,432,865
3,432,866
172 : 3,432,867
8— 55 : 3,433,573
89 : 3,433,574
115.5 : 3,433,575
127.5 : 3,433,576
9—343 : 3,432,868
12—145 : 3,432,869
13— 14 : 3,433,878
33 : 3,433,879
15— 21 : 3,432,870
104.04: 3,432,871
.12: 3,432,872
118 : 3,432,873
145 : 3,432,874
246 : 3,432,875
250.04: 3,432,876
312 : 3,432,877
16— 32 : 3,432,878
145 : 3,432,879
146 : 3,432,880
3,432,881
171 : 3,432,882
197 : 3,432,883
18— 9 : 3,432,884
13 : 3,432,885
14 : 3,432,886
19 : 3,432,887
44 : 3,432,888
19— 66 : 3,432,889
150 : 3,432,890
157 : 3,432,891
203 : 3,432,892
21— 2.5 : 3,433,577
53 : 3,433,578
83 : 3,433,579
23— 2 : 3,433,580
3,433,581
60 : 3,433,582
89 : 3,433,583
102 : 3,433,584
106 : 3,433,585
109 : 3,433,586
112 : 3,433,587
113 : 3,433,588
3,433,589
116 : 3,433,590
121 : 3,433,591
165 : 3,433,592
182 : 3,433,593
202 : 3,433,594
205 : 3,433,595
209 : 3,433,596
232 : 3,433,597
270 : 3,433,598
.5 : 3,433,599
288 : 3,433,600
293 : 3,433,601
300 : 3,433,602
3,433,603
312 : 3,433,604
361 : 3,433,605
24—135 : 3,432,893
265 : 3,432,895
26— 52 : 3,432,894
28— 4 : 3,432,896
40 : 3,432,897
72 : 3,432,898
29— 11 : 3,432,899
25.17: 3,432,900
.42: 3,432,901
125 : 3,432,902
157.1 : 3,432,904
.3 : 3,432,903
3,432,905
203 : 3,432,906
205 : 3,432,907
237 : 3,432,908
401 : 3,432,909
458 : 3,432,910
464 : 3,432,911
470.1 : 3,432,912
472.7 : 3,432,913
477.3 : 3,432,914
29—491 : 3,432,915
516 : 3,432,916
558 : 3,432,917
570 : 3,432,918
578 : 3,432,919
3,432,920
603 : 3,432,921
620 : 3,432,922
623 : 3,432,923
628 : 3,432,924
630 : 3,432,925
30—294 : 3,432,926
33— 1 : 3,432,927
3 : 3,432,928
107 : 3,432,929
137 : 3,432,930
169 : 3,432,931
172 : 3,432,932
3,432,933
174 : 3,432,934
199 : 3,432,935
34— 6 : 3,432,936
22 : 3,432,937
45 : 3,432,938
151 : 3,432,939
189 : 3,432,940
35— 19 : 3,432,941
31 : 3,432,942
3,432,943
66 : 3,432,944
36— 36 : 3,432,945
37— 42 : 3,432,946
3,432,947
3,432,948
44 : 3,432,949
195 : 3,432,950
40—107 : 3,432,951
117 : 3,432,952
124.1 : 3,432,953
202 : 3,432,954
42— 16 : 3,432,955
17 : 3,432,956
43— 17.1 : 3,432,957
24 : 3,432,958
84 : 3,432,959
44— 2 : 3,433,606
63 : 3,433,607
46— 29 : 3,432,960
37 : 3,432,961
86 : 3,432,962
169 : 3,432,963
189 : 3,432,964
47— 1.2 : 3,432,965
48—180 : 3,433,608
214 : 3,433,609
3,433,610
49—368 : 3,432,966
506 : 3,432,967
51— 8 : 3,432,968
3,432,969
49 : 3,432,970
80 : 3,432,971
103 : 3,432,972
108 : 3,432,973
328 : 3,432,974
392 : 3,432,975
52— 60 : 3,432,976
98 : 3,432,977
227 : 3,432,978
309 : 3,432,979
53— 14 : 3,432,980
33 : 3,432,981
40 : 3,432,982
52 : 3,432,983
120 : 3,432,984
140 : 3,432,985
179 : 3,432,986
210 : 3,432,987
229 : 3,432,988
264 : 3,432,989
373 : 3,432,990
55— 42 : 3,432,991
51 : 3,432,992
64 : 3,432,993
91 : 3,432,994
179 : 3,432,995
189 : 3,432,996
367 : 3,432,997
3,432,998
400 : 3,432,999
56— 25 : 3,433,000
3,433,001
26 : 3,433,002
3,433,003
119 : 3,433,004
235 : 3,433,005
57— 53 : 3,433,006
140 : 3,433,007
153 : 3,433,008
58— 23 : 3,433,009
53 : 3,433,010
86 : 3,433,011
126 : 3,433,012
127 : 3,433,013
60— 12 : 3,433,014
39.28: 3,433,016
.36: 3,433,015
52 : 3,433,017
54.5 : 3,433,018
3,433,019
226 : 3,433,020
242 : 3,433,021
258 : 3,433,022
61— 12 : 3,433,023
46.5 : 3,433,024
62— 3 : 3,433,025
23 : 3,433,026
3,433,027
45 : 3,433,028
160 : 3,433,029
186 : 3,433,030
446 : 3,433,031
63— 15.65: 3,433,032
64— 23.7 : 3,433,033
65— 30 : 3,433,611
99 : 3,433,612
145 : 3,433,613
182 : 3,433,614
193 : 3,433,615
289 : 3,433,616
66—150 : 3,433,034
68— 23 : 3,433,035
70— 99 : 3,433,036
71— 43 : 3,433,617
70 : 3,433,618
3,433,619
3,433,620
3,433,621
3,433,622
86 : 3,433,623
72— 35 : 3,433,037
42 : 3,433,038
56 : 3,433,039
85 : 3,433,040
138 : 3,433,041
159 : 3,433,042
176 : 3,433,043
186 : 3,433,044
239 : 3,433,045
3,433,046
241 : 3,433,047
417 : 3,433,048
467 : 3,433,049
73— 11 : 3,433,050
15 : 3,433,051
3,433,052
23.1 : 3,433,053
28 : 3,433,054
37.5 : 3,433,055
38 : 3,433,056
49.8 : 3,433,079
61 : 3,433,057
67.7 : 3,433,058
71.5 : 3,433,059
88.5 : 3,433,060
95 : 3,433,061
104 : 3,433,062
141 : 3,433,063
3,433,064
187 : 3,433,065
194 : 3,433,066
199 : 3,433,067
204 : 3,433,068
3,433,069
229 : 3,433,070
231 : 3,433,071
304 : 3,433,072
313 : 3,433,073
343 : 3,433,074
356 : 3,433,075
73—374 : 3,433,076
401 : 3,433,077
424 : 3,433,078
515 : 3,433,080
74— 10.8 : 3,433,081
22 : 3,433,082
68 : 3,433,083
84 : 3,433,084
89.19: 3,433,085
364 : 3,433,086
473 : 3,433,087
484 : 3,433,088
501.5 : 3,433,089
567 : 3,433,090
568 : 3,433,091
3,433,092
578 : 3,433,093
682 : 3,433,094
687 : 3,433,095
731 : 3,433,096
750 : 3,433,097
752 : 3,433,098
798 : 3,433,099
801 : 3,433,100
866 : 3,433,101
75— 1 : 3,433,624
5 : 3,433,625
10 : 3,433,626
65 : 3,433,627
80 : 3,433,628
101 : 3,433,629
170 : 3,433,630
171 : 3,433,631
222 : 3,433,632
77— 4 : 3,433,102
38 : 3,433,103
58 : 3,433,104
62 : 3,433,105
81— 9.5 : 3,433,106
121 : 3,433,108
83—117 : 3,433,107
401 : 3,433,109
84— 1.17: 3,433,880
3,433,881
102 : 3,433,110
188 : 3,433,111
317 : 3,433,112
383 : 3,433,113
394 : 3,433,114
411 : 3,433,115
454 : 3,433,116
85— 1 : 3,433,117
8.3 : 3,433,118
32 : 3,433,119
36 : 3,433,120
3,433,121
90— 13.5 : 3,433,122
91— 36 : 3,433,123
198 : 3,433,124
363 : 3,433,125
367 : 3,433,126
372 : 3,433,127
384 : 3,433,128
3,433,129
447 : 3,433,130
3,433,131
92— 48 : 3,433,132
100 : 3,433,133
243 : 3,433,134
93— 8 : 3,433,135
3,433,136
94— 7 : 3,433,137
95— 10 : 3,433,138
3,433,139
3,433,140
11 : 3,433,141
12.20: 3,433,142
31 : 3,433,143
64 : 3,433,144
96— 3 : 3,433,633
29 : 3,433,634
3,433,635
76 : 3,433,636
78 : 3,433,637
84 : 3,433,638
107 : 3,433,639
3,433,640
98— 43 : 3,433,145
115 : 3,433,146
99— 2 : 3,433,641
99— 50.5 : 3,433,642
59 : 3,433,643
78 : 3,433,644
90 : 3,433,645
92 : 3,433,646
111 : 3,433,647
116 : 3,433,648
118 : 3,433,649
124 : 3,433,650
136 : 3,433,651
171 : 3,433,652
249 : 3,433,147
276 : 3,433,148
282 : 3,433,149
403 : 3,433,150
441 : 3,433,151
101— 28 : 3,433,152
93 : 3,433,153
132 : 3,433,154
148 : 3,433,155
102— 39 : 3,433,156
92.7 : 3,433,157
103 : 3,433,158
103— 2 : 3,433,159
37 : 3,433,160
44 : 3,433,161
87 : 3,433,162
3,433,163
3,433,164
97 : 3,433,165
118 : 3,433,166
125 : 3,433,167
126 : 3,433,168
136 : 3,433,169
149 : 3,433,170
3,433,171
154 : 3,433,172
162 : 3,433,173
232 : 3,433,174
104— 7 : 3,433,175
20 : 3,433,176
105—199 : 3,433,177
282 : 3,433,178
369 : 3,433,179
376 : 3,433,180
106— 13 : 3,433,653
15 : 3,433,654
33 : 3,433,655
57 : 3,433,656
97 : 3,433,657
123 : 3,433,658
238 : 3,433,659
307 : 3,433,660
316 : 3,433,661
107— 1 : 3,433,181
69 : 3,433,182
108— 12 : 3,433,183
53 : 3,433,184
109— 55 : 3,433,185
110— 14 : 3,433,186
112— 2 : 3,433,187
79 : 3,433,188
158 : 3,433,189
3,433,190
166 : 3,433,191
235 : 3,433,192
3,433,193
114— 56 : 3,433,194
66.5 : 3,433,195
67 : 3,433,196
77 : 3,433,197
3,433,198
219 : 3,433,200
115— 70 : 3,433,201
116— 27 : 3,433,202
28 : 3,433,203
117— 6 : 3,433,662
62.1 : 3,433,663
76 : 3,433,664
120 : 3,433,665
139.5 : 3,433,666
161 : 3,433,667
119— 51.11: 3,433,205
52 : 3,433,204
122— 7 : 3,433,218
123— 41.7 : 3,433,206
119 : 3,433,207
148 : 3,433,208
198 : 3,433,209
124— 12 : 3,433,210
126— 25 : 3,433,211
110 : 3,433,212
197 : 3,433,213
127— 67 : 3,433,668
128— 2 : 3,433,214
3,433,215
3,433,216
.08: 3,433,217
76.5 : 3,433,219
92 : 3,433,220
94 : 3,433,221
142.2 : 3,433,222
218 : 3,433,223
3,433,224
263 : 3,433,225
305 : 3,433,226
350 : 3,433,227
422 : 3,433,228
494 : 3,433,229
130— 27 : 3,433,230
131— 10.5 : 3,433,231
132— 7 : 3,433,232
40 : 3,433,233
53 : 3,433,234
3,433,235
134— 1 : 3,433,669
10 : 3,433,670
45 : 3,433,236
168 : 3,433,237
136— 6 : 3,433,671
3,433,672
22 : 3,433,673
26 : 3,433,674
86 : 3,433,675
89 : 3,433,676
3,433,677
100 : 3,433,678
102 : 3,433,679
120 : 3,433,680
133 : 3,433,681
137— 81.5 : 3,433,238
85 : 3,433,239
108 : 3,433,240
112 : 3,433,241
119 : 3,433,242
183 : 3,433,243
221 : 3,433,244
242 : 3,433,245
351 : 3,433,246
355.26: 3,433,247
386 : 3,433,248
390 : 3,433,249
469 : 3,433,250
488 : 3,433,251
493 : 3,433,253
496 : 3,433,252
505.16: 3,433,254
510 : 3,433,255
529 : 3,433,256
561 : 3,433,257
590 : 3,433,258
599.1 : 3,433,259
608 : 3,433,260
3,433,261
614.19: 3,433,262
624.15: 3,433,263
625.17: 3,433,264
.18: 3,433,265
.61: 3,433,266
.69: 3,433,267
138— 30 : 3,433,268
92 : 3,433,269
162 : 3,433,270
139—144 : 3,433,271
257 : 3,433,272
371 : 3,433,273
140— 88 : 3,433,274
93.2 : 3,433,275
141— 12 : 3,433,276
143— 91 : 3,433,277
146— 78 : 3,433,278
148— 6.3 : 3,433,682
13.2 : 3,433,683
33.4 : 3,433,684
35 : 3,433,685
175 : 3,433,686
150— 39 : 3,433,279
151— 21 : 3,433,280
156— 47 : 3,433,687

156– 85 : 3,433,688
96 : 3,433,689
157 : 3,433,690
195 : 3,433,691
197 : 3,433,692
242 : 3,433,693
244 : 3,433,694
401 : 3,433,695
425 : 3,433,696
489 : 3,433,697
540 : 3,433,698
580 : 3,433,699
160–330 : 3,433,281
161–160 : 3,433,700
198 : 3,433,701
162– 87 : 3,433,702
157 : 3,433,703
181 : 3,433,704
164– 53 : 3,433,282
69 : 3,433,283
111 : 3,433,284
193 : 3,433,285
274 : 3,433,286
3,433,287
281 : 3,433,288
282 : 3,433,289
303 : 3,433,290
305 : 3,433,291
343 : 3,433,292
358 : 3,433,293
165– 1 : 3,433,294
35 : 3,433,295
39 : 3,433,296
40 : 3,433,297
134 : 3,433,298
135 : 3,433,299
151 : 3,433,300
166–128 : 3,433,301
162 : 3,433,302
184 : 3,433,303
226 : 3,433,304
297 : 3,433,305
170–159 : 3,433,306
172– 4 : 3,433,307
18 : 3,433,308
67 : 3,433,706
430 : 3,433,309
471 : 3,433,310
173– 49 : 3,433,311
174– 15 : 3,433,882
28 : 3,433,883
49 : 3,433,884
52 : 3,433,885
57 : 3,433,886
63 : 3,433,887
68.5 : 3,433,888
69 : 3,433,889
116 : 3,433,890
120 : 3,433,891
126 : 3,433,892
153 : 3,433,893
175– 66 : 3,433,312
270 : 3,433,313
330 : 3,433,331
176– 3 : 3,433,705
177–146 : 3,433,314
151 : 3,433,315
208 : 3,433,316
178– 5.8 : 3,433,894
7.2 : 3,433,895
.3 : 3,433,896
179– 6 : 3,433,897
7 : 3,433,898
15 : 3,433,899
3,433,900
18 : 3,433,901
84 : 3,433,902
100.2 : 3,433,903
110 : 3,433,904
157 : 3,433,905
180– 7 : 3,433,317
26 : 3,433,318
44 : 3,433,319
124 : 3,433,320
181– .5 : 3,433,321
33 : 3,433,322
182– 48 : 3,433,323
187– 9 : 3,433,324
3,433,325
29 : 3,433,326
188– 24 : 3,433,327
73 : 3,433,328
82.2 : 3,433,329
134 : 3,433,332
151 : 3,433,330
196 : 3,433,333
218 : 3,433,334
190– 43 : 3,433,335
192– 3 : 3,433,336
46 : 3,433,337
67 : 3,433,338
84 : 3,433,339
91 : 3,433,340
111 : 3,433,341
193– 25 : 3,433,342
31 : 3,433,343

194– 84 : 3,433,344
195– 28 : 3,433,707
31 : 3,433,708
80 : 3,433,709
3,433,710
114 : 3,433,711
127 : 3,433,712
197–114 : 3,433,345
198– 33 : 3,433,346
69 : 3,433,347
89 : 3,433,348
177 : 3,433,349
3,433,350
200– 1 : 3,433,906
47 : 3,433,907
80 : 3,433,908
82 : 3,433,909
83 : 3,433,910
3,433,911
3,433,912
148 : 3,433,913
159 : 3,433,914
166 : 3,433,915
3,433,916
3,433,917
201– 34 : 3,433,713
202–135 : 3,433,714
3,433,715
151 : 3,433,716
173 : 3,433,717
203– 13 : 3,433,718
204– 15 : 3,433,719
34 : 3,433,720
38 : 3,433,721
129 : 3,433,722
149 : 3,433,723
159.17: 3,433,724
164 : 3,433,725
180 : 3,433,726
224 : 3,433,727
3,433,728
278 : 3,433,729
291 : 3,433,730
206– 37 : 3,433,351
42 : 3,433,352
46 : 3,433,353
3,433,354
59 : 3,433,355
208– 48 : 3,433,731
111 : 3,433,732
150 : 3,433,733
308 : 3,433,734
325 : 3,433,735
209–164 : 3,433,356
372 : 3,433,357
210– 37 : 3,433,736
49 : 3,433,737
54 : 3,433,738
58 : 3,433,739
65 : 3,433,358
199 : 3,433,359
249 : 3,433,360
258 : 3,433,361
512 : 3,433,362
211– 41 : 3,433,363
42 : 3,433,364
59 : 3,433,365
212– 14 : 3,433,366
39 : 3,433,367
46 : 3,433,368
213–148 : 3,433,369
214– 1 : 3,433,370
3,433,371
6 : 3,433,372
63 : 3,433,373
138 : 3,433,374
309 : 3,433,375
653 : 3,433,376
767 : 3,433,377
215– 6 : 3,433,378
40 : 3,433,379
3,433,380
217– 69 : 3,433,381
219– 10.77: 3,433,918
69 : 3,433,919
79 : 3,433,920
110 : 3,433,921
121 : 3,433,922
3,433,923
123 : 3,433,924
130 : 3,433,925
137 : 3,433,926
3,433,927
267 : 3,433,928
363 : 3,433,929
386 : 3,433,930
502 : 3,433,931
220– 3 : 3,433,382
8 : 3,433,383
14 : 3,433,384
40 : 3,433,385
48 : 3,433,386
89 : 3,433,387
221–274 : 3,433,388
222– 3 : 3,433,389
83.5 : 3,433,390

222– 95 : 3,433,391
189 : 3,433,392
402 : 3,433,393
519 : 3,433,394
223– 67 : 3,433,395
73 : 3,433,396
91 : 3,433,397
226– 93 : 3,433,398
229– 5.6 : 3,433,399
14 : 3,433,400
15 : 3,433,401
33 : 3,433,402
230–132 : 3,433,403
234– 5 : 3,433,404
235– 61.11: 3,433,932
3,433,933
91 : 3,433,405
92 : 3,433,934
128 : 3,433,406
3,433,407
183 : 3,433,935
3,433,936
3,433,937
193 : 3,433,938
201 : 3,433,408
236– 9 : 3,433,409
13 : 3,433,410
21 : 3,433,411
59 : 3,433,412
82 : 3,433,413
237– 8 : 3,433,414
239–126 : 3,433,415
284 : 3,433,416
304 : 3,433,417
422 : 3,433,418
470 : 3,433,419
476 : 3,433,420
240– 2.1 : 3,433,940
10 : 3,433,939
41.36: 3,433,941
241– 30 : 3,433,421
61 : 3,433,422
242– 35.5 : 3,433,423
47 : 3,433,424
55.12: 3,433,425
3,433,426
3,433,427
.13: 3,433,428
65 : 3,433,429
66 : 3,433,430
107 : 3,433,431
118.1 : 3,433,432
129.51: 3,433,433
158 : 3,433,434
244– 1 : 3,433,435
3,433,436
3.23: 3,433,437
63 : 3,433,438
120 : 3,433,439
137 : 3,433,440
138 : 3,433,441
152 : 3,433,442
246– 34 : 3,433,942
428 : 3,433,943
248–214 : 3,433,443
279 : 3,433,444
291 : 3,433,445
316 : 3,433,446
352 : 3,433,447
476 : 3,433,448
497 : 3,433,449
249– 67 : 3,433,450
183 : 3,433,451
201 : 3,433,452
250– 41.3 : 3,433,944
.9 : 3,433,945
43 : 3,433,946
49.5 : 3,433,947
3,433,948
51 : 3,433,949
65 : 3,433,950
3,433,951
71 : 3,433,952
83 : 3,433,953
.3 : 3,433,954
90 : 3,433,955
106 : 3,433,956
108 : 3,433,957
199 : 3,433,958
3,433,959
3,433,960
203 : 3,433,961
209 : 3,433,962
217 : 3,433,963
218 : 3,433,964
219 : 3,433,965
223 : 3,433,966
239 : 3,433,967
251–282 : 3,433,453
321 : 3,433,455
331 : 3,433,454
339 : 3,433,456
252– 8.5 : 3,433,740
12 : 3,433,741
3,433,742
13 : 3,433,743

252– 46.7 : 3,433,744
153 : 3,433,745
3,433,746
433 : 3,433,747
453 : 3,433,748
521 : 3,433,749
254– 86 : 3,433,457
93 : 3,433,458
139.1 : 3,433,459
256– 65 : 3,433,460
259– 1 : 3,433,461
3,433,462
7 : 3,433,463
8 : 3,433,464
111 : 3,433,465
153 : 3,433,466
260– 2 : 3,433,750
.2 : 3,433,755
.5 : 3,433,751
3,433,752
22 : 3,433,753
3,433,754
3,433,756
29.2 : 3,433,780
31.4 : 3,433,757
33.4 : 3,433,758
.6 : 3,433,759
37 : 3,433,760
40 : 3,433,761
45.75: 3,433,763
.8 : 3,433,762
46.5 : 3,433,764
3,433,765
47 : 3,433,766
51 : 3,433,767
54 : 3,433,768
58 : 3,433,769
75 : 3,433,770
77.5 : 3,433,771
78.4 : 3,433,772
.5 : 3,433,773
80 : 3,433,774
85.3 : 3,433,775
88.2 : 3,433,777
.3 : 3,433,776
94.3 : 3,433,778
112.5 : 3,433,779
146 : 3,433,781
211.5 : 3,433,782
3,433,783
239.1 : 3,433,784
.5 : 3,433,785
3,433,786
.55: 3,433,787
247 : 3,433,788
256.5 : 3,433,789
279 : 3,433,790
285 : 3,433,791
290 : 3,433,792
293.4 : 3,433,793
294.8 : 3,433,794
295.5 : 3,433,795
296 : 3,433,796
3,433,797
309 : 3,433,798
.5 : 3,433,799
.7 : 3,433,800
326.3 : 3,433,801
.5 : 3,433,802
327 : 3,433,803
332.3 : 3,433,804
340.5 : 3,433,805
.6 : 3,433,806
347.7 : 3,433,807
.8 : 3,433,808
348 : 3,433,809
377 : 3,433,810
378 : 3,433,811
396 : 3,433,812
397.25: 3,433,814
.4 : 3,433,813
419 : 3,433,815
3,433,816
448 : 3,433,817
.2 : 3,433,818
.8 : 3,433,819
465 : 3,433,820
3,433,821
.3 : 3,433,822
3,433,823
476 : 3,433,824
478 : 3,433,825
479 : 3,433,826
480 : 3,433,827
487 : 3,433,828
496 : 3,433,829
514 : 3,433,830
526 : 3,433,831
534 : 3,433,832
558 : 3,433,833
559 : 3,433,834
562 : 3,433,835
570 : 3,433,836
586 : 3,433,837
593 : 3,433,838
598 : 3,433,839

260–604 : 3,433,840
643 : 3,433,841
666 : 3,433,842
3,433,843
3,433,844
667 : 3,433,845
671 : 3,433,846
3,433,847
672 : 3,433,848
674 : 3,433,849
680 : 3,433,850
683.3 : 3,433,851
3,433,852
857 : 3,433,853
869 : 3,433,854
878 : 3,433,855
932 : 3,433,856
263– 21 : 3,433,467
3,433,468
264– 24 : 3,433,857
40 : 3,433,858
44 : 3,433,859
71 : 3,433,860
78 : 3,433,861
97 : 3,433,862
140 : 3,433,863
202 : 3,433,864
210 : 3,433,866
225 : 3,433,867
266– 4 : 3,433,469
35 : 3,433,471
38 : 3,433,472
267– 64 : 3,433,473
65 : 3,433,474
271– 57 : 3,433,475
64 : 3,433,476
272– 64 : 3,433,477
273– 1 : 3,433,478
54 : 3,433,479
55 : 3,433,480
72 : 3,433,481
131 : 3,433,482
134 : 3,433,483
3,433,484
157 : 3,433,485
274– 15 : 3,433,486
37 : 3,433,487
277– 9 : 3,433,488
74 : 3,433,489
164 : 3,433,490
279– 2 : 3,433,491
3,433,492
280– 6 : 3,433,493
11.13: 3,433,494
.37: 3,433,495
33.99: 3,433,496
40 : 3,433,497
47.11: 3,433,498
79.1 : 3,433,499
.2 : 3,433,500
96 : 3,433,501
400 : 3,433,502
512 : 3,433,503
285– 93 : 3,433,504
177 : 3,433,505
187 : 3,433,506
197 : 3,433,507
341 : 3,433,508
374 : 3,433,509
287– 12 : 3,433,510
14 : 3,433,511
52.05: 3,433,512
53 : 3,433,513
124 : 3,433,514
189.365 3,433,515
290– 37 : 3,433,968
292– 62 : 3,433,516
74 : 3,433,517
238 : 3,433,518
336.3 : 3,433,519
293– 85 : 3,433,520
294– 19 : 3,433,521
82 : 3,433,522
87.2 : 3,433,523
296– 28 : 3,433,470
65 : 3,433,524
97 : 3,433,525
137 : 3,433,526
297– 85 : 3,433,527
298– 17 : 3,433,528
299– 1 : 3,433,529
4 : 3,433,530
8 : 3,433,531
31 : 3,433,532
56 : 3,433,533
301– 5 : 3,433,534
303– 21 : 3,433,535
3,433,536
307– 10 : 3,433,969
11 : 3,433,970
18 : 3,433,971
38 : 3,433,972
88 : 3,433,973
3,433,974
3,433,975
.3 : 3,433,976

307–106 : 3,433,977
214 : 3,433,978
235 : 3,433,979
293 : 3,433,980
308– 6 : 3,433,537
9 : 3,433,538
22 : 3,433,539
36.1 : 3,433,540
3,433,541
121 : 3,433,542
235 : 3,433,543
310– 6 : 3,433,981
8.2 : 3,433,982
15 : 3,433,983
37 : 3,433,984
52 : 3,433,985
87 : 3,433,986
156 : 3,433,987
166 : 3,433,988
239 : 3,433,989
258 : 3,433,990
312– 39 : 3,433,544
42 : 3,433,545
71 : 3,433,546
111 : 3,433,547
184 : 3,433,548
245 : 3,433,549
313–231 : 3,433,991
315– 3.5 : 3,433,999
.6 : 3,433,992
8 : 3,433,993
10 : 3,433,994
11 : 3,433,995
12 : 3,433,996
22 : 3,433,997
27 : 3,433,998
3,434,000
3,434,001
3,434,002
3,434,003
3,434,004
3,434,005
30 : 3,434,006
119 : 3,434,007
169 : 3,434,008
209 : 3,434,009
316– 28 : 3,433,550
317– 13 : 3,434,010
33 : 3,434,011
98 : 3,434,012
99 : 3,434,013
3,434,014
101 : 3,434,015
123 : 3,434,016
234 : 3,434,017
3,434,018
235 : 3,434,019
3,434,020
3,434,021
3,434,022
3,434,023
260 : 3,434,024
318– 8 : 3,434,025
125 : 3,434,026
282 : 3,434,027
484 : 3,434,028
320– 1 : 3,434,029
321– 2 : 3,434,030
5 : 3,434,031
3,434,032
11 : 3,434,033
43 : 3,434,034
45 : 3,434,035
3,434,036
69 : 3,434,037
323– 4 : 3,434,038
22 : 3,434,039
74 : 3,434,040
3,434,041
3,434,042
324– .5 : 3,434,043
3,434,044
30 : 3,434,045
34 : 3,434,046
3,434,048
43 : 3,434,047
52 : 3,434,049
57 : 3,434,050
60 : 3,434,051
127 : 3,434,052
132 : 3,434,053
151 : 3,434,054
158 : 3,434,055
325– 65 : 3,434,056
423 : 3,434,057
328– 43 : 3,434,058
117 : 3,434,059
127 : 3,434,060
155 : 3,434,061
163 : 3,434,062
329–205 : 3,434,063
330– 2 : 3,434,064
3,434,065
13 : 3,434,066
15 : 3,434,067
19 : 3,434,068

330– 30 : 3,434,069
31 : 3,434,070
331– 78 : 3,434,071
94.5 : 3,434,072
3,434,073
183 : 3,434,074
332– 43 : 3,434,075
333– 24.1 : 3,434,077
98 : 3,434,076
335–151 : 3,434,079
154 : 3,434,080
203 : 3,434,081
229 : 3,434,082
230 : 3,434,083
284 : 3,434,084
297 : 3,434,085
336– 30 : 3,434,086
96 : 3,434,087
192 : 3,434,088
337– 40 : 3,434,089
338– 4 : 3,434,090

339– 14 : 3,434,091
16 : 3,434,092
17 : 3,434,093
3,434,094
18 : 3,434,095
44 : 3,434,096
89 : 3,434,097
91 : 3,434,098
176 : 3,434,099
196 : 3,434,100
207 : 3,434,101
242 : 3,434,102
272 : 3,434,103
340– 7 : 3,434,104
18 : 3,434,105
55 : 3,434,106
74 : 3,434,107
3,434,108
146.2 : 3,434,109
.3 : 3,434,110
172.5 : 3,434,111

340–172.5 : 3,434,112
3,434,113
3,434,114
3,434,115
3,434,116
3,434,117
3,434,118
173 : 3,434,119
.1 : 3,434,121
.2 : 3,434,122
174 : 3,434,123
3,434,124
3,434,125
3,434,126
3,434,127
3,434,128
.1 : 3,434,130
3,434,131
198 : 3,434,132

340–227.1 : 3,434,133
244 : 3,434,134
324 : 3,434,135
347 : 3,434,136
381 : 3,434,137
110 : 3,434,158
139 : 3,434,159
343– 6 : 3,434,140
3,434,141
100 : 3,434,142
105 : 3,434,143
108 : 3,434,144
726 : 3,434,145
753 : 3,434,146
754 : 3,434,138
756 : 3,434,147
778 : 3,434,139
858 : 3,434,148
346– 1 : 3,434,149
3,434,150
3,434,151
18 : 3,434,152
21 : 3,434,153

346– 32 : 3,434,154
43 : 3,434,155
74 : 3,434,156
3,434,157
110 : 3,434,158
139 : 3,434,159
350– 2 : 3,433,551
10 : 3,433,552
42 : 3,433,559
157 : 3,433,553
160 : 3,433,554
3,433,555
162 : 3,433,556
3,433,557
225 : 3,433,558
351– 14 : 3,433,560
352– 60 : 3,433,561
234 : 3,433,562
355– 54 : 3,433,563
76 : 3,433,564

355– 76 : 3,433,567
77 : 3,433,565
79 : 3,434,078
110 : 3,433,566
356–106 : 3,433,568
109 : 3,433,569
128 : 3,433,570
139 : 3,433,571
424– 47 : 3,433,868
180 : 3,433,869
203 : 3,433,865
216 : 3,433,870
250 : 3,433,871
253 : 3,433,872
263 : 3,433,873
275 : 3,433,874
319 : 3,433,875
325 : 3,433,876
353 : 3,433,877
431– 31 : 3,433,572

CLASSIFICATION OF DESIGNS

D 2–183 : 213,608
213,609
206 : 213,610
D 4– 16 : 213,539
25 : 213,540
D 8–136 : 213,587
272 : 213,589
D 9– 76 : 213,541
145 : 213,542
149 : 213,543
155 : 213,544
169 : 213,545

D 9–242 : 213,546
D13– 1 : 213,547
D14– 3 : 213,548
6 : 213,549
D15– 1 : 213,550
8 : 213,551
213,552
D18– 2 : 213,553
213,554
D23– 4 : 213,555
17 : 213,556

D23– 51 : 213,557
58 : 213,558
142 : 213,559
148 : 213,560
D26– 1 : 213,561
5 : 213,562
213,563
12 : 213,564
14 : 213,565
213,566
213,567
213,568

D33– 3 : 213,569
14 : 213,570
19 : 213,571
213,572
D34– 5 : 213,573
D44– 1 : 213,574
10 : 213,575
213,576
21 : 213,577
29 : 213,578
D48– 20 : 213,580
213,581

D48– 20 : 213,582
213,583
24 : 213,584
D49– 9 : 213,585
17.1 : 213,586
D52– 10 : 213,588
D55– 1 : 213,590
D56– 2 : 213,591
4 : 213,592
9 : 213,593
D57– 1 : 213,594
213,595

D61– 1 : 213,596
D71– 1 : 213,597
D74– 5 : 213,598
D80– 9 : 213,599
D81– 10 : 213,600
D87– 1 : 213,601
213,602
213,603
D90– 1 : 213,604
213,605
8 : 213,606
D96– 12 : 213,607

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,433,158
3,433,464
3,433,509
4 : 3,432,863
3,432,864
3,432,865
3,432,866
3,433,227
3,433,251
3,433,318
3,433,399
3,434,018
3,434,022
3,434,023
3,434,035
3,434,036
6 : 3,432,879
3,432,899
3,432,912
3,432,914
3,432,916
3,432,919
3,432,961
3,432,976
3,432,984
3,432,985
3,432,986
3,433,026
3,433,039
3,433,050
3,433,051
3,433,062
3,433,079
3,433,115
3,433,136
3,433,152
3,433,179
3,433,182
3,433,199
3,433,211
3,433,237
3,433,248
3,433,262
3,433,268
3,433,278
3,433,303
3,433,332
3,433,343
3,433,381
3,433,409

6 : 3,433,411
3,433,441
3,433,466
3,433,471
3,433,483
3,433,484
3,433,489
3,433,500
3,433,504
3,433,521
3,433,522
3,433,523
3,433,531
3,433,532
3,433,569
3,433,570
3,433,575
3,433,580
3,433,595
3,433,604
3,433,648
3,433,684
3,433,708
3,433,727
3,433,740
3,433,762
3,433,830
3,433,836
3,433,846
3,433,870
3,433,931
3,433,934
3,433,936
3,433,937
3,433,945
3,433,954
3,433,957
3,433,964
3,433,972
3,433,977
3,433,983
3,433,999
3,434,002
3,434,037
3,434,043
3,434,044
3,434,047
3,434,051
3,434,057
3,434,060

6 : 3,434,065
3,434,069
3,434,072
3,434,076
3,434,085
3,434,090
3,434,096
3,434,100
3,434,110
3,434,113
3,434,125
3,434,126
3,434,128
3,434,136
3,434,139
3,434,140
3,434,148
3,434,154
3,434,157
8 : 3,432,904
3,433,052
3,433,075
3,433,225
3,433,415
3,433,437
3,433,440
3,433,579
3,433,723
3,433,996
3,434,053
3,434,158
9 : 3,432,934
3,432,955
3,432,956
3,432,994
3,432,997
3,432,998
3,433,041
3,433,064
3,433,067
3,433,163
3,433,420
3,433,422
3,433,443
3,433,446
3,433,492
3,433,600
3,433,606
3,433,658
3,433,659

9 : 3,433,737
3,433,803
3,433,871
3,433,891
3,433,928
3,433,959
3,433,969
3,434,039
3,434,129
10 : 3,432,860
3,433,008
3,433,055
3,433,665
3,433,813
3,433,819
3,433,853
11 : 3,433,662
3,433,818
12 : 3,433,005
3,433,228
3,433,451
3,433,459
3,433,545
3,433,815
3,433,909
3,434,007
3,434,014
3,434,150
3,434,156
13 : 3,433,205
3,433,308
3,433,366
3,433,396
3,434,102
17 : 3,432,883
3,432,901
3,432,939
3,432,953
3,433,010
3,433,017
3,433,035
3,433,058
3,433,080
3,433,081
3,433,086
3,433,105
3,433,108
3,433,112
3,433,118
3,433,120

17 : 3,433,121
3,433,149
3,433,166
3,433,206
3,433,208
3,433,209
3,433,258
3,433,267
3,433,300
3,433,314
3,433,341
3,433,344
3,433,361
3,433,364
3,433,377
3,433,378
3,433,391
3,433,419
3,433,473
3,433,511
3,433,516
3,433,518
3,433,536
3,433,541
3,433,549
3,433,554
3,433,567
3,433,597
3,433,610
3,433,643
3,433,652
3,433,655
3,433,663
3,433,688
3,433,728
3,433,735
3,433,739
3,433,745
3,433,752
3,433,761
3,433,793
3,433,842
3,433,843
3,433,894
3,433,904
3,433,906
3,433,920
3,433,922
3,433,923
3,433,925

17 : 3,433,940
3,433,943
3,433,955
3,433,968
3,433,971
3,433,985
3,434,005
3,434,024
3,434,026
3,434,091
3,434,094
3,434,095
18 : 3,432,878
3,432,907
3,432,925
3,432,927
3,432,929
3,432,987
3,433,094
3,433,095
3,433,096
3,433,098
3,433,100
3,433,103
3,433,130
3,433,413
3,433,448
3,433,539
3,433,670
3,433,676
3,433,711
3,433,746
3,433,782
3,433,845
3,433,876
3,433,880
3,433,908
3,433,970
3,433,993
3,434,000
3,434,075
3,434,081
3,434,084
3,434,088
19 : 3,433,212
3,434,028
20 : 3,432,991
3,433,123
3,433,309
3,433,315

20 : 3,433,447
3,433,696
3,433,706
21 : 3,433,264
3,433,270
3,433,387
3,433,400
3,433,480
3,433,564
22 : 3,432,993
3,433,219
3,433,337
3,433,619
3,433,620
3,433,622
3,433,775
23 : 3,432,890
24 : 3,432,906
3,432,935
3,432,968
3,432,970
3,432,974
3,433,082
3,433,150
3,433,221
3,433,269
3,433,436
3,433,617
3,433,687
3,433,747
3,433,748
3,433,767
3,433,867
3,433,884
3,433,952
3,433,960
3,433,961
3,434,144
3,434,155
25 : 3,432,861
3,432,867
3,432,917
3,432,960
3,432,990
3,433,032
3,433,061
3,433,066
3,433,126
3,433,128
3,433,129
3,433,138
3,433,144
3,433,202
3,433,282
3,433,353
3,433,401
3,433,404
3,433,430
3,433,527
3,433,553
3,433,557
3,433,568
3,433,572
3,433,633
3,433,635
3,433,637
3,433,660
3,433,675
3,433,726
3,433,786
3,433,864
3,433,892
3,433,935
3,433,944
3,433,947
3,433,950
3,434,034
3,434,041
3,434,042
3,434,082
3,434,089
3,434,099
3,434,107
3,434,108
3,434,120
3,434,123
26 : 3,432,910
3,432,921
3,432,932
3,432,951
3,432,957
3,432,979
3,433,044
3,433,088
3,433,104
3,433,119
3,433,124
3,433,127
3,433,132
3,433,151
3,433,180
3,433,195
3,433,213
3,433,241
3,433,242
3,433,246

26 : 3,433,260
3,433,263
3,433,284
3,433,319
3,433,324
3,433,325
3,433,328
3,433,333
3,433,334
3,433,372
3,433,376
3,433,431
3,433,444
3,433,455
3,433,491
3,433,496
3,433,515
3,433,524
3,433,525
3,433,526
3,433,538
3,433,581
3,433,618
3,433,621
3,433,685
3,433,757
3,433,760
3,433,765
3,433,780
3,433,798
3,433,807
3,433,824
3,433,851
3,433,852
3,433,863
3,433,907
3,433,916
3,433,939
3,433,990
3,433,995
3,434,009
3,434,012
3,434,038
3,434,048
3,434,077
3,434,149
27 : 3,432,978
3,433,031
3,433,040
3,433,068
3,433,074
3,433,204
3,433,259
3,433,317
3,433,355
3,433,363
3,433,370
3,433,417
3,433,547
3,433,584
3,433,644
3,433,645
3,433,646
3,433,678
3,433,703
3,433,766
3,433,933
3,433,975
3,434,050
3,434,093
3,434,124
3,434,135
3,434,151
28 : 3,432,868
3,432,959
29 : 3,432,950
3,433,236
3,433,293
3,433,520
3,433,571
3,433,601
3,433,719
3,433,859
3,433,930
3,433,988
30 : 3,433,307
31 : 3,432,949
3,433,023
3,433,456
3,433,938
32 : 3,433,185
33 : 3,433,442
3,433,697
3,433,888
34 : 3,432,862
3,432,905
3,432,909
3,432,945
3,432,992
3,433,015
3,433,022
3,433,034
3,433,134
3,433,187
3,433,189
3,433,190

34 : 3,433,191
3,433,192
3,433,200
3,433,232
3,433,235
3,433,265
3,433,275
3,433,342
3,433,356
3,433,382
3,433,390
3,433,394
3,433,405
3,433,410
3,433,429
3,433,435
3,433,449
3,433,461
3,433,478
3,433,508
3,433,546
3,433,563
3,433,587
3,433,589
3,433,608
3,433,650
3,433,656
3,433,661
3,433,682
3,433,700
3,433,701
3,433,704
3,433,712
3,433,718
3,433,732
3,433,743
3,433,759
3,433,771
3,433,776
3,433,794
3,433,795
3,433,808
3,433,817
3,433,821
3,433,823
3,433,838
3,433,847
3,433,854
3,433,861
3,433,868
3,433,872
3,433,889
3,433,895
3,433,897
3,433,901
3,433,927
3,433,932
3,433,949
3,433,958
3,433,965
3,433,979
3,433,992
3,434,019
3,434,021
3,434,056
3,434,058
3,434,059
3,434,106
3,434,111
3,434,112
3,434,115
3,434,119
3,434,121
3,434,130
3,434,132
3,434,146
3,434,159
35 : 3,433,365
36 : 3,432,875
3,432,876
3,432,882
3,432,913
3,432,920
3,432,926
3,432,942
3,432,948
3,432,958
3,432,963
3,432,964
3,432,973
3,433,029
3,433,077
3,433,090
3,433,106
3,433,110
3,433,113
3,433,153
3,433,164
3,433,181
3,433,183
3,433,196
3,433,203
3,433,218
3,433,220
3,433,229

36 : 3,433,231
3,433,234
3,433,239
3,433,249
3,433,254
3,433,257
3,433,266
3,433,277
3,433,279
3,433,281
3,433,296
3,433,299
3,433,316
3,433,326
3,433,335
3,433,349
3,433,350
3,433,351
3,433,395
3,433,397
3,433,408
3,433,426
3,433,427
3,433,477
3,433,479
3,433,495
3,433,513
3,433,548
3,433,550
3,433,552
3,433,556
3,433,558
3,433,565
3,433,576
3,433,583
3,433,613
3,433,636
3,433,639
3,433,651
3,433,654
3,433,677
3,433,686
3,433,705
3,433,709
3,433,710
3,433,721
3,433,722
3,433,750
3,433,785
3,433,788
3,433,827
3,433,834
3,433,865
3,433,874
3,433,877
3,433,941
3,433,948
3,433,962
3,433,967
3,433,974
3,433,989
3,434,003
3,434,013
3,434,016
3,434,030
3,434,040
3,434,061
3,434,063
3,434,067
3,434,070
3,434,083
3,434,092
3,434,109
3,434,116
3,434,117
3,434,131
3,434,142
37 : 3,432,877
3,432,924
3,433,107
3,433,339
3,433,445
3,433,667
3,433,772
3,434,031
3,434,037
39 : 3,432,873
3,432,908
3,432,938
3,432,943
3,432,966
3,433,016
3,433,020
3,433,021
3,433,030
3,433,037
3,433,042
3,433,057
3,433,060
3,433,065
3,433,069
3,433,084
3,433,089
3,433,099
3,433,114
3,433,154
3,433,155

39 : 3,433,168
3,433,178
3,433,184
3,433,201
3,433,253
3,433,255
3,433,280
3,433,283
3,433,292
3,433,330
3,433,354
3,433,357
3,433,369
3,433,388
3,433,398
3,433,403
3,433,418
3,433,421
3,433,450
3,433,452
3,433,460
3,433,465
3,433,468
3,433,469
3,433,470
3,433,505
3,433,512
3,433,535
3,433,537
3,433,555
3,433,573
3,433,577
44 : 3,432,952
3,433,616
45 : 3,432,891
3,433,631
3,433,632
3,433,649
3,433,683
3,433,690
3,433,691
47 : 3,432,928
3,433,713
3,433,720
3,433,725
3,433,730
3,433,744
3,433,758
3,433,764
48 : 3,432,872
3,433,856
3,433,858
3,433,887
3,433,910
3,433,918
3,433,956
3,434,074
3,434,133
3,434,145
40 : 3,432,892
3,432,962
3,433,071
3,433,214
3,433,215
3,433,406
3,433,407
3,433,507
3,433,578
3,433,828
3,433,873
3,433,986
3,434,046
41 : 3,433,018
3,433,481
3,433,497
3,433,994
3,434,049
42 : 3,432,871
3,432,886
3,432,887
3,432,896
3,432,898
3,432,900
3,432,902
3,432,936
3,432,972
3,433,025
3,433,028
3,433,038
3,433,046
3,433,116
3,433,117
3,433,133
3,433,226
3,433,286
3,433,287
3,433,306
3,433,320
3,433,373
3,433,423
3,433,438
3,433,462
3,433,472
3,433,485
3,433,607
3,433,611
3,433,623
3,433,673

43 : 3,433,517
44 : 3,432,952
3,433,689
45 : 3,432,891
3,433,003
3,433,048
3,433,137
3,433,346
3,433,432
47 : 3,432,928
3,433,109
3,433,294
3,433,295
3,433,389
3,433,857
3,433,881
48 : 3,432,872
3,432,895
3,432,918
3,432,954
3,432,965
3,432,975
3,433,004
3,433,033
3,433,139
3,433,174
3,433,210
3,433,223
3,433,224
3,433,252
3,433,301
3,433,302
3,433,304
3,433,305
3,433,312
3,433,313
3,433,386
3,433,488
3,433,503
3,433,506
3,433,731
3,433,733
3,433,741
3,433,742
3,433,806
3,433,832
3,433,841
[illegible]
[illegible]
3,434,015
3,434,020
3,434,045
3,434,062
3,434,064
3,434,068
3,434,104
3,434,105
3,434,134
49 : 3,433,233
3,433,860
51 : 3,432,977
3,433,007
3,433,047
3,433,054
3,433,177
3,433,261
3,433,383
3,433,384
3,433,534
3,433,699
3,433,801
3,433,802
3,433,903
3,433,953

51 : 3,434,033	53 : 3,433,457	55 : 3,432,937	55 : 3,433,240	55 : 3,433,502	55 : 3,433,717
3,434,138	3,433,647	3,432,980	3,433,243	3,433,510	3,434,027
52 : 3,433,135	3,433,702	3,433,076	3,433,285	3,433,544	3,434,103
53 : 3,432,996	54 : 3,433,530	3,433,169	3,433,367	3,433,642	3,434,153
3,433,310	55 : 3,432,893	3,433,217	3,433,392	3,433,674	56 : 3,433,216
3,433,439	3,432,933	3,433,230	3,433,498	3,433,679	59 : 3,434,010

Design Patents

4 : 213,546	6 : 213,601	20 : 213,548	34 : 213,542	36 : 213,586	42 : 213,547
6 : 213,549	213,608	213,552	213,543	213,595	213,561
213,550	213,609	213,559	213,553	213,596	213,603
213,556	213,610	24 : 213,551	213,554	213,599	48 : 213,580
213,558	8 : 213,572	213,570	213,557	37 : 213,593	213,581
213,564	9 : 213,584	213,578	36 : 213,540	39 : 213,539	213,583
213,579	17 : 213,565	25 : 213,541	213,544	213,571	55 : 213,560
213,585	213,574	213,566	213,545	213,582	213,576
213,590	213,587	213,575	213,555	213,592	213,577
213,597	213,588	26 : 213,567	213,562	213,602	213,598
213,600	18 : 213,589	29 : 213,569	213,568	213,607	

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 18, 1969 Volume 860 Number 3

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 103,906 (MANHATTAN), The Manhattan Shirt Company, Outer shirts, dress shirts, negligee shirts, and high-grade underwear, as follows: shirts, drawers, and union suits made of textile materials; **Reg. No. 629,186**, same, Robes for personal wear; **Reg. No. 429,687**, same, Neckties; **Reg. No. 232,666** (MANSHADES), same Outer shirts; **Reg. No. 124,019** (MANHATTAN), same, Outer shirts and dress-shirts; **Reg. No. 140,800**, same, Outer shirts, dress-shirts and pajamas; **Reg. No. 150,673**, same, Clothing for men, women and children as follows: knit and woven underwear, hosiery, bathing suits, and sweaters, filed Nov. 21, 1968, D.C., M.D. Fla. (Jacksonville), Doc. 68–514–C–J, *Manhattan Industries Inc.* v. *Manhattan Fashions.*

Reg. No. 124,019. (See Reg. No. 103,906.)

Reg. No. 140,800. (See Reg. No. 103,906.)

Reg. No. 150,673. (See Reg. No. 103,906.)

Reg. No. 216,906 (SHALIMAR), Guerlain, Inc., Perfumes, filed Dec. 9, 1968, D.C., E.D. Pa. (Philadelphia), Doc. C.A. 68–2677, *Guerlain, Inc.* v. *De Grasse et Cie Inc. et al.*

Reg. No. 232,666. (See Reg. No. 103,906.)

Reg. No. 429,687. (See Reg. No. 103,906.)

Reg. No. 513,225 (JULIUS AND DESIGN), Orange Julius Corporation, Compound for the preparation of a nonalcoholic, maltless beverage sold as a soft drink, filed June 24, 1968, D.C., S.D.N.Y. Doc. 68–C–2575, *Orange Julius of America, Inc. et al.* v. *Richard S. Cohn.* Settlement approved, complaint discontinued, July 9, 1968.

Reg. No. 527,589 (GRAND OLD OPRY), WSM Incorporated, Radio program broadcasting services; entertainment services through the medium of radio and personal appearance performances of dramatic, musical, and dramtico-musical programs; and for the advertising of sponsors' goods through the medium of radio broadcast programs; **Reg. No. 645,886**, same, The title of entertainment services in the nature of dramatic, dramatico-musical programs and/or musical programs performed through the medium of television and personal appearances, filed Nov. 21, 1968, D.C. Del. (Wilmington), Doc. 3634, *WSM, Incorporated* v. *Mid-America Television Company.*

Reg. No. 629,186. (See Reg. No. 103,906.)

Reg. No. 643,926 (DESIGN OF RABBIT'S HEAD), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 675,006** (FANCIFUL REPRESENTATION OF HEAD OF RABBIT), same, Mechanically grooved phonograph records; **Reg. No. 679,997** (REPRESENTATION OF RABBIT'S HEAD), same, Cocktail glasses; **Reg. No. 723,889** (FANCIFUL DESIGN OF A RABBIT HEAD), same, Ties and men's and women's shirts; **Reg. No. 743,134** (REPRESENTATION OF RABBIT

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	16,535
Date of oldest new application	January 3, 1968
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	5–8 –68	9–8 –66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	5–21–68	10–18–65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	5–12–68	7–30–64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1–3 –68	9–22–65
Renewals (All Classes)	12–9 –68	----------
Sec. 12(c) Publications (All Classes)	12–11–68	----------

Applications filed during the month of January 1969—2,803

Registrations Issued ---------- 311—No. 866,682 to No. 866,992
Renewals Issued ---------- 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $30.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

HEAD AND DESIGN), same, Operating private social clubs which feature food, drinks, and entertainment; **Reg. No. 734,714** (FANCIFUL DESIGN OF RABBIT HEAD), same, Arranging and conducting travel tours and arranging hotel accommodations and entertainment for tourists; **Reg. No. 740,395** (PLAYBOY TOURS AND DESIGN), same; **Reg. No. 738,388** (KEY DESIGN), same, Operating private social clubs which feature food, drinks and entertainment, filed Oct. 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1962, *HMH Publishing Co., Inc.* v. *David Verduin, doing business as Lake Star Co., and Lake Star, Inc.* Judgment restraining defendants from selling, etc. decals and emblems bearing a representation of a rabbit head or any articles similar to plaintiff's registered "Rabbit Head Design," Dec. 17, 1968.

Reg. No. 645,898. (See Reg. No. 527,589.)

Reg. No. 675,806. (See Reg. No. 643,926.)

Reg. No. 679,907. (See Reg. No. 643,926.)

Reg. No. 728,889. (See Reg. No. 643,926.)

Reg. No. 733,636 (THYRO), Conifer Laboratories, Inc., Reagents in kit form for laboratory use in determining the protein bound iodine content of blood, filed Nov. 5, 1968, D.C. Minn. (Minneapolis), Doc. 4–68–C–359, *Conifer Laboratories, Inc.* v. *Uni-Tech Chemical Manufacturing Co., Inc.*

Reg. No. 734,714. (See Reg. No. 643,926.)

Reg. No. 738,886. (See Reg. No. 643,926.)

Reg. No. 739,239 (ASCARITE), Arthur H. Thomas Company, Sodium hydrate asbestos absorbent, filed Dec. 12, 1968, D.C. District of Columbia (Washington), Doc. 3088–68, *H. R. Radomski & Co., Ltd.* v. *Hugo Freund.*

Reg. No. 740,395. (See Reg. No. 643,926.)

Reg. No. 743,134. (See Reg. No. 643,926.)

Reg. No. 764,009 (KORATRON), Koret of California, Chemically treated fabrics for making women's, misses' and children's dresses, halters, outer shorts, outer shirts, blouses, slacks, pedal pushers, jackets, and men's, students' and boys' pants, slacks, jackets, jacket and slack combinations, walking shorts, shirts, and blouses; **Reg. No. 769,609**, same, Women's, misses' and children's dresses, halters, outer shorts, outer shirts, blouses, slacks, pedal pushers, and jackets; and men's, students' and boys' pants, slacks, jackets, jacket and slack combinations, walking shorts, shirts and blouses; **Reg. No. 769,625**, same, Zippers and zipper tapes; **Reg. No. 780,108**, same, Koratron Company, Inc., Chemical solutions to be applied to fabrics for rendering products thereof press-free with retained creases after repeated washings; **Reg. No. 816,674** (KORATRON AND DESIGN), same, Women's, misses', and children's dresses, halters, outer shorts, outer shirts, blouses, slacks, pedal pushers, and jackets; men's, students', and boys' pants, slacks, jackets, jacket and slack combinations, walking shorts, shirts, and blouses; **Reg. No. 817,856**, same, Chemically treated fabrics for rendering products thereof press-free with retained creases after repeated washings; **Reg. No. 833,386** (KOR-PRESS), E. J. Korvette, Inc., Children's, girls' and ladies' shirts, jackets, dresses, blouses, slacks, pants, and sweaters; **Reg. No. 857,565** (KOR-VAL), Spartans Industries, Inc., Hosiery, filed Nov. 4, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2063, *Koratron Company, Inc.* v. *E. J. Korvette, Inc.*

Reg. No. 769,609. (See Reg. No. 764,009.)

Reg. No. 769,625. (See Reg. No. 764,009.)

Reg. No. 780,108. (See Reg. No. 764,009.)

Reg. No. 784,934 (JADE EAST), Swank, Inc., Cologne, after-shave lotion and deodorant, filed June 20, 1968, D.C., S.D.N.Y., Doc. 68–C–2516, *Swank, Inc.* v. *Almar Sales Co., Inc.* Final judgment on consent, defendant enjoined, Oct. 30, 1968.

Reg. No. 801,100 (A TO Z), A to Z Rental, Inc., Service of renting tools, equipment, and vehicles, filed Nov. 15, 1968, D.C. Mont. (Great Falls), Doc. 2818–C, *Reuben Strobel* v. *Arnold C. Peterson.* Dismissed with prejudice, plaintiff stipulating to cease and desist use of "A to Z" mark and acknowledging defendant's ownership and registration of mark, Dec. 26, 1968. Same, filed Oct. 8, 1968, D.C. Mont. (Great Falls), Doc. 2806–C, *A to Z Rental, Inc.* v. *Arnold C. Peterson.* Dismissed without prejudice, agreement requiring defendant to cease and desist use of "A-Z" mark or/and other mark confusingly similar thereto. Defendant acknowledged plaintiff's ownership and registration of mark, Nov. 21, 1968.

Reg. No. 807,406 (ASPERGESIC AND DESIGN), S. M. Duschock, Liquid analgesic; **Reg. No. 858,527** (ASPERGESIC), Polamer Drug Co., Inc., Analgesic tablets, filed Nov. 13, 1968, D.C., S.D.N.Y., Doc. 68–C–4484, *Polamer Drug Co., Inc.* v. *Robert Daniels & Co., Inc.* Same, filed Nov. 25, 1968, D.C.N.J. (Newark), Doc. 1232–68, *Polamer Drug Co., Inc.* v. *Generics Corporation of America, Robert Daniels & Company, Inc.*

Reg. No. 816,674. (See Reg. No. 764,009.)

Reg. No. 817,856. (See Reg. No. 764,009.)

Reg. No. 833,386. (See Reg. No. 764,009.)

Reg. No. 857,565. (See Reg. No. 764,009.)

Reg. No. 858,527. (See Reg. No. 807,406.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 267,013. Chore-Time Equipment, Inc., Milford, Ind. Filed Mar. 17, 1967.

CHORE-TIME

Owner of Reg. No. 575,167.

Class 100—Miscellaneous

For Engineering Services With Respect to Poultry and Livestock Equipment (Int. Cl. 42).

Class 103—Construction and Repair

For Installation and Maintenance Services With Respect to Poultry and Livestock Equipment (Int. Cl. 37).

First use Feb. 16, 1952.

SN 269,444. Novo Industrial Corporation, New York, N.Y. Filed Apr. 18, 1967.

NOVO

Owner of Reg. No. 736,018 and others.

Class 19—Vehicles

For Mirrors and Reflectors (Int. Cl. 12).

Class 21—Electrical Apparatus, Machines, and Supplies

For Switches for Raising and Lowering Power Winders and Seats; Electric Lighting and Safety Equipment—Namely, Head Lamps, Safety Lights, Directional Lamps and Switches, Bicycle Lights and Horns, Portable Flashlight Type Lanterns, Marine Lights for Boats, and Battery Operated Electric Candles (Int. Cls. 9 and 11).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Crankcase Ventilating Systems and Pumps (Int. Cl. 7).

Class 31—Filters and Refrigerators

For Air Cleaners for Internal Combustion Engines; Oil and Hydraulic Filters; and Filter Elements for Air Cleaners (Int. Cls. 7 and 12).

First use May 23, 1961.

SN 269,612. Agpro, Inc., Santa Rosa, Calif. Filed Apr. 20, 1967.

MANURE-RAIN

Class 100—Miscellaneous

For Design and Engineering of Hydraulic Systems for the Collection, Processing and Disposal of Animal Wastes (Int. Cl. 42).

Class 103—Construction and Repair

For Installation and Maintenance of Hydraulic Systems for the Collection, Processing and Disposal of Animal Wastes (Int. Cl. 37).

First use Nov. 1, 1966.

SN 269,843. B. Freudenberg Inc., New York, N.Y. Filed Apr. 24, 1967.

Bfi

Class 100—Miscellaneous

For Engineering and Consulting Services in the Field of Electronic Equipment (Int. Cl. 42).

Class 101—Advertising and Business

For Distributorship Services in the Field of Electronic Equipment (Int. Cl. 35).

Class 103—Construction and Repair

For Servicing of Electronic Equipment (Int. Cl. 37).

First use September 1962.

SN 272,403. The Permalux Company, Aurora, Ill. Filed May 25, 1967.

PROCESS 40

The word "Process" is disclaimed apart from the mark as shown.

Class 1—Raw or Partly Prepared Materials

For Vinyl Pressure-Sensitive Marking Film (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Pressure-Sensitive Emblems Prepared From Vinyl Marking Film (Int. Cl. 16).

First use at least as early as February 1967.

SN 275,192. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed July 3, 1967.

MOWILITH

Owner of German Reg. No. 783,908, dated Feb. 2, 1957.

Class 1—Raw or Partly Prepared Materials

For Natural and Synthetic Resins (Int. Cls. 1 and 2).

Class 5—Adhesives

For Natural and Synthetic Resin Adhesives (Int. Cl. 1).

Class 6—Chemicals and Chemical Compositions

For Wetting and Fixing Agents for Adhesives and Glues, Fixing Agents for Pigment Dispersions and Mordants (Int. Cl. 2).

Class 16—Protective and Decorative Coatings

For Varnishes and Lacquers (Int. Cl. 2).

SN 277,628. Anthony J. Ciroli, Medford, Mass. Filed Aug. 7, 1967.

KNIT-WIT

Owner of Reg. No. 582,720.

Class 38—Prints and Publications

For Knitting Instruction Books (Int. Cl. 16).

Class 43—Thread and Yarn

For Kits Containing Yarn and Instructions for Making Knitted Goods (Int. Cl. 23).

First use Apr. 5, 1954.

SN 285,285. Puppy Palace Enterprises, Inc., Philadelphia, Pa. Filed Nov. 21, 1967.



Applicant disclaims the words "Pet Products" apart from the mark as shown.

Class 6—Chemicals and Chemical Compositions

For Disinfectants, Deodorants, Repellants and a Preparation To Promote Housebreaking (Int. Cl. 5).

Class 18—Medicines and Pharmaceutical Preparations

For Proprietary Preparations for the Treatment of Minor Ailments of Eyes, Ears, Skin, Internal Disorders, Worms, Motion Sickness, Diarrhea, and Mange in Animals; Vitamins; and Mating Control Tablets (Int. Cl. 5).

Class 46—Foods and Ingredients of Foods

For Foods and Food Supplements—Namely, Wheat Germ, Oil, Milk Substitutes, Cod Liver Oil, Mynah Bird Meal, Mynah Bird Pellets, Canary Seed, Keet Seed With Fruit, Canary Moulting Food, Song Food, Canary Conditioning Food, Malt and Malt Food Supplement (Int. Cls. 5 and 31).

Class 52—Detergents and Soaps

For Preparation To Remove Animal Stains From Rugs and Carpets, and Pads Impregnated With a Dry Cleaning Preparation for Use on Animals (Int. Cl. 3).

First use June 23, 1967.

SN 286,113. Fibre Formations, Inc., Philadelphia, Pa. Filed Dec. 4, 1967.

AMITY

Class 37—Paper and Stationery

For Disposable Products—Namely, Paper Towels (Int. Cl. 16).

Class 39—Clothing

For Disposable Products—Namely, Examination Gowns and Examination Capes (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Disposable Products—Namely, Sheets and Absorbent Cellulose Underpads (Int. Cl. 24).

First use Aug. 14, 1967.

SN 286,397. Enterprise Paint Manufacturing Company, Chicago, Ill. Filed Dec. 7, 1967.

TASK FORCE

Class 16—Protective and Decorative Coatings

For Floor and Concrete Sealing and Finishing Preparations for Industrial or Professional Use (Int. Cl. 2).

Class 52—Detergents and Soaps

For Strippers and Solvents for Cleaning and Degreasing Purposes; and Cleaning, Deodorizing, and Disinfecting Detergents for Industrial or Professional Use (Int. Cls. 1 and 5).

First use Oct. 31, 1967.
Subj. to Intf. with SN 291,445.

SN 287,207. Gilac S.A.R.L., Oyonnax (Ain), France. Filed Dec. 19, 1967.

GILAC

Owner of French Reg. No. 668, dated Feb. 17, 1955 (Nantua); Natl. Inst. No. 55,397.

Class 2—Receptacles

For Baskets, Buckets, Garbage Cans and Dish Pans All Made of Plastic (Int. Cl. 21).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Bathroom Accessories—Namely, Soap Holders, Towel Racks and Toilet Paper Holders (Int. Cl. 21).

Class 32—Furniture and Upholstery

For Chairs, Stools and Shelves (Int. Cl. 20).

Class 44—Dental, Medical, and Surgical Appliances

For Bed Pans, Urinals, and Hot Water Bottles (Int. Cls. 10 and 21).

Class 50—Merchandise Not Otherwise Classified

For Coat and Robe Hangers (Int. Cl. 26).

SN 287,850. The Frank Lloyd Wright Foundation, Scottsdale, Ariz. Filed Jan. 2, 1968.

TALIESIN

Owner of Reg. No. 853,377.

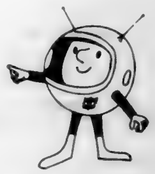
Class 36—Musical Instruments and Supplies

For Music Boxes (Int. Cl. 15).
First use on or before Sept. 1, 1966.

Class 38—Prints and Publications

For Post Cards, Books and Pamphlets (Int. Cl. 16).
First use on or before Mar. 1, 1966.

SN 292,647. Biarritz Shoes, Biarritz, France. Filed Mar. 7, 1968.



Priority claimed under Sec. 44(d) on French Reg. No. 727,041, dated Sept. 8, 1967.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Cases, Trunks, Handbags, Brief Cases, Animal Collars, Dog Leashes, Saddles, Bridles, Purses, Billfolds, and Pocketbooks (Int. Cl. 18).

Class 39—Clothing

For Boots, Shoes, and Slippers (Int. Cl. 25).

SN 292,833. Gibson, Inc., Kalamazoo, Mich. Filed Mar. 11, 1968.



Owner of Reg. No. 510,594.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electronic Amplifiers (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Musical Instruments of the Fretted Type—Namely, Guitars, Electric Guitars, Mandolins, Banjos, Ukeleles, and Electric Bases, Organs, and Replacement Parts Therefor—Namely, Pick Guards (Int. Cl. 15).

First use at least as early as June 1966.

SN 294,769. Renault, Inc., New York, N.Y. Filed Apr. 3, 1968.

RENAULT

Owner of Reg. No. 240,774.

Class 19—Vehicles

For Motor Vehicles—Namely, Automobiles, Trucks and Buses, Motor Vehicle Bodies, Instrument Panels, Moldings and Trim, Seats, Doors, Back Rests, Bumpers, Windows, Mirrors, Floor Mats, Windshield Wiper Motors and Heaters, Seat Belts and Seat Belt Parts for Motor Vehicles and Parts of All of the Foregoing (Int. Cls. 12 and 27).
First use at least as early as January 1907.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Parts and Accessories for Motor Vehicles—Namely, Generators, Fans, Starters, Headlights, Parking and Tail Lights and Lenses and Bulbs Therefor, Electrical Wiring, Electrical Switches, Horns, and Parts of All of the Foregoing (Int. Cls. 9, 11, and 12).
First use at least as early as January 1907.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automobile Transmissions, Differentials, Internal Combustion Engines, Clutches and Parts for All of the Foregoing; and Hand and Electric Tools for Use in the Repair and Maintenance of Automobiles (Int. Cls. 7, 8, and 12).
First use at least as early as January 1907.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Fan and Generator Belts, Gaskets, Rubber and Plastic Hose and Tubing (Int. Cls. 7 and 17).
First use at least as early as January 1907.

Class 103—Construction and Repair

For Motor Vehicle Repair and Maintenance Services (Int. Cl. 37).
First use at least as early as 1907.

SN 298,196. Carter Case Inc., New York, N.Y. Filed May 15, 1968.

CRTR

Class 27—Horological Instruments

For Watches (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Rings, Earrings, Clasps, Necklaces, Bracelets, Pins and Brooches, Cufflinks, Tie Bars, and Tiaras (Int. Cl. 14).

First use Mar. 15, 1967.

SN 301,667. Playskool Manufacturing Company, Chicago, Ill. Filed July 1, 1968.

PLAYSKOOL

Owner of Reg. Nos. 241,344, 814,056, and others.

Class 22—Games, Toys, and Sporting Goods

For Educational Toys, Wheeled Toys, Vehicular Toys, Toy Construction and Building Sets, Children's Toy Furniture, Doll House Furniture, Puzzles, Educational Games and Games of Skill, Toys Having Music Making or Noise Making Attachments, Toys for Developing Manipulative Skills, and Children's Physical Activity Play Equipment (Int. Cl. 28).

Class 32—Furniture and Upholstery

For Children's Furniture (Int. Cl. 20).

First use on or about Nov. 17, 1927.

SN 301,872. Bowmar Records, Inc., Glendale, Calif. Filed July 3, 1968.



The mark consists of a hunter horn design.

Class 36—Musical Instruments and Supplies

For Phonograph Records (Int. Cl. 9).
First use about April 1962.

Class 38—Prints and Publications

For Books; Classroom Aids—Namely, Posters of Musical Instruments, Prints of Composers and Prints of Musical Instruments (Int. Cl. 16).
First use about August 1961.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 280,858. Cork Manufacturing Company Limited, South Chingford, London, England. Filed Sept. 21, 1967.

NEOLANGITE

Owner of U.S. Reg. Nos. 242,332, 243,628, and 859,304.
For Sheet Material of Bonded Synthetic Rubber and Cork for Various Industrial Uses (Int. Cl. 17).
First use at least as early as 1952; in commerce at least as early as 1952.

SN 285,033. W. & J. Martin Limited, Renfrew, Scotland. Filed Nov. 16, 1967.

ZUG

Owner of British Reg. No. 632,285, dated Oct. 25, 1944; and U.S. Reg. No. 399,189.
For Upper Leather (Int. Cl. 18).

SN 288,647. Shawinigan Chemicals Limited, Montreal, Quebec, Canada. Filed Jan. 11, 1968.

CLIMATITE

For Plastic Film and Sheeting for General Use in Industrial Arts (Int. Cl. 17).
First use Nov. 17, 1967; in commerce Nov. 17, 1967.

SN 290,955. Foam-Pak Corporation, Philadelphia, Pa. Filed Feb. 13, 1968.

FOAMPAK

For Synthetic Cushioning Packing Material (Int. Cl. 17).
First use on or about Jan. 12, 1954.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 284,089. Kossegi Leather & Vinyl Products, Inc., South Bend, Ind. Filed Nov. 6, 1967.

UNI-KIT

For Unfitted Toiletry Cases or Containers Formed of Leather or Plastic Material (Int. Cl. 18).
First use Sept. 20, 1967.

SN 291,099. Ralide, Inc., Athens, Tenn. Filed Feb. 14, 1968.

RALIDE

For Plastic Saddle Trees (Int. Cl. 18).
First use about Jan. 24, 1968.

Class 4 — Abrasives and Polishing Materials

SN 284,487. Leatherfoam, Inc., South Bend, Ind. Filed Nov. 9, 1967.

Leather foam

For Chemical Preparation Used for Cleaning, Polishing and Preserving Leather Articles and Shoes (Int. Cl. 3).
First use Dec. 22, 1953.

SN 295,981. This Corporation, Camden, N.J. Filed Apr. 18, 1968.

THIS

For Polishes for Golf Carts and Clubs, Boats, Boots, Gun Stocks and Racks, Golf and Bowling Bags, and Marine Chromium (Int. Cl. 3).
First use Mar. 1, 1968.

SN 297,318. Robert E. Roeser, d.b.a. Cleanbright Distributing Co., Bronx, N.Y. Filed May 3, 1968.

NO. 27 LIQUID EBONY

The word "Liquid" is disclaimed apart from the mark as shown.
For Liquid Abrasive and Polisher for Use on Cars (Int. Cl. 3).
First use Jan. 31, 1965.

SN 298,200. Coastal Abrasive & Tool Company, Inc., Trumbull, Conn. Filed May 15, 1968.

ZIPPIDI-DO

For Power Tool Accessory—Namely, Abrasive Cutting and Sanding Discs (Int. Cl. 7).
First use Mar. 1, 1968.

SN 298,680. American Abrasive Company, Westfield, Mass. Filed May 21, 1968.

OX ZALUMA 40

For Abrasives—Namely, a Blend of Aluminum Oxide and Zirconium for Use in the Metal, Stone and Glass Industries, for Polishing and Pressure Blasting, and as the Abrasive Ingredient in Grinding Wheels (Int. Cl. 3).
First use April 1968.

SN 302,368. Abrasive Products, Inc., South Braintree, Mass. Filed July 10, 1968.



The mark is claimed only in the manner in which it is shown. Owner of Reg. No. 688,520.
For Flexible Coated Abrasives in the Form of Sheets, Belts, Rolls, Discs and Other Miscellaneous Shapes (Int. Cl. 3).
First use February 1968.

SN 303,960. Ball Industries, El Segundo, Calif. Filed July 31, 1968.

BALL

Owner of Reg. No. 741,112.
For Cream Wax Furniture Polish; Metal Polish; Stainless Steel Cleaner and Polish; Cedar Oil Polish; a Spray Polish for All Types of Furniture, Chrome, Stainless Steel, and Plastic; Buffable Floor Wax; Buffable Slip Retardant Floor Wax; Self-Polishing Floor Waxes; Specially Formulated Wax for Use on Hardwod, Cork and Concrete; and a Wax Base Liquid Cleaner Which Leaves a Wax-Like Film After Drying (Int. Cl. 3).
First use at least as early as the year 1951.

SN 303,987. The Drackett Company, Cincinnati, Ohio. Filed July 31, 1968.

NATURE'S OWN

For Cleaning Wax for Use on Wood Paneling, Furniture, Plastic Counters and Table Tops, Leather Items, Brass, Chrome, Stainless Steel, Porcelain and Enameled Surfaces, Ceramic Tile and Vinyl Upholstery (Int. Cl. 3).
First use June 27, 1968.

SN 303,988. The Drackett Company, Cincinnati, Ohio. Filed July 31, 1968.

NATURE'S BEST

For Cleaning Wax for Use on Wood Paneling, Furniture, Plastic Counters and Table Tops, Leather Items, Brass, Chrome, Stainless Steel, Porcelain and Enameled Surfaces, Ceramic Tile and Vinyl Upholstery (Int. Cl. 3).
First use June 27, 1968.

SN 305,416. The Drackett Company, Cincinnati, Ohio. Filed Aug. 19, 1968.

BESTOW

For Cleaning Wax for Use on Wood Paneling, Furniture, Plastic Counters and Table Tops, Brass, Chrome, Stainless Steel, Porcelain and Enameled Surfaces, Ceramic Tile and Vinyl Upholstery (Int. Cl. 3).
First use July 29, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 279,762. West Chemical Products, Inc., Long Island City, N.Y. Filed Sept. 6, 1967.

TETRADINE

For Iodine Ingredient of a Disinfectant and Deodorant Preparation, With Incidental Cleansing Properties, for Animals, Poultry and Their Equipment (Int. Cl. 5).
First use July 11, 1967.

SN 283,680. Madison Chemical Corporation, Maywood, Ill. Filed Oct. 30, 1967.

OUT-CIDE

For Insecticide Concentrate for Use With Fogging Dispensers (Int. Cl. 5).
First use Mar. 31, 1964.

SN 294,517. Madison Chemical Corporation, Maywood, Ill. Filed Mar. 29, 1968.

RALLY!

For Leather Dressing Which Preserves, Softens, Weather-Proofs and Retards Mildew (Int. Cl. 1).
First use Mar. 23, 1964.

SN 301,738. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 1, 1968.

PRIMAZE

Owner of Reg. No. 834,552.
For Herbicide (Int. Cl. 5).
First use Apr. 10, 1968.

SN 301,739. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 1, 1968.

EZZIN

For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use June 11, 1968.

SN 301,740. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 1, 1968.

FIRODAL

For Chemical Ingredient Used in the Manufacture of Nematicides (Int. Cl. 1).
First use June 20, 1968.

SN 301,741. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 1, 1968.

CARAGARD

Owner of Reg. No. 819,349.
For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use June 11, 1968.

SN 302,028. Allied Chemical Corporation, New York, N.Y. Filed July 5, 1968.

FASTOLON

For Dyes, Dyestuffs and Colors (Int. Cl. 2).
First use on or about July 21, 1965.

SN 304,835. Sternco Industries, Inc., Harrison, N.J. Filed Aug. 9, 1968.

Owner of Reg. No. 859,910.
For Chemicals for Aquarium Water Testing (Int. Cl. 1).
First use May 6, 1968.

SN 307,706. Abbott Laboratories, North Chicago, Ill. Filed Sept. 19, 1968.

TETRAMET

For Laboratory Radioactive Thyroxine for Medical Diagnostic Use (Int. Cl. 1).
First use Sept. 10, 1968.

Class 7 — Cordage

SN 299,167. Southern Mills, Inc., Atlanta, Ga. Filed May 27, 1968.

SOUPAK

For Fabric Slings for Handling Linen and Clothing in a Laundry (Int. Cl. 22).
First use on or about Apr. 26, 1968.

Class 8 — Smokers' Artides, Not Induding Tobacco Products

SN 304,822. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Aug. 9, 1968.

SONY

Owner of U.S. Reg. Nos. 705,902, 801,885, and others.
For Cigarette and Cigar Lighters and Ash Trays (Int. Cl. 34).
First use July 20, 1967; in commerce July 20, 1967.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 298,778. Earl Pellant, Hollywood, Calif. Filed May 22, 1968.

Stock
Lo-Kater
by Pellant

No claim is made to the word "Stock" apart from the association shown.
For Shaped Leather Pad, Affixed to the Wearer by Means of Leather Straps, for Trap, Skeet or Bird Shooting, To Be Worn by a Shooter as an Aid in Keeping a Gun Stock in Its Proper Place on the Shoulder of the Shooter (Int. Cl. 13).
First use on or about Dec. 28, 1967.

SN 307,106. Imperial Chemical Industries Limited, Millbank, London, England. Filed Sept. 11, 1968.

AQUAFLEX

Owner of British Reg. No. 905,655, dated Feb. 20, 1967.
For Detonating Fuses (Int. Cl. 13).

Class 10 — Fertilizers

SN 267,030. Garden Products, Inc., South San Francisco, Calif. Filed Mar. 17, 1967.

GROMIX

For Organic Base Planters (Int. Cl. 1).
First use Feb. 10, 1967.

SN 299,657. Doggett-Fison Company, Moonachie, N.J. Filed June 4, 1968.

NUTRI-RAPID

For Water Soluble Fertilizers (Int. Cl. 1).
First use Jan. 9, 1964.

Class 12 — Construction Materials

SN 293,884. Plywood & Door Manufacturers Corporation, Bronx, N.Y. Filed Mar. 22, 1968.

Finn Form

For Plywood Concrete Forms (Int. Cl. 19).
First use on or about Mar. 15, 1964.

SN 294,316. SCM Corporation, Cleveland, Ohio. Filed Mar. 27, 1968.

DECO-LURE

For Resin-Impregnated, Transparent and Decorative Paper Overlays (Int. Cl. 16).
First use Jan. 29, 1968.

SN 299,061. GAF Corporation, New York, N.Y., by merger from American Felt Company, Glenville, Conn. Filed May 27, 1968.

AFCO

Owner of Reg. Nos. 520,627 and 702,567.
For Building or Construction Material—Namely, Acoustic Felt for Walls and Ceilings, Vibration Isolation and Sound Absorbing Felt, and Felt Weather Stripping (Int. Cls. 17 and 19).
First use Jan. 4, 1968, on vibration isolation and sound absorbing felt.

SN 304,667. The Cambridge Tile Manufacturing Company, Cincinnati, Ohio. Filed Aug. 8, 1968.

ETRUSCAN

For Glazed Wall and Floor Tile (Int. Cl. 19).
First use Mar. 1, 1965.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 261,082. Interfarm G.m.b.H., Buchschlag, near Frankfurt, Germany. Filed Dec. 19, 1966.

MONOFLO

For Watering Systems for Poultry and Other Livestock, and Valves and Parts and Accessories Therefor (Int. Cl. 11).
First use November 1965.

SN 263,103. National Lock Co., Rockford, Ill. Filed Jan. 28, 1967.

Dress up your home!

For Cabinet, Chest, Refrigerator, Range, Bathroom, Household and Office Furniture, Window, Door and Builders' Hardware (Int. Cl. 6).
First use Jan. 10, 1966.

SN 280,582. Gary Industries, Inc., d.b.a. Acco Products, Chicago, Ill. Filed Jan. 25, 1968.

ACCO

Owner of Reg. No. 735,684 and others.
For Staples for Desk Type Staplers (Int. Cl. 16).
First use Sept. 20, 1967.

SN 292,223. Siks Manufacturing, Inc., Bronx, N.Y. Filed Feb. 29, 1968.

UNI-STAT

For Hardware Jigs, Universal Station for Holding Work in Process of Manufacturing, Assembly, Inspection, Testing, etc. (Int. Cl. 6).
First use Oct. 14, 1967.

SN 293,793. Beneke Corporation, Columbus, Miss. Filed Mar. 21, 1968.

E-Z-ON

For Toilet Seats (Int. Cl. 11).
First use Dec. 1, 1967.

SN 295,848. Sani-Seat Inc., Chicago, Ill. Filed Apr. 17, 1968.

Sanitét

For Toilet Seats Having Warm Water Spray, Warm Air Drying and/or Douche Attachments (Int. Cl. 11).
First use Dec. 15, 1967.

SN 296,817. The Delron Company, Inc., Santa Ana, Calif. Filed Apr. 29, 1968.

DURA-LOC

For Self Locking Nuts (Int. Cl. 6).
First use approximately May 10, 1946.

SN 299,175. Bliss & Laughlin Industries Incorporated, Oak Brook, Ill., assignee of Threaded Nails, Inc., Skokie, Ill. Filed May 27, 1968.



The illustration of the nail apart from the composite shown on the drawing is disclaimed.
For Nails (Int. Cl. 6).
First use May 5, 1954.

SN 299,607. The West Bend Company, West Bend, Wis. Filed June 3, 1968.

MIRACLE MAID
© the ultimate dimension in cookware

No claim is made to the words "The Ultimate Dimension in Cookware." Owner of Reg. Nos. 334,570, 527,908, and 583,126.
For Aluminum Cooking Utensils—Namely, Sauce Pans, Fry Pans, Roasters and Dutch Ovens (Int. Cls. 11 and 21).
First use May 3, 1968.

Class 14 — Metals and Metal Castings and Forgings

SN 295,122. Cyclops Corporation, Pittsburgh, Pa. Filed Apr. 8, 1968.

LR

For Metals in the Form of Ingots, Blooms, Billets, Bars, Rods, Wire, Plates, Sheets, Strip, Forgings and Wrought or Cast Shapes (Int. Cl. 6).
First use Nov. 24, 1964.

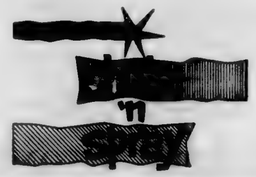
Class 16 — Protective and Decorative Coatings

SN 270,549. Cato Oil and Grease Company, Oklahoma City, Okla. Filed May 3, 1967.

WETSEAL

For Roof Coating Composition in the Nature of a Paint (Int. Cl. 2).
First use Apr. 2, 1962.

SN 286,411. Bel-Aire Paint Company, Los Angeles, Calif. Filed Dec. 7, 1967.



The drawing is lined to indicate the colors red, blue, violet, green, orange, and yellow, no claim is made to the colors apart from the mark as shown. Owner of Reg. No. 745,996.
For Paints (Int. Cl. 2).
First use Oct. 21, 1960.

SN 288,640. Garry R. Perkins, West Chicago, Ill. Filed Jan. 11, 1968.

TUFWEAR

For Abrasion Resistant Metallic-Fluorocarbon Coatings (Int. Cl. 2).
First use on or before Dec. 7, 1967.

SN 293,722. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Mar. 20, 1968.

P-40

For Paints and Paint Primers (Int. Cl. 2).
First use Jan. 24, 1967.

SN 303,084. United Gilsonite Laboratories, Scranton, Pa. Filed July 18, 1968.

NITE-BRITE

Owner of Reg. No. 561,010.
For Luminous Paint (Int. Cl. 2).
First use Feb. 4, 1949.

SN 305,915. Brooklyn Paint & Varnish Co., Inc., Brooklyn, N.Y. Filed Aug. 26, 1968.

VIP

For Interior Paints Including Vinyl Based Paints (Int. Cl. 2).
First use May 24, 1957.

SN 305,982. Rust-Oleum Corporation, Evanston, Ill. Filed Aug. 26, 1968.

STOPS RUST!

Owner of Reg. Nos. 632,437, 692,628, and others.
For Surface Coating Compositions—Namely, Rust-Preventive Paint and Enamel Surface Coating Compositions for the Protection of Metal Surfaces, Including Ferrous Metal Surfaces, From Corrosion; Rust-Preventive, Chemical-Resistant Paint and Enamel Surface Coatings; Rust-Preventive Heat Resistant Paint and Enamel Surface Coatings; Rust-Preventive Water-Resistant Paint and Enamel Surface Coatings; and Rust-Preventive Acid-Resisting Paint and Enamel Surface Coatings (Int. Cl. 2).
First use on or about Apr. 30, 1951.

SN 306,064. Lilly Chemical Products, Inc., Gardner, Mass. Filed Aug. 27, 1968.

MELAMINATE

For Liquid Synthetic Resin Coating Material for Providing Wood, Metal, and Plastic With Finishing Coats (Int. Cl. 2).
First use Aug. 5, 1968.

SN 306,790. M & H Laboratories, Inc., Chicago, Ill. Filed Sept. 6, 1968.

PRESERV-A-TONE

For Protective Coat for Wall and Ceiling Decorations and Acrylic Sealer for Padded Top, Vinyl Interiors, Engine Compartments and Other Automotive Parts (Int. Cl. 2).
First use in or about December 1943.

Class 17—Tobacco Products

SN 310,712. Theodorus Niemeijer N.V., d.b.a. Theodorus Niemeyer N.V., Groningen, Netherlands. Filed Oct. 28, 1968.

Neptune

For Cut Tobacco (Int. Cl. 34).
First use in 1903; in commerce Feb. 10, 1954.

SN 310,92 . James B. Russell, Inc., New York, N.Y. Filed Oct. 30, 1968.

GREAT DANE

For Pipe Smoking Tobacco (Int. Cl. 34).
First use Sept. 6, 1968.

SN 312,163. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Nov. 14, 1968.

For Cigarettes (Int. Cl. 34).
First use Oct. 30, 1968.

SN 312,377. The American Tobacco Company, New York, N.Y. Filed Nov. 18, 1968.

SAVE

For Cigarettes (Int. Cl. 34).
First use Nov. 4, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 292,529. Salada Foods Ltd., Don Mills, Ontario, Canada. Filed Feb. 23, 1968.

NEOCITRAN

Priority claimed under Sec. 44(d) on Canadian application filed Oct. 10, 1967; Reg. No. 157,209, dated June 7, 1968.
For Cold Remedy (Int. Cl. 5).

SN 295,809. The Dietene Company, Minneapolis, Minn. Filed Apr. 17, 1968.

POW!

For High-Calorie Food Supplements in Tablet and Powder Forms and Including Protein, Vitamins, and Minerals (Int. Cl. 5).
First use Feb. 27, 1968.

SN 296,003. American Cyanamid Company, Wayne, N.J. Filed Apr. 19, 1968.

PROSYMASUL

For Anti-Bacterial Preparation (Int. Cl. 5).
First use Feb. 23, 1968.

SN 296,433. Thomas H. Lamoreaux, d.b.a. H. Thomas Company, Grand Rapids, Mich. Filed Apr. 24, 1968.

CONCOR

For Pharmaceutical Preparation in Capsule Form for Relief of Allergies and Asthma (Int. Cl. 5).
First use on or about Mar. 29, 1968.

SN 296,601. The Wander Company, Lincoln, Nebr. Filed Apr. 25, 1968.

DOR-C

For Preparation To Be Used in the Treatment of Upper Respiratory Congestion (Int. Cl. 5).
First use Feb. 28, 1968.

SN 300,319. Agway, Inc., Dewitt, N.Y. Filed June 13, 1968.

WORMERPELS

For Medicated Livestock Feed (Int. Cl. 5).
First use Mar. 8, 1968.

SN 302,688. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 15, 1968.

PFIZER TLC

Owner of Reg. Nos. 620,956, 626,088, and others.
For Antibiotic Preparation for Veterinary Use (Int. Cl. 5).
First use July 2, 1968.

SN 311,425. White Laboratories, Inc., Kenilworth, N.J. Filed Nov. 5, 1968.

OPTIVAL

For Ophthalmic Solution (Int. Cl. 5).
First use Aug. 30, 1968.

SN 311,641. American Home Products Corporation, New York, N.Y. Filed Nov. 8, 1968.

DONOREST

For Psychotropic Agent (Int. Cl. 5).
First use Oct. 29, 1968.

Class 19—Vehicles

SN 281,649. Airfloat Corporation, Decatur, Ill., assignee of Vega Enterprises, Decatur, Ill. Filed Oct. 2, 1967.

AIRFLOAT

For Air Casters, Air Rollers, and Air Wheels (Int. Cl. 12).
First use Aug. 9, 1967.

SN284,674. Floyd W. Kuecker, Lacrosse,Wis. Filed Nov. 13, 1967.

POWRMITE

For Motorized Vehicles—Namely, Motorized Bicycles (Int. Cl. 12).
First use June 1965.

SN 285,640. Gaston Andrey Inc., Watertown, Mass. Filed Nov. 27, 1967.

GASTON ANDREY

For Automobiles (Int. Cl. 12).
First use April 1966.

SN 295,387. Trident Cars Limited, Woodbridge, Suffolk, England. Filed Apr. 10, 1968.

TRIDENT

For Land Vehicles—Namely, Automobiles, Bodies for Automobiles, and Parts Therefor (Int. Cl. 12).
First use Jan. 4, 1966; in commerce Mar. 30, 1967.

SN 300,288. Parker Industries, Inc., Silver Lake, Ind. Filed June 12, 1968.

HUMP-T-DUMPER

For Dump Truck Beds (Int. Cl. 12).
First use March 1968.
Subj. to Intf. with SN 304,288.

SN 300,711. Laher Spring & Electric Car Corp., Oakland, Calif. Filed June 18, 1968.

Laher

Owner of Reg. Nos. 206,777, 615,028, and others.
For Wheeled Vehicles—Namely, Golf Carts, Personnel Carriers and Electric Trucks (Int. Cl. 12).
First use Mar. 9, 1955.

SN 301,378. Universal Oil Products Company, Des Plaines, Ill. Filed June 25, 1968.

OLYMPIAN

For Airplane Seats (Int. Cl. 12).
First use Mar. 15, 1968.

SN 304,288. Thiele, Incorporated, Windber, Pa. Filed Aug. 5, 1968.

HUMP-T-DUMPER

The representation of the truck and the truck body, per se, are disclaimed apart from the mark as shown.
For Hydraulic Dump Bodies (Int. Cl. 12).
First use at least as early as June 3, 1968.
Subj. to Intf. with SN 300,288.

SN 305,828. Hudson River Boat Company, Santa Barbara, Calif. Filed Aug. 23, 1968.

sportcat

For Sail Boats (Int. Cl. 12).
First use Apr. 30, 1968.

SN 306,674. Lazott Company, Stow, Mass. Filed Sept. 5, 1968.

JOLLY ROGER

For Sailboats (Int. Cl. 12).
First use Mar. 23, 1967.

SN 311,816. Bonair Boats, Inc., Mission, Kans. Filed Nov. 12, 1968.

BONAIR

For Boats (Int. Cl. 12).
First use Oct. 10, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 264,255. Sonus Corporation, Natick, Mass. Filed Feb. 8, 1967.

SONUSWITCH

For Acoustically-Controlled Electric Switches (Int. Cl. 9).
First use January 1966.

SN 275,758. The Helfets Company, Clinton, Conn. Filed July 11, 1967.

CRYSTALUME

For Electrical Lamps, Electrical Lighting Fixtures, and Shades for Electrical Lighting Fixtures (Int. Cl. 11).
First use Dec. 13, 1963.

SN 276,648. Comdel, Inc., South Hamilton, Mass. Filed July 24, 1967.

COMDEL

For Radio Communication Equipment—Namely, Speech Processors, Directional Wattmeters, Balanced Mixers and Amplifiers (Int. Cl. 9).
First use August 1966.

SN 278,254. The Telex Corporation, Tulsa, Okla. Filed Aug. 14, 1967.

AMPLITWIN

For Headphones (Int. Cl. 9).
First use July 6, 1967.

SN 280,241. Mole-Richardson Co., Hollywood, Calif. Filed Sept. 13, 1967.

MOLESTROBE

For Lighting Equipment for Motion Picture, Television and Photographic Stages and Studios (Int. Cl. 11).
First use July 20, 1967.

SN 284,638. Electronized Chemicals Corporation, Burlington, Mass. Filed Nov. 13, 1967.

JudCo
Your Assurance of Control & Use

For Insulated Conductive Wire, Cable and Allied Applications Including Ground Wiring, Parallel Line Wires, TV Cables, Elevator Cables, Assemblies Comprising Electrical Wires Cut to Length, Stripped, Tinned, Terminated and Taped Including Harness Assemblies and Plastic Coated Steel Wires (Int. Cl. 9).
First use in or about September 1956.

SN 287,669. Pittway Corporation, Skokie, Ill. Filed Dec. 27, 1967.

ADEMCO

For Burglar and Fire Alarm Devices—Namely, Modularms, Day and Night Premise Controls, Multiarms, Burglar and Fire Alarms, Hold-Up Footrails, Vibration Detectors, Safe Alarms, Auto and Truck Alarms, Smoke Detectors and Parts Therefor (Int. Cl. 9).
First use on or about June 10, 1932.

SN 290,829. Continental Oil Company, Ponca City, Okla. Filed Feb. 12, 1968.

DYNALIFE

Owner of Reg. No. 813,876.
For Automotive Storage Batteries (Int. Cl. 9).
First use Oct. 4, 1967.

SN 291,585. Clevite Corporation, Cleveland, Ohio. Filed Feb. 21, 1968.

PANTHER LITE

The word "Lite" is disclaimed apart from the mark as a whole.
For Electric Lanterns (Int. Cl. 11).
First use Jan. 10, 1968.

SN 291,781. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Feb. 23, 1968.

REFRACTRON

For Television Tubes (Int. Cl. 9).
First use Feb. 8, 1968.

SN 292,397. F. Richard Mansfield, New York, N.Y. Filed Mar. 4, 1968.

DOG-ALARM

For Electrical Deterrent Burglar Alarm Systems (Int. Cl. 9).
First use Aug. 15, 1967.

SN 293,916. Dow Jones & Company, Inc., New York, N.Y. Filed Mar. 22, 1968.

DOWVUE

The lining of the drawing is not intended to indicate particular colors, but simply a contrast in the appearance of different portions of the mark.
For Closed Circuit Television Type Apparatus for Displaying News and Other Information (Int. Cl. 9).
First use August 1967.

SN 294,656. RMS Electronics, Inc., Bronx, N.Y. Filed Apr. 1, 1968.

RMS

For Consumer Electronic Equipment—Namely, Indoor and Outdoor Television Antennas and Parts Therefor, Intercoms, UHF Converters, Antenna Couplers and Splitters and FM Antennas (Int. Cl. 9).
First use on or about Jan. 1, 1947.

SN 295,308. Cities Service Oil Company, Tulsa, Okla. Filed Apr. 10, 1968.

CITGO

The drawing is lined for the colors orange and two shades of red.
For Batteries (Int. Cl. 9).
First use at least as early as Nov. 14, 1966.

SN 297,565. Infranor of North America, Inc., Berlin, Conn. Filed May 7, 1968.

WALL-LITER

For Electric Luminaires (Int. Cl. 11).
First use Feb. 28, 1967.

SN 298,317. Birnbach Radio Company Inc., New York, N.Y. Filed May 16, 1968.

BBR

The mark consists of the letters "BBR."
For Electronic Wire and Cable (Int. Cl. 9).
First use Mar. 1, 1968.

SN 298,418. Capitol Stage Lighting Co., Inc., New York, N.Y. Filed May 17, 1968.

QUARTZELLIPSOIDAL

For Spotlights (Int. Cl. 11).
First use on or about Apr. 10, 1968.

SN 298,490. Supersonic Radio Mfg. Co. (PVT.), Ltd., Belmont, Bulawayo, Rhodesia. Filed May 16, 1968.

SUPERSONIC

For Radio Receivers (Int. Cl. 9).
First use in 1952; in commerce December 1964.

SN 298,595. Guardian Electric Manufacturing Co., Chicago, Ill. Filed May 20, 1968.

REGALOY

For Electrical Contacts for Embodiment in Relays, Switches, Solenoids, Steppers, Contactors, Circuit Breakers, and Various Electrical Control Apparatus (Int. Cl. 9).
First use May 6, 1968.

SN 298,929. Espey Mfg. & Electronics Corp., Saratoga Springs, N.Y. Filed May 23, 1968.

HELIMAX

For Electric Fans (Int. Cl. 11).
First use Dec. 16, 1967.

SN 299,048. Square D Company, Park Ridge, Ill. Filed May 24, 1968.

VISI-TRIP

For Molded Case Circuit Breakers Having a Mechanical Indicator for Indicating the Operating Condition Thereof, and Indicators for Molded Case Circuit Breakers (Int. Cl. 9).
First use Oct. 31, 1966.

SN 299,356. ITT Blackburn Corporation, St. Louis, Mo. Filed May 29, 1968.

SQUID

For Electrical Connectors (Int. Cl. 9).
First use Apr. 19, 1968.

SN 299,454. Ford Motor Company, Dearborn, Mich. Filed May 31, 1968.

UNIFILL

For Electric Storage Batteries (Int. Cl. 9).
First use May 1968.

SN 299,457. Harman-Kardon, Incorporated, Plainview, N.Y. Filed May 31, 1968.

STRATOPHONIC

For Radio-Phonograph Combinations, Parts and Components Thereof (Int. Cl. 9).
First use on or about September 1964.

SN 300,690. Curlator Corporation, East Rochester, N.Y. Filed June 18, 1968.

CURFLOW

For Industrial Fans or Blowers (Int. Cl. 11).
First use December 1967.

SN 301,287. Wells Television, Inc., New York, N.Y. Filed June 24, 1968.

WELLBOW

For Combination Television Set and Arm Support Therefor (Int. Cl. 9).
First use September 1965.

SN 301,558. Tandy Corporation, d.b.a. Radio Shack, Boston, Mass. Filed June 27, 1968.

ENERCELL

For Dry Cell Batteries (Int. Cl. 9).
First use at least as early as Mar. 31, 1968.

SN 301,654. Superior Continental Corporation, Hickory, N.C. Filed June 28, 1968.



For Telephone Call Analizers, Telephone Central Office Switching Equipment (Appliques), Telephone Line Usage Recorders, Telephone Call Interceptors, and Telephone Pay Station Adapters (Int. Cl. 9).
First use September 1967.

SN 302,120. Pinlites Inc., Fairfield, N.J. Filed July 5, 1968.

ALPHA-LITE

For Incandescent Light Bar for Producing Letters of the Alphabet (Int. Cl. 11).
First use Apr. 12, 1966.

SN 302,934. General Connector Corporation, Newton, Mass. Filed July 17, 1968.



The mark consists of the letters "GC."
For Electrical Connectors (Int. Cl. 9).
First use April 1966.
Subj. to Intf. with SN 278,382.

SN 303,284. Dunlee Corp., Bellwood, Ill. Filed July 22, 1968.

DUNLEE

For X-Ray Tubes, Vacuum Contacts, Vacuum Relays, High Voltage High Vacuum Rectifiers, and Silicon Diode Rectifiers (Int. Cl. 9).
First use in early 1947.

SN 303,533. LTV Ling Altec, Inc., Anaheim, Calif. Filed July 24, 1968.

STUDIO PRO 120

Applicant disclaims the term "120" appearing as part of the mark.
For Radio Receivers (Int. Cl. 9).
First use Nov. 16, 1967.

SN 304,547. Kleer-Vu Industries, Inc., New York, N.Y. Filed Aug. 7, 1968.

CHATTERBOX

For Wireless Intercom (Int. Cl. 9).
First use Mar. 7, 1966.

Class 22 — Games, Toys, and Sporting Goods

SN 269,190. Kent Rubber Corporation, Jericho, N.Y. Filed Apr. 14, 1967.

SUBMARINE

For Underwater Sports Equipment—Namely, Fins, Masks, Goggles, Snorkels and Underwater Flashlights (Int. Cl. 28).
First use Nov. 17, 1964.

SN 293,822. Gentex Corporation, New York, N.Y. Filed Mar. 21, 1968.

CUB

For Life-Saving Buoyant Vests (Int. Cl. 9).
First use Jan. 31, 1968.

SN 299,375. Northwestern Golf Company, Chicago, Ill. Filed May 29, 1968.

CHAMPIONSHIP

For Golf Clubs (Int. Cl. 28).
First use January 1962.

SN 299,578. Northwestern Golf Company, Chicago, Ill. Filed June 3, 1968.

GOLD SIGNATURE

For Golf Clubs (Int. Cl. 28).
First use January 1963.

SN 299,579. Northwestern Golf Company, Chicago, Ill. Filed June 3, 1968.

HALL OF FAME

For Golf Clubs (Int. Cl. 28).
First use January 1966.

SN 299,697. Northwestern Golf Company, Chicago, Ill. Filed June 4, 1968.

LORD BYRON

For Golf Clubs (Int. Cl. 28).
First use January 1966.

SN 299,887. Thompson Fishing Tackle Company, Inc., Knoxville, Tenn. Filed June 6, 1968.

DOLL JAW-BRAKER

Owner of Reg. No. 582,078.
For Fishing Lures (Int. Cl. 28).
Subj. to Intf. with SN 302,754.

SN 299,888. Thompson Fishing Tackle Company, Inc., Knoxville, Tenn. Filed June 6, 1968.

DOLL TOP SECRET

Owner of Reg. No. 582,078.
For Fishing Lures (Int. Cl. 28).
First use Apr. 23, 1968.

SN 300,105. Plas-Steel Products, Inc., Walkerton, Ind. Filed June 10, 1968.

TORQUE CONTROL

For Golf Clubs (Int. Cl. 28).
First use Mar. 24, 1967.

SN 301,363. Sky-Slides International, Inc., Glendale, Calif. Filed June 25, 1968.

SKY-SLIDE

For Inclined Structures on Which People Slide for Amusement (Int. Cl. 28).
First use Feb. 25, 1967.

SN 302,455. A. G. Spalding & Bros. Inc., Chicopee, Mass. Filed July 10, 1968.

DUOSPHERE

For Golf Balls (Int. Cl. 28).
First use Feb. 14, 1968.

SN 305,382. Wham-O Mfg. Co., San Gabriel, Calif. Filed Aug. 19, 1968.

ZAP-A-BUBBLE

For Combination Toy Gun to Which a Bubble-Making Wand Is Connected for Creating Bubbles and for Shooting Puffs of Air at Said Bubbles (Int. Cl. 28).
First use July 31, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 276,867. Remote Control Sweden Limited AB, Bromma, Sweden. Filed July 26, 1967.



Priority claimed under Sec. 44(d) on Swedish application filed June 1, 1967; Reg. No. 121,239, dated Sept. 29, 1967. No exclusive rights are claimed in the words "Remote Control Sweden Ltd. Stockholm," and in the pictorial representation of a ratchet wheel apart from the mark.
For Pneumatic and Hydraulic Actuators (Int. Cl. 7).
First use Nov. 1, 1963; in commerce May 12, 1966.

SN 277,687. Moulton Irrigation Company, Somerset, Wis. Filed Aug. 7, 1967.

MOCO

For Irrigation Equipment Featuring Boom Sprinklers, Roll-Type and Fixed Piping, Pulumbing and Engine Units, Deep Well Turbines, Couplers, Risers, Valves and Fittings Therefor (Int. Cl. 11).
First use April 1967.

SN 280,573. Deere & Company, Moline, Ill. Filed Sept. 18, 1967.

ROLL-GARD

For Operator's Protective Frame for Attachment to Agricultural and Industrial Tractors and the Like (Int. Cl. 12).
First use July 1966.

SN 280,580. Flint & Walling Manufacturing Co., Inc., Kendallville, Ind. Filed Sept. 18, 1967.

PUMP MATE

The word "Pump" is disclaimed when used separate and apart from the mark.
For Water Pumps (Int. Cl. 7).
First use May 5, 1967.

SN 281,103. Ohlinger Industries, Inc., Phoenix, Ariz. Filed Sept. 25, 1967.



For Rotary Table for Boring and Threading (Int. Cl. 7).
First use July 1, 1963.

SN 282,392. James C. Price, d.b.a. The Hi-Fog Company, Montbello, Calif. Filed Oct. 12, 1967.

ULV

For Pest Control Apparatus—Namely, Insecticide Sprayers of the Portable and Stationary Types (Int. Cl. 7).
First use Aug. 29, 1967.

SN 284,055. Stone Conveyor Co., Inc., Honeoye, N.Y. Filed Nov. 2, 1967.

STOMPER

For Self-Propelled Earth Compactors (Int. Cl. 7).
First use Nov. 7, 1966.

SN 284,246. Stromberg-Carlson Products, Inc., Traverse City, Mich. Filed Nov. 6, 1967.

PLASTI-JACK

For Stabilizing Jacks for Trailers and Campers (Int. Cl. 7).
First use on or about Aug. 7, 1967.

SN 285,101. Adolph Saurer Limited, Arbon, Switzerland. Filed Nov. 17, 1967.

terrymatic

Owner of Swiss Reg. No. 224,198, dated Dec. 29, 1966.
For Textile Machines and Parts Thereof—Namely, Weaving Machines for Turkish Towelling (Int. Cl. 7).

SN 285,154. Smithpac Corp., Defiance, Ohio, assignee of H. E. Smith, Inc., Defiance, Ohio. Filed Nov. 17, 1967.

SMITHPAC

For Refuse Loading and Compacting Unit for Mounting on Vehicles (Int. Cl. 7).
First use June 29, 1967.

SN 285,513. American Tractor Equipment Corporation, Oakland, Calif. Filed Nov. 24, 1967.

ATECO

Owner of Reg. Nos. 195,833, 276,843, and 516,771.
For Earthmoving and Road-Building Machines—Namely, Rippers, Scarifiers, Cable Plows, Pipe Plows, Subsoilers, Stumpsplitters, Road Grader Moldboards, Compaction-Cutter-Crushers, Bulldozers, Angle Dozers, Scrapers, Front End Loaders, Log Loaders, Tractor-Mounted Bottomless Scrapers, Back-Rippers and Tractor-Mounted Cranes (Int. Cl. 7).
First use May 1, 1929.

SN 286,772. Oneida Ltd., Oneida, N.Y. Filed Dec. 12, 1967.

ONEIDACRAFT

Owner of Reg. Nos. 340,426 and 370,388.
For Flatware Made of Non-Precious Material (Int. Cl. 8).
First use 1938.

SN 288,385. Techniservice Corporation, Lester, Pa. Filed Jan. 8, 1968.

TECHTEX

For Textile Machinery, Specifically Machines for Drawing, Crimping, and Otherwise Treating Textile Yarns and the Like, as To Enhance the Bulk and Hand Thereof (Int. Cl. 7).
First use 1961.

SN 288,435. The Jaeger Machine Company, Columbus, Ohio. Filed Jan. 9, 1968.

ELEC-CRETE-TROL

For Solid State Electronic Control Unit, Sold as a Component for Hydraulic Powered Mobile Concrete Pump Assembly, for Controlling the Operation Thereof (Int. Cl. 9).
First use Jan. 2, 1968.

SN 291,494. Dallas Smith Engineering Corp., Phoenix, Ariz. Filed Feb. 20, 1968.

HYDROLANE

For Automatic Car Washing Machinery (Int. Cl. 7).
First use Nov. 10, 1967.

SN 292,029. Tartan Industries, Inc., Duncansville, Pa. Filed Feb. 27, 1968.

TARTAN

For Earth Drilling Bits, Earth Drilling Equipment—Namely, Bit Adapters and Drill Steel (Int. Cl. 7).
First use April 1963.

SN 293,230. Clipper Manufacturing Company, Inc., Grandview, Mo. Filed Mar. 14, 1968.

BRIKSAWMATIC

Owner of Reg. No. 639,308.
For Masonry Saws (Int. Cl. 7).
First use during 1957.

SN 294,098. U.S. Textile Machine Company, Scranton, Pa. Filed Mar. 25, 1968.

LOW PROFILE

For Textile Machines for Twisting Yarn (Int. Cl. 7).
First use Mar. 13, 1967.

SN 294,607. Federal Press Company, Elkhart, Ind. Filed Apr. 1, 1968.

FEDERAL

For Power Presses (Int. Cl. 7).
First use Apr. 25, 1926.

SN 294,917. C.R.O. Engineering Co. Inc., Brookfield, Wis. Filed Apr. 4, 1968.

PROFI-MILL

For Machine Tools for Cutting Contours in a Workpiece (Int. Cl. 7).
First use Jan. 9, 1967.

SN 295,399. Thiokol Chemical Corporation, Bristol, Pa. Filed Apr. 11, 1968.

Speedscavel

For Mobile Soil-Mover for Use in Plowing, Ditching, Furrowing, Trenching and/or Channel-Cutting of Boggy, Water-Logged, Swampy, Marshy, Spongy, and/or Otherwise Unfirm Terrain (Int. Cl. 7).
First use Feb. 2, 1968.

SN 295,551. National-Spencer, Inc., Wichita, Kans. Filed Apr. 12, 1968.

ZEE-MATIC

Owner of Reg. Nos. 529,880 and 532,105.
For Grease Guns (Int. Cl. 8).
First use Dec. 15, 1965.

SN 296,024. The Johnson Rubber Company, Middlefield, Ohio. Filed Apr. 19, 1968.

DURAMAX

For Marine Bearings (Int. Cl. 7).
First use at least as early as Jan. 16, 1968.

SN 300,822. Kennametal Inc., Latrobe, Pa. Filed June 19, 1968.

KENNAMEX

For Metal Products in the Form of Tool Holders and Cutting Inserts Supported in the Tool Holders and for the Combination of a Tool Holder and a Cutting Insert (Int. Cl. 7).
First use Apr. 4, 1968.

SN 301,081. Litton Business Systems, Inc., New York, N.Y. Filed June 21, 1968.

SABRE

For Portable Typewriters (Int. Cl. 16).
First use May 30, 1968.

SN 301,315. A.J.L. Corporation, New York, N.Y. Filed June 25, 1968.



For Eating Utensils—Namely, Forks, Knives and Spoons (Int. Cl. 8).
First use Apr. 2, 1964.

SN 301,530. Her Majesty Underwear Company, Mauldin, S.C. Filed June 27, 1968.

ELF

For Label Feeding, Severing and Folding Apparatus (Int. Cl. 7).
First use May 8, 1968.

SN 301,687. American Packaging Corporation, Hudson, Ohio. Filed July 1, 1968.

PORT-A-VAC

For Machines for Forming Skin Packages, and for Molding Plastic Sheets Into Predetermined Shapes for Blister Packages (Int. Cl. 7).
First use Sept. 18, 1967.

SN 301,698. Buhr Machine Tool Company, Ann Arbor, Mich. Filed July 1, 1968.

BUHR ECONOMATIC

Owner of Reg. No. 682,162.
For Multiple Operation Machine Tools (Int. Cl. 7).
First use Jan. 29, 1957.

SN 301,775. T. S. Simms & Co. Limited, St. John, New Brunswick, Canada. Filed July 1, 1968.



For Machinery for the Production and Assembly of Paint and Other Brushes and Components Thereof, and Roller Coaters and Components Thereof (Int. Cl. 7).
First use in 1961; in commerce in 1961.

SN 301,859. Rockland, Inc., Winter Garden, Fla. Filed July 2, 1968.

R

For Attachments for Construction Equipment—Namely, Blades, Rakes, Buckets, Lift Forks, Grapples, Stump Removers, Clearing Chains, Canopies, Loaders, and Windrow Eliminators (Int. Cl. 7).
First use July 1967.

SN 301,900. Amsted Industries Incorporated, Chicago, Ill. Filed July 3, 1968.

JOHNSON

Owner of Reg. No. 778,721.
For Power Presses and Parts Thereof (Int. Cl. 7).
First use Mar. 22, 1968; 1940 as to "Johnson."

SN 302,097. Mattison Machine Works, Rockford, Ill. Filed July 5, 1968.

MATTISON

For Woodworking Machinery—Namely, Turning Lathes, Moulders, Ripsaws, Sanding Machinery, and Components Thereof; and Metal Working Machinery—Namely, Surface Grinders (Int. Cl. 7).
First use at least as early as 1900 on woodworking machinery.

SN 302,442. Otis Elevator Company, New York, N.Y. Filed July 10, 1968.

BAKER-YORK

Owner of Reg. Nos. 516,052, 530,650, and 795,725.
For Industrial, Material Handling Trucks (Int. Cl. 12).
First use at least as early as June 7, 1967.

SN 304,829. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Aug. 9, 1968.

SONY

Owner of U.S. Reg. Nos. 705,902, 801,885, and others.
For Scissors (Int. Cl. 8).
First use July 20, 1967; in commerce July 20, 1967.

SN 311,208. Marian Company, Chicago, Ill. Filed Nov. 4, 1968.

SPEED-EEZ

Owner of Reg. No. 740,895.
For Sheet Laminator Machines and Cutters (Int. Cl. 7).
First use Sept. 1, 1961.

Class 26—Measuring and Scientific Appliances

SN 266,907. National Cine Equipment, Inc., New York, N.Y. Filed Mar. 16, 1967.

HYDROFLUID TRIPOD

The word "Tripod" is disclaimed apart from the mark as a whole.
For Photographic Tripods (Int. Cl. 9).
First use March 1959.

SN 285,192. The Bissett-Berman Corporation, Santa Monica, Calif. Filed Nov. 20, 1967.

SENTRY

For Computers and Computer Components (Int. Cl. 9).
First use on or about June 22, 1967.

SN 285,641. Argonaut Associates, Inc., Portland, Oreg. Filed Nov. 27, 1967.

RDK

For Electronic Graphic Recording Devices, Specifically Single Channel Graphic Recorders; Multichannel Graphic Recorders; on Line Analog Computing Recorders; Servo Balancing Recorders; Potentiometric Graphic Recorders; Dot Printing Recorders; and High Speed Rectilinear Galvanometric Recorders (Int. Cl. 9).
First use Nov. 26, 1965.

SN 285,932. Mintex, Inc., New York, N.Y. Filed Nov. 30, 1967.

PAYCOMP

For Payroll Computer (Int. Cl. 9).
First use on or about Nov. 1, 1967.

SN 292,115. Martin Wells Pty. Limited, St. Marys, New South Wales, Australia. Filed Feb. 28, 1968.

MARTIN WELLS

"Martin Wells" is an entirely fanciful name and not the name of a living person.
For Spectacle Frames (Int. Cl. 9).
First use May 13, 1953; in commerce Oct. 23, 1958.

SN 292,261. Computer Corporation of America, Houston, Tex. Filed Mar. 1, 1968.

CCA

The drawing is lined for the colors red and blue, however, no claim is made to color.
For Computer-Detector Apparatus for Use in Radioisotopic and Other Testing Procedures, Radiation Shields, Radiation Detectors, and Counters, and Electronic Counters and Computers (Int. Cl. 9).
First use Nov. 13, 1967.

Class 27—Horological Instruments

SN 285,029. Le Coultre Watches, Inc., New York, N.Y. Filed Nov. 16, 1967.

MEMODATE

For Watches (Int. Cl. 14).
First use January 1965.

SN 285,030. Le Coultre Watches, Inc., New York, N.Y. Filed Nov. 16, 1967.

MEMOVOX

For Watches (Int. Cl. 14).
First use January 1958.

SN 288,423. Benrus Watch Company, Inc., New York, N.Y. Filed Jan. 9, 1968.



For Watches (Int. Cl. 14).
First use Dec. 19, 1967.

SN 290,005. Montres Sicura S.A., Grenchen, Soleure, Switzerland. Filed Jan. 31, 1968.

SICATRON

Owner of Swiss Reg. No. 215,016, dated Dec. 22, 1965.
For Watches (Int. Cl. 14).

SN 295,574. United States Sales Corp., North Hollywood, Calif. Filed Apr. 12, 1968.

JACQUES CARPENTIER

The mark does not identify any particular individual but rather is fanciful.
For Wristwatches (Int. Cl. 14).
First use Mar. 15, 1968.

SN 296,099. Benrus Watch Company, Inc., Ridgefield, Conn. Filed Apr. 22, 1968.

PACER

Owner of Reg. No. 836,711.
For Watches (Int. Cl. 14).
First use Aug. 1, 1967.

SN 296,101. Benrus Watch Company, Inc., Ridgefield, Conn. Filed Apr. 22, 1968.

THUNDERBIRD

For Watches (Int. Cl. 14).
First use Apr. 5, 1968.

Class 28—Jewelry and Precious-Metal Ware

SN 254,066. The Richelieu Corp., Holbrook, N.Y. Filed Sept. 8, 1966.

LOVALIER

For Necklaces (Int. Cl. 14).
First use June 15, 1966.

SN 285,751. Oneida Ltd., Oneida, N.Y. Filed Nov. 28, 1967.

BENNINGTON

For Flatware and Holloware Made of, or Coated With, Precious Metal (Int. Cls. 8 and 14).
First use Mar. 6, 1929.

SN 301,275. Textron Inc., Providence, R.I. Filed June 24, 1968.

GOLDEN WEAVE

No claim is made to the word "Golden" apart from the remainder of the mark. Owner of Reg. No. 514,593.
For Expansion Bracelets Including Watch Bracelets (Int. Cl. 14).
First use June 14, 1968.

SN 301,854. Mida Mfg. Inc., Philadelphia, Pa. Filed July 2, 1968.

MINI DOT

For Jewelry for Personal Use (Int. Cl. 14).
First use June 1967.

SN 301,855. Mida Mfg. Inc., Philadelphia, Pa. Filed July 2, 1968.

MICRO DOT

For Jewelry for Personal Use (Int. Cl. 14).
First use October 1967.

SN 309,420. Carole Accessories, d.b.a. Carole, Inc., Los Angeles, Calif. Filed Oct. 11, 1968.

CALIENTE

"Caliente" is a Spanish word meaning "warm," "fiery," "hot," and "scalding."
For Costume Jewelry (Int. Cl. 14).
First use on the last day of spring of 1963.

Class 29—Brooms, Brushes, and Dusters

SN 299,891. John O. Butler Company, Chicago, Ill., assignee of The University of Alabama Medical Center Foundation, Birmingham, Ala. Filed June 6, 1968.

PROXABRUSH

For Toothbrushes (Int. Cl. 21).
First use June 15, 1967.

Class 30—Crockery, Earthenware, and Porcelain

SN 283,639. Den Kongelige Porcelainsfabrik A/S, Copenhagen, Denmark. Filed Oct. 30, 1967.

ROYAL COPENHAGEN DENMARK

Applicant disclaims "Copenhagen" and "Denmark" apart from the mark as shown. Owner of U.S. Reg. Nos. 30,487 and 125,799.
For Dinner Services; Luncheon Services; Tea Services; Coffee Services; Plates; Cups; Saucers; Serving Pieces—Namely, Bowls, Large Dishes, Trays; Vases; Mugs; and Flower Pots, All of the Foregoing Being Made of Porcelain, Faience, Stoneware, or Other Ceramic Materials (Int. Cl. 21).
First use 1923; in commerce 1923.

SN 287,364. International Pipe & Ceramics Corporation, Los Angeles, Calif. Filed Dec. 21, 1967.

RENAISSANCE

Owner of Reg. No. 811,926.
For China Dinnerware (Int. Cl. 21).
First use Jan. 19, 1963.

Class 31—Filters and Refrigerators

SN 289,379. Application Engineering Corporation, Elk Grove Village, Ill. Filed Jan. 23, 1968.

aec

The drawing is lined for the color green but no claim is made to color.
For Water Chiller and Treatment Apparatus—Namely, Heat Pump Chillers, Portable Water Chillers, Water Cooled Chillers, Central System Water Chillers, Sand and Gravel Filters, Cooling Towers, and Parts Therefor (Int. Cl. 11).
First use December 1963; April 1960 as to the mark "AEC" in a different form.

SN 294,575. S. Blickman, Inc., Weehawken, N.J. Filed Apr. 1, 1968.

Brew 'n Toss

The drawing is lined for the color red. Owner of Reg. Nos. 607,541, 667,406, and 790,973.
For Paper Coffee Filters and Supporting Baskets for Coffee Urns (Int. Cl. 11).
First use May 1967.

Class 32—Furniture and Upholstery

SN 299,037. National Mattress Company, Huntington, W. Va. Filed May 24, 1968.

CAMEO SUPREME

No claim is made to the word "Supreme" apart from the mark as shown.
For Mattresses and Box Springs (Int. Cl. 20).
First use Nov. 10, 1958.

SN 299,678. Krueger Metal Products, Inc., Green Bay, Wis. Filed June 4, 1968.

STEWARD

For Hat and Coat Racks (Int. Cl. 20).
First use on or about Jan. 15, 1968.

SN 299,680. Krueger Metal Products, Inc., Green Bay, Wis. Filed June 4, 1968.

DIPLOMAT

For Hat and Coat Racks (Int. Cl. 20).
First use on or about Jan. 15, 1968.

SN 299,681. Krueger Metal Products, Inc., Green Bay, Wis. Filed June 4, 1968.

DEPUTY

For Classroom Furniture—Namely, Coat and Hat Racks (Int. Cl. 20).
First use on or about Jan. 15, 1968.

SN 307,323. Flex-O-Lators, Inc., Carthage, Mo. Filed Sept. 13, 1968.

PERMA-MESH

For Coated Spring Decks for Upholstered Furniture (Int. Cl. 20).
First use Sept. 6, 1968.

SN 308,168. Young Spring & Wire Corporation, Detroit, Mich. Filed Sept. 24, 1968.

DUCKBILL

For Edge-Wire Support Unit for Spring Assemblies Utilized in Furniture Such as Chairs and Sofas (Int. Cl. 6).
First use Sept. 16, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 274,447. Nelson Sales Company, Kansas City, Mo. Filed June 21, 1967.

NESCO

For Hand Warmers and Burners Therefor, Kerosene Lamps and Lanterns (Int. Cl. 11).
First use on or about June 1, 1965.

SN 279,759. Vaporstream Humidifier Corporation, Chestertown. Md. Filed Sept. 6, 1967.

VAPORSTREAM

For Humidifiers (Int. Cl. 11).
First use Jan. 18, 1967.

SN 287,918. Jettor Sales Co., Inc., Elmwood Park, Ill. Filed Jan. 2, 1968.

JETTOR

For Combination Battery Powered and Butane Fueled Torch Units Used for Igniting Barbecue Fires, Camp Stove, Candles, Lanterns, etc. (Int. Cl. 11).
First use in or about July 1964.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 264,843. National Automotive Parts Association, Chicago, Ill. Filed Feb. 16, 1967. COLLECTIVE MARK.

NAPA

For Automotive Parts—Namely, Belts, Hoses, Brake Shoes, Brake Linings, Clutch Facings, Pump Packings, Gasket Packings, Oil Seals, Grease Retainers, and Brake Blocks (Int. Cl. 12).
First use Apr. 15, 1965.

SN 292,521. The Weatherhead Company, Cleveland, Ohio. Filed Mar. 5, 1968.

Owner of Reg. Nos. 327,913, 832,388, and others.
For Rubber, Plastic, and Fabric Tubing and Hosing, and Tube and Hose Assemblies (Int. Cl. 17).
First use at least as early as December 1967.

Class 36 — Musical Instruments and Supplies

SN 295,758. The Ohio Art Company, Bryan, Ohio. Filed Apr. 16, 1968.

HISSING CYMBAL

Applicant disclaims the word "Cymbal" apart from the mark as shown without waiving any of its common law rights in the mark.
For Cymbals (Int. Cl. 15).
First use Mar. 5, 1968.

SN 296,605. Zenith Radio Corporation, Chicago, Ill. Filed Apr. 25, 1968.

CIRCLE OF SOUND

Applicant disclaims the word "Sound" apart from the mark as shown.
For High Fidelity Phonograph Instruments (Int. Cl. 9).
First use at least as early as June 7, 1967.

SN 299,661. Electra Radio Corporation, New York, N.Y. Filed June 4, 1968.

Electra

For Tape Recorders and Phonographs (Int. Cl. 9).
First use Oct. 1, 1964.

SN 312,432. Chicago Musical Instrument Co., Chicago, Ill. Filed Nov. 18, 1968.

TON-KLAR

For Violins, Violas and Cellos (Int. Cl. 15).
First use on or about Apr. 4, 1960.

SN 312,713. Worldwide Musical Instrument Co., Inc., New York, N.Y. Filed Nov. 20, 1968.

JOLLY JACK

For Harmonicas (Int. Cl. 15).
First use Apr. 9, 1962.

Class 37 — Paper and Stationery

SN 262,208. Victor Silber, Brooklyn, N.Y. Filed Jan. 9, 1967.

FOLL-O-DEX

For Diaries and Memo Books (Int. Cl. 16).
First use December 1960.

SN 274,775. Roll-O-Sheets, Inc., St. Louis, Mo. Filed June 26, 1967.

A Clean Glass

For Perforated Plastic Wrapping Film for Household or Institutional Use (Int. Cl. 16).
First use Apr. 2, 1967.

SN 279,863. Sales Tools, Inc., Chicago, Ill. Filed Sept. 7, 1967.

BETTER
SELLING
THROUGH
BETTER
PRESENTATION

For Loose Leaf Binders (Int. Cl. 16).
First use April 1962.

SN 295,118. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed Apr. 8, 1968.

STARTONE ROTO

Applicant does not claim exclusive right to the word "Roto" apart from its mark.
For Coated Printing Paper (Int. Cl. 16).
First use Mar. 18, 1968.

SN 295,538. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed Apr. 12, 1968.

PATHMARK

Owner of Reg. Nos. 854,358, 854,884, and 856,671.
For Paper and Stationery—Namely, Paper Towels and Facial Tissue (Int. Cl. 16).
First use Jan. 4, 1968.

SN 299,809. Capitol Records, Inc., Los Angeles, Calif. Filed June 6, 1968.

Rhythm-writer

No claim is made to the word "Writer" apart from the mark as shown. Owner of Reg. No. 621,325.
For Ball Point Pens and Fibre-Tip Pens (Int. Cl. 16).
First use Apr. 22, 1968.

Class 38 — Prints and Publications

SN 259,809. Herbert L. Cohen and Frank (NMI) Zappa (joint owners), Los Angeles, Calif. Filed Dec. 1, 1966.

FREAKOUT!

For Newspaper Supplements Published From Time to Time Related to the Field of Entertainment (Int. Cl. 16).
First use Sept. 16, 1966.

SN 277,419. American Society for Information Science, Washington, D.C., by change of name from American Documentation Institute, Washington, D.C. Filed Aug. 3, 1967.

AMERICAN DOCUMENTATION

For Journal (Int. Cl. 16).
First use Jan. 2, 1950.

SN 279,352. Blaise F. Alfano, Melrose, Mass. Filed Aug. 30, 1967.



THE Physician Speaks
THE VOICE OF MEDICINE

The symbol of the caduceus is disclaimed apart from the mark as shown.
For Bi-Monthly Newsletter (Int. Cl. 16).
First use Dec. 17, 1966.

SN 279,555. The Hardy Company, Grand Haven, Mich. Filed Sept. 1, 1967.

GROW-GUIDE

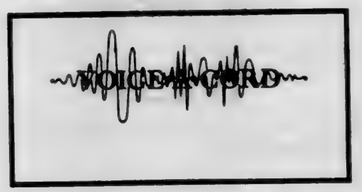
For Printed Identification Pamphlets and Tags for Plants and Shrubbery (Int. Cl. 16).
First use on or about May 19, 1967.

SN 279,796. Bard-Parker Company, Inc., Danbury, Conn. Filed Sept. 7, 1967.

EMPHASIZER

For Product Bulletin Featuring Medical, Scientific and Laboratory Products (Int. Cl. 16).
First use at least as early as December 1966.

SN 280,737. Margaret D. Wheeler, Hollywood, Calif. Filed Sept. 19, 1967.



For Phonograph Records With an Instruction Manual Which Constitutes a Home Study Course of Vocal Instruction (Int. Cl. 16).
First use July 9, 1963.

SN 282,436. Carlson Publications, Inc., Huntington, N.Y. Filed Oct. 13, 1967.

job scope

The words "Heating" "Plumbing" and "Air Conditioning" are disclaimed apart from the mark as shown.
For Monthly Trade Magazine (Int. Cl. 16).
First use Sept. 11, 1967.

SN 285,827. Famous Photographers School, Inc., Westport, Conn. Filed Nov. 29, 1967.

FAMOUS PHOTOGRAPHERS MAGAZINE

The word "Magazine" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 747,644, 783,802, and 821,744.
For Serially Published Magazine (Int. Cl. 16).
First use Nov. 1, 1967.

SN 290,661. R. H. Smith, Jr., d.b.a. Smith Enterprises, Sherman Oaks, Calif. Filed Feb. 8, 1968.

Singles Critique

For Periodical (Int. Cl. 16).
First use July 1967.

SN 291,766. Ike Tennessee Parker, Cumberland, R.I. Filed Feb. 23, 1968.

Parkerchart

For Chord Charts for Various Instruments (Int. Cl. 16).
First use Oct. 8, 1963.

SN 291,998. National Depositors Cooperative Association, Great Neck, N.Y. Filed Feb. 27, 1968.

MATTERS OF INTEREST

For Magazine Dealing With Financial Matters (Int. Cl. 16).
First use Sept. 22, 1967.

SN 294,622. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Apr. 1, 1968.

CHARMERS

For Greeting Cards (Int. Cl. 16).
First use Feb. 15, 1968.

SN 298,070. Vac-Hyd Processing Corporation, Detroit, Mich. Filed May 13, 1968.



The drawing is lined for blue and red but no claim is made to the particular colors.
For News and Information Letter Published Periodically (Int. Cl. 16).
First use May 1, 1968.

SN 298,195. CCM: Schaar Scientific, Inc., Chicago, Ill. Filed May 15, 1968.

THE NITPICKER

For Monthly Newsletter (Int. Cl. 16).
First use Mar. 22, 1968.

SN 300,512. The American Chemical Society, Washington, D.C. Filed June 17, 1968.

POST·J

For Periodically Issued Digest Concerning Journal and Report Literature in the Polymer Chemistry Field (Int. Cl. 16).
First use Feb. 6, 1967.

SN 302,779. Traffic Stoppers Company, Philadelphia, Pa. Filed July 15, 1968.

TRAFFIC STOPPERS

For Wall Signs and Posters, and Postal Cards (Int. Cl. 16).
First use May 8, 1967.

SN 303,332. Thomas J. Mullin, d.b.a. The Finger Things Company, New York, N.Y. Filed July 22, 1968.

FINGER THINGS

For Decorations and Designs for Application by Transfer Process to Finger Nails and Toe Nails (Int. Cl. 16).
First use March 1968.

SN 304,738. Keith Clark, Inc., New York, N.Y. Filed Aug. 9, 1968.



DEFIANCE

For Memo Calendars (Int. Cl. 16).
First use Jan. 1, 1920.

SN 305,166. Tracor, Inc., Austin, Tex. Filed Aug. 14, 1968.

THERMOSCOPE

For Publication in the Form of a Scientific Newsletter Directed Primarily Toward Technology in the Fields of Differential Thermal Analysis and Thermogravimetric Analysis (Int. Cl. 16).
First use at least as early as November 1967.

SN 307,078. Standard Oil Company, Flemington, N.J. Filed Sept. 24, 1968.

CHEMSPHERE

For Magazine (Int. Cl. 16).
First use Apr. 29, 1968.

SN 309,142. McGraw-Hill, Inc., New York, N.Y. Filed Oct. 8, 1968.

LAZARILLO

The Spanish term "Lazarillo" is translated as "a boy who guides a blind man."
For Bi-Monthly Magazine in the Spanish Language (Int. Cl. 16).
First use Sept. 16, 1968.

Class 39—Clothing

SN 281,882. Gayar Shoe Corp., New York, N.Y. Filed Oct. 5, 1967.

ITALIAN ROOM

For Women's Shoes (Int. Cl. 25).
First use on or about July 10, 1966.

SN 285,951. J. P. Stevens & Co., Inc., New York, N.Y. Filed Nov. 30, 1967.

GOLDEN DAYS

For Hosiery (Int. Cl. 25).
First use Nov. 1, 1967.

SN 285,953. J. P. Stevens & Co., Inc., New York, N.Y. Filed Nov. 30, 1967.

MELLOCRAFT

Owner of Reg. No. 313,802.
For Hosiery (Int. Cl. 25).
First use Nov. 1, 1967.

SN 299,738. Michaels Stern & Company, Inc., Rochester, N.Y. Filed June 5, 1968.

BEGGARS BUSH

Owner of Reg. No. 371,578.
For Men's and Boys' Suits and Topcoats (Int. Cl. 25).
First use Mar. 16, 1939.

SN 303,717. Union Camp Corporation, New York, N.Y. Filed July 26, 1968.

HOLIDAISIES

For Paper Dresses (Int. Cl. 25).
First use Mar. 4, 1968.

SN 303,730. Wonderjac Corp., New York, N.Y. Filed July 26, 1968.

WONDERJAC

For Outerwear Jackets, Coats, Sport Suits, Rugby Suits, and Eton Suits (Int. Cl. 25).
First use May 8, 1968.

SN 303,981. Boss Manufacturing Company, Kewanee, Ill. Filed July 31, 1968.

THORNGARD

For Work Gloves of Leather (Int. Cl. 25).
First use Mar. 1, 1968.

SN 310,018. Becton, Dickinson and Company, East Rutherford, N.J. Filed Oct. 21, 1968.

SEAMS-RITE

For Gloves and Mittens (Int. Cl. 25).
First use Sept. 20, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 294,527. Sally Beauty Company, Inc., New Orleans, La. Filed Mar. 29, 1968.

LOLITA

For Wigs and Artificial Eyelashes (Int. Cl. 26).
First use Dec. 15, 1967.

SN 298,765. Trend Imports Corp., New York, N.Y. Filed May 21, 1968.

HAIRNEL

For Wigs, Wiglets, Toupees, Perukes, Postiches, Switches, Braids, Chignons, Clusters, Curls and Transformations (Int. Cl. 26).
First use Apr. 8, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 302,029. Allied Stores Corporation, New York, N.Y. Filed July 5, 1968.

SLUMBERON

For Sheets and Blankets and Plastic Mattress Pads (Int. Cl. 24).
First use Oct. 24, 1929.

Class 44—Dental, Medical, and Surgical Appliances

SN 285,155. T. J. Smith & Nephew, Limited, Hull, England. Filed Nov. 17, 1967.

AIRSTRIP

Owner of British Reg. No. 760,048, dated Nov. 29, 1956.
For Non-Medicated First-Aid Dressings and Bandages (Int. Cl. 5).

SN 288,208. Foremost-McKesson, Inc., d.b.a. Gentec Hospital Supply Company, New York, N.Y. Filed Jan. 5, 1968.

SPOZAPAD

For Hospital Bed Pad (Int. Cl. 24).
First use at least as early as Sept. 8, 1967.

SN 300,591. Hayakawa Electric Co. Ltd., Abeno-ku, Osaka, Japan. Filed June 17, 1968.

SHARP

Owner of U.S. Reg. Nos. 707,148, 737,474, and others.
For Hair Dryers (Int. Cl. 11).
First use Feb. 28, 1966; in commerce Feb. 28, 1966.

SN 305,177. Aamed, Inc., Forest Park, Ill. Filed Aug. 15, 1968.

AID-AL

For Medical Equipment—Namely, Wheelchairs, Oxygen Equipment, Inhalation Therapy Equipment and Therapeutic Devices, Namely, Walkers, Exercisers and Braces (Int. Cls. 10 and 12).
First use July 29, 1968.

SN 307,746. The Lawton Company, Inc., New York, N.Y. Filed Sept. 19, 1968.

DURA-GRIP

For Surgical Instrument Needle Holder (Int. Cl. 10).
First use Aug. 17, 1964.

SN 307,849. A. W. Lewin, New York, N.Y. Filed Sept. 20, 1968.

Tsviks

Owner of Reg. No. 600,066.
For Toothpicks Containing Flavoring and Medicating Ingredients (Int. Cl. 21).
First use on or about Feb. 18, 1953.

SN 308,235. Simmons Company, New York, N.Y. Filed Sept. 25, 1968.

MAXI-MATE

For Hospital Beds, Accessories for Attachment Thereto, and Parts Therefor (Int. Cl. 10).
First use Sept. 9, 1968.

SN 308,889. W. R. Grace & Co., New York, N.Y. Filed Oct. 4, 1968.

SEPTI-SCRUB

For Disposable Surgical Scrub Sponge Containing Antibacterial Agent (Int. Cl. 5).
First use Sept. 3, 1968.

SN 308,920. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Oct. 4, 1968.

DUAL FINISH

For Surgeons' Gloves (Int. Cl. 10).
First use Sept. 20, 1968.

SN 310,296. C. R. Bard, Inc., Murray Hill, N.J. Filed Oct. 23, 1968.

WINDOW-WALL

For Plastic Tubing for Medical and Surgical Uses (Int. Cl. 10).
First use June 27, 1968.

Class 46—Foods and Ingredients of Foods

SN 251,269. Arista Olive Co. Inc., New York, N.Y. Filed July 29, 1966.

MINERVA

For Peppers, Spices, Vine Leaves, Jams and Jellies, Carp Roe Caviar, Pickles, Stuffed Eggplants, Feta Cheese, Wine Vinegar, Greek Wild Onions, Garden Mix and Tahini (Int. Cls. 29 and 30).
First use Oct. 1, 1958.
Subj. to Intf. with SN 260,652.

SN 252,694. Pet Incorporated, St. Louis, Mo., assignee of Sue Ann Food Products Corporation, Chicago, Ill. Filed Aug. 18, 1966.



For Salad Dressings; Meat Products—Namely, Salami and Sausages; Candy; Crackers; Cookies; Pickles; Processed Canned Fruits, Fruit Preserves and Fruit Spreads—Namely, Marmalade; Spices; Processed Canned Vegetables; Honey; Pickle and Tomato Relishes (Commonly Known as Chili Relishes) and Pickle Relishes; Meat Sauces and Fish Sauces; Fruit Compotes; Garden Salads and Sauerkraut; Cheese, Processed Cheese and Cheese Spreads (Int. Cls. 29 and 30).
First use on or about June 15, 1951.

SN 262,734. Dixie Kitchens, Inc., Omaha, Nebr. Filed Dec. 29, 1966.

Dixie Chicken

Applicant disclaims the word "Chicken" apart from the mark as shown.
For Prepared Restaurant Food—Namely, Cooked Chicken (Int. Cl. 29).
First use on or before Sept. 24, 1966.
Subj. to Intf. with SN 304,903.

SN 265,095. Nishimoto Trading Co., Ltd., Ikuta-ku, Kobe, Japan. Filed Feb. 20, 1967.

SHIRA KIKU

"Shira Kiku" means "white crysanthemum." Owner of U.S. Reg. No. 654,517.
For Prepared, Canned and Seasoned Edible Seaweeds, Canned Lavers, Canned Oysters, Dried Shrimps, Canned Octopus, Dried, Prepared Canned Fish, Baked and Fried Fish Cakes, Dried and Broiled Canned Cuttle Fish, Canned Crab Meat, Edible Canned Shells, Canned Clams, Canned Salmon, Dried Bonito, Canned Clams, Canned Abalone, Canned Baby Abalone, Canned Mussels, Dried Scallops and Broiled Canned Eel; Dried, Canned and Seasoned Vegetables, Canned Fried and Baked Beans, Pickled Vegetables, Pickled Scallions, Pickled Cucumbers, Pickled Radish, Canned Coltsfoots, Boiled Canned Taros, Canned Bamboo Shoots, Canned Burdock, Pickled Eggplant, Boiled Lotus Root, Canned and Dried Mushrooms, Dried Roasted Sesame, Canned Peaches, Canned Loquats, Canned Fruit Salad, Dried and Canned Chestnuts, Boiled Gingko-Nuts; Noodles Made From Yam Flour and Alimentary Paste; Pressed and Roasted Barley, Rice Flour, Red Bean Flour, Starch, Rice Crackers and Rice Cracker Balls, Canned Rice With Beans Added; Canned Chicken and Mushroom, Canned Beefsteak; Roasted Green Tea and Japanese Green Tea; and Rice (Int. Cls. 29 and 30).
First use Oct. 1, 1947; in commerce Nov. 30, 1947.

SN 266,563. A. E. Staley Manufacturing Company, Decatur, Ill., assignee of Morningstar-Paisley, Inc., New York, N.Y. Filed Mar. 13, 1967.

NU STAR

For Modified Tapioca Starch (Int. Cl. 30).
First use Jan. 13, 1967.

SN 278,869. Carnation Company, Los Angeles, Calif. Filed Aug. 23, 1967.

BODY BUILD

For Fortified Milk Powder (Int. Cl. 29).
First use July 27, 1967.

SN 281,826. Societe Agricole Les Fermiers Reunis Des Flanders, Steenvoorde (Nord), France. Filed Oct. 4, 1967.

Owner of French Reg. No. 720,171, dated Feb. 10, 1967.
For Butter, Cheese, Yogurts, Cream, Fresh Milk, Milk Powder, Gellified Milk and Milk Serum Powder (Int. Cl. 29).

SN 283,250. Green & Green, Inc., Houston, Tex. Filed Oct. 24, 1967.

DRI-LOK

For Spray-Dried Flavors (Int. Cl. 30).
First use May 3, 1967.

SN 283,543. National Federation of Coffee Growers of Colombia, New York, N.Y. Filed Oct. 27, 1967.



No claim is made to exclusive rights in the wording "Coffee of Colombia O Kilos Net" apart from other features of the mark. The person shown is "Jose Duval" whose consent is of record. Owner of Reg. Nos. 726,575 and 752,589.
For Coffee (Int. Cl. 30).
First use January 1964.

SN 285,650. Chesterfield Farms, Inc., Chesterfield, Mo. Filed Nov. 27, 1967.



The lining on the drawing is a feature of the mark and is not a color lining.
For Fresh Eggs (Int. Cl. 29).
First use Oct. 1, 1961; July 1, 1955, as to "Chesterfield Farms."

SN 286,422. Fabrica de Dulces y Chocolates el Alcazar, S.A., Tijuana, Mexico. Filed Dec. 7, 1967.

EL ALCAZAR

The translation of "El Alcazar" is "the castle." Owner of Mexican Reg. No. 113,492, dated Feb. 28, 1963.
For Candies, Chewing Gums, Caramels and Chocolates (Int. Cl. 30).

SN 287,879. Borman Food Stores, Inc., Detroit, Mich. Filed Jan. 2, 1968.



For Canned Fruits and Vegetables (Int. Cl. 29).
First use Mar. 23, 1966.

SN 288,928. Artel Inc., Duvernay, Montreal, Quebec, Canada. Filed Jan. 16, 1968.



Priority claimed under Sec. 44(d) on Canadian application filed Oct. 23, 1967; Reg. No. 158,803, dated Oct. 18, 1968.
For Batter Mix for Use in the Production of Deep-Fried Coatings on Foodstuffs (Int. Cl. 30).

SN 288,929. Artel Inc., Duvernay, Montreal, Quebec, Canada. Filed Jan. 16, 1968.

POGO

Priority claimed under Sec. 44(d) on Canadian application filed Oct. 23, 1967; Reg. No. 158,800, dated Oct. 18, 1968.
For Batter Mix for Use in the Production of Deep-Fried Coatings on Foodstuffs (Int. Cl. 30).

SN 289,508. Hancock's Old Fashion Country Ham, Inc., Franklinville, N.C. Filed Jan. 24, 1968.

HANCOCK'S COUNTRY BRAND

Without waiving its common law rights and for purposes of this registration only, applicant makes no claim to the words "Country Brand" apart from the mark as shown.
For Sliced and Whole Hams, Ham Butts, Ham Hocks, Sausage, and Bacon and Pork Side Meat (Int. Cl. 29).
First use July 1, 1960.

SN 291,241. Auto-Dine Corporation, d.b.a. Auto-Dine, Bismarck, N. Dak. Filed Feb. 16, 1968.

PRAIRIE FRIED CHICKEN

No claim is made to the words "Fried Chicken" apart from the mark as shown, applicant reserving all of its rights at common law.
For Fried Chicken (Int. Cl. 29).
First use Jan. 28, 1964.

SN 291,716. Congeladora Nino de Zamora, S.A. de C.V., Michoacan, Mexico. Filed Feb. 23, 1968.

DON PEPE

"Don Pepe" does not identify any particular living individual.
For Fresh and Frozen Strawberries (Int. Cls. 29 and 31).
First use Nov. 22, 1967; in commerce Nov. 22, 1967.

SN 292,420. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Mar. 4, 1968.

PASTRY PRIDE

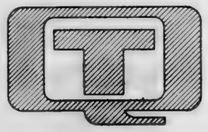
For Non-Dairy Topping Similar in Consistency, Flavor, Whipping Characteristics and Use to Fresh Dairy Whipping Cream, Sold in a Frozen State and Being Whippable Upon Thawing, and a Concentrate for Making the Same (Int. Cl. 29).
First use Nov. 6, 1967.

SN 294,173. Dixie Frozen Foods, Inc., Peachtree City, Ga. Filed Mar. 26, 1968.

SOUTHERN PRIDE

For Frozen Foods—Namely, Beef Steaks of Various Cuts; Frankfurters; Chopped and Cubed Steaks Both Breaded and Plain; Beef, Veal and Pork Patties Both Breaded and Plain; Breaded Pork Fritters; Sliced Beef With Gravy; Fully Cooked Beef and Veal Patties; Fully Cooked Roast Beef, Corn Beef, Chili Con Corne, Frankfurters Dipped in Corn Batter, Pizza, Veal Parmigiana, Spaghetti With Meat Sauce, Turkey Sliced and Rolled, Chicken Breasts, Beef and Cereal Patties, Liver, Meat Loaf, Beef Stew Cubes, Beef and Mushroom Patties, Beef and Onion Patties (Int. Cls. 29 and 30).
First use 1962.
Subj. to Intf. with SN 303,162.

SN 296,129. Dixie Frozen Foods, Inc., Peachtree City, Ga. Filed Apr. 22, 1968.



The shading is for white on a brown background, but no claim is made as to the color so named.
For Frozen Foods—Namely, Beef Steaks of Various Cuts; Frankfurters; Chopped and Cubed Steaks Both Breaded and Plain; Beef, Veal and Pork Patties Both Breaded and Plain; Breaded Pork Fritters; Sliced Beef With Gravy; Fully Cooked Beef and Veal Patties; Fully Cooked Roast Beef, Corn Beef, Chili Con Corne, Frankfurters Dipped in Corn Batter, Pizza, Veal Parmigiana, Spaghetti With Meat Sauce, Turkey Sliced and Rolled, Chicken Breasts, Beef and Cereal Patties, Liver, Meat Loaf, Beef Stew Cubes, Beef and Mushroom Patties, Beef and Onion Patties (Int. Cls. 29 and 30).
First use July 18, 1967.

SN 300,338. Archer Daniels Midland Company, Minneapolis, Minn. Filed June 13, 1968.

TVP

For Unflavored and Meat and Poultry Flavored Vegetable Protein Food (Int. Cl. 30).
First use on or before May 2, 1966.

SN 300,625. Schweigert Meat Co., Minneapolis, Minn. Filed June 17, 1968.

RANCHETTES

For Sausages (Int. Cl. 29).
First use December 1964.

SN 302,968. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 17, 1968.

DIXIE DUDES

For Corn Cheese (Int. Cl. 30).
First use May 24, 1968.

SN 303,740. The Dia-Mel Companies, Inc., Brooklyn, N.Y. Filed July 29, 1968.

Dia-Mel DIET CONTROL BRAND

The words "Diet Control" and "Brand" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 561,115 and 804,351.
For Preserves and Jellies, Syrups for Food Purposes, Sugars and Artificial Sweeteners, Salad Dressings, Gelatine Desserts, Puddings, Candies, Chewing Gum, Barbecue Sauce, Spices, Soups, Canned Beef Stew, Cookies, Crackers, Toast, Flour (Int. Cls. 29, 30, and 31).
First use Dec. 26, 1967.

SN 303,848. Wagner Bros. Feed Corp., d.b.a. Manor House Products, Brooklyn, N.Y. Filed July 29, 1968.

MANOR HOUSE

For Bird Food (Int. Cl. 31).
First use July 13, 1968.

SN 305,368. Larry Celle, d.b.a. Linden Associated Growers, Linden, Calif. Filed Aug. 19, 1968.

PRIDE PACK

No claim is made to the word "Pack" except in the association shown.
For Fresh Cherries (Int. Cl. 31).
First use May 1, 1968.

SN 310,393. General Mills, Inc., Minneapolis, Minn. Filed Oct. 24, 1968.

KABOOMS

For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or prior to Oct. 8, 1968.

SN 310,412. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Oct. 24, 1968.

SUM-FUN

For Soy Sauce (Int. Cl. 30).
First use Oct. 3, 1968.

SN 310,419. Penick & Ford, Limited, Cedar Rapids, Iowa. Filed Oct. 24, 1968.

PENDEX

For Dextrose and Corn Syrup Solids (Int. Cl. 30).
First use Sept. 23, 1968.

SN 310,420. Penick & Ford, Limited, Cedar Rapids, Iowa. Filed Oct. 24, 1968.

X-CELSWEET

For Dextrose and Corn Syrup Solids (Int. Cl. 30).
First use Sept. 23, 1968.

SN 310,421. Penick & Ford, Limited, Cedar Rapids, Iowa. Filed Oct. 24, 1968.

CELUTAB

For Dextrose and Corn Syrup Solids (Int. Cl. 30).
First use Sept. 23, 1968.

SN 310,422. Penick & Ford, Limited, Cedar Rapids, Iowa. Filed Oct. 24, 1968.

PENSWEET

For Dextrose and Corn Syrup Solids (Int. Cl. 30).
First use Sept. 23, 1968.

Class 47 — Wines

SN 291,830. Bodegas Rioja Santiago, S.A., d.b.a. Rioja Santiago, S.A., Haro (Logrono), Spain. Filed Feb. 26, 1968.



The Spanish word "Espumante" means "sparkling" and is disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 829,219, 834,859, and 844,244.
For Wines (Int. Cl. 33).
First use September 1967; in commerce Nov. 1, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 310,036. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Oct. 21, 1968.

ROYAL LABEL

For Blended Whiskey (Int. Cl. 33).
First use Sept. 27, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 279,299. David Jaffe, d.b.a. Head to Toe Products, Rahway, N.J. Filed Aug. 29, 1967.

Head-to-Toe PRODUCTS

Applicant disclaims the word "Products" and the slogan "Instant Grooming Any Time Any Place."
For Kits Containing Breath Freshener Sprays and Drops, Hair Dressing, Hair Spray, Shaving Cream, Suntan Lotion, Laundry Detergents, Hair Shampoo, Hand and Face Cosmetic Cream, Personal Deodorant Cream, Toilet Soap, Colognes, Pad Impregnated With Shoe Polish, Pad Impregnated With Spot Removing Preparation, Pads Impregnated With a Personal Deodorant, Pad Impregnated With an Insect Repellent, Pad Impregnated With a Pre-Electric Shave Preparation (Int. Cl. 3).
First use July 24, 1967.
Subj. to Intf. with SN 282,044.

SN 282,702. David Jaffe, d.b.a. Head to Toe Products, Rahway, N.J. Filed Oct. 17, 1967.

HEAD·TO·TOE VALET

For Kits Containing Breath Freshener Sprays and Drops, Hair Dressing, Hair Spray, Shaving Cream, Suntan Lotion, Laundry Detergents, Hair Shampoo, Hand and Face Cosmetic Cream, Personal Deodorant Cream, Toilet Soap, Colognes, Pad Impregnated With Shoe Polish, Pad Impregnated With Spot Removing Preparation, Pads Impregnated With a Personal Deodorant, Pad Impregnated With an Insect Repellent, Pad Impregnated With a Pre-Electric Shave Preparation, Tooth Brush, Dental Floss, Styptic Pencil, Safety Razor, Paper Cup, Hair Brush and Comb (Int. Cl. 3).
First use Sept. 8, 1967.
Subj. to Intf. with SN 282,044.

SN 303,826. Sales Promotion Products, Inc., Cleveland, Ohio. Filed July 29, 1968.

TIRE TENT

For Advertising Display Device Comprising Replaceable Signs and a Tire Supported Signboard Upon Which the Signs Are Mounted or Carried (Int. Cl. 20).
First use June 16, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 249,505. Cosmetically Yours, Inc., Yonkers, N.Y. Filed July 5, 1966.

COLOR YOUR LIPS "KISSABLE"

For Lipstick (Int. Cl. 3).
First use Nov. 30, 1965.

SN 267,041. Island Mists, Ltd., New York, N.Y. Filed Mar. 17, 1967.

ISLAND MIST

The word "Mist" is disclaimed apart from the mark as shown.
For Perfume, Cologne, and Bath Perfume (Int. Cl. 3).
First use June 15, 1964.

SN 274,396. Avon Products, Inc., New York, N.Y. Filed June 21, 1967.

POCKETEER

For Lipstick and Compact Filled With Powder (Int. Cl. 3).
First use June 8, 1967.

SN 276,895. The Upjohn Company, Kalamazoo, Mich. Filed July 26, 1967.

VOLAR

Owner of Reg. No. 829,016.
For Cologne, Cold Cream, Body Lotion and Hair Spray (Int. Cl. 3).
First use Dec. 9, 1966.

SN 291,844. D'Elya, Inc., New York, N.Y. Filed Feb. 26, 1968.

CANDY

For Perfume and Cologne (Int. Cl. 3).
First use Oct. 17, 1967.

SN 293,395. The Mennen Company, Morristown, N.J. Filed Mar. 15, 1968.

BURNISHED LEATHER

The word "Leather" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 505,804 and 576,098.
For After Shave Lotion (Int. Cl. 3).
First use Feb. 16, 1968.

SN 294,568. American Home Products Corporation, New York, N.Y. Filed Apr. 1, 1968.

SILK PAJAMAS

For Deodorant Bath Powder (Int. Cl. 5).
First use Mar. 19, 1968.

SN 294,682. Stacy, Inc., Providence, R.I. Filed Apr. 1, 1968.

Soul Brother

For Cologne and After Shave Lotion (Int. Cl. 3).
First use on or about Mar. 11, 1968.

SN 298,498. Beauty Industries, Inc., Springfield, N.J. Filed May 20, 1968.

Jon Pierre

"Jon Pierre" is not the name of any living individual.
For Facial Cream, Liquid Foundation, Face Powder, Rouge, Eye Shadow, Astringents, Undereye Cream, Lipstick and Hands and Body Lotions (Int. Cl. 3).
First use Aug. 31, 1959.

SN 300,720. The Mennen Company, Morristown, N.J. Filed June 18, 1968.

ARGOSY

For All-Purpose Lotion (Int. Cl. 3).
First use May 27, 1968.

SN 301,073. Richard Hudnut, Morris Plains, N.J. Filed June 21, 1968.

DELICOLORS

For Nail Enamel (Int. Cl. 3).
First use June 17, 1968.

SN 301,179. Avon Products, Inc., New York, N.Y. Filed June 24, 1968.

MINARET

For Cologne, Filled Powder Compact and Lipstick (Int. Cl. 3).
First use May 27, 1968.

SN 303,742. The Gillette Company, Boston, Mass. Filed July 29, 1968.

LIKE HOT

No claim is made to the exclusive use of the word "Hot" apart from the mark as shown.
For Body Lotion (Int. Cl. 3).
First use May 27, 1968.

SN 307,064. Gem, Incorporated, Byhalia, Miss. Filed Sept. 11, 1968.

Fashion *Set

Applicant disclaims the word "Set" apart from the mark as shown.
For Aerosol Hair Spray (Int. Cl. 3).
First use July 11, 1968.

SN 307,707. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 19, 1968.

WASHKINS

For Disposable Towels Impregnated With a Skin Freshener (Int. Cl. 3).
First use Sept. 6, 1968.

SN 307,920. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

APPLE CHEEKS

Applicant disclaims the word "Cheeks" separate and apart from the mark as shown.
For Facial Skin Cleanser (Int. Cl. 3).
First use Aug. 6, 1968.

Class 52 — Detergents and Soaps

SN 286,946. Laboratoire Garnier, Societe Anonyme, Paris, France. Filed Dec. 14, 1967.

MOELLE GARNIER

The term "Moelle" is the French equivalent of the English word "Marrow." Owner of French Reg. No. 733,466, dated May 9, 1967.
For Hair Shampoo (Int. Cl. 3).

SN 287,443. Arcane Trading Corporation, d.b.a. Meredith Separator Co., Kansas City, Mo. Filed Dec. 22, 1967.

NAVAL JELLY

Applicant disclaims the term "Jelly" apart from the mark as shown but without prejudice or affect to its right to use and register said term alone and as a part of the mark.
For Rust Remover (Int. Cl. 3).
First use June 20, 1966.

SN 290,869. Misco Industries, Inc., Wichita, Kans. Filed Feb. 12, 1968.

MU-7

For Heavy Duty Detergents, Soaps, Solvents and Cleaners for Industrial and Domestic Use (Int. Cl. 3).
First use July 14, 1966.

SN 292,944. Madison Chemical Corporation, Maywood, Ill. Filed Mar. 11, 1968.

CHEM-MATE

For General Purpose Solvent Cleaner for Industrial and Commercial Use (Int. Cl. 1).
First use June 15, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 241,624. Autoscan, Inc., Culver City, Calif. Filed Mar. 23, 1966.

AUTOSCAN

For Testing the Performance of Automobiles for Manufacturers in the Automobile Industry (Int. Cl. 42).
First use Sept. 30, 1965.

SN 263,827. S. A. Dansyear, d.b.a. Ghost Services, Coral Gables, Fla. Filed Feb. 2, 1967.

GHOST SERVICES

For Consultant Services for Improving Leadership Qualities in Public Life, for Individuals, Service Groups, Trade Associations and Social Clubs, and for Advice in Setting Up and Operating Service Groups, Trade Associations, and Social Club Organizations (Int. Cl. 42).
First use Jan. 1, 1952.

SN 267,446. Professional Nursing Homes of America, Inc., Kansas City, Mo. Filed Mar. 23, 1967.



No claim is made to the wording "Professional Nursing Homes of America" apart from the mark as shown, without waiving any common law rights therein.
For Operation of Nursing Homes and Extended Care Facilities (Int. Cl. 42).
First use Oct. 15, 1966.

SN 267,820. Mortimer Russell Dock, New York, N.Y. Filed Mar. 30, 1967.

BETTOR WEATHER

For Providing Wind Condition Information at Racetracks and Other Sporting Events Where Betting Is Legally Permitted (Int. Cl. 42).
First use June 22, 1961.

SN 275,674. Lucky Steer Steak Houses, Inc., Fort Wayne, Ind. Filed July 10, 1967.



The drawing is lined for the color gray. The color, however, is not a part of the mark.
For Restaurant Services (Int. Cl. 42).
First use November 1965.

SN 276,847. Medicenters of America, Inc., Memphis, Tenn. Filed July 26, 1967.



Applicant disclaims the phrase "A Nice Place To Get Well" apart from the mark as shown.
For Medical and Skilled Nursing Care Services (Int. Cl. 42).
First use Sept. 16, 1966.

SN 277,267. Comarecs Inc., Washington, D.C. Filed Aug. 1, 1967.



For Rendering Technical Assistance to Banks in the Field of Revolving Credit (Int. Cl. 42).
First use June 13, 1967.

SN 280,421. International Shrimp Council, Inc., Washington, D.C. Filed Sept. 15, 1967.

No claim is made to the wording "International Shrimp Council" apart from the mark as shown.

For Association Services—Namely, Promoting the Sale of Shrimp and Keeping the Membership of the International Shrimp Council Advised as to All Government Regulations Applicable to Their Commercial Operations (Int. Cl. 42).

First use at least as early as Aug. 15, 1967.

SN 288,042. Gaston Wacker, Ville Jacques-Cartier, Quebec, Canada. Filed Jan. 3, 1968.

Priority claimed under Sec. 44(d) on Canadian application filed Nov. 15, 1967; Reg. No. 159,594, dated Nov. 29, 1968. The English meaning of the French term "Sur Le Pouce" is "on the thumb."

For Services Furnished by Restaurants, Snack Bars and the Like Including Take-Out Services (Int. Cl. 42).

SN 289,485. Communications and Systems, Incorporated, Falls Church, Va. Filed Jan. 24, 1968.

For Consultation Research and Analyses in the Fields of Aerospace Technology, Radar Technology, Navigation, Transportation Management Systems, Geosciences and Environmental Sciences, Management Sciences, Information and Communication Systems, Computer Applications and Support Services (Int. Cl. 42).

First use Nov. 27, 1967.

SN 290,742. Robert T. Mitton, Jr., d.b.a. Philly Hoagie & Steak Shops, Largo, Fla. Filed Feb. 9, 1968.

No claim is made to the exclusive use of the words "Philly Hoagie Submarine Sandwiches," apart from the mark shown in the drawing. Owner of Reg. No. 853,737.

For Restaurant Services (Int. Cl. 42).

First use June 15, 1959.

SN 294,679. Soil Testing Services, Inc., Northbrook, Ill. Filed Apr. 1, 1968.

The drawing is lined for the colors brown and gray. Applicant while preserving all common law rights, disclaims "Soil Testing Services Inc."

For Soil Borings and Field Evaluations, Quality Control of Earthwork, Concrete and Asphalt, and Engineering Reports, Particularly of the Type Relating to the Borings, Evaluations, and Quality Controls Referred to (Int. Cl. 42).

First use at least as early as January 1968; at least as early as March 1948 as to "Soil Testing Services."

SN 295,352. Merck & Co., Inc., Rahway, N.J. Filed Apr. 10, 1968.

Owner of Reg. No. 737,063.

For Service to Poultry Raisers Providing Technical Advice and Counseling To Prevent and Control Outbreaks of Coccidiosis in Poultry (Int. Cl. 42).

First use Jan. 29, 1968.

SN 298,677. Sea Host, Inc., New York, N.Y. Filed May 21, 1968.

The lining on the drawing of the mark represents a feature of the mark as used and is not intended to indicate color.

For Restaurant Services (Int. Cl. 42).

First use May 8, 1968.

SN 301,948. Lachmann, Inc., Chicago, Ill., assignee of Mini-Chef, Inc., Niles, Mich. Filed July 3, 1968.

For Restaurant Services (Int. Cl. 42).

First use May 1, 1967.

SN 302,291. American Dairy Queen Corporation, Minneapolis, Minn. Filed July 9, 1968.

FLAVORED IN FLAME

For Restaurant Services (Int. Cl. 42).

First use May 31, 1963.

SN 305,101. Software Products Corporation, Falls Church, Va. Filed Aug. 14, 1968.

CASE

For Evaluation of Electronic Data Processing Machines, Programs, and Systems (Int. Cl. 42).

First use May 13, 1968.

Class 101—Advertising and Business

SN 247,863. William A. Zubbrick, d.b.a. Active Sign Company of America, Chicago, Ill. Filed June 13, 1966.

The representation of the map of the United States, the word "Sign" and the wording "Since 1929" are disclaimed apart from the mark as shown.

For Silk Screen Process Printing for Others (Int. Cl. 35).

First use May 18, 1966.

SN 261,453. Robert J. Borgsmiller, d.b.a. Grandpa John's Store, Murphysboro, Ill. Filed Dec. 27, 1966.

For General Merchandise Store Services (Int. Cl. 35).

First use Oct. 10, 1965.

SN 269,338. Barbara Moore Neitz, d.b.a. A Village Realty, and Acreage Brokers of America, Framingham, Mass. Filed Apr. 17, 1967.

A VILLAGE REALTY

The word "Realty" is disclaimed apart from the mark.

For Real Estate Brokerage Services (Int. Cl. 35).

First use November 1959.

SN 271,253. Huebner Publications, Inc., Cleveland, Ohio. Filed May 11, 1967.

REQUEST-O-GRAM

For Inquiry-Forwarding Service Designed To Facilitate Communications Between Magazine Readers and Advertisers (Int. Cl. 35).

First use Oct. 11, 1966.

SN 278,960. First Girl, Inc., Chicago, Ill. Filed Aug. 24, 1967. The word "Girl" is disclaimed apart from the mark.

For Supplying Temporary Office, Secretarial, Data Processing and Bookkeeping Help and Temporary Business Machine Operators (Int. Cl. 35).

First use June 28, 1967.

SN 281,906. Mip-TV Marche International du Disque et de l'Edition Musicale-International Record and Music Publishing Market, Paris, France. Filed Oct. 5, 1967.

Owner of French Reg. No. 710,649, dated Aug. 12, 1966.

For Promotion, Marketing, and Advertising of Songs, Musical Plays, Films, and Records of Others by Means of Exhibitions, Fairs, and Similar Displays (Int. Cl. 35).

SN 282,205. Pharma-Scripts, Inc., New York, N.Y. Filed Oct. 10, 1967.

PHARMA-SCRIPTS

For Promotion of Ethical Drug Products of Others by Issuing Forms To Be Used by Physicians for Prescribing Such Drug Products and by Reimbursing Pharmacists Who Fill Such Prescriptions (Int. Cl. 35).

First use Sept. 7, 1967.

SN 286,216. United Motel Management Corp., New York, N.Y. Filed Dec. 4, 1967.

UNITEL

For Motel Management and Consultants Thereto With Respect to All Phases of Motel Operation (Int. Cl. 35).

First use May 3, 1967.

SN 286,662. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 11, 1967.

CASH ROULETTE

For Services Related to Promotional Game Programs of the Public-Participation Type, for Retail Businesses of Others—Namely, Originating, Planning, Devising Materials for, and Implementing Such Programs (Int. Cl. 35).

First use Oct. 5, 1967.

SN 287,128. Allied Stores of New York, Inc., New York, N.Y. Filed Dec. 18, 1967.

For Retail Gift Store Services (Int. Cl. 35).

First use Oct. 5, 1966.

Subj. to Intf. with SN 282,566.

SN 294,078. R.E.L. Enterprises, Inc., Los Angeles, Calif. Filed Mar. 25, 1968.

AD

For Supplying Temporary Bookkeepers and Accountants to Others (Int. Cl. 35).
First use Dec. 15, 1967.

SN 294,932. General Wholesalers Inc., New York, N.Y. Filed Apr. 4, 1968.

The mark comprises a fanciful representation of the letters "gw."
For Distributing Services in the Fields of Military Insignia, Jewelry, Food and Soap (Int. Cl. 35).
First use on or about Jan. 1, 1968.

SN 303,736. Applied Logic Corporation, Princeton, N.J. Filed July 29, 1968.

AL/COM

For Computer Time Sharing Services (Int. Cl. 35).
First use May 30, 1968.

Class 102 — Insurance and Financial

SN 280,724. Old Kent Bank and Trust Company, Grand Rapids, Mich. Filed Sept. 19, 1967.

OK CHARGE

Applicant disclaims the word "Charge" apart from the mark as shown.
For Consumer Credit Banking Services (Int. Cl. 36).
First use on or about Feb. 1, 1967.

SN 288,317. The Home Life Insurance Company of America, Philadelphia, Pa. Filed Jan. 8, 1968.



The mark consists of a rectangle having positioned therein an oval, within which is positioned the representation of a quill pen positioned within an ink well.
For Underwriting of Annuities, Life Insurance, and Disability Insurance (Int. Cl. 36).
First use on or about July 1, 1967.

SN 291,366. Dial a Quote Corp., New York, N.Y. Filed Feb. 19, 1968.

DIAL-A-QUOTE

For Furnishing of Stock Quotations to Subscribing Patrons Who Call by Telephone (Int. Cl. 36).
First use Feb. 2, 1968.

SN 296,154. John Hancock Mutual Life Insurance Company, Boston, Mass. Filed Apr. 22, 1968.



The mark comprises a fanciful representation of the lettering "JH" surrounding a stylized globe.
For Administration and Underwriting of Life Insurance, Accident and Health Insurance, Annuity Contracts, and Pensions (Int. Cl. 36).
First use Oct. 30, 1967.

SN 300,101. Northwestern Mutual Insurance Company, Seattle, Wash. Filed June 10, 1968.



The drawing is lined for gray.
For Insurance Services—Namely, Property and Casualty Insurance, Workmen's Compensation Insurance, Surety Underwriting, Life Insurance, Accident and Health Insurance, Medical and Hospital Insurance, Marine and Transportation Insurance, Annuities, and Insurance Premium Financing (Int. Cl. 36).
First use May 21, 1968.

SN 300,615. People's Savings Bank, Providence, R.I. Filed June 17, 1968.



For Banking Services (Int. Cl. 36).
First use on or about Mar. 5, 1967.

SN 302,361. Continental Casualty Company, Chicago, Ill. Filed July 10, 1968.

GOLDEN 65

No claim is made to the exclusive rights to the numerals "65." Owner of Reg. Nos. 687,002 and 830,368.
For Underwriting Health Insurance and Underwriting Life Insurance (Int. Cl. 36).
First use May 1962.

SN 310,021. Continental Assurance Company, Chicago, Ill. Filed Oct. 21, 1968.

COMP-U-TERM

For Underwriting Life Insurance (Int. Cl. 36).
First use Oct. 1, 1968.

Class 103 — Construction and Repair

SN 269,236. Teer, Wickwire & Company, Jackson, Mich. Filed Apr. 14, 1967.

TW

For Manufacturing and Processing Industrial Mechanical Devices and Component Parts Therefor for Others (Int. Cl. 37).
First use on or before Oct. 1, 1956.

SN 270,768. Dyna Car Clinic, Incorporated, Media, Pa. Filed May 5, 1967.

DYNA CAR CLINIC

No claim is made to the words "Car Clinic" apart from the mark shown.
For Automotive Diagnostic Services and Repairs (Int. Cl. 37).
First use Dec. 27, 1965.

SN 271,240. Edick Laboratories, Inc., d.b.a. Penny-Wise Car Wash Systems, Milwaukee, Wis. Filed May 11, 1967.

PENNY-WISE

For Operation of Car Wash Facilities (Int. Cl. 37).
First use July 1, 1965.

SN 273,753. Fleet Maintenance Service, Inc., South Sioux City, Nebr. Filed June 13, 1967.



Applicant makes no claim to the exclusive right to use the wording "Fleet Maintenance Service" apart from the mark as shown.
For Lubricating the Mobile Equipment of Others (Int. Cl. 37).
First use Aug. 10, 1966.

SN 278,828. Sinclair Refining Company, New York, N.Y. Filed Aug. 22, 1967.

DRIVE WITH CARE AND BUY SINCLAIR

Owner of Reg. Nos. 146,362, 712,302, and 812,000.
For Gasoline Station Services (Int. Cl. 37).
First use in the fall 1955.

Class 105 — Transportation and Storage

SN 260,808. Allied Van Lines, Inc., Broadview, Ill. Filed Dec. 15, 1966.



Owner of Reg. Nos. 834,903, 841,035, and 856,747.
For Packing, Storage and Transportation of Goods (Int. Cl. 39).
First use during October 1966.

SN 263,114. REA Leasing Corporation, New York, N.Y. Filed Jan. 23, 1967.



No claim is made to the representation of the map of the United States. Owner of Reg. No. 813,178.
For Furnishing of Piggyback Trailers and Containers on a Per Diem Basis to Railroads and Users of Piggyback (Int. Cl. 39).
First use Apr. 15, 1965; Mar. 7, 1961, as to the wording "Realco—The National Railroad Trailer Pool."

SN 294,873. Unitours Inc., Los Angeles, Calif. Filed Apr. 3, 1968.

UNITOURS

For Organizing, Arranging, and Conducting Travel Tours (Int. Cl. 39).
First use October 1958.

SN 310,985. Sea-Land Service, Inc., Elizabeth, N.J. Filed Oct. 31, 1968.

SEA-LAND

Owner of Reg. No. 742,107.
For Transportation of Freight in Containers Which Are Moved Successively as the Demountable Bodies of Land Vehicles and by Marine Vessels (Int. Cl. 39).
First use 1959, Apr. 19, 1956 in a different form.

Class 106 — Material Treatment

SN 280,629. Perfection Photo Co., Inc., Greensburg, Pa. Filed Sept. 18, 1967.

Life Photo Co.

For Mail Order Photo Finishing Services (Int. Cl. 40).
First use Oct. 13, 1960.

Class 107 — Education and Entertainment

SN 273,126. Syncretism Productions, Inc., New York, N.Y. Filed June 5, 1967.

SYNCRETISM

For Producing Motion Picture Films for Others (Int. Cl. 41).
First use May 15, 1967.

SN 284,226. National Railroad Institute, Inc., Atlanta, Ga. Filed Nov. 6, 1967.



For Training High School Graduates for Railroad Clerical Work (Int. Cl. 41).
First use on or about Mar. 15, 1966.

SN 284,368. Gold' Seal Company, Bismarck, N. Dak. Filed Nov. 8, 1967.

RANCHORAMA

For Educational Demonstration of Ranch Work and Professional Rodeo (Int. Cl. 41).
First use March 1967.

SN 287,454. The National Science Network, Inc., New York, N.Y. Filed Dec. 22, 1967.

PHYSICIANS JOURNAL OF THE AIR

For Providing Medical Abstracts for Doctors in Practice Through the Medium of a Radio Program Series (Int. Cl. 41).
First use Oct. 16, 1967.

SN 293,627. Kenneth M. Harris, Pointe Claire, Quebec, Canada. Filed Mar. 19, 1968.

THE RABBLE

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 5, 1968; Reg. No. 159,761, dated Dec. 6, 1968.
For Entertainment by a Musical Group (Int. Cl. 41).

SN 296,935. Almitra Music Co., Inc., Delevan, N.Y. Filed Apr. 30, 1968.

THE FREE DESIGN

For Entertainment Services in the Field of Popular Music Performed by a Group (Int. Cl. 41).
First use on or about Sept. 8, 1967.

SN 299,635. Madison Square Garden Corporation, New York, N.Y. Filed June 4, 1968.



Applicant disclaims any right to the use of the words "New York" apart from the mark as shown.
For Entertainment Services—Namely, Professional Ice Hockey Exhibitions (Int. Cl. 41).
First use not later than 1964, 1926 as to "New York Rangers."

SN 302,554. Chicago Cardinals Football Club, d.b.a. St. Louis Football Cardinals, St. Louis, Mo. Filed July 12, 1968.



The drawing is lined for the colors red and yellow. The football helmet is disclaimed apart from the mark as a whole.
For Entertainment Services—Namely, Football Exhibitions Rendered Live in Stadia and Through the Media of Radio and Television Broadcasts.
First use 1960.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

866,682. ETHOCON. Rexall Drug and Chemical Company, d.b.a. Fiberfil. SN 273,114. Pub. 4-23-68. Filed 6-5-67.

866,683. CORCO AND DESIGN. Commonwealth Oil Refining Company, Inc. MULTIPLE CLASS (Classes 1, 6, 12, and 15). SN 281,256. Pub. 2-13-68. Filed 9-27-67.

866,684. PARTHON. Shell Oil Company. SN 291,905. Pub. 12-31-68. Filed 2-26-68.

866,685. MACROCELL. Antonio Conterno, d.b.a. R.T.A. Resine Termoplastiche Applicate S.A.S. Dott. A. Conterno & C. SN 292,186. Pub. 12-31-68. Filed 2-29-68.

866,686. DECRA CHIPS. General Clay Products Corp. SN 306,434. Pub. 12-31-68. Filed 9-3-68.

866,687. GE GENERAL ELECTRIC AND DESIGN. General Electric Company. SN 306,435. Pub. 12-31-68. Filed 9-3-68.

Class 2—Receptacles

866,688. FLOROVEL. Modern Manufacturing Company, Inc. MULTIPLE CLASS (Classes 2 and 23). SN 264,752. Pub. 12-31-68. Filed 2-15-67.

866,689. VIKING. United Silver and Cutlery Company. MULTIPLE CLASS (Classes 2 and 13). SN 265,945. Pub. 2-20-68. Filed 3-6-67.

866,690. EMBLEM (DESIGN). Inland Steel Company. SN 281,895. Pub. 12-31-68. Filed 10-5-67.

866,691. B BELMAS AND DESIGN. The Belmas Company, Inc. MULTIPLE CLASS (Classes 2 and 103). SN 289,150. Pub. 12-31-68. Filed 1-19-68.

866,692. CASKET AIRTRAY. Abbott & Hast Mortuary Accommodation Company. SN 290,564. Pub. 12-31-68. Filed 2-8-68.

866,693. COTE-A-COR 600. West Virginia Pulp and Paper Company. SN 290,918. Pub. 12-31-68. Filed 2-12-68.

866,694. TEAR, TOTE & TOSS. Republic Molding Corporation. SN 299,380. Pub. 12-31-68. Filed 5-29-68.

866,695. MERVILLE. Mercantile Stores Company, Inc. SN 304,865. Pub. 12-31-68. Filed 8-12-68.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

866,696. WESELEN. Weselen Enterprises. SN 273,916. Pub. 12-31-68. Filed 6-14-67.

866,697. PINNACLE. Samsonite Corporation. SN 293,854. Pub. 10-15-68. Filed 3-21-68.

Class 4—Abrasives and Polishing Materials

866,698. GIBSON. Gibson, Inc. MULTIPLE CLASS (Classes 4, 21, 36, and 38). SN 267,480. Pub. 12-17-68. Filed 3-27-67.

Class 5—Adhesives

866,699. AB. American Bus Association, Inc. MULTIPLE CLASS (Classes 5, 12, and 19). SN 263,982. Pub. 12-31-68. Filed 2-6-67.

866,700. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 272,866. Pub. 12-31-68. Filed 6-1-67.

866,701. ELMCO. Lumbermens Merchandising Corporation. SN 291,410. Pub. 12-31-68. Filed 2-19-68.

Class 6—Chemicals and Chemical Compositions

866,683. (See Class 1 for this trademark.)

866,702. AUTO BOND. The Lubrizol Corporation. SN 271,377 Pub. 12-31-68. Filed 5-12-67.

866,703. R (DESIGN). Radiant Color Company. SN 283,564. Pub. 12-31-68. Filed 10-27-67.

866,704. BURN-OUT. Bio-Lab, Inc. SN 291,958. Pub. 12-31-68. Filed 2-27-68.

866,705. CONSIDER. Olin Mathieson Chemical Corporation. SN 307,068. Pub. 12-31-68. Filed 9-1 -68.

866,706. MINI-BULK. Baron Blakeslee, Inc. SN 307,910. Pub. 12-31-68. Filed 9-23-68.

Class 9—Explosives, Firearms, Equipments, and Projectiles

866,707. SAFE-T-SHELL. Clyde R. Rockwood. SN 299,589. Pub. 12-31-68. Filed 6-3-68.

Class 10—Fertilizers

866,708. HUMEX. Georesources, Inc. SN 301,742. Pub. 12-31-68. Filed 7-1-68.

866,709. F P A. Monsanto Company. SN 302,435. Pub. 12-31-68. Filed 7-10-68.

Class 11—Inks and Inking Materials

866,710. R (DESIGN). Radiant Color Company. SN 283,565. Pub. 12-31-68. Filed 10-27-67.

866,711. ROLLER TIGER AND DESIGN. Toka Shikiso Chemical Industry Co., Ltd. SN 285,160. Pub. 12-31-68. Filed 11-17-67.

Class 12—Construction Materials

866,683. (See Class 1 for this trademark.)

866,699. (See Class 5 for this trademark.)

866,712. HANDI-HOUSES THEY'RE PORTABLE ETC. AND DESIGN. James A. Fries, Jr. SN 267,283. Pub. 12-31-68. Filed 3-9-67.

866,713. THE VIROQUA DOOR. Dole Refrigerator Company. SN 282,780. Pub. 12-31-68. Filed 10-18-67.

866,714. MATCH STIX. Masonite Corporation. SN 300,603. Pub. 12-31-68. Filed 6-17-68.

866,715. SHADOWFORM. American Metal Climax, Inc. SN 301,022. Pub. 12-31-68. Filed 6-21-68.

866,716. UNITREAD. Niles Expanded Metals Company. SN 301,953. Pub. 12-31-68. Filed 7-3-68.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

866,689. (See Class 2 for this trademark.)

866,717. MISCELLANEOUS DESIGN. Mass Action Sales Systems, Inc. SN 263,471. Pub. 12–31–68. Filed 1–27–67.

866,718. RING-SEAL AND DESIGN. Whittaker Thermoplastics Corporation, assignee of Thermoplastics Corporation. SN 276,186. Pub. 5–7–68. Filed 7–17–67.

866,719. IOWA. Woodford Manufacturing Co. SN 277,235. Pub. 12–31–68. Filed 7–31–67.

866,720. WHEELWRIGHT TRIPLE LOCK NUT AND DESIGN. Schwaiger Corporation. SN 283,579. Pub. 12–31–68. Filed 10–27–67.

866,721. MISCELLANEOUS DESIGN. Fly-Wheel Corporation, d.b.a. Schiefer Manufacturing Co. MULTIPLE CLASS (Classes 13 and 23). SN 285,009. Pub. 12–31–68. Filed 11–16–67.

866,722. SCHIEFER. Fly-Wheel Corporation, d.b.a. Schiefer Manufacturing Co. MULTIPLE CLASS (Classes 13 and 23). SN 285,010. Pub. 12–31–68. Filed 11–16–67.

866,723. POW'RIVET AND DESIGN. Vaco Products Company. SN 286,218. Pub. 12–31–68. Filed 12–4–67.

866,724. D-LOC. Joseph Dyson & Sons, Inc. SN 299,332. Pub. 12–31–68. Filed 5–29–68.

866,725. STAN-SURE. American Standard Inc. SN 299,748. Pub. 12–31–68. Filed 6–5–68.

866,726. INSTA-FLOW. Sealed Unit Parts Co., Inc. SN 299,796. Pub. 12–31–68. Filed 6–5–68.

866,727. HIDE-N-HOLD. Leslie Welding Company, Inc. SN 299,988. Pub. 12–31–68. Filed 6–7–68.

Class 14—Metals and Metal Castings and Forgings

866,728. METLFORM. J. A. Richards Company. MULTIPLE CLASS (Classes 14 and 23). SN 290,752. Pub. 12–31–68. Filed 2–9–68.

Class 15—Oils and Greases

866,683. (See Class 1 for this trademark.)

866,729. SPRA-SLIK. Plasti-Kote Corp., assignee, by mesne assignment, of Plasti-Kote, Inc. SN 251,331. Pub. 10–3–67. Filed 7–29–66.

866,730. BEARING GARD. The Standard Oil Company. SN 297,320. Pub. 12–31–68. Filed 5–3–68.

866,731. ROYAL FLUSH. Georgia-Carolina Oil Company. SN 298,722. Pub. 12–31–68. Filed 5–21–68.

Class 16—Protective and Decorative Coatings

866,732. PROTECTOCOAT. Alpha Metals, Inc. SN 279,261. Pub. 12–31–68. Filed 8–29–67.

Class 17—Tobacco Products

866,733. SANTOS-DUMONT. Rothmans of Pall Mall Limited. SN 277,385. Pub. 12–31–68. Filed 8–2–67.

Class 18—Medicines and Pharmaceutical Preparations

866,734. KEY-MIN. Kimbell Milling Company. SN 217,547. Pub. 12–31–68. Filed 4–28–65.

866,735. KALI-CHEMIE. Kali-Chemie Aktiengesellschaft. SN 224,202. Pub. 12–31–68. Filed 7–26–65.

866,736. STOP'N GROW. Paige Proprietary Limited. SN 270,806. Pub. 12–31–68. Filed 5–5–67.

866,737. PSOR-BAN. Thor Laboratories, Inc., assignee of Psor-Ban Laboratories, Inc. SN 276,688. Pub. 12–31–68. Filed 7–24–67.

866,738. MACROSCAN. Abbott Laboratories. SN 277,416. Pub. 12–31–68. Filed 8–3–67.

866,739. SPASNIL. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Company. SN 282,887. Pub. 12–31–68. Filed 10–19–67.

866,740. CLEARINE. The Murine Company, Inc. SN 284,780. Pub. 8–20–68. Filed 10–23–67.

866,741. FERROBID. Meyer Laboratories Inc. SN 287,307. Pub. 12–31–68. Filed 12–20–67.

866,742. OP-SULFA. Broemmel Pharmaceuticals. SN 288,081. Pub. 12–31–68. Filed 1–4–68.

866,743. PEVIDINE. Drugs for Veterinary Medicine, Inc. SN 288,289. Pub. 12–31–68. Filed 1–8–68.

866,744. OPTIGEN. Mead Johnson & Company. SN 289,244. Pub. 12–31–68. Filed 1–22–68.

866,745. BAYMIX. Chemagro Corporation. SN 289,968. Pub. 12–31–68. Filed 1–31–68.

866,746. BARACOAT. The MacBick Company. SN 292,943. Pub. 12–31–68. Filed 3–11–68.

866,747. REGROLINE. Geigy Chemical Corporation. SN 293,502. Pub. 12–31–68. Filed 3–18–68.

866,748. HYGROZINE. Geigy Chemical Corporation. SN 293,504. Pub. 12–31–68. Filed 3–18–68.

866,749. AXIAMBRIN. Geigy Chemical Corporation. SN 293,505. Pub. 12–31–68. Filed 3–18–68.

866,750. NORMUDE. Geigy Chemical Corporation. SN 293,507. Pub. 12–31–68. Filed 3–18–68.

866,751. PANCORAN. Geigy Chemical Corporation. SN 293,508. Pub. 12–31–68. Filed 3–18–68.

866,752. CORICIDIN MEDILETS AND DESIGN. Schering Corporation. SN 293,588. Pub. 12–31–68. Filed 3–18–68.

866,753. PATH FINDER. Bristol-Myers Company. SN 294,584. Pub. 12–31–68. Filed 4–1–68.

866,754. SENSE. Bristol-Myers Company. SN 296,396. Pub. 12–31–68. Filed 4–24–68.

866,755. THE COLD HIDER. American Home Products Corporation. SN 297,240. Pub. 12–31–68. Filed 5–3–68.

866,756. REBOUND. Warner-Lambert Pharmaceutical Company. SN 298,780. Pub. 12–31–68. Filed 5–22–68.

866,757. PRAMOX. Salvador Lopez, d.b.a. Philpharma. SN 306,538. Pub. 12–31–68. Filed 9–4–68.

866,758. LITHANE. Chas. Pfizer & Co., Inc. SN 306,737. Pub. 12–31–68. Filed 9–6–68.

Class 19—Vehicles

866,699. (See Class 5 for this trademark.)

866,759. ASCO AND DESIGN. Aisin Seiki Co., Ltd. MULTIPLE CLASS (Classes 19 and 23). SN 242,095. Pub. 11–28–67. Filed 3–29–66.

866,760. ROAD MASTER. Monroe Auto Equipment Company. SN 258,397. Pub. 3–19–68. Filed 11–10–66.

866,761. KART-A-BAG. Remin Laboratories, Inc. SN 291,773. Pub. 12–31–68. Filed 2–23–68.

866,762. YAMAHA. Nippon Gakki Co., Ltd. MULTIPLE CLASS (Classes 19 and 23). SN 292,450. Pub. 12–31–68. Filed 3–5–68.

866,763. MAKO. Mako Marine, Inc. SN 302,684. Pub. 12–31–68. Filed 7–15–68.

Class 21—Electrical Apparatus, Machines, and Supplies

866,698. (See Class 4 for this trademark.)

866,764. TASKER. Tasker Industries, by change of name from Tasker Instruments, Corporation. SN 261,890. Pub. 12–31–68. Filed 1–3–67.

866,765. STCN. Appleton Electric Company. SN 283,848. Pub. 12–31–68. Filed 11–1–67.

866,766. HOSPITALITY. McGraw-Edison Company. SN 289,109. Pub. 12–31–68. Filed 1–18–68.

866,767. ESCORT. Motorola, Inc. SN 289,824. Pub. 12–31–68. Filed 1–29–68.

866,768. TEMPRENE. Simplex Wire and Cable Company. SN 289,930. Pub. 12–31–68. Filed 1–30–68.

866,769. FENCO. Fujiya Electric Co. Ltd. SN 292,089. Pub. 12–31–68. Filed 2–28–68.

866,770. E.C.C. Electronized Chemicals Corporation. SN 292,846. Pub. 12–31–68. Filed 3–11–68.

866,771. FLEXCOAT. American Enka Corporation. SN 294,108. Pub. 12–31–68. Filed 3–21–68.

866,772. THERMOFUZE. Pennsylvania Electronics Technology, Inc. SN 294,206. Pub. 12–31–68. Filed 3–26–68.

866,773. FABRICSCOPE. Westinghouse Electric Corporation. SN 294,875. Pub. 12–31–68. Filed 4–3–68.

866,774. ADD-A-POINT. Beauchaine & Sons, Inc. SN 301,123. Pub. 12–31–68. Filed 6–24–68.

866,775. SEASPACE. ESB Incorporated. SN 302,676. Pub. 12–31–68. Filed 7–15–68.

866,776. SLIDE 'N SWITCH AND DESIGN. Sealectro Corporation. SN 302,902. Pub. 12–31–68. Filed 7–17–68.

866,777. ECONO-LYTIC. Ionetics Corporation. SN 304,863. Pub. 12–31–68. Filed 8–12–68.

Class 22—Games, Toys, and Sporting Goods

866,778. DISGUSTING DIGUISES. Topps Chewing Gum, Incorporated. MULTIPLE CLASS (Classes 22 and 46). SN 283,840. Pub. 12–31–68. Filed 11–1–67.

866,779. CIRCUS. Robert L. Moore. SN 286,704. Pub. 12–31–68. Filed 12–11–67.

866,780. DEVIL SPOON. Atlantic Lures, Inc. SN 297,751. Pub. 12–31–68. Filed 5–9–68.

866,781. SOUND-A-ROUND. Western Publishing Company, Inc. SN 298,273. Pub. 12–31–68. Filed 5–15–68.

866,782. ICE-BREAKER. Holiday Publishing Co., Inc. SN 300,448. Pub. 12–31–68. Filed 6–14–68.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

866,688. (See Class 2 for this trademark.)

866,721. (See Class 13 for this trademark.)

866,722. (See Class 13 for this trademark.)

866,728. (See Class 14 for this trademark.)

866,759. (See Class 19 for this trademark.)

866,762. (See Class 19 for this trademark.)

866,783. JOHNSON BIG WHEEL. Johnson Big Wheel Mowers, Inc. SN 249,240. Pub. 9–26–67. Filed 6–29–66.

866,784. P AND DESIGN. Thurman A. Pelsue, d.b.a. T. A. Pelsue Company. MULTIPLE CLASS (Classes 23, 34, and 50). SN 251,743. Pub. 12–31–68. Filed 8–4–66.

866,785. AMPULCO. Universal American Corporation. SN 254,410. Pub. 12–31–68. Filed 9–13–66.

866,786. SIDEWINDER. New Jersey Machine Corporation. SN 260,445. Pub. 5–7–68. Filed 12–9–66.

866,787. BALL. Ball Brothers Company Incorporated. SN 263,245. Pub. 12–31–68. Filed 1–25–67.

866,788. VIBRELIEF. Lodding Engineering Corporation. SN 277,058. Pub. 12–31–68. Filed 7–28–67.

866,789. MORRIS MOR-SPEED. Morris Radial Drill Co. SN 277,367. Pub. 12–31–68. Filed 8–2–67.

866,790. FISK. Uniroyal, Inc. SN 278,047. Pub. 12–31–68. Filed 8–10–67.

866,791. CAPSULFINER. Howe-Baker Engineers, Inc. SN 278,103. Pub. 12–31–68. Filed 8–11–67.

866,792. HELIXOR. Polcon Corporation. SN 282,476. Pub. 12–31–68. Filed 10–13–67.

866,793. STYLIZED AND SYMBOLIC DESIGN OF THE LETTER D. The J. E. Doyle Company. CONSOLIDATED CERTIFICATE. SN 283,643, pub. 12–31–68, filed 10–30–67, Cls. 23 and 34; SN 305,413, pub. 12–10–68, filed 8–19–68, Cl. 26.

866,794. VENTIFLOC. Societe Anonyme des Etablissements NEU. SN 284,858. Pub. 12–31–68. Filed 10–17–67.

866,795. CHOC-LO-MATIC. Multiplex Company. SN 286,357. Pub. 12–31–68. Filed 12–6–67.

866,796. QUICKSILVER. Brunswick Corporation. SN 289,267. Pub. 12–31–68. Filed 1–22–68.

866,797. GIZMO. The Whip Guide Company. SN 289,365. Pub. 12–31–68. Filed 1–22–68.

866,798. RUD-O-BRAKE. McCaffrey-Ruddock Tagline Corporation. SN 290,307. Pub. 12–31–68. Filed 2–5–68.

866,799. G GROVE AND DESIGN. Grove Manufacturing Company. SN 290,389. Pub. 12–31–68. Filed 2–6–68.

866,800. VASTEX. Michael Vasilantone, d.b.a. Vastex Machine Co. SN 290,421. Pub. 12–31–68. Filed 2–6–68.

866,801. MIGHTY MIDGET. The Stanley Works. SN 290,764. Pub. 12–31–68. Filed 2–9–68.

866,802. FLOTO-PUMP AND DESIGN. Waterous Company. SN 290,917. Pub. 12–31–68. Filed 2–12–68.

866,803. CHEVRON (DESIGN). Standard Oil Company of California. SN 291,105. Pub. 12–31–68. Filed 2–14–68.

866,804. CHIPPER. Ilines Machine Products Ltd. SN 291,267. Pub. 12–31–68. Filed 2–16–68.

866,805. JET-FLO. Babson Bros. Co. SN 291,348. Pub. 12–31–68. Filed 2–19–68.

866,806. FIBERMIZER. Bird Machine Company. SN 291,706. Pub. 12–31–68. Filed 2–23–68.

866,807. GP. Nordberg Manufacturing Company. SN 291,890. Pub. 12–31–68. Filed 2–26–68.

866,808. EJECTO PUNCH. Park-Air Corp. SN 291,895. Pub. 12–31–68. Filed 2–26–68.

866,809. FAVAIR. Ritter Pfaudler Corporation. SN 292,135. Pub. 12–31–68. Filed 2–28–68.

866,810. CROWN AND DESIGN. Crown Controls Corporation. SN 295,019. Pub. 12–31–68. Filed 4–5–68.

866,811. 3M. Minnesota Mining and Manufacturing Company. SN 303,649. Pub. 12–31–68. Filed 7–26–68.

866,812. SCOTCH-BRITE. Minnesota Mining and Manufacturing Company. SN 303,652. Pub. 12–31–68. Filed 7–26–68.

866,813. MISCELLANEOUS DESIGN. Autocase Corporation. SN 304,182. Pub. 12–31–68. Filed 8–2–68.

866,814. MERVILLE. Mercantile Stores Company, Inc. SN 307,388. Pub. 12–31–68. Filed 9–16–68.

Class 26—Measuring and Scientific Appliances

866,793. CONSOLIDATED CERTIFICATE. See Class 23.

866,815. NORTH SEEKER. Humphrey, Inc. SN 268,188. Pub. 8–27–68. Filed 4–3–67.

866,816. CAMBRIDGE. School House Products, Inc. SN 272,102. Pub. 2–6–68. Filed 5–22–67.

866,817. REC AND DESIGN. Responsive Environments Corporation. SN 279,566. Pub. 12–31–68. Filed 9–1–67.

866,818. PM. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 296,141. Pub. 12–31–68. Filed 4–22–68.

866,819. OM. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 296,142. Pub. 12–31–68. Filed 4–22–68.

866,820. COLLIMASTER. Raytheon Company. SN 300,535. Pub. 12–31–68. Filed 6–17–68.

866,821. PERMA-FLASHMATIC. Perfect Film & Chemical Corporation. SN 301,547. Pub. 12–31–68. Filed 6–27–68.

866,822. DIGI-PROBE. R. J. Naylor, d.b.a. Digi-T-Co. SN 304,042. Pub. 12–31–68. Filed 8–1–68.

Class 27 — Horological Instruments

866,823. OPTICAN'S. Joe Optican Jewelry Co., Inc. MULTIPLE CLASS (Classes 27 and 28). SN 300,502. Pub. 12–31–68. Filed 6–17–68.

Class 28 — Jewelry and Precious-Metal Ware

866,823. (See Class 27 for this trademark.)

866,824. EMBASSY. Gladwin Limited. SN 284,085. Pub. 12–31–68. Filed 11–3–67.

866,825. FLAMENCO. Dubarry Fifth Avenue Inc. SN 295,427. Pub. 12–31–68. Filed 4–11–68.

866,826. AGAGEM. The Agagem Company. SN 300,545. Pub. 12–31–68. Filed 6–17–68.

866,827. JEWEL FLAKES. Philips Manufacturing Company. SN 306,541. Pub. 12–31–68. Filed 9–4–68.

866,828. CROWN DESIGN. International Silver Company. SN 308,257. Pub. 12–31–68. Filed 9–26–68.

Class 30 — Crockery, Earthenware, and Porcelain

866,829. RC AND DESIGN. Noritake Co., Inc. SN 245,745. Pub. 9–5–67. Filed 5–16–66.

Class 31 — Filters and Refrigerators

866,830. LONGLIFE. Sternco Industries, Inc. SN 295,680. Pub. 12–31–68. Filed 4–15–68.

Class 32 — Furniture and Upholstery

866,831. POSTURE-REST. The Stearns & Foster Co. SN 279,871. Pub. 5–28–68. Filed 9–7–67.

866,832. CUSTOMAIRE. Samsonite Corporation. SN 290,025. Pub. 12–31–68. Filed 1–31–68.

Class 33 — Glassware

866,833. UNI-PAK. Owens-Illinois, Inc. SN 299,479. Pub. 12–31–68. Filed 5–31–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

866,784. (See Class 23 for this trademark.)

866,793. CONSOLIDATED CERTIFICATE. See Class 23.

866,834. THERMOTRON. Thermoil Ltd. SN 278,539. Pub. 6–18–68. Filed 8–17–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

866,835. MX. John N. Martin, d.b.a. John N. Martin, Manufacturer. SN 298,837. Pub. 12–31–68. Filed 5–22–68.

Class 36 — Musical Instruments and Supplies

866,698. (See Class 4 for this trademark.)

866,836. IMS (DESIGN). I.M.S. International Music Supply G.m.b.H. SN 280,833. Pub. 12–31–68. Filed 9–13–67.

866,837. SWINGSTER. Kenner Products Company. SN 286,271. Pub. 12–31–68. Filed 12–5–67.

866,838. CAREER CONFERENCES. Behavioral Science Associates, Inc. SN 303,016. Pub. 12–31–68. Filed 7–18–68.

866,839. CROSSROADS. Columbia Broadcasting System, Inc. SN 308,420. Pub. 12–31–68. Filed 9–30–68.

Class 37 — Paper and Stationery

866,840. PERM-A-BIND. United States Tabulating Binder Corporation. SN 258,334. Pub. 12–31–68. Filed 11–9–66.

866,841. CROWN JEWEL. Cory Corporation. SN 283,878. Pub. 12–31–68. Filed 11–1–67.

866,842. DURA-COVER. Packaging Corporation of America. SN 289,562. Pub. 4–16–68. Filed 1–25–68.

866,843. BERGSTROM. Bergstrom Paper Company. SN 297,755. Pub. 12–31–68. Filed 5–9–68.

866,844. Q-TEES. The Exclusive Company. SN 298,116. Pub. 12–31–68. Filed 5–14–68.

866,845. WEYMOUTH. The Mead Corporation. SN 298,139. Pub. 12–31–68. Filed 5–14–68.

866,846. SOUTHGATE. The Mead Corporation. SN 298,140. Pub. 12–31–68. Filed 5–14–68.

866,847. LITTLE SHOW-OFF. Tru-Foto, Inc. SN 305,581. Pub. 12–31–68. Filed 8–20–68.

Class 38 — Prints and Publications

866,698. (See Class 4 for this trademark.)

866,848. HORSE-PITALITY. Motel Horse-Pitality, Inc., assignee of William J. Taylor. SN 169,988. Pub. 12–31–68. Filed 5–29–63.

866,849. GO WITH DOALL GREEN LIGHT AND DESIGN. DoAll Company. SN 266,311. Pub. 12–31–68. Filed 3–9–67.

866,850. ALDERMAN AND DESIGN. Alderman Studios, Inc. SN 269,245. Pub. 12–31–68. Filed 4–17–67.

866,851. CARDS AND SHARDS ETC. AND DESIGN. Robert Fesler, Jr. SN 277,552. Pub. 12–31–68. Filed 8–4–67.

866,852. SUBURBAN SAM. James G. Teason. SN 286,044. Pub. 12–31–68. Filed 12–1–67.

866,853. CYBERMATION ENGINEERING. Hitchcock Publishing Company. SN 291,265. Pub. 12–31–68. Filed 2–16–68.

866,854. SUN UP AND DESIGN. World Publishing Company. SN 291,568. Pub. 12–31–68. Filed 2–21–68.

866,855. TOP VIEW. The McNaught Syndicate, Inc. SN 292,402. Pub. 12–31–68. Filed 3–4–68.

866,856. EMPHASIS. Marva Publishing Corporation. SN 294,638. Pub. 12–31–68. Filed 4–1–68.

866,857. DOVER. Dover Publications, Inc. SN 297,662. Pub. 12–31–68. Filed 5–8–68.

866,858. POST-P. American Chemical Society. SN 300,511. Pub. 12–31–68. Filed 6–17–68.

866,859. "MINI-BOARDS." Sid Brawer, d.b.a. Tri-Ads Company. SN 301,124. Pub. 12–31–68. Filed 6–24–68.

866,860. PASSPORT. MTH Corporation. SN 303,620. Pub. 12–31–68. Filed 7–25–68.

866,861. FANCIFUL A (DESIGN). Alderman Studios Inc. SN 306,025. Pub. 12–31–68. Filed 8–9–68.

Class 39 — Clothing

866,862. NONCHALANT. The Alligator Company, Inc., by merger from Timely Clothes, Inc. SN 236,304. Pub. 4–5–66. Filed 1–12–66.

866,863. OXFORD 5 AND DESIGN. Lipton & Bezerman. SN 240,926. Pub. 4–4–67. Filed 3–14–66.

866,864. AMPEC AND DESIGN. Asociacion Mexicana de Productores Exportadores de Calzado, S. de R.L.I.P. y C.V. SN 251,595. Pub. 12–31–68. Filed 8–3–66.

866,865. AURA BOUTIQUE. Park-Storyk Corporation. SN 272,623. Pub. 12–31–68. Filed 5–29–67.

866,866. BRAHMA CORD. Farah Manufacturing Company, Inc. SN 273,188. Pub. 12–31–68. Filed 6–6–67.

866,867. ROYAL CLUB. The Puritan Sportswear Corp. SN 274,772. Pub. 12–31–68. Filed 6–26–67.

866,868. TOTER. The Puritan Sportswear Corp. SN 274,773. Pub. 12–31–68. Filed 6–26–67.

866,869. NUR DIE AND DESIGN. "Nur Die" Textilvertrieb G.m.b.H. SN 277,701. Pub. 12–31–68. Filed 8–7–67.

866,870. "FLOWER POWER." Peter Pan International, Inc., by merger and change of name from Peter Pan Foundations, Inc. SN 279,851. Pub. 2–27–68. Filed 9–7–67.

866,871. BLACK KNIGHT AND DESIGN. Tex-Sun Glove Company. SN 280,352. Pub. 8–27–68. Filed 9–14–67.

866,872. THE SPORTING TAILORS AND DESIGN. The Sporting Tailors Manufacturing Co., Inc. SN 280,980. Pub. 12–31–68. Filed 9–22–67.

866,873. BIDIM. Societe Rhodiaceta. SN 281,232. Pub. 12–31–68. Filed 9–26–67.

866,874. SOUTHERN COMFORT. Oxford Industries, Inc. SN 281,614. Pub. 12–31–68. Filed 10–2–67.

866,875. PINEHURST. Pinehurst Textiles, Inc. SN 286,277. Pub. 12–31–68. Filed 12–5–67.

866,876. WILD WILD ANIMALS. Ben Cooper, Inc. SN 288,495. Pub. 12–31–68. Filed 1–10–68.

866,877. SATURDAY'S HEROES. Ben Cooper, Inc. SN 288,496. Pub. 12–31–68. Filed 1–10–68.

866,878. ROMANTICS. Formaid Co. SN 289,291. Pub. 12–31–68. Filed 1–22–68.

866,879. ULTIMITT. Benjamin Harrison Weiss, Inc. SN 300,995. Pub. 12–31–68. Filed 6–20–68.

866,880. UTOPIA. Associated Dry Goods Corporation. SN 306,113. Pub. 12–31–68. Filed 8–28–68.

866,881. KORACORP AND DESIGN. Koracorp Industries, Inc. SN 307,383. Pub. 12–31–68. Filed 9–16–68.

866,882. K (DESIGN). Koracorp Industries, Inc. SN 307,384. Pub. 12–31–68. Filed 9–16–68.

866,883. KORACORP. Koracorp Industries, Inc. SN 307,385. Pub. 12–31–68. Filed 9–16–68.

866,884. LORD BLAIR. Wonderknit Corporation. SN 307,619. Pub. 12–31–68. Filed 9–18–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

866,885. PLACE MATCH. Ross-Matthai Corporation. MULTIPLE CLASS (Classes 42 and 50). SN 264,447. Pub. 12–31–68. Filed 2–10–67.

866,886. BONNIE AND DESIGN. Interco Incorporated. SN 274,324. Pub. 7–16–68. Filed 6–20–67.

866,887. UNIWEAVE. Uniweave Corporation. SN 291,689. Pub. 5–14–68. Filed 2–23–68.

866,888. D (DESIGN). Dundee Mills, Inc. SN 299,658. Pub. 12–31–68. Filed 6–4–68.

Class 43 — Thread and Yarn

866,889. BIDIM. Societe Rhodiaceta. SN 281,234. Pub. 12–31–68. Filed 9–26–67.

Class 44 — Dental, Medical, and Surgical Appliances

866,890. SHOP-RITE. Wakefern Food Corporation. SN 297,463. Pub. 12–31–68. Filed 5–6–68.

866,891. URO-TRAY. C. R. Bard, Inc. SN 298,560. Pub. 12–31–68. Filed 5–20–68.

866,892. COMFORTUBE. Kimberly-Clark Corporation. SN 299,463. Pub. 12–31–68. Filed 5–31–68.

866,893. REXTON. Bommer AG. SN 302,827. Pub. 12–31–68. Filed 7–16–68.

866,894. ASEPTI-WRAP. W. A. Baum Co., Inc. SN 303,655. Pub. 12–31–68. Filed 7–26–68.

866,895. TOPCO. Topco Associates, Inc. SN 306,961. Pub. 12–31–68. Filed 9–9–68.

Class 45 — Soft Drinks and Carbonated Waters

866,896. PARFA. J. F. Lazier Manufacturing Co. SN 284,485. Pub. 12–31–68. Filed 11–9–67.

866,897. MISCELLANEOUS DESIGN. Sunkist Growers, Inc. SN 287,046. Pub. 12–31–68. Filed 12–15–67.

Class 46 — Foods and Ingredients of Foods

866,778. (See Class 22 for this trademark.)

866,898. SOMMER MAID AND DESIGN. Sommer Maid Creamery, Inc. SN 230,940. Pub. 11–8–66. Filed 10–21–65.

866,899. FREEZIE. Fremantle Fishermen's Co-Operative Society Limited. SN 253,870. Pub. 12–31–68. Filed 9–6–66.

866,900. SPILLERS. Spillers Limited. SN 258,269. Pub. 12–31–68. Filed 9–20–66.

866,901. MEADOW GOLD. Beatrice Foods Co. SN 268,468. Pub. 1–16–68. Filed 4–6–67.

866,902. THE VIRGINIAN. Pierce Pre-Cooked Foods, Inc. SN 271,831. Pub. 5–21–68. Filed 5–18–67.

866,903. MIMICS. Gerber Products Company. SN 279,939. Pub. 12–31–68. Filed 9–8–67.

866,904. BONANZA. Elsie M. Smith, d.b.a. Bonanza Salt Company. SN 283,039. Pub. 12–31–68. Filed 10–20–67.

866,905. JUAN VALDEZ ETC. AND DESIGN. National Federation of Coffee Growers of Colombia. SN 283,540. Pub. 12–31–68. Filed 10–27–67.

866,906. JONNIE-O AND DESIGN. Oroville-Cordell Fruit Growers, Inc. SN 284,497. Pub. 12-31-68. Filed 11-9-67.

866,907. BRIDGFORD. Bridgford Foods Corporation. SN 285,111. Pub. 12-31-68. Filed 11-17-67.

866,908. DURKEE. SCM Corporation, d.b.a. Durkee Famous Foods. SN 286,847. Pub. 12-31-68. Filed 12-13-67.

866,909. MISCELLANEOUS DESIGN. Sunkist Growers, Inc. SN 287,047. Pub. 12-31-68. Filed 12-15-67.

866,910. BRATA. Erprather Muhlen Schmidt & Co. K.-G. SN 288,405. Pub. 12-31-68. Filed 1-4-68.

866,911. TODDLES. Gerber Products Company. SN 288,511. Pub. 12-31-68. Filed 1-10-68.

866,912. SCOOP. General Foods Corporation. SN 289,182. Pub. 12-31-68. Filed 1-19-68.

866,913. FANTASTIX. Frito-Lay, Inc. SN 292,371. Pub. 12-31-68. Filed 3-4-68.

866,914. JACK FROST. The National Sugar Refining Company. SN 294,403. Pub. 12-31-68. Filed 3-28-68.

866,915. TWICE CREAM. Thomas Carvel. SN 295,015. Pub. 12-31-68. Filed 4-5-68.

866,916. TCP AND DESIGN. Rockingham Poultry Marketing Cooperative, Inc. SN 296,349. Pub. 12-31-68. Filed 4-23-68.

866,917. D AND DESIGN. National Cheese Company. SN 296,858. Pub. 12-31-68. Filed 4-29-68.

866,918. CHUNK O'GOLD. Woody's Cheese Company. SN 297,477. Pub. 12-31-68. Filed 5-6-68.

866,919. GULF COAST. Willa Lee Johnson, d.b.a. Johnson Seafood Company. SN 298,008. Pub. 12-31-68. Filed 5-13-68.

866,920. MORNING CUP. Carnation Company. SN 299,427. Pub. 12-31-68. Filed 5-31-68.

866,921. BRIGHT EYES. Carnation Company. SN 299,428. Pub. 12-31-68. Filed 5-31-68.

866,922. ROLL OVER. Carnation Company. SN 299,429. Pub. 12-31-68. Filed 5-31-68.

866,923. ROYAL SCOT AND DESIGN OF PACKAGE. The Miami Margarine Company. SN 299,614. Pub. 12-31-68. Filed 6-3-68.

866,924. ROASTIES. Stoppenbach Sausage Company. SN 299,885. Pub. 12-31-68. Filed 6-6-68.

866,925. TABEAST. Standard Brands Incorporated. SN 300,015. Pub. 12-31-68. Filed 6-6-68.

866,926. CABANA AND DESIGN. Standard Fruit and Steamship Company. SN 303,875. Pub. 12-31-68. Filed 7-30-68.

866,927. BALMORAL AND DESIGN. Heggblade-Margulcas Co. SN 304,282. Pub. 12-31-68. Filed 8-5-68.

866,928. DUCOR KING. Heggblade-Margulcas Co. SN 304,283. Pub. 12-31-68. Filed 8-5-68.

866,929. RIDGE ROYAL AND DESIGN. John J. Kovacevich. SN 304,550. Pub. 12-31-68. Filed 8-7-68.

866,930. RED COACH AND DESIGN. Bruce Church, Inc. SN 304,734. Pub. 12-31-68. Filed 8-9-68.

866,931. TENDERFUL. Tri-Valley Growers. SN 305,102. Pub. 12-31-68. Filed 8-14-68.

866,932. TLC AND DESIGN. Tani Farms. SN 305,288. Pub. 12-31-68. Filed 8-16-68.

866,933. SNO BUNNY. Crown Packing Company. SN 306,429. Pub. 12-31-68. Filed 9-3-68.

Class 47 — Wines

866,934. BAPTISTIN CARACOUS. Baptistin Caracous & Cie. SN 284,155. Pub. 12-31-68. Filed 11-6-67.

Class 49 — Distilled Alcoholic Liquors

866,935. RARE SCOT. Jay L. Ambrose, d.b.a. Highland Distillers Import Co. SN 284,564. Pub. 12-31-68. Filed 11-13-67.

Class 50 — Merchandise Not Otherwise Classified

866,784. (See Class 23 for this trademark.)

866,885. (See Class 42 for this trademark.)

866,936. LUXICON. Dolan-Jenner Industries, Inc. SN 275,648. Pub. 12-31-68. Filed 7-10-67.

866,937. R (DESIGN). Radiant Color Company. SN 283,569. Pub. 12-31-68. Filed 10-27-67.

866,938. DESIGNER CARVINGS. Vistron Corporation. SN 287,603. Pub. 12-31-68. Filed 12-26-67.

866,939. FRROG AND DESIGN. Fred Rothenberg. SN 287,958. Pub. 12-31-68. Filed 1-2-68.

866,940. KOOL-STRAWS. General Foods Corporation. SN 301,342. Pub. 12-31-68. Filed 6-25-68.

866,941. SPIRO-PAC. Sonoco Products Company. SN 301,454. Pub. 12-31-68. Filed 6-26-68.

866,942. WHOPPER KNOCKER. Stanley E. Graham. SN 301,747. Pub. 12-31-68. Filed 7-1-68.

866,943. F FELCO AND DESIGN. Farmers Regional Cooperative. SN 305,277. Pub. 12-31-68. Filed 8-16-68.

Class 51 — Cosmetics and Toilet Preparations

866,944. CUCUMBER DEW. Cosmetics Manufacturing Company, d.b.a. Cosmetco. SN 287,726. Pub. 12-31-68. Filed 12-28-67.

866,945. SURVIVAL CREAM. Yardley of London, Inc. SN 287,982. Pub. 12-31-68. Filed 1-2-68.

866,946. SURVIVAL KIT. Yardley of London, Inc. SN 287,983. Pub. 12-31-68. Filed 1-2-68.

866,947. WHITE BELT. Chas. Pfizer & Co., Inc. SN 290,519. Pub. 12-31-68. Filed 2-7-68.

866,948. BROWN BELT. Chas. Pfizer & Co., Inc. SN 290,520. Pub. 12-31-68. Filed 2-7-68.

866,949. PANACEA. Helene Curtis Industries, Inc., d.b.a. Helene Curtis. SN 293,254. Pub. 12-31-68. Filed 3-14-68.

866,950. LANOMEN. The Mennen Company. SN 293,394. Pub. 12-31-68. Filed 3-15-68.

866,951. IL LEONE. The Gillette Company. MULTIPLE CLASS (Classes 51 and 52). SN 300,032. Pub. 12-31-68. Filed 6-10-68.

866,952. WICKER. Chesebrough-Pond's Inc. SN 396,047. Pub. 12-31-68. Filed 8-27-68.

866,953. TWO DO. Colgate-Palmolive Company. SN 307,380. Pub. 12-31-68. Filed 9-16-68.

866,954. LANCE. Colgate-Palmolive Company. SN 307,381. Pub. 12-31-68. Filed 9-16-68.

866,955. THE MORNING AFTER. Carter-Wallace, Inc. SN 307,913. Pub. 12-31-68. Filed 9-23-68.

866,956. THE NIGHT BEFORE. Carter-Wallace, Inc. SN 307,914. Pub. 12-31-68. Filed 9-23-68.

866,957. KOOLIP. Carter-Wallace, Inc. SN 307,918. Pub. 12-31-68. Filed 9-23-68.

Class 52 — Detergents and Soaps

866,951. (See Class 51 for this trademark.)

Service Marks

Class 100 — Miscellaneous

866,958. COMM/SCOPE. Superior Continental Corporation, by change of name from Superior Cable Corporation. MULTIPLE CLASS (Classes 100 and 103). SN 279,577. Pub. 12-31-68. Filed 9-1-67.

866,959. COMM SCOPE AND DESIGN. Superior Continental Corporation, by change of name from Superior Cable Corporation. MULTIPLE CLASS (Classes 100 and 103). SN 279,578. Pub. 12-31-68. Filed 9-1-67.

866,960. DER RATHAUS. Moscow Pizza Corporation. SN 280,910. Pub. 12-31-68. Filed 9-22-67.

866,961. SOUTH BAY CLUB. South Bay Clubs International, Inc., assignee of South Bay Clubs International. SN 282,632. Pub. 12-31-68. Filed 10-16-67.

866,962. BHC. Schlumberger Limited (Schlumberger N.V.), assignee of Schlumberger Technology Corporation, d.b.a. Schlumberger Well Services. SN 287,678. Pub. 12-31-68. Filed 12-27-67.

866,963. THE RED HORSE. Red Horse, Incorporated. SN 302,863. Pub. 12-31-68. Filed 7-16-68.

866,964. MA MA DEMAR'S AND DESIGN. Ma Ma DeMar's Pizza International Inc. SN 305,098. Pub. 12-31-68. Filed 8-14-68.

866,965. AL HIRT'S. Al Hirt's Sandwich Saloons, Inc. SN 308,207. Pub. 12-31-68. Filed 9-25-68.

866,966. THE GROUND FLOOR. 5152 Ground Floor, Inc. SN 308,254. Pub. 12-31-68. Filed 9-26-68.

Class 101 — Advertising and Business

866,967. LUCKY BAG. Frank Dennis Co., Inc. SN 245,391. Pub. 12-31-68. Filed 5-11-66.

866,968. TEEN WORLD AND DESIGN. Steiner Promotions, Inc. SN 259,484. Pub. 12-31-68. Filed 11-25-66.

866,969. EDP ELECTRONIC DINING PLANNING. Charles E. Kress, d.b.a. Electronic Dining Planning. SN 260,991. Pub. 12-31-68. Filed 12-6-66.

866,970. NEODATA. A. C. Nielsen Company. SN 264,087. Pub. 12-31-68. Filed 2-2-67.

866,971. DESIGN OF A BRIDGE. David T. Artson, d.b.a. Artson Answering System. SN 270,653. Pub. 12-31-68. Filed 5-4-67.

866,972. TOPIC. Agency Assistance, Inc. SN 273,453. Pub. 12-31-68. Filed 6-9-67.

866,973. LEASE AND DESIGN. The Reynolds & Reynolds Company. SN 286,034. Pub. 12-31-68. Filed 12-1-67.

866,974. PAGODA. The Pagoda. SN 288,028. Pub. 12-31-68. Filed 1-3-68.

866,975. REALTRON. Realtron Corporation. SN 296,198. Pub. 12-31-68. Filed 4-22-68.

866,976. SUNNY'S. Hayden Franchise Corporation. SN 297,483. Pub. 12-31-68. Filed 4-26-68.

866,977. ALDERMAN AND DESIGN. Alderman Studios Inc. SN 304,748. Pub. 12-31-68. Filed 8-9-68.

866,978. FANCIFUL A (DESIGN). Alderman Studios Inc. SN 306,026. Pub. 12-31-68. Filed 8-9-68.

Class 102 — Insurance and Financial

866,979. GOLDEN SAVINGS. Trust Company of Georgia. SN 288,245. Pub. 12-31-68. Filed 1-5-68.

866,980. UNIGARD. Northwestern Mutual Insurance Company. SN 300,099. Pub. 12-31-68. Filed 6-10-68.

866,981. THE INVESTAMERICA GROUP. The Investamerica Group, Inc. SN 300,155. Pub. 12-31-68. Filed 6-11-68.

Class 103 — Construction and Repair

866,691. (See Class 2 for this trademark.)

866,958. (See Class 100 for this trademark.)

866,959. (See Class 100 for this trademark.)

866,982. GLAM-O-RAMA. Glam-O-Rama, Incorporated. SN 284,008. Pub. 12-31-68. Filed 11-2-67.

Class 107 — Education and Entertainment

866,983. P (DESIGN). The Philadelphia Hockey Club, Inc. SN 284,834. Pub. 12-31-68. Filed 11-14-67.

866,984. PHILADELPHIA FLYERS. The Philadelphia Hockey Club, Inc. SN 284,836. Pub. 12-31-68. Filed 11-14-67.

866,985. THE BILL OF RIGHTS. Bankers Management & Services, Inc. SN 295,006. Pub. 12-31-68. Filed 4-5-68.

Collective Membership Marks

Class 200

866,986. NCEE AND DESIGN. National Council of Engineering Examiners. SN 290,872. Pub. 12-31-68. Filed 2-12-68.

866,987. TKE. Tau Kappa Epsilon Fraternity. SN 307,282. Pub. 12-31-68. Filed 9-13-68.

866,988. TAU KAPPA EPSILON ETC. AND SEAL DESIGN. Tau Kappa Epsilon Fraternity. SN 307,290. Pub. 12-31-68. Filed 9-13-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 21 — Electrical Apparatus, Machines, and Supplies

866,989. Telfex, Inc., Asbury Park, N.J. SN 290,663. Filed P.R. 2-8-68; Am. S.R. 11-29-68.

"INVERTED-VEE"

For Antenna Kits for Transmission or Reception of Electromagnetic Radiation (Int. Cl. 9).
First use Feb. 6, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

866,990. Degrémont S.A., Suresnes (Seine), France. SN 268,037. Filed P.R. 3-31-67; Am. S.R. 4-4-68.

Degrémont

For Sewage Disposal and Reduction Plants (Int. Cl. 11).
First use October 1962; in commerce October 1962.

Class 32 — Furniture and Upholstery

866,991. Congoleum Industries, Inc., Kearny, N.J., assignee of Congoleum-Nairn Inc., Kearny, N.J. SN 282,683. Filed 10–17–67.

MESA BELLA

The English translation of "Mesa Bella" is "beautiful table."

For Tables (Int. Cl. 20).

First use January 1966.

Service Mark

Class 107 — Education and Entertainment

866,992. The Diet Workshop, Inc., Newton Corner, Mass. SN 272,476. Filed P.R. 5–26–67; Am. S.R. 11–25–68.

THE DIET WORKSHOP

For Providing Dietary and Exercise Programs (Int. Cl. 41).

First use Oct. 31, 1966.

TRADEMARK REGISTRATIONS RENEWED

73,586. FLORSHEIM'S "WET DEFI" WATERPROOF. Cl. 39 (Int. Cl. 25). 5–4–09.
73,964. MEPHISTO. Cl. 23 (Int. Cls. 7 and 8). 6–1–09.
240,107. "FULLERLITE" AND DESIGN. Cl. 16 (Int. Cl. 2). 3–20–28.
240,108. "FULLERGLO" AND DESIGN. Cl. 16 (Int. Cl. 2). 3–20–28.
247,302. "ITALINA" AND DESIGN. Cl. 18 (Int. Cl. 5). 9–25–28.
247,328. "D" AND DESIGN. Cl. 21 (Int. Cl. 9). 9–25–28.
247,361. MULTIPLICITY OF STRIPES EXTENDING ABOUT THE INTERMEDIATE PORTION OF A TRUNK. Cl. 3 (Int. Cl. 18). 9–25–28.
248,759. LIFE-TIME. Cl. 23 (Int. Cl. 8). 10–30–28.
251,076. CONGRESS. Cl. 39 (Int. Cl. 25). 12–25–28.
252,109. ALUMIKOTE. Cl. 16 (Int. Cl. 2). 1–22–29.
252,447. SOBEE. Cl. 46 (Int. Cl. 5). 2–5–29.
253,714. POETIQUE HEEL. Cl. 39 (Int. Cl. 25). 3–5–29.
254,795. FLY DED. Cl. 6 (Int. Cl. 5). 4–2–29.
439,756. STRUT. Cl. 46 (Int. Cl. 31). 7–20–48.
439,757. STRUT AND DESIGN. Cl. 46 (Int. Cl. 31). 7–20–48.
440,205. FISH (DESIGN). Cl. 27 (Int. Cl. 14). 8–17–48.
440,311. SEWER SCOOTER. Cl. 23 (Int. Cl. 7). 8–24–48.
441,382. GENTRIE. Cl. 51 (Int. Cl. 3). 11–23–48.
441,386. DIPSY DOODLE. Cl. 22 (Int. Cl. 28). 11–23–48.
441,598. LUCUL AND DESIGN. Cl. 46 (Int. Cls. 29 and 30). 12–14–48.
441,930. JACK RABBIT AND DESIGN. Cl. 46 (Int. Cl. 29). 1–25–49.
502,038. THE HARVARD CLASSICS. Cl. 38 (Int. Cl. 16). 9–7–48.
504,617. BURGESS. Cl. 37 (Int. Cl. 16). 12–7–48.
504,862. SUPER BUBBLE. Cl. 46 (Int. Cl. 30). 12–14–48.
504,951. ADVANCE KRAFT. Cl. 37 (Int. Cl. 16). 12–21–48.
504,985. SOUR-TEC. Cl. 6 (Int. Cl. 1). 12–21–48.
505,383. VELSICOL. Cl. 16 (Int. Cl. 1). 1–4–49.
505,518. LEVINE & SMITH. Cl. 39 (Int. Cl. 25). 1–4–49.
505,552. AMERICAN GLACE. Cl. 39 (Int. Cl. 25). 1–4–49.
505,699. SIMPLOT AND GREEN DIAMOND DESIGN. Cl. 10 (Int. Cl. 1). 1–18–49.
505,700. SIMPLOT AND RED DIAMOND DESIGN. Cl. 10 (Int. Cl. 1). 1–18–49.
505,984. NOTION AND NOVELTY REVIEW. Cl. 38 (Int. Cl. 16). 1–25–49.
506,011. JEWEL AND DESIGN. Cl. 37 (Int. Cl. 16). 1–25–49.
506,196. HANES SUEDE KNIT AND DESIGN. Cl. 39 (Int. Cl. 25). 12–1–49.
506,197. HANES AND DESIGN. Cl. 39 (Int. Cl. 25). 2–1–49.
506,198. TWYN-RIB AND DESIGN. Cl. 39 (Int. Cl. 25). 2–1–49.
506,227. HUGTOP. Cl. 39 (Int. Cl. 25). 2–1–49.
506,404. ALACTA. Cl. 16 (Int. Cl. 5). 2–8–49.
506,448. A & F CO. Cl. 22 (Int. Cl. 28). 2–8–49.
506,461. PARANITE. Cl. 35 (Int. Cl. 17). 2–8–49.
506,467. JEWELS BY TRIFARI AND DESIGN. Cl. 28 (Int. Cl. 14). 2–8–49.
506,492. 8 UP. Cl. 46 (Int. Cl. 31). 2–8–49.
506,754. G.D.T. Cl. 6 (Int. Cl. 3). 2–15–49.
506,804. THE POP CORN MAN AND DESIGN. Cl. 46 (Int. Cls. 30 and 31). 2–22–49.
506,920. SHADY SPRINGS. Cl. 49 (Int. Cl. 33). 2–22–49.
507,644. OLD ENGLISH. Cl. 12 (Int. Cl. 19). 3–15–49.
507,651. AETNA. Cl. 46 (Int. Cl. 29). 3–15–49.
507,708. PERFON. Cl. 4 (Int. Cl. 3). 3–15–49.
507,723. TRIANGLE (DESIGN). Cl. 102 (Int. Cl. 36). 3–15–49.
507,763. TRUZZOLINO VT. Cl. 46 (Int. Cl. 29). 3–22–49.
507,891. YOO-HOO. Cl. 45 (Int. Cl. 32). 3–22–49.
507,933. DETECTO. Cl. 26 (Int. Cl. 9). 3–22–49.
508,032. WADEWELL. Cl. 39 (Int. Cl. 25). 3–29–49.
508,119. WHITE HANDS. Cl. 18 (Int. Cl. 5). 3–29–49.
508,486. ETC. Cl. 13 (Int. Cl. 6). 4–12–49.
508,556. PLIOGRIP. Cl. 5 (Int. Cl. 1). 4–12–49.
508,644. DE WITT. Cl. 18 (Int. Cl. 5). 4–12–49.
508,689. DOLE. Cl. 46 (Int. Cls. 29 and 32). 4–19–49.
508,704. BALLANTINE'S. Cl. 49 (Int. Cl. 33). 4–19–49.
508,804. HI-SPEED. Cl. 7 (Int. Cl. 22). 4–19–49.
508,886. SNOW WHITE. Cl. 52 (Int. Cl. 3). 4–26–49.
508,891. MORTEX. Cl. 12 (Int. Cl. 19). 4–26–49.
509,094. SEGELIN'S. Cl. 1 (Int. Cl. 31). 4–26–49.
509,130. QUAKER BRAND AND DESIGN. Cl. 46 (Int. Cl. 2). 4–26–49.
509,236. D AND DESIGN. Cl. 16 (Int. Cl. 3). 5–3–49.
509,284. DIVERSEY. Cl. 23 (Int. Cl. 7). 5–3–49.
509,300. MYLES. Cl. 46 (Int. Cl. 30). 5–3–49.
509,504. JUST AS GOOD. Cl. 46 (Int. Cl. 31). 5–3–49.
509,558. NUTRAMIGEN. Cl. 18 (Int. Cl. 5). 5–10–49.
509,573. RELAY. Cl. 37 (Int. Cl. 16). 5–10–49.
509,576. RELAY BOND AND DESIGN. Cl. 37 (Int. Cl. 16). 5–10–49.
509,623. GRUNDY. Cl. 23 (Int. Cl. 7). 5–10–49.
509 732. KOYLON. Cl. 19 (Int. Cl. 12). 5–10–49.
509,767. MONARK. Cl. 9 (Int. Cl. 13). 5–10–49.
509,789. HAMIDRAW. Cl. 6 (Int. Cl. 4). 5–10–49.
509,790. STEELGARD. Cl. 6 (Int. Cl. 2). 5–10–49.
509,849. HOLD-HEET. Cl. 21 (Int. Cl. 11). 5–17–49.
509,900. TRIANGLE AND BAND (DESIGN). Cl. 42 (Int. Cl. 24). 5–17–49.
509,930. COBA SWAY-TEX. Cl. 42 (Int. Cl. 24). 5–17–49.
510,019. KOTOL. Cl. 16 (Int. Cl. 2). 5–24–49.
510,023. QUEEN'S TASTE. Cl. 46 (Int. Cl. 30). 5–24–49.
510,041. OXXFORD. Cl. 39 (Int. Cl. 25). 5–24–49.
510,199. JIFFIX. Cl. 6 (Int. Cl. 1). 5–31–49.
510,229. IVES. Cl. 13 (Int. Cl. 6). 5–31–49.
510,252. DIAZOPHENYL. Cl. 6 (Int. Cl. 2). 5–31–49.
510,286. KINNEAR. Cl. 12 (Int. Cl. 19). 5–31–49.
510,380. KOYLON. Cl. 1 (Int. Cl. 17). 5–31–49.
510,415. EMPIRE. Cl. 12 (Int. Cl. 19). 5–31–49.
510,474. WIDE BEARING. Cl. 13 (Int. Cl. 6). 5–31–49.
510,506. FLEXI-CARTON. Cl. 2 (Int. Cl. 16). 6–7–49.
510,534. VIZZENE. Cl. 6 (Int. Cl. 1). 6–7–49.
510 607. WACO. Cl. 50 (Int. Cl. 6). 6–7–49.
510,615. RED TOP AND DESIGN. Cl. 15 (Int. Cl. 4). 6–7–49.
510,678. MIXTURE NO. 79 AND DESIGN. Cl. 17 (Int. Cl. 34). 6–7–49.
510,684. TEMBRITE. Cl. 52 (Int. Cl. 3). 6–7–49.
510,769. SKYDROL Cl. 6 (Int. Cl. 1). 6–7–49.
510,806. EZY-KNIT. Cl. 40 (Int. Cl. 26). 6–7–49.
510,872. EDLUND. Cl. 23 (Int. Cls. 8 and 21). 6–14–49.
510,873. GIROUX. Cl. 46 (Int. Cl. 30). 6–14–49.
510,897. CLEARTYPE AND DESIGN. Cl. 38 (Int. Cl. 16). 6–14–49.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

134,212. ARMOUR'S BIG CROP FERTILIZERS AND DESIGN. Cl. 10. 8–24–20.
612,708. GENUINE SOUTH AFRICAN LOBSTER TAILS ETC. AND DESIGN. Cl. 46. 9–20–55.
759,902. FANCI-FRI. Cl. 13. 11–12–63.
736,050. PETROLEUM MANAGEMENT. Cl. 38. 8–14–62.
596,135. GENUINE SOUTH AFRICAN ROCK LOBSTER TAILS BEST IN TASTE—LEAST IN WASTE AND DESIGN. Cl. 46. 9–28–54.
858,159. BAC-GARD. Cl. 6. 10–8–68.
588,221. ARMOUR AND DESIGN. Cl. 10. 4–13–54.
713,218. ORBIT. Cl. 39. 3–28–61.

Section 8

714,383. ASTRO-COGO. Cl. 22. 4–25–61.
724,850. EXPORT TRADE. Cl. 38. 12–5–61.
725,258. CORTEPYROL. Cl. 18. 12–19–61.
725,781. THERMO-STEEL. Cl. 12. 1–2–62.
726,103. NATIONAL DOWNTOWN WEEK AND DESIGN. Cl. 101. 1–2–62.
726,842. NATIONAL DOWNTOWN WEEK. Cl. 101. 1–23–62.
727,388. SOL-ART. Cl. 12. 2–13–62.
730,094. G-PLAN. Cl. 32. 4–17–62.
730,317. NORTHERN AND DESIGN. Cl. 21. 4–24–62.

The following registrations issued Jan. 29, 1963

744,280. INFOCOLOR. Cl. 6.
744,282. THE 600 GROUP OF COMPANIES AND DESIGN. Cl. 12.
744,283. 600 AND DESIGN. Cl. 12.
744,285. THE 600 GROUP OF COMPANIES AND DESIGN. Cl. 13.
744,286. 600 AND DESIGN. Cl. 13.
744,287. 600. Cl. 13.
744,289. BROOMOP. Cl. 13.
744,291. ZIPCO. Cl. 13.
744,293. VAC REZ AND DESIGN. Cl. 13.
744,295. C–103. Cl. 14.
744,296. MELTIRON. Cl. 14.
744,297. THE 600 GROUP OF COMPANIES AND DESIGN. Cl. 14.
744,298. 600 AND DESIGN. Cl. 14.
744,299. 600. Cl. 14.
744,302. AD LIB. Cl. 14.
744,303. FLEX-IRON. Cl. 14.
744,312. RAYCO AND DESIGN. Cl. 19.
744,317. CO-ED. Cl. 19.
744,318. CARAVELLE HORIZON. Cl. 19.
744,319. CADDYMASTER. Cl. 19.
744,330. THE 600 GROUP OF COMPANIES AND DESIGN. Cl. 21.
744,331. 600 AND DESIGN. Cl. 21.
744,336. VARO INC. AND DESIGN. Cl. 21.
744,341. HEALTH MAID. Cl. 21.
744,342. VARIMAG. Cl. 21.
744,343. CI AND DESIGN. Cl. 21.
744,350. CYBER-COR. Cl. 21.
744,355. PIRAYA. Cl. 23.
744,356. CRESTVIEW. Cl. 23.
744,358. AUTO PAK AND DESIGN. Cl. 23.
744,360. HYDRA-SENTINEL. Cl. 23.
744,363. IBR. Cl. 23.
744,365. ROUND POWER. Cl. 23.
744,369. STAR-FIRE MARINE-JET AND DESIGN. Cl. 23.
744,370. TOSS-A-WAY. Cl. 23.
744,372. WELDAN AND DESIGN. Cl. 23.
744,384. G704 AND DESIGN. Cl. 23.
744,386. CASEY-MOW. Cl. 23.
744,395. M AND DESIGN. Cl. 26.
744,396. MIKROS. Cl. 26.
744,397. MIKROS AND DESIGN. Cl. 26.
744,398. SUNETTE. Cl. 26.
744,401. IT'S THE TIP! AND DESIGN. Cl. 26.
744,403. VARO INC. AND DESIGN. Cl. 26.
744,404. SKIDOMETER. Cl. 26.
744,405. SPEED-O-TAC. Cl. 26.
744,406. QUANTIZER. Cl. 26.
744,408. PENETRACE. Cl. 26.
744,416. ITM. Cl. 26.
744,417. LUBE-RATER. Cl. 26.
744,419. MULTITEST. Cl. 26.
744,428. KALMAC. Cl. 26.
744,430. REPRESENTATION OF LENS AND LIGHTNING. Cl. 26.
744,440. COUNSELOR DECORATOR. Cl. 26.
744,445. MIL-STAK MARK II. Cl. 26.
744,447. CAM-RA-STAT. Cl. 26.
744,451. SPRINT. Cl. 26.
744,452. POLYMICRO. Cl. 26.
744,456. PJC. Cl. 28.
744,460. GB. Cl. 28.
744,465. ES AND DESIGN. Cl. 28.
744,468. JRK AND DESIGN. Cl. 28.
744,476. DESIGN OF LIGHTNING FLASH. Cl. 28.
744,485. EVEN-ROLL. Cl. 29.
744,487. RP ETC. AND DESIGN. Cl. 31.
744,488. MEADOWBROOK. Cl. 31.
744,489. WHIRL-O-DEX. Cl. 32.
744,490. SERV-A-CAN. Cl. 32.
744,491. EZY FIT. Cl. 32.
744,492. ROUN' WEE GO. Cl. 32.
744,494. TWIRL-WIND. Cl. 32.
744,495. FOAM VERTIBLE. Cl. 32.
744,498. DEL MUNDO. Cl. 32.
744,500. G-R FIN-FAN. Cl. 34.
744,501. ADD ON WEATHERITE. Cl. 34.
744,504. THE 600 GROUP OF COMPANIES AND DESIGN. Cl. 34.
744,505. 600. Cl. 34.
744,506. DEL NORTE. Cl. 34.
744,511. HART AND DESIGN. Cl. 35.
744,516. FIDDLEFIT. Cl. 36.
744,517. AMETEK. Cl. 36.
744,522. BETTY KAY BRIEFETTES. Cl. 39.
744,523. BRUSH POPPER. Cl. 39.
744,524. CUDDLY BABY. Cl. 39.
744,531. PROMISE CUT-AWAY. Cl. 39.
744,533. WUNDA-WRAP. Cl. 39.
744,535. THE REVEILLE TIE BY MANFORD AND DESIGN. Cl. 39.
744,537. KIRINYL. Cl. 39.
744,538. SANDRINYL. Cl. 39.
744,544. JULIE-ANN. Cl. 42.
744,546. LLAMBA AND DESIGN. Cl. 42.
744,551. KIRINYL. Cl. 42.
744,552. SANDRINYL. Cl. 42.
744,553. AD VALOREM. Cl. 42.
744,555. KIRINYL. Cl. 43.
744,556. SANDRINYL. Cl. 43.
744,557. NORGE. Cl. 44.
744,559. FRIAR'S. Cl. 46.
744,560. ABBEY. Cl. 46.
744,561. LIQUILATED. Cl. 46.
744,563. ALF-A-BEE BOARD AND DESIGN. Cl. 50.
744,564. CELANT. Cl. 12.
744,566. TRU-PORCELAIN. Cl. 12.
744,570. DANSK FORM. Cl. 32.
744,574. DANSK FORM AND DESIGN. Cl. 42.
744,576. TASTI-BLEND. Cl. 46.
744,580. RUSTY BUMPER. Cl. 52.

Section 18

706,865. LIVING EARTH AND DESIGN. Cl. 10. 11–8–60.
692,649. LIVING EARTH. Cl. 10. 2–9–60.
748,258. BLANCHARD. Cl. 47. 4–16–63.
756,902. SAVAREZ. Cl. 36. 9–17–63.
828,201. GSI. Cl. 26. 5–2–67.
852,511. POWER STEAM. Cl. 52. 7–9–68.
747,484. MONTE-CARLO. Cl. 17. 4–2–63.
853,546. KAB. Cl. 19. 7–30–68.

Erratum

In the OFFICIAL GAZETTE of Jan. 14, 1969, at page TM 85 under "Trademark Registrations Canceled Section 8" 741,159. TCJ. Cl. 14. should be deleted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

504,008. THE GRADE TEACHER. Cl. 38. 11–16–48. Educational Publishing Corporation. Teachers Publishing Corporation, Darien, Conn. Amended to appear:

GRADE TEACHER

506,735. J. Cl. 6. 2–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

506,736. M. Cl. 6. 2–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

506,737. N. Cl. 6. 2–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

506,740. S. Cl. 6. 2–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

506,742. U. Cl. 6. 2–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

506,757. B. Cl. 6. 2–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 7, "silicate of soda" is deleted and *sodium silicate* is inserted.

507,666. SS. Cl. 6. 3–15–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

507,992. METSO 99. Cl. 6. 3–22–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

509,700. A. Cl. 6. 5–10–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

509,701. G. Cl. 6. 5–10–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 8, "silicate of soda" is deleted and *sodium silicate* is inserted.

510,420. STARSO. Cl. 6. 5–31–49. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, line 7, "silicate of soda" is deleted and *sodium silicate* is inserted.

755,474. FILTERITE. Cl. 31. 8–27–63. The Industrial Products Company, Timonium, Md. Corrected: In the statement, column 1, line 1, before "Industrial" *The* should be inserted, and ", Inc." should be deleted.

755,901. DOLPH'S. Cl. 21. 9–3–63. John C. Dolph Company, Monmouth Junction, N.J. Corrected: In the statement, column 1, line 1, "New Jersey" should be deleted and *New York* should be inserted.

785,847. COLORPLY H AND DESIGN. Cl. 14. 3–2–65. American Metal Climax, Inc., doing business as Hunter Engineering Co., New York, N.Y. Amended to appear:

COLORPLY

813,969. MICRO-CARBON. Cl. 31. 8–30–66. The Industrial Products Company, Timonium, Md. Corrected: In the statement, column 1, line 1, before "Industrial" *The* should be inserted, and ", Inc." should be deleted.

813,970. MICRO-FINE. Cl. 31. 8–30–66. The Industrial Products Company, Timonium, Md. Corrected: In the statement, column 1, line 1, before "Industrial" *The* should be inserted, and ", Inc." should be deleted.

854,521. SNUG HARBOUR. Cl. 17. 8–13–68. Snug Harbour Tobacco, Ltd., New York, N.Y. Corrected: In the statement, column 1, line 1, "Tobacconists" should be deleted and *Tobacco* should be inserted.

858,293. MARS DISPOSABLES AND DESIGN. Cl. 39. 10–8–68. Mars Manufacturing Company, Inc. of Asheville, N.C. Corrected: In the statement, column 1, line 1, after "Company", *Inc.* should be inserted.

858,363. PAARL. Cl. 47. 10–8–68. Ko-Operatieve Wijnbouwers Vereniging Van Zuidafrika, Beperkt, Suider Paarl, Cape Province, Republic of South Africa. Corrected: In the statement, column 1, line 1, "Ko-Operative" should be deleted and *Ko-Operatieve* should be inserted.

859,801. DOUCHE FRIS ANDRELON. Cl. 52. 11–5–68. Fabriek van Cosmetische Producten "Andrélon Cosmetics" N.V., Bodegraven, Netherlands. Corrected: In the statement, column 1, line 1, "Produkten Andrelon Cosmetics" should be deleted and *Producten "Andrélon Cosmetics"* should be inserted.

861,821. MIDWEST BANK CARD AND DESIGN. Cl. 102. 12–10–68. Midwest Bank Card System, Inc., assignee of Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Corrected to appear:

862,308. HP AND DESIGN. Cls. 21, 26 and 44. 12–24–68. Hewlett-Packard Company, Palo Alto, Calif. Corrected: In the statement, column 1, line 5, "—namely" should be deleted and (*for example* should be inserted, line 10, "cables—" should be deleted and *cables*) should be inserted, column 2, line 16, "—namely" should be deleted and (*for example* should be inserted, line 26, "phenomena—" should be deleted and *phenomena*) should be inserted.

862,875. CREATIVE DESIGN BOARD AND DESIGN. Cl. 100. 12–31–68. Creative Design Board, Chicago, Ill. Corrected: In the statement, column 1, line 1, "Illinois corporation" should be deleted and *limited partnership* should be inserted.

863,791. DEMCO. Cls. 13, 23, and 26. 1–21–69. Demco, Incorporated, by change of name from Drilling Equipment Manufacturing Company, Oklahoma City, Okla. Corrected: In the heading, "Ser. No. 256,997, filed Oct. 24, 1966" should be deleted and *Ser. No. 230,366, filed Oct. 18, 1965* should be inserted.

INDEX OF REGISTRANTS

MARCH 18, 1969

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Abbott & Hast Mortuary Accommodation Co., Los Angeles, Calif. 866,692, pub. 12–31–68. Cl. 2.
Abbott Laboratories, North Chicago, Ill. 866,788, pub. 12–31–68. Cl. 18.
Abercrombie & Fitch Co., New York, N.Y. 506,448, ren. 3–18–69. Cl. 22.
Agagem Co., The, Valdosta, Ga. 866,826, pub. 12–31–68. Cl. 28.
Agency Assistance, Inc., Poughkeepsie, N.Y. 866,972, pub. 12–31–68. Cl. 101.
Aisin Seiki Co., Ltd., Kariya, Aichi, Japan. 866,759, pub. 11–28–67. Multiple Class (Classes 19 and 23).
Aktiebolaget Bofors, Bofors, Sweden. 725,258, canc. Cl. 18.
Alderman Studios, Inc., High Point, N.C. 866,850, pub. 12–31–68. Cl. 38.
Alderman Studios Inc., High Point, N.C. 866,861, pub. 12–31–68. Cl. 38.
Alderman Studios Inc., High Point, N.C. 866,977–8, pub. 12–31–68. Cl. 101.
Alf-A-Bee Products Co., Nyssa, Oreg. 744,563, canc. Cl. 50.
Alligator Co., Inc., The, St. Louis, Mo., from Timely Clothes, Inc., Rochester, N.Y. 866,862, pub. 4–5–66. Cl. 39.
Alpha Metals, Inc., Jersey City, N.J. 866,732, pub. 12–31–68. Cl. 16.
Ambrose, Jay L., d.b.a. Highland Distillers Import Co., Santa Monica, Calif. 866,935, pub. 12–31–68. Cl. 49.
American Bus Association, Inc., Cleveland, Ohio. 866,699, pub. 12–31–68. Multiple Class (Classes 5, 12, and 19).
American Chemical Society, Washington, D.C. 866,858, pub. 12–31–68. Cl. 38.
American Enka Corp., Enka, N.C. 866,771, pub. 12–31–68. Cl. 21.
American Home Products Corp.: *See*—
Midway Chemical Co.
Boyle-Midway Inc.
American Home Products Corp., New York, N.Y. 866,755, pub. 12–31–68. Cl. 18.
American Map Co., Inc., New York, N.Y. 510,897, ren. 3–18–69. Cl. 38.
American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. 785,847. Am. 7(d). Cl. 14.
American Metal Climax, Inc., New York, N.Y. 866,715, pub. 12–31–68. Cl. 12.
American Standard Inc., New York, N.Y. 866,725, pub. 12–31–68. Cl. 13.
American Type Founders Co., Inc., Elizabeth, N.J. 744,302, canc. Cl. 14.
Ametek, Inc., New York, N.Y. 744,517, canc. Cl. 36.
Ampex Corp., Redwood City, Calif. 744,445, canc. Cl. 26.
Appleton Electric Co., Chicago, Ill. 866,765, pub. 12–31–68. Cl. 21.
Armour & Co.: *See*—
Armour Fertilizer Works.
Armour & Co., d.b.a. The Trade Style Armour Fertilizer Works, Chicago, Ill. 588,221, canc. Cl. 10.
Armour Fertilizer Works, from Armour & Co., Chicago, Ill. 134,212, canc. Cl. 10.
Arnold, Schwinn & Co., Chicago, Ill. 744,317, canc. Cl. 19.
Artson Answering System: *See*—
Artson, David T.
Artson, David T., d.b.a. Artson Answering System, San Francisco, Calif. 866,971, pub. 12–31–68. Cl. 101.
Ashwell, Thomas, & Co., Inc., New York, N.Y. 724,850, canc. Cl. 38.
Asociacion Mexicana De Productores Exportadores De Calzado, S. De R.L.I.P.Y.C.V., Leon, Guanajuato, Mexico. 866,864, pub. 12–31–68. Cl. 39.
Associated Dry Goods Corp., New York, N.Y. 866,880, pub. 12–31–68. Cl. 39.
Associated Popcorn Distributors, Inc.: *See*—
Darden, Chas. E., & Co.
Atlantic Lures, Inc., Providence, R.I. 866,780, pub. 12–31–68. Cl. 22.
Autocase Corp., Richmond, Va. 866,813, pub. 12–31–68. Cl. 23.
Autopak, Inc., Ridgewod, N.J. 744,358, canc. Cl. 23.
Babson Bros. Co., Oak Brook, Ill. 866,805, pub. 12–31–68. Cl. 23.
Ball Brothers Co. Inc., Muncie, Ind. 866,787, pub. 12–31–68. Cl. 23.
Ballantine, George, & Son Ltd., Dumbarton, Scotland. 508,704, ren. 3–18–69. Cl. 49.
Bankers Management & Services, Inc., Dallas, Tex. 866,985, pub. 12–31–68. Cl. 107.
Baptistin Caracous & Cie, Frejus, Var, France. 866,934, pub. 12–31–68. Cl. 47.
Bard, C. R., Inc., Murray Hill, N.J. 866,891, pub. 12–31–68. Cl. 44.
Baron Blakeslee, Inc., Chicago, Ill. 866,706, pub. 12–31–68. Cl. 6.
Baum, W. A., Co., Inc., Copiague, N.Y. 866,894, pub. 12–31–68. Cl. 44.
Beatrice Foods Co., Chicago, Ill. 866,901, pub. 1–16–68. Cl. 46.
Beauchaine & Sons, Inc., Laconia, N.C. 866,774, pub. 12–31–68. Cl. 21.
Bebry Bedding Corp., Bayonne, N.J. 744,495, canc. Cl. 32.
Behavioral Science Associates, Inc., Cincinnati, Ohio. 866,838, pub. 12–31–68. Cl. 36.
Belmas Co., Inc., The, Houston, Tex. 866,691, pub. 12–31–68. Multiple Class (Classes 2 and 103).
Beltx Corp., St. Louis, Mo. 744,522, canc. Cl. 39.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 510,506, ren. 3–18–69. Cl. 2.
Bemis Co., Inc.: *See*—
Bemis Bro. Bag Co.
Bergstrom Paper Co., Neenah, Wis. 866,843, pub. 12–31–68. Cl. 37.
Besly-Welles Corp., South Beloit, Ill. 744,370, canc. Cl. 23.
Billings & Spencer Co., The, Hartford, Conn., to Crescent Niagara Corp., Buffalo, N.Y. 248,759, ren. 3–18–69. Cl. 23.
Bio-Lab, Inc., Decatur, Ga. 866,704, pub. 12–31–68. Cl. 6.
Bird Machine Co., South Walpole, Mass. 866,806, pub. 12–31–68. Cl. 23.
Blanchard Importing & Distributing Co., Inc., Boston, Mass. 748,258, canc. Cl. 47.
Bliss & Laughlin Industries, Inc.: *See*—
Wilson-Albrecht Co. Inc.
Bommer Ag., Zurich, Switzerland. 866,893, pub. 12–31–68. Cl. 44.
Bonanza Salt Co.: *See*—
Smith, Elsie M.
Borg-Warner Corp., Chicago, Ill., from Westprest, Inc., Amarillo, Tex. 744,506, canc. Cl. 34.
Borg-Warner Corp., Chicago, Ill. 744,557, canc. Cl. 44.
Boye Needle Co., The, Chicago, Ill. 510,806, ren. 3–18–69. Cl. 40.
Boyle-Midway Inc., Jersey City, N.J., to American Home Products Corp., New York, N.Y. 507,644, ren. 3–18–69. Cl. 12.
Brandt, René, Fabrique D'Horlogerie Ogival, to Ogival S.A., La Chaux-de-Fonds, Switzerland. 440,205, ren. 3–18–69. Cl. 27.
Brawer, Sid, d.b.a. Tri-Ads Co., Los Angeles, Calif. 866,859, pub. 12–31–68. Cl. 38.
Brearley Co., The, Rockford, Ill. 744,440, canc. Cl. 26.
Bridgford Foods Corp., Anaheim, Calif. 866,907, pub. 12–31–68. Cl. 46.
Bristol-Myers Co., New York, N.Y. 866,753–4, pub. 12–31–68. Cl. 18.
Broemmel Pharmaceuticals, San Francisco, Calif. 866,742, pub. 12–31–68. Cl. 18.
Broomop Sales Co.: *See*—
Thompson, Eldridge W., Jr.
Bruce Church, Inc., Salinas, Calif. 866,930, pub. 12–31–68. Cl. 46.
Brunswick Corp., Chicago, Ill. 866,796, pub. 12–31–68. Cl. 23.
Burgess Cellulose Co., Freeport, Ill. 504,617, ren. 3–18–69. Cl. 37.
Burlington Industries, Inc.: *See*—
Burlington Mills Corp.
Burlington Mills Corp., to Burlington Industries, Inc., Greensboro, N.C. 509,900, ren. 3–18–69. Cl. 42.
California Canners & Growers: *See*—
Filice & Perrelli Canning Co., Inc.
Campbell Soup Co.: *See*—
Swanson, C. A., & Sons.
Carnation Co., Los Angeles, Calif. 866,920–2, pub. 12–31–68. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 866,955–7, pub. 12–31–68. Cl. 51.
Carvel, Thomas, Yonkers, N.Y. 866,915, pub. 12–31–68. Cl. 46.
Castle & Cooke, Inc.: *See*—
Hawaiian Pineapple Co., Ltd.
Dillemann, Ch., & Polyclair S.A., d.b.a. Polyclair, Paris, France. 744,452, canc. Cl. 26.
Chap Stick Co.: *See*—
Morton Mfg. Corp.
Bond, Charles, Co., Philadelphia, Pa. 509,623, ren. 3–18–69. Cl. 23.
Chase Bag Co., to Chase Bag Co., New York, N.Y. 508,804, ren. 3–18–69. Cl. 7.
Chemagro Corp., Kansas City, Mo. 866,745, pub. 12–31–68. Cl. 18.
Chesebrough-Pond's Inc., New York, N.Y. 866,952, pub. 12–31–68. Cl. 51.
Clark, Robert J., Dolton, Ill. 759,902, canc. Cl. 13.
Clark-Reliance Corp., The: *See*—
Reliance Gauge Column Co., The.
Cleveland Trust Co., The, Cleveland, Ohio. 507,723, ren. 3–18–69. Cl. 102.
Cohen, George, Sons & Co., Ltd., London, England. 744,282–3, canc. Cl. 12.
Cohen, George, Sons & Co., Ltd., London, England. 744,285–7, canc. Cl. 13.
Cohen, George, Sons & Co., Ltd., London, England. 744,297–9, canc. Cl. 14.
Cohen, George, Sons & Co., Ltd., London, England. 744,330–1, canc. Cl. 21.
Cohen, George, Sons & Co., Ltd., London, England. 744,504–5, canc. Cl. 34.
Cole Chemical Co.: *See*—
Cole Pharmacal Co., Inc.
Cole Pharmacal Co., Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Co., St. Louis, Mo. 866,739, pub. 12–31–68. Cl. 18.

Colgate-Palmolive Co., New York, N.Y. 866,953–4, pub. 12–31–68. Cl. 51.
Columbia Broadcasting System, Inc., New York, N.Y. 866,839, pub. 12–31–68. Cl. 36.
Commonwealth Oil Refining Co., Inc., San Juan, Puerto Rico. 866,683, pub. 2–13–68. Multiple Class (Classes 1, 6, 12, and 15).
Communications Industries, Inc., Dallas, Tex. 744,343, canc. Cl. 21.
Computer Equipment Corp., Los Angeles, Calif. 744,406, canc. Cl. 26.
Congoleum Industries, Inc., from Congoleum-Nairn Inc., Kearny, N.J. 866,991. Cl. 32.
Congoleum-Nairn Inc.: *See*— Congoleum Industries, Inc.
Conterno, Antonio, d.b.a. R.T.A. Resine Termoplastiche Applicate S.A.S., Vigano S. Martino (Bergamo), Italy. 866,685, pub. 12–31–68. Cl. 1.
Continental Can Co., Inc.: *See*— Southern Advance Bag & Paper Co. Inc.
Continental Mills, Inc., Philadelphia, Pa., to Gloversville-Continental Mills, Inc., Gloversville, N.Y. 509,930, ren. 3–18–69. Cl. 42.
Cooper, Ben, Inc., Brooklyn, N.Y. 866,876–7, pub. 12–31–68. Cl. 39.
Corp Corp., Chicago, Ill. 866,841, pub. 12–31–68. Cl. 37.
Cosmetco: *See*— Cosmetics Mfg. Co.
Cosmetics Mfg. Co., d.b.a. Cosmetco, Long Beach, Calif. 866,944, pub. 12–31–68. Cl. 51.
Cosmos Products Co.: *See*— Erenhouse, Rudolph.
Crane Co., Chicago, Ill. 744,303, canc. Cl. 14.
Creative Design Board, Chicago, Ill. 862,875, cor. Cl. 100.
Crescent Niagara Corp.: *See*— Billings & Spencer Co., The.
Crest Mfg. Co., The, Southfield, Mich. 853,546, canc. Cl. 19.
Crowell-Collier Educational Corp.: *See*— Crowell-Collier Publishing Co., The.
Crowell-Collier Publishing Co., The, to Crowell-Collier Educational Corp., New York, N.Y. 502,038, ren. 3–18–69. Cl. 38.
Crown Controls Corp., New Bremen, Ohio. 866,810, pub. 12–31–68. Cl. 23.
Crown Packing Co., Pebble Beach, Calif. 866,933, pub. 12–31–68. Cl. 46.
Curtis, Helene: *See*— Curtis, Helene, Industries, Inc.
Curtis, Helene, Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. 866,949, pub. 12–31–68. Cl. 51.
Cushman & Denison Mfg. Co., Inc.: *See*— Esterbrook Pen Co., The.
Dansk Form: *See*— Preben Mikael Aerendal Mikkelsen.
Darden, Chas. E., & Co., to Associated Popcorn Distributors, Inc., Dallas, Tex. 506,804, ren. 3–18–69. Cl. 46.
Degremont S.A., Suresnes (Seine), France. 866,990. Cl. 23.
Del Laboratories, Inc.: *See*— Parfums Blanchard.
Demco, Inc., by change of name from Drilling Equipment Mfg. Co., Oklahoma City, Okla. 863,791, cor. Multiple Class (Classes 13, 23, and 26).
Dennis, Frank, Co., Inc., New York, N.Y. 866,967, pub. 12–31–68. Cl. 101.
Detecto Scales, Inc.: *See*— Jacobs Bros. Co., Inc., The.
De Witt, E. C., & Co. Inc., Chicago, Ill. 508,644, ren. 3–18–69. Cl. 18.
Dictograph Products Corp., New York, N.Y., to Guardian Industries, Inc., Springfield, N.J. 247,328, ren. 3–18–69. Cl. 21.
Diet Workshop, Inc., The, Newton Corner, Mass. 866,992. Cl. 107.
Digi-T-Co.: *See*— Naylor, R. J.
Diversey Corp., The, Chicago, Ill. 507,708, ren. 3–18–69. Cl. 4.
Diversey Corp., The, Chicago, Ill. 509,236, ren. 3–18–69. Cl. 16.
Diversey Corp., The, Chicago, Ill. 509,284, ren. 3–18–69. Cl. 23.
Diversey Corp., The, Chicago, Ill. 510,684, ren. 3–18–69. Cl. 52.
Dixon, Eugene, d.b.a. Rusty Bumper, Dorchester, Mass. 744,580, canc. Cl. 52.
Doall Co., Des Plaines, Ill. 866,849, pub. 12–31–68. Cl. 38.
Dolan-Jenner Industries, Inc., Melrose, Mass. 866,936, pub. 12–31–68. Cl. 50.
Dole Co.: *See*— Hawaiian Pineapple Co., Ltd.
Dole Refrigerating Co., Chicago, Ill. 866,713, pub. 12–31–68. Cl. 12.
Dolph, John C., Co., Monmouth Junction, N.J. 755,901, cor. Cl. 21.
Donruss Co., The: *See*— Thomas-Wiener Co.
Dover Publications, Inc., New York, N.Y. 866,857, pub. 12–31–68. Cl. 38.
Doyle, J. E., Co., The, Cleveland, Ohio. 866,793, pub. 12–31–68. Multiply Class (Classes 23, 26, and 34).
Droutman Mfg. Co., Inc.: *See*— Oshkosh Trunk Co., The.
Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. 866,743, pub. 12–31–68. Cl. 18.
DuBarry Fifth Ave., Inc., Brooklyn, N.Y. 866,825, pub. 12–31–68. Cl. 28.
Dundee Mills, Inc., Griffin, Ga. 866,888, pub. 12–31–68. Cl. 42.
Durkee Famous Foods: *See*— SCM Corp.
Dyersburg Cotton Products, Inc., Dyersburg, Tenn. 744,546, canc. Cl. 42.
Dyson, Joseph, & Sons, Inc., Eastlake, Ohio. 866,724, pub. 12–31–68. Cl. 13.
E. Gomme Ltd., High Wycombe, England. 730,094, canc. Cl. 32.
Eaton Mfg. Co., to Eaton Yale & Towne Inc., Cleveland, Ohio. 510,474, ren. 3–18–69. Cl. 13.
Eaton Yale & Towne Inc.: *See*— Eaton Mfg. Co.
Edlund Co., to Edlund Co., Inc., Burlington, Vt. 510,872, ren. 3–18–69. Cl. 23.
Edlund Co., Inc.: *See*— Edlund Co.
Educational Publishing Corp., to Teachers Publishing Corp., Darien, Conn. 504,008. Am. 7(d). Cl. 38.
Electronic Dining Planning: *See*— Kress, Charles E.
Electronized Chemicals Corp., Burlington, Mass. 866,770, pub. 12–31–68. Cl. 21.
Ellias, Phillip, d.b.a. Metro Bakery Service, Trenton, Mich. 744,576, canc. Cl. 46.
Emerson Electric Mfg. Co., The, St. Louis, Mo., from U.S. Electrical Motors Inc., Los Angeles, Calif. 744,342, canc. Cl. 21.
Eppi Precision Products, Inc., Clarendon Hills, Ill. 744,417, canc. Cl. 26.
Erenhouse, Rudolph, d.b.a. Cosmos Products Co., New York, N.Y. 744,372, canc. Cl. 23.
Erprather Muhlen Schmidt & Co. K.-G., Neuss-Weckhoven, Germany. 866,910, pub. 12–31–68. Cl. 46.
Esterbrook Pen Co., The, Camden, N.J., from Cushman & Denison Mfg. Co., Inc., Carlstadt, N.J. 744,489, canc. Cl. 32.
Even Roll Mfg. Co.: *See*— Rasmussen, Edgar E.
Ever-Tite Coupling Co. Inc., New York, N.Y. 508,486, ren. 3–18–69. Cl. 13.
Exclusive Co., The, Philadelphia, Pa. 866,844, pub. 12–31–68. Cl. 37.
Fabriek van Cosmetische Producten "Andrelon Cosmetics" N.V., Bodegraven, Netherlands. 859,801, cor. Cl. 52.
Fairchild Camera & Instrument Corp., Syosset, N.Y. 744,447, canc. Cl. 26.
Farah Mfg. Co., Inc., El Paso, Tex. 866,866, pub. 12–31–68. Cl. 39.
Farmers Regional Cooperative, Fort Dodge, Iowa. 866,943, pub. 12–31–68. Cl. 50.
Federal Cartridge Corp., Minneapolis, Minn. 509,767, ren. 3–18–69. Cl. 9.
Fesler, Robert, Jr., Cohasset, Mass. 866,851, pub. 12–31–68. Cl. 38.
Fiberfil: *See*— Rexall Drug & Chemical Co.
5152 Ground Floor, Inc., New York, N.Y. 866,966, pub. 12–31–68. Cl. 100.
Filice & Perrelli Canning Co., Inc., Richmond, to California Canners & Growers, San Francisco, Calif. 507,651, ren. 3–18–69. Cl. 46.
Fitzgerald, J. C., Miami, Fla. 440,311, ren. 3–18–69. Cl. 23.
Floret Co., The, to Floret-Italina Corp., New York, N.Y. 247,302, ren. 3–18–69. Cl. 18.
Floret-Italina Corp.: *See*— Floret Co., The.
Florsheim Shoe Co., The, to Interco Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 73,586, ren. 3–18–69. Cl. 39.
Fly-Wheel Corp., d.b.a. Schiefer Mfg. Co., Monterey Park, Calif. 866,721–2, pub. 12–31–68. Multiple Class (Classes 13 and 23).
Food Fair Stores, Inc., Philadelphia, Pa. 744,524, canc. Cl. 39.
Formaid Co., Boston, Mass. 866,878, pub. 12–31–68. Cl. 39.
Formfit Co., The, Chicago, Ill. 713,218, canc. Cl. 39.
Forster/Hoover Electronics, Inc., Ann Arbor, Mich. 744,419, canc. Cl. 26.
Foxcraft Products Corp., Huntingdon Valley, Pa. 744,492, canc. Cl. 32.
Fremantle Fishermen's Co-Operative Society Ltd., Fremantle, Western Australia. 866,899, pub. 12–31–68. Cl. 46.
Friar's Products Co., Jersey City, N.J. 744,559–60, canc. Cl. 46.
Fries, James A., Jr., Swainsboro, Ga. 866,712, pub. 12–31–68. Cl. 12.
Frito-Lay, Inc., Dallas, Tex. 866,913, pub. 12–31–68. Cl. 46.
Fujiya Electric Co. Ltd., Tokyo, Japan. 866,769, pub. 12–31–68. Cl. 21.
Fuller, W. P., & Co., San Francisco, to Fuller-O'Brien Corp., Menlo Park, Calif. 240,107–8, ren. 3–18–69. Cl. 16.
Fuller-O'Brien Corp.: *See*— Fuller, W. P., & Co.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 866,818–19, pub. 12–31–68. Cl. 26.
Geigy Chemical Corp.: *See*— Geigy Co., Inc.
Geigy Chemical Corp., Ardsley, N.Y. 866,747–51, pub. 12–31–68. Cl. 18.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 510,252, ren. 3–18–69. Cl. 6.
Gelles, Max, d.b.a. Gelles Neckwear Co., to Gelles Neckwear Ltd., Inc., Boston, Mass. 251,076, ren. 3–18–69. Cl. 39.
Gelles Neckwear Co.: *See*— Gelles, Max.
Gelles Neckwear Ltd., Inc.: *See*— Gelles, Max.
General Aniline & Film Corp.: *See*— GAF Corp.
General Clay Products Corp., Columbus, Ohio. 866,686, pub. 12–31–68. Cl. 1.

General Electric Co., Schenectady, N.Y. 866,687, pub. 12–31–68. Cl. 1.
General Foods Corp., White Plains, N.Y. 866,912, pub. 12–31–68. Cl. 46.
General Foods Corp., White Plains, N.Y. 866,940, pub. 12–31–68. Cl. 50.
General Semiconductors, Inc., Tempe, Ariz. 828,201, canc. Cl. 26.
Georesources, Inc., Denver, Colo. 866,708, pub. 12–31–68. Cl. 10.
Georgia-Carolina Oil Co., Macon, Ga. 866,731, pub. 12–31–68. Cl. 15.
Gerber Products Co., Fremont, Mich. 866,903, pub. 12–31–68. Cl. 46.
Gerber Products Co., Fremont, Mich. 866,911, pub. 12–31–68. Cl. 46.
Gibson, Inc., Kalamazoo, Mich. 866,698, pub. 12–17–68. Multiple Class (Classes 4, 21, 36, and 38).
Gillette Co., The, Boston, Mass. 866,951, pub. 12–31–68. Multiple Class (Classes 51 and 52).
Giroux Co., Inc., Brooklyn, N.Y. 510,873, ren. 3–18–69. Cl. 46.
Gladwin Ltd., London, England. 866,824, pub. 12–31–68. Cl. 28.
Glam-O-Rama, Inc., Benson, N.C. 866,982, pub. 12–31–68. Cl. 103.
Gloversville-Continental Mills, Inc.: *See*— Continental Mills, Inc.
Goheen Corp. of New Jersey, Newark, to Textron Inc., New Brunswick, N.J. 252,109, ren. 3–18–69. Cl. 16.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 508,556, ren. 3–18–69. Cl. 5.
Gottlieb Bros., New York, N.Y. 744,460, canc. Cl. 28.
Graham, Stanley E., Morris, Ill. 866,942, pub. 12–31–68. Cl. 50.
Green, A. P., Fire Brick Co., to A. P. Green Refractories Co., Mexico, Mo. 510,415, ren. 3–18–69. Cl. 12.
Green, A. P., Refractories Co.: *See*— Green, A. P., Fire Brick Co.
Griscom Russell Co., The, Massillon, Ohio. 744,500, canc. Cl. 34.
Grove Mfg. Co., Shady Grove, Pa. 866,799, pub. 12–31–69. Cl. 23.
Guardian Industries, Inc.: *See*— Dictograph Products Corp.
Gundlach, Paul J., d.b.a. Vita-Mart, Cleveland, Ohio. 744,341, canc. Cl. 21.
Haas-Miller Corp., to Harry Miller Corp., Philadelphia, Pa. 509,789–90, ren. 3–18–69. Cl. 6.
Haire Publishing Co., to Haire Publishing Corp., New York, N.Y. 505,984, ren. 3–18–69. Cl. 38.
Haire Publishing Corp.: *See*— Haire Publishing Co.
Hanes Corp.: *See*— Hanes, P. H., Knitting Co.
Hanes, P. H., Knitting Co., to Hanes Corp., Winston-Salem, N.C. 506,196–8, ren. 3–18–69. Cl. 39.
Hartzmark, Alan, d.b.a. Industrial Tire Co., Cleveland, Ohio. 744,511, canc. Cl. 35.
Hawaiian Pineapple Co., Ltd., San Francisco, Calif., to Castle & Cooke, Inc., d.b.a. Dole Co., Honolulu, Hawaii. 508,689, ren. 3–18–69. Cl. 46.
Hayden Franchise Corp., Minneapolis, Minn. 866,976, pub. 12–31–68. Cl. 101.
Heggblade-Margulean Co., San Francisco, Calif. 866,927–8, pub. 12–31–68. Cl. 46.
Henry, H., & Son Mfg. Co., Hillsboro, Ohio. 744,491, canc. Cl. 32.
Hewitt, Delbert C., d.b.a. Hewitt Industries, Portland, Oreg. 744,401, canc. Cl. 26.
Hewitt Industries: *See*— Hewitt, Delbert C.
Hewlett-Packard Co., Palo Alto, Calif. 862,308, cor. Multiple Class (Classes 21, 26, and 44).
Highland Distillers Import Co.: *See*— Ambrose, Jay L.
Hill Packing Co., Topeka, Kans., to Riviana Foods Inc., Houston, Tex. 506,492, ren. 3–18–69. Cl. 46.
Hirt's, Al, Sandwich Saloons, Inc., Nashville, Tenn. 866,965, pub. 12–31–68. Cl. 100.
Hitchcock Publishing Co., Wheaton, Ill. 866,853, pub. 12–31–68. Cl. 38.
Hobson & Botts Co., The, Danbury, Conn. 744,356, canc. Cl. 23.
Hodgman Rubber Co., Framingham, to Tyer Rubber Corp., Andover, Mass. 508,032, ren. 3–18–69. Cl. 39.
Hoeganaes Sponge Iron Corp., Riverton, N.J. 744,296, canc. Cl. 14.
Hold-Heat Products Corp.: *See*— Russell Electric Co.
Holeproof Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 253,714, ren. 3–18–69. Cl. 39.
Holiday Publishing Co., Inc., Park Ridge, Ill. 866,782, pub. 12–31–68. Cl. 22.
Holliston Laboratories, Inc., Boston, Mass. 858,159, canc. Cl. 6.
House of Perfection, Inc., The, New York, N.Y. 744,533, canc. Cl. 39.
Howe-Baker Engineers, Inc., Tyler, Tex. 866,791, pub. 12–31–68. Cl. 23.
Humphrey, Inc., San Diego, Calif. 866,815, pub. 8–27–68. Cl. 26.
I.M.S. International Music Supply G.m.b.H., Bubenreuth, near Erlangen, Germany. 866,836, pub. 12–31–68. Cl. 36.
Ilford, Ltd., Ilford, Essex, England. 744,280, canc. Cl. 6.
Ilines Machine Products Ltd., Weston, Ontario, Canada. 866,804, pub. 12–31–68. Cl. 23.
Industrial Electronic Hardware Corp., New York, N.Y. 744,350, canc. Cl. 21.
Industrial Products Co., The, Timonium, Md. 755,474, cor. Cl. 31.
Industrial Products Co., The, Timonium, Md. 813,969–70, cor. Cl. 31.
Industrial Tire Co.: *See*— Hartzmark, Alan.
Inland Steel Co., Chicago, Ill. 866,690, pub. 12–31–68. Cl. 2.
Interco Inc.: *See*— Florsheim Shoe Co., The.
Interco Inc., St. Louis, Mo. 866,886, pub. 7–16–68. Cl. 42.
International Oil Burner Co., St. Louis, Mo. 744,501, canc. Cl. 34.
International Silver Co., Meriden, Conn. 866,828, pub. 12–31–68. Cl. 28.
International Teaching Machine Corp., New York, N.Y. 744,416, canc. Cl. 26.
Investamerica Group, Inc., The, San Antonio, Tex. 866,981, pub. 12–31–68. Cl. 102.
Ionetics Corp., Avenel, N.J. 866,777, pub. 12–31–68. Cl. 21.
Ives, H. B., Co., The, to The H. B. Ives Co., New Haven, Conn. 510,229, ren. 3–18–69. Cl. 13.
Ives, W. A., Mfg. Co., The, Wallingford, Conn., to The Mephisto Tool Co., Inc., Hudson, N.Y. 73,964, ren. 3–18–69. Cl. 23.
Jacobs Bros. Co., Inc., The, to Detecto Scales, Inc., Brooklyn, N.Y. 507,933, ren. 3–18–69. Cl. 26.
Jarnbirger Aktiebolag, Orsa, Sweden. 744,355, canc. Cl. 23.
Joe Optican Jewelry Co., Inc., St. Joseph, Mo. 866,823, pub. 12–31–68. Multiple Class (Classes 27 and 28).
Joeck, Jane H., Eatontown, N.J. 714,383, canc. Cl. 22.
Johnson Big Wheel Mowers, Inc., Jackson, Miss. 866,783, pub. 9–26–67. Cl. 23.
Johnson Seafood Co.: *See*— Johnson, Willa L.
Johnson, Willa L., d.b.a. Johnson Seafood Co., Biloxi, Miss. 866,919, pub. 12–31–68. Cl. 46.
Julie-Ann, Inc., Dallas, Tex. 744,544, canc. Cl. 42.
Kali-Chemie Aktiengesellschaft, Hannover, Germany. 866,735, pub. 12–31–68. Cl. 18.
Kalvar Corp., New Orleans, La. 744,428, canc. Cl. 26.
Kayser-Roth Corp.: *See*— Holeproof Hosiery Co. Wimelbacher & Rice Inc.
Keen Mfg. Co., Inc., Kansas City, Mo. 744,386, canc. Cl. 23.
Kelemen, Albert B., d.b.a. Pretty Jewelry Co., New York, N.Y. 744,456, canc. Cl. 28.
Kenner Products Co., Cincinnati, Ohio. 866,837, pub. 12–31–68. Cl. 36.
Kimbell Milling Co., Fort Worth, Tex. 866,734, pub. 12–31–68. Cl. 18.
Kimberly-Clark Corp., Neenah, Wis. 866,892, pub. 12–31–68. Cl. 44.
Kinnear Corp.: *See*— Kinnear Mfg. Co., The.
Kinner Mfg. Co., The, to Kinnear Corp., Columbus, Ohio. 510,286, ren. 3–18–69. Cl. 12.
Koch, J. & R., Co., Inc., New York, N.Y. 744,468, canc. Cl. 28.
Ko-Operatieve Wijnbouwers Vereniging Van Zuidafrika, Beperkt, Suider Paarl, Cape Province, Republic of South Africa. 858,363, cor. Cl. 47.
Koracorp Industries, Inc., San Francisco, Calif. 866,881–3, pub. 12–31–68. Cl. 39.
Kovacevich, John J., Arvin, Calif. 866,929, pub. 12–31–68. Cl. 46.
Kress, Charles E., d.b.a. Electronic Dining Planning, Irvington-on-Hudson, N.Y. 866,969, pub. 12–31–68. Cl. 101.
Lasky, Harry G., Bronxville, N.Y. 756,902, canc. Cl. 36.
Lazier, J. F., Mfg. Co., St. Louis, Mo. 866,896, pub. 12–31–68. Cl. 45.
Lemon Cove Assn., Lemon Cove, to Lemon Cove Assn., Inc., Woodlake, Calif. 509,504, ren. 3–18–69. Cl. 46.
Lemon Cove Assn., Inc.: *See*— Lemon Cove Assn.
Lenel Co.: *See*— Rothchild, Lionel G.
Lenel Perfumes, Inc.: *See*— Rothchild, Lionel G.
Le Roi Hosiery Co. Inc., New York, N.Y. 506,227, ren. 3–18–69. Cl. 39.
Leslie Welding Co., Inc., Franklin Park, Ill. 866,727, pub. 12–31–68. Cl. 13.
Levine & Smith, Inc., New York, N.Y. 505,518, ren. 3–18–69. Cl. 39.
Lipton & Bezerman, New York, N.Y. 866,863, pub. 4–4–67. Cl. 39.
Liquilated, Inc., from Queen Mix Corp., Neenah, Wis. 744,561, canc. Cl. 46.
Lodding Engineering Corp., Auburn, Mass. 866,788, pub. 12–31–68. Cl. 23.
Lopez, Salvador, d.b.a. Philpharma, Hato Rey, Puerto Rico. 866,757, pub. 12–31–68. Cl. 18.
Lubrizol Corp., The, Cleveland, Ohio. 866,702, pub. 12–31–68. Cl. 6.
Lucul Food Products, Ltd.: *See*— Scheim, Lina.
Lucul Nahrmittelfabrik A.G.: *See*— Scheim, Lina.
Lumbermens Merchandising Corp., Wayne, Pa. 866,701, pub. 12–31–68. Cl. 5.
MTH Corp., Chicago, Ill. 866,860, pub. 12–31–68. Cl. 38.
Ma Ma Demar's Pizza International Inc., Youngstown, Ohio. 866,964, pub. 12–31–68. Cl. 100.
MacBick Co., The, Wilmington, Mass. 866,746, pub. 12–31–68. Cl. 18.
Madison Chemical Corp., Maywood, Ill. 852,511, canc. Cl. 52.
Mako Marine, Inc., Hialeah, Fla. 866,763, pub. 12–31–68. Cl. 19.

Mallinckrodt Chemical Works, St. Louis, Mo. 510,199, ren. 3–18–69. Cl. 6.
Manford Neckwear Co.: *See*—
Silverman, Sol.
Mars Mfg. Co., Inc., Asheville, N.C. 858,293, cor. Cl. 39.
Martin, John N., d.b.a. John N. Martin Manufacturer, Tulsa, Okla. 866,835, pub. 12–31–68. Cl. 35.
Martin, John N., Manufacturer: *See*—
Martin, John N.
Marva Publishing Corp., Richmond, Va. 866,856, pub. 12–31–68. Cl. 38.
Masonite Corp., Chicago, Ill. 866,714, pub. 12–31–68. Cl. 12.
Mass Action Sales Systems, Inc., Dallas, Tex. 866,717, pub. 12–31–68. Cl. 13.
McCaffrey-Ruddock Tagline Corp., Los Angeles, Calif. 866,798, pub. 12–31–68. Cl. 23.
McGraw-Edison Co., Elgin, Ill. 866,766, pub. 12–31–68. Cl. 21.
McNaught Syndicate, Inc., The, New York, N.Y. 866,855, pub. 12–31–68. Cl. 38.
Mead Corp., The, Dayton, Ohio. 866,845–6, pub. 12–31–68. Cl. 37.
Mead Johnson & Co., to Mead Johnson Co., Evansville, Ind. 252,447, ren. 3–18–69. Cl. 46.
Mead Johnson & Co., to Mead Johnson & Co., Evansville, Ind. 506,404, ren. 3–18–69. Cl. 18.
Mead Johnson & Co., to Mead Johnson & Co., Evansville, Ind. 509,558, ren. 3–18–69. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 866,744, pub. 12–31–68. Cl. 18.
Medley Distilling Co., to Medley Distilling Co., d.b.a. Shady Springs Distilling Co., Owensboro, Ky. 506,920, ren. 3–18–69. Cl. 49.
Melpar, Inc., Falls Church, Va. 744,395, canc. Cl. 26.
Mennen Co., The, Morristown, N.J. 866,950, pub. 12–31–68. Cl. 51.
Mephisto Tool Co., Inc., The: *See*—
Ives, W. A., Mfg. Co., The.
Mercantile Stores Co., Inc., New York, N.Y. 866,695, pub. 12–31–68. Cl. 2.
Mercantile Stores Co., Inc., New York, N.Y. 866,814, pub. 12–31–68. Cl. 23.
Metro Bakery Service: *See*—
Ellias, Phillip.
Meyer Laboratories Inc., Detroit, Mich. 866,741, pub. 12–31–68. Cl. 18.
Miami Margarine Co., The, Cincinnati, Ohio. 866,923, pub. 12–31–68. Cl. 46.
Michigan Bean Co., to The Wickes Corp., Saginaw, Mich. 441,930, ren. 3–18–69. Cl. 46.
Midway Chemical Co., Chicago, Ill., to American Home Products Corp., New York, N.Y. 254,795, ren. 3–18–69. Cl. 6.
Midwest Bank Card System, Inc., from Continental Illinois National Bank & Trust Co. of Chicago, Chicago, Ill. 861,821, cor. Cl. 102.
Mikkelsen, Preben M. A., d.b.a. Dansk Form, Copenhagen, Denmark. 744,570, canc. Cl. 32.
Mikkelsen, Preben M. A., d.b.a. Dansk Form, Copenhagen, Denmark. 744,574, canc. Cl. 42.
Mikros, Inc., Portland, Oreg. 744,396–7, canc. Cl. 26.
Miller, Harry, Corp.: *See*—
Haas-Miller Corp.
Millville Mfg. Co., The, Philadelphia, Pa. 744,553, canc. Cl. 42.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 866,811–2, pub. 12–31–68. Cl. 23.
Mission Mfg. Co., Houston, Tex. 744,365, canc. Cl. 23.
Modern Mfg. Co., Inc., Menasha, Wis. 866,688, pub. 12–31–68. Multiple Class (Classes 2 and 23).
Monroe Auto Euipment Co., Monroe, Mich. 866,760, pub. 3–19–68. Cl. 19.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 510,769, ren. 3–18–69. Cl. 6.
Monsanto Co.: *See*—
Monsanto Chemical Co.
Monsanto Co., St. Louis, Mo. 866,709, pub. 12–31–68. Cl. 10.
Moore, Robert L., LaGrange, Ill. 866,779, pub. 12–31–68. Cl. 22.
Morris Radial Drill Co., Cleveland, Ohio. 866,789, pub. 12–31–68. Cl. 23.
Mortell, J. W., Co., Kankakee, Ill. 508,891, ren. 3–18–69. Cl. 12.
Morton International, Inc.: *See*—
Myles Salt Co., Inc.
Morton Mfg. Corp., d.b.a. Snow White Products Co., Lynchburg, to Chap Stick Co., Richmond, Va. 508,886, ren. 3–18–69. Cl. 52.
Moscow Pizza Corp., Moscow, Idaho. 866,960, pub. 12–31–68. Cl. 100.
Motec Industries, Inc., Hopkins, Minn. 744,384, canc. Cl. 23.
Motel Horse-Pitality, Inc., from William J. Taylor, Boulder City, Nev. 866,848, pub. 12–31–68. Cl. 38.
Motorola, Inc., Franklin Park, Ill. 866,767, pub. 12–31–68. Cl. 21.
Multiplex Co., St. Louis, Mo. 866,795, pub. 12–31–68. Cl. 23.
Murine Co., Inc., The, Chicago, Ill. 866,740, pub. 8–20–68. Cl. 18.
Music Research Associates: *See*—
Schultz, Carl.
Myles Salt Co., Inc., New Orleans, La., to Morton International, Inc., Chicago, Ill. 509,300, ren. 3–18–69. Cl. 46.
National Cheese Co., Chicago, Ill. 866,917, pub. 12–31–68. Cl. 46.
National Council of Engineering Examiners, Clemson, S.C. 866,986, pub. 12–31–68. Cl. 200.
National Downtown Week, Inc., New York, N.Y. 726,103, canc. Cl. 101.
National Downtown Week, Inc., New York, N.Y. 726,842, canc. Cl. 101.
National Federation of Coffee Growers of Colombia, New York, N.Y. 866,905, pub. 12–31–68. Cl. 46.
National Sugar Refining Co., The, New York, N.Y. 866,914, pub. 12–31–68. Cl. 46.
Naylor, R. J., d.b.a. Digi-T-Co., Philadelphia, Pa. 866,822, pub. 12–31–68. Cl. 26.
New Jersey Machine Corp., Hoboken, N.J. 866,786, pub. 5–7–68. Cl. 23.
Nielsen, A. C., Co., Chicago, Ill. 866,970, pub. 12–31–68. Cl. 101.
Niles Expanded Metals Co., Niles, Ohio. 866,716, pub. 12–31–68. Cl. 12.
Nippon Gakki Co., Ltd., Prefecture, Japan. 866,762, pub. 12–31–68. Multiple Class (Classes 19 and 23).
Nordberg Mfg. Co., Milwaukee, Wis. 866,807, pub. 12–31–68. Cl. 23.
Noritake Co., Inc., New York, N.Y. 866,829, pub. 9–5–67. Cl. 30.
Northern Steel Products, Inc., Seattle, Wash. 730,317, canc. Cl. 21.
Northwestern Mutual Insurance Co., Seattle, Wash. 866,980, pub. 12–31–68. Cl. 102.
"Nur Die" Textilvertrieb G.m.b.H., Westphalia, Germany. 866,869, pub. 12–31–68. Cl. 39.
Ogival S.A.: *See*—
René Brandt, Fabrique D'Horlogerie Ogival.
Olin Mathieson Chemical Corp., New York, N.Y. 866,705, pub. 12–31–68. Cl. 6.
Olivieri, Natole, d.b.a. Yoo-Hoo Chocolate Beverage Co., assor. to Yoo-Hoo Chocolate Beverage Co., Garfield, to Yoo-Hoo Beverage Co., Carlstadt, N.J. 507,891, ren. 3–18–69. Cl. 45.
Optical Salons, Ltd., Great Neck, N.Y. 744,398, canc. Cl. 26.
Oroville-Cordell Fruit Growers, Inc., Oroville, Wash. 866,906, pub. 12–31–68. Cl. 46.
Oshkosh Trunk Co., The, Oshkosh, Wis., to Droutman Mfg. Co., Inc., New York, N.Y. 247,361, ren. 3–18–69. Cl. 3.
Ottens, Henry H., Mfg. Co., Inc., to Henry H. Ottens Mfg. Co., Inc., Philadelphia, Pa. 509,130, ren. 3–18–69. Cl. 46.
Owens-Illinois, Inc., Toledo, Ohio. 866,833, pub. 12–31–68. Cl. 33.
Oxford Industries, Inc., Atlanta, Ga. 866,874, pub. 12–31–68. Cl. 39.
Oxxford Clothes Inc.: *See*—
Weinberg Corp.
Packaging Corp. of America, Evanston, Ill. 866,842, pub. 4–16–68. Cl. 37.
Pagoda, The, Washington, D.C. 866,974, pub. 12–31–68. Cl. 101.
Paige Proprietary Ltd., Richmond, Victoria, Australia. 866,736, pub. 12–31–68. Cl. 18.
Parfums Blanchard, New York, to Del Laboratories, Inc., Farmingdale, N.Y. 508,119, ren. 3–18–69. Cl. 18.
Park-Air Corp., Boston, Mass. 866,808, pub. 12–31–68. Cl. 23.
Parker-Hannifin Corp., Cleveland, Ohio. 744,360, canc. Cl. 23.
Park-Storyk Corp., New York, N.Y. 866,865, pub. 12–31–68. Cl. 39.
Paulucci, Jeno F., from Wilderness Valley Farms, Inc., Duluth, Minn. 706,865, canc. Cl. 10.
Pelsue, T. A., Co.: *See*—
Pelsue, Thurman A.
Pelsue, Thurman A., d.b.a. T. A. Pelsue Co., Denver, Colo. 866,784, pub. 12–31–68. Multiple Class (Classes 23, 34, and 50).
Pennsylvania Electronics Technology, Inc., Pittsburgh, Pa. 866,772, pub. 12–31–68. Cl. 21.
Perfect Film & Chemical Corp., Manhasset, N.Y. 866,821, pub. 12–31–68. Cl. 26.
Peter Pan Foundations, Inc.: *See*—
Peter Pan International, Inc.
Peter Pan International, Inc., from Peter Pan Foundations, Inc., New York, N.Y. 866,870, pub. 2–27–68. Cl. 39.
Petroleum Engineer Publishing Co., The, Dallas, Tex. 736,050, canc. Cl. 38.
Pfizer, Chas., & Co., Inc., New York, N.Y. 866,758, pub. 12–31–68. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 866,947–8, pub. 12–31–68. Cl. 51.
Philadelphia Hockey Club, Inc., The, Philadelphia, Pa. 866,983–4, pub. 12–31–68. Cl. 107.
Philadelphia Quartz Co., Philadelphia, Pa. 506,735–7. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 506,740. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 506,742. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 506,757. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 507,666. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 507,992. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 509,700–1. Am. 7(d). Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 510,420. Am. 7(d). Cl. 6.
Philips Mfg. Co., Brooklyn, N.Y. 866,827, pub. 12–31–68. Cl. 28.
Philpharma: *See*—
Lopez, Salvador.
Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. 866,902, pub. 5–21–68. Cl. 46.
Pinehurst Textiles, Inc., Asheboro, N.C. 866,875, pub. 12–31–68. Cl. 39.

Plastic Coating Corp., The, Holyoke, Mass. 744,430, canc. Cl. 26.
Plasti-Kote Corp., from Plasti-Kote, Inc., Medina, Ohio. 866,729, pub. 10–3–67. Cl. 15.
Plasti-Kote, Inc., Medina, Ohio. 744,494, canc. Cl. 32.
Plasti-Kote, Inc.: *See*—
Plasti-Kote Corp.
Poirette Corsets, Inc., New York, N.Y. 744,531, canc. Cl. 39.
Polcon Corp., Montreal, Quebec, Canada. 866,792, pub. 12–31–68. Cl. 23.
Polyclair: *See*—
Dillemann, Ch., & Polyclair S.A.
Pretty Jewelry Co.: *See*—
Kelemen, Albert B.
Psor-Ban Laboratories, Inc.: *See*—
Thor Laboratories, Inc.
Puritan Sportswear Corp., The, Altoona, Pa. 866,867–8, pub. 12–31–68. Cl. 39.
Queen Mix Corp.: *See*—
Liquilated, Inc.
R.T.A. Resine Termoplastiche Applicate S.A.S.: *See*—
Conterno, Antonio.
Racz, Tibor, Madrid, Spain. 744,363, canc. Cl. 23.
Radiant Color Co., Richmond, Calif. 866,703, pub. 12–31–68. Cl. 6.
Radiant Color Co., Richmond, Calif. 866,710, pub. 12–31–68. Cl. 18.
Radiant Color Co., Richmond, Calif. 866,937, pub. 12–31–68. Cl. 50.
Rasmussen, Edgar E., d.b.a. Even Roll Mfg. Co., Portland, Oreg. 744,485, canc. Cl. 29.
Raybestos-Manhattan, Inc., Passaic, N.J. 506,461, ren. 3–18–69. Cl. 35.
Rayco Mfg. Co., Paramus, N.J. 744,312, canc. Cl. 19.
Rayette-Faberge, Inc.: *See*—
Raymond Laboratories, Inc.
Raymond De-Icer & Engineering Co., Inc.: *See*—
Raymond Development Industries, Inc.
Raymond Development Industries, Inc., from Raymond De-Icer & Engineering Co., Inc., Huntington Park, Calif. 744,564, canc. Cl. 12.
Raymond Laboratories, Inc., St. Paul, Minn., to Rayette-Faberge, Inc., New York, N.Y. 506,754, ren. 3–18–69. Cl. 6.
Raytheon Co., Lexington, Mass. 866,820, pub. 12–31–68. Cl. 26.
Realtron Corp., Detroit, Mich. 866,975, pub. 12–31–68. Cl. 101.
Red Horse, Inc., Frederick, Md. 866,963, pub. 12–31–68. Cl. 100.
Reliance Gauge Column Co., The, to The Clark-Reliance Corp., Cleveland, Ohio. 510,534, ren. 3–18–69. Cl. 6.
Remin Laboratories, Inc., Joliet, Ill. 866,761, pub. 12–31–68. Cl. 19.
Republic Molding Corp., Chicago, Ill. 866,894, pub. 12–31–68. Cl. 2.
Research Products Corp., Madison, Wis. 744,487, canc. Cl. 31.
Responsive Environments Corp., Englewood Cliffs, N.J. 866,817, pub. 12–31–68. Cl. 26.
Rexall Drug & Chemical Co., d.b.a. Fiberfil, Los Angeles, Calif. 866,682, pub. 4–23–68. Cl. 1.
Reynolds & Reynolds Co., The, Dayton, Ohio. 866,973, pub. 12–31–68. Cl. 101.
Reznicek, Vaclav, d.b.a. Vaclav Reznicek Co., Little Rock, Ark. 744,293, canc. Cl. 13.
Reznicek, Vaclav, Co.: *See*—
Reznicek, Vaclav.
Richards, J. A., Co., Kalamazoo, Mich. 866,728, pub. 12–31–68. Multiple Class (Classes 14 and 23).
Ritter Pfaudler Corp., Rochester, N.Y. 866,809, pub. 12–31–68. Cl. 23.
Riviana Foods Inc.: *See*—
Hill Packing Co.
Rockingham Poultry Marketing Cooperative, Inc., Broadway, Va. 866,916, pub. 12–31–68. Cl. 46.
Rockwood, Clyde R., Columbus, Ohio. 866,707, pub. 12–31–68. Cl. 9.
Ross-Matthai Corp., Baltimore, Md. 866,885, pub. 12–31–68. Multiple Class (Classes 42 and 50).
Rothchild, Lionel G., d.b.a. Lenel Co., to Lenel Perfumes, Inc., Dallas, Tex. 441,382, ren. 3–18–69. Cl. 51.
Rothenberg, Fred, New York, N.Y. 866,939, pub. 12–31–68. Cl. 50.
Rothmans of Pall Mall Ltd., Zurich, Switzerland. 866,733, pub. 12–31–68. Cl. 17.
Roto-Pack Corp., Washington, D.C. 744,490, canc. Cl. 32.
Russell Electric Co., to Hold-Heat Products Corp., Chicago, Ill. 509,849, ren. 3–18–69. Cl. 21.
Rusty Bumper: *See*—
Dixon, Eugene.
Ryon Saddle & Ranch Supply, Fort Worth, Tex. 744,523, canc. Cl. 39.
SCM Corp., d.b.a. Durkee Famous Foods, Cleveland, Ohio. 866,908, pub. 12–31–68. Cl. 46.
Samsonite Corp., Denver, Colo. 866,697, pub. 10–15–68. Cl. 3.
Samsonite Corp., Denver, Colo. 866,832, pub. 12–31–68. Cl. 32.
Scheim, Lina, d.b.a. Wilhelm Scheim Wwe. Lucul-Nahrmittelfabrik, to Lucul Nahrmittelfabrik A.G., d.b.a. Lucul Food Products, Ltd., Zurich, Switzerland. 441,598, ren. 3–18–69. Cl. 46.
Scheim, Wilhelm, Wwe. Lucul-Nahrmittelfabrik: *See*—
Scheim, Lina.
Schering Corp., Bloomfield, N.J. 866,752, pub. 12–31–68. Cl. 18.
Schiefer Mfg. Co.: *See*—
Fly-Wheel Corp.
Schlumberger Ltd., (Schlumberger N.V.), New York, N.Y., from Schlumberger Technology Corp., d.b.a. Schlumberger Well Services, Houston, Tex. 866,962, pub. 12–31–68. Cl. 100.
Schlumberger Technology Corp.: *See*—
Schlumberger Ltd., (Schlumberger N.V.).
Schlumberger Well Services: *See*—
Schlumberger Ltd., (Schlumberger N.V.).
School House Products, Inc., New York, N.Y. 866,816, pub. 2–6–68. Cl. 26.
Schultz, Carl, d.b.a. Music Research Associates, Evanston, Ill. 744,516, canc. Cl. 36.
Schwaiger Corp., Cullman, Ala. 866,720, pub. 12–31–68. Cl. 13.
Sealectro Corp., Mamaroneck, N.Y. 866,776, pub. 12–31–68. Cl. 21.
Sealed Unit Parts Co., Inc., Bronx, N.Y. 866,726, pub. 12–31–68. Cl. 13.
Segelin's, Cleveland, Ohio. 509,094, ren. 3–18–69. Cl. 1.
Serio S.p.A. Officine Meccaniche Di Precisione, Milan, Italy. 744,451, canc. Cl. 26.
Shady Springs Distilling Co.: *See*—
Medley Distilling Co.
Shell Oil Co., New York, N.Y. 866,684, pub. 12–31–68. Cl. 1.
Silverman, Jerome I., Inc., New York, N.Y. 744,476, canc. Cl. 28.
Silverman, Sol, d.b.a. Manford Neckwear Co., New York, N.Y. 744,535, canc. Cl. 39.
Simplex Wire & Cable Co., Cambridge, Mass. 866,768, pub. 12–31–68. Cl. 21.
Simplot, J. R., Co.: *See*—
Simplot, John R.
Simplot, John R., Pocatello, Idaho, to J. R. Simplot Co., Reno, Nev. 505,699–700, ren. 3–18–69. Cl. 10.
Smith, Elsie M., d.b.a. Bonanza Salt Co., Grand Rapids, Mich. 866,904, pub. 12–31–68. Cl. 46.
Snow White Products Co.: *See*—
Morton Mfg. Corp.
Snug Harbour Tobacco, Ltd., New York, N.Y. 854,521, cor. Cl. 17.
Societe Anonyme Des Etablissements Neu, Lille (Nord), France. 866,794, pub. 12–31–68. Cl. 23.
Societe Anonyme Ed. Laurens "Le Khedive" Extension Belge, Manufacture De Cigarettes, Molenbeek-Saint-Jean, Belgium. 747,484, canc. Cl. 17.
Societe Rhodiaceta, Paris, France. 744,537–8, canc. Cl. 39.
Societe Rhodiaceta, Paris, France. 744,551–2, canc. Cl. 42.
Societe Rhodiaceta, Paris, France. 744 555–6, canc. Cl. 43.
Societe Rhodiaceta, Paris, France. 866,873, pub. 12–31–68. Cl. 39.
Societe Rhodiaceta, Paris, France. 866,889, pub. 12–31–68. Cl. 43.
Sommer Maid Creamery, Inc., Doylestown, Pa. 866,898, pub. 11–8–66. Cl. 46.
Sonoco Products Co., Hartsville, S.C. 866,941, pub. 12–31–68. Cl. 50.
South African Rock Lobster Association, Inc., New York, N.Y. 596,135, canc. Cl. 46.
South African Rock Lobster Association, Inc., New York, N.Y. 612,708, canc. Cl. 46.
South Bay Clubs International: *See*—
South Bay Clubs International, Inc.
South Bay Clubs International, Inc., from South Bay Clubs International, Los Angeles, Calif. 866,961, pub. 12–31–68. Cl. 100.
Southern Advance Bag & Paper Co. Inc., Bangor, Maine, and Boston, Mass., to Continental Can Co., Inc., New York, N.Y. 504,951, ren. 3–18–69. Cl. 37.
Southwest Engineering & Mfg. Co., Inc., Fort Worth, Tex. 744,404–5, canc. Cl. 26.
Spillers Ltd., London, England. 866,900, pub. 12–31–68. Cl. 46.
Sporting Tailors Mfg. Co., Inc., The, Boston, Mass. 866,872, pub. 12–31–68. Cl. 39.
Standard Brands Inc., New York, N.Y. 866,925, pub. 12–31–68. Cl. 46.
Standard Candy Co., Nashville, Tenn. 510,023, ren. 3–18–69. Cl. 46.
Standard Fruit & Steamship Co., New Orleans, La. 866,926, pub. 12–31–68. Cl. 46.
Standard Oil Co., The, Cleveland, Ohio. 866,730, pub. 12–31–68. Cl. 15.
Standard Oil Co., of California, San Francisco, Calif. 866,803, pub. 12–31–68. Cl. 23.
Standard Packaging Corp., Stamford, Conn. 866,700, pub. 12–31–68. Cl. 5.
Stanley Works, The, New Britain, Conn. 866,801, pub. 12–31–68. Cl. 23.
Star-Fire Marine Jet Co., Spokane, Wash. 744,369, canc. Cl. 23.
Stauffer Chemical Co., Richmond, Calif. 727,388, canc. Cl. 12.
Stearns & Foster Co., The, Cincinnati, Ohio. 866,831, pub. 5–28–68. Cl. 32.
Steiner, Ernest, New York, N.Y. 744,465, canc. Cl. 28.
Steiner Promotions, Inc., Detroit, Mich. 866,968, pub. 12–31–68. Cl. 101.
Sternco Industries, Inc., Harrison, N.J. 866,830, pub. 12–31–68. Cl. 31.
Stoppenbach Sausage Co., Jefferson, Wis. 866,924, pub. 12–31–68. Cl. 46.
Sucetti, Glenn, Grass Valley, Calif. 725,781, canc. Cl. 12.
Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France. 744,318, canc. Cl. 19.
Sunkist Growers, Inc., Los Angeles, Calif. 866,897, pub. 12–31–68. Cl. 45.
Sunkist Growers, Inc., Los Angeles, Calif. 866,909, pub. 12–31–68. Cl. 46.

Superior Cable Corp.: *See*—
Superior Continental Corp.
Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 866,958–9, pub. 12–31–68. Multiple Class (Classes 100 and 103).
Sutliff Tobacco Co., Richmond, Va. 510,678, ren. 3–18–69. Cl. 17.
Swanson, C. A., & Sons, Omaha, Nebr., to Campbell Soup Co., Camden, N.J. 439,756–7, ren. 3–18–69. Cl. 46.
Tani Farms, Santa Maria, Calif. 866,932, pub. 12–31–68. Cl. 46.
Tasker Industries, from Tasker Instruments Corp., Van Nuys, Calif. 866,764, pub. 12–31–68. Cl. 21.
Tasker Instruments Corp.: *See*—
Tasker Industries.
Tau Kappa Epsilon Fraternity, Indianapolis, Ind. 866,987–8, pub. 12–31–68. Cl. 200.
Taylor, William J.: *See*—
Motel Horse-Pitality, Inc.
Teason, James G., Elmhurst, Ill. 866,852, pub. 12–31–68. Cl. 38.
Telrex, Inc., Asbury Park, N.J. 866,989. Cl. 21.
Tex-Sun Glove Co., Corsicana, Tex. 866,871, pub. 8–27–68. Cl. 39.
Textron Inc.: *See*—
Goheen Corp. of New Jersey.
Thermoil Ltd., Tel-Aviv, Israel. 866,834, pub. 6–18–68. Cl. 34.
Thermoplastics Corp.: *See*—
Whittaker Thermoplastics Corp.
Thomas-Wiener Co., the The Donruss Co., Memphis, Tenn. 504,862, ren. 3–18–69. Cl. 46.
Thompson, Eldridge W., Jr., d.b.a. Broomop Sales Co., Greensboro, N.C. 744,289, canc. Cl. 13.
Thor Laboratories, Inc., Cincinnati, from Psor-Ban Laboratories, Inc., Newark, Ohio. 866,737, pub. 12–31–68. Cl. 18.
Timely Clothes, Inc.: *See*—
Alligator Co., Inc., The.
Toka Shikiso Chemical Industry Co., Ltd., Tokyo, Japan. 866,711, pub. 12–31–68. Cl. 11.
Topco Associates, Inc., Skokie, Ill. 866,895, pub. 12–31–68. Cl.44.
Topp Oil & Chemical Co., Milwaukee, Wis. 510,615, ren. 3–18–69. Cl. 15.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 866,778, pub. 12–31–68. Multiple Class (Classes 22 and 46).
Toro Mfg. Corp., Minneapolis, Minn. 744,319, canc. Cl. 19.
Trade Style Armour Fertilizer Works: *See*—
Armour & Co.
Tri-Ads Co.: *See*—
Brawer, Sid.
Trifari, Krussman & Fishel, Inc., New York, N.Y. 506,467, ren. 3–18–69. Cl. 28.
Tri-Valley Growers, San Francisco, Calif. 866,931, pub. 12–31–68. Cl. 46.
Tru-Foto, Inc., Dayton, Ohio. 866,847, pub. 12–31–68. Cl. 37.
Tru-Porcelain, Inc., Trenton, N.J. 744,566, canc. Cl. 12.
Trust Co. of Georgia, Atlanta, Ga. 866,979, pub. 12–31–68. Cl. 102.
Truzzolino Food Products Co., Butte, Mont. 507,763, ren. 3–18–69. Cl. 46.
Tyer Rubber Corp.: *See*—
Hodgman Rubber Co.
Unagusta Mfg. Corp., Hazelwood, N.C. 744,498, canc. Cl. 32.
Uniroyal, Inc.: *See*—
U.S. Rubber Co.
Uniroyal, Inc., New York, N.Y. 866,790, pub. 12–31–68. Cl. 23.
United Aircraft Corp., East Hartford, Conn. 744,408, canc. Cl. 26.
United Silver & Cutlery Co., Los Angeles, Calif. 866,689, pub. 2–20–68. Multiple Class (Classes 2 and 13).
U.S. Electrical Motors Inc.: *See*—
Emerson Electric Mfg. Co., The.
U.S. Rubber Co., to Uniroyal, Inc., New York, N.Y. 509,732, ren. 3–18–69. Cl. 19.
U.S. Rubber Co., to Uniroyal, Inc., New York, N.Y. 510,019, ren. 3–18–69. Cl. 16.
U.S. Rubber Co., to Uniroyal, Inc., New York, N.Y. 510,380, ren. 3–18–69. Cl. 1.
United States Tabulating Binder Corp., Niles, Ill. 866,840, pub. 12–31–68. Cl. 37.
Universal American Corp., New York, N.Y. 866,785, pub. 12–31–68. Cl. 23.
Uniweave Corp., New York, N.Y. 866,887, pub. 5–14–68. Cl. 42.
Vaco Products Co., Chicago, Ill. 866,723, pub. 12–31–68. Cl. 13.
Valley Paper Co., Holyoke, Mass. 509,573, ren. 3–18–69. Cl. 37.
Valley Paper Co., Holyoke, Mass. 509,576, ren. 3–18–69. Cl. 37.
Varo Inc., Garland, Tex. 744,336, canc. Cl. 21.
Varo Inc., Garland, Tex. 744,403, canc. Cl. 26.
Vasilantone, Michael, d.b.a. Vastex Machine Co., Roselle, N.J. 866,800, pub. 12–31–68. Cl. 23.
Vastex Machine Co.: *See*—
Vasilantone, Michael.
Velsicol Chemical Corp.: *See*—
Velsicol Corp.
Velsicol Corp., to Velsicol Chemical Corp., Chicago, Ill. 505,383, ren. 3–18–69. Cl. 16.
Vistron Corp., Cleveland, Ohio. 866,938, pub. 12–31–68. Cl. 50.
Vita-Mart: *See*—
Gundlach, Paul J.
Wah Chang Corp., New York, N.Y. 744,295, canc. Cl. 14.
Wakefern Food Corp., Elizabeth, N.J. 866,890, pub. 12–31–68. Cl. 44.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 866,756, pub. 12–31–68. Cl. 18.
Waterous Co., St. Paul, Minn. 866,802, pub. 12–31–68. Cl. 23.
Weinberg Corp., to Oxxford Clothes Inc., Chicago, Ill. 510,041, ren. 3–18–69. Cl. 39.
Weiss, Benjamin Harrison, Inc., New York, N.Y. 866,879, pub. 12–31–68. Cl. 39.
Weselen Enterprises, La Porte, Ind. 866,696, pub. 12–31–68. Cl. 3.
West Virginia Pulp & Paper Co., New York, N.Y. 866,693, pub. 12–31–68. Cl. 2.
Westab Inc.: *See*—
Western Tablet & Stationery Corp.
Western Publishing Co., Inc., Racine, Wis. 866,781, pub. 12–31–68. Cl. 22.
Western Tablet & Stationery Corp., to Westab Inc., Dayton, Ohio. 506,011, ren. 3–18–69. Cl. 37.
Westinghouse Electric Corp., Pittsburgh, Pa. 866,773, pub. 12–31–68. Cl. 21.
Westprest, Inc.: *See*—
Borg-Warner Corp.
Whip Guide Co., The, Cleveland Heights, Ohio. 866,797, pub. 12–31–68. Cl. 23.
Whittaker Thermoplastics Corp., Los Angeles, Calif., from Thermoplastics Corp., Charlotte, N.C. 866,718, pub. 5–7–68. Cl. 13.
Wickes Corp., The: *See*—
Michigan Bean Co.
Wilderness Valley Farms, Inc., Duluth, Minn. 692,649, canc. Cl. 10.
Wilderness Valley Farms, Inc.: *See*—
Paulucci, Jeno F.
Wilson-Albrecht Co. Inc., Minneapolis, Minn., to Bliss & Laughlin Industries, Inc., Schiller Park, Ill. 510,607, ren. 3–18–69. Cl. 50.
Wimelbacher & Rice Inc., to Kayser-Roth Corp., New York, N.Y. 505,552, ren. 3–18–69. Cl. 39.
Wonderknit Corp., New York, N.Y. 866,884, pub. 12–31–68. Cl. 39.
Wood Mfg. Co., El Dorado, Ark., to Wod Mfg. Co. Inc., Conway, Ark. 441,386, ren. 3–18–69. Cl. 22.
Wood Mfg. Co. Inc.: *See*—
Wood Mfg. Co.
Woodford Mfg. Co., Des Moines, Iowa. 866,719, pub. 12–31–68. Cl. 13.
Woody's Cheese Co., Waupaca, Wis. 866,918, pub. 12–31–68. Cl. 46.
World Publishing Co., Omaha, Nebr. 866,854, pub. 12–31–68. Cl. 38.
Wyandotte Chemicals Corp., Wyandotte, Mich. 504,985, ren. 3–18–69. Cl. 6.
Yardley of London, Inc., Totowa, N.J. 866,945–6, pub. 12–31–68. Cl. 51.
Yoo-Hoo Beverage Co.: *See*—
Olivieri, Natole.
Yoo-Hoo Chocolate Beverage Co.: *See*—
Olivieri, Natole.
Zeo-Ran Co., The, St. Paul, Minn. 744,488, canc. Cl. 31.
Zipco Inc., Uncasville, Conn. 744,291, canc. Cl. 13.

U.S. GOVERNMENT PRINTING OFFICE: 0——1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 25, 1969 Volume 860 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1969

Examiner affirmed	108
Examiner affirmed in part	22
Examiner reversed	33
Total	163

Certificates of Correction for the Week of Mar. 25, 1969

Re. 26,341	3,363,549
D. 209,906	3,365,039
3,258,338	3,365,446
3,349,432	3,365,520
3,351,743	3,365,749
3,353,682	3,367,302
3,359,056	3,368,036
3,362,108	3,389,561

Revised Design Patent Practice

The following changes are being instituted in order to clarify the distinction between the ornamental design for an article being claimed in a design patent and its environment. These changes are to be followed in the examination of all design applications as of the date of this notice. It is suggested that applicants initiate compliance with these changes in all pending design applications.

The ornamental design which is being claimed must be shown in solid lines in the drawing. Dotted lines for the purpose of indicating unimportant or immaterial features of the designed article are no longer permitted. There are no portions of a design which are immaterial or unimportant. In re *Blum*, 852 O.G. 1045; 153 USPQ 177.

The title of the article being claimed in a design patent must correspond to the name of the article shown in solid lines in the drawing.

RICHARD A. WAHL,
Assistant Commissioner.

Feb. 26, 1969.

New Applications Received During December 1968

Patents	8001
Designs	441
Plant Patents	5
Reissues	40
Total	8487

Issue—March 25, 1969

Patents	1300	No. 3,434,160 to No.	3,435,459, incl.
Designs	55	No. 213,611 to No.	213,665, incl.
Plant Patents	4	No. 2,872 to No.	2,875, incl.
Reissues	14	No. 26,546 to No.	26,559, incl.
Total	1373		

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF MARCH 10, 1969

PATENT EXAMINING GROUPS *Denotes oldest new application.	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	1-03-69
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-20-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	12-16-66
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*5-11-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	11-07-66
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4-03-67
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	2-16-67
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*2-21-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	11-10-66
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-14-67
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	5-20-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-28-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-03-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-10-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-19-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-04-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-14-67

Total number of pending applications (excluding Designs)	186,304
Total number of Design applications pending	3,151

Expiration of patents: The patents within the range of numbers indicated below expire during March 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,587,576 to 2,590,832, inclusive
Plant Patents	Numbers 1,077 to 1,080, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE EDGAR SIEGEL AND KLAUS SASSE

No. 7908. Decided June 6, 1968

[55 CCPA —; 395 F.2d 812; 158 USPQ 16]

1. CLAIM—BROADER THAN DISCLOSURE—SINGLE EXAMPLE.

"We * * * believe * * * that the appealed claims embrace subject matter [represented by a single example in the specification] not described by a 'written description' which, in contemplation of law, may be said to be adequately representative of the breadth desired. See also *In re Lund*, 54 CCPA 1361, —, 376 F.2d 982, 985, 153 USPQ 625, 628 (1967); *In re Holmen*, 52 CCPA 1626, 347 F.2d 852, 146 USPQ 290 (1965)."

2. SAME—SAME—SAME.

"In affirming the decision of the Board, we wish to make it clear that nothing is here intended as a determination that a *single* example may not be relied upon in evaluating an invention, or that but a single example may not be a sufficient written description to support a particular broad claim. What we decide here is that the invention claimed in the appealed claims appears to be broader than the invention disclosed in the written description forming a part of the specification. *In re Sus*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301 (1962); see *In re Corr*, 52 CCPA 1505, 347 F.2d 578, 146 USPQ 69 (1965)."

AFFIRMED.

Connolly and Hutz, *John A. Sarjeant* (*Werner H. Hutz*, of counsel) for appellants.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

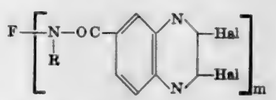
SMITH, *J.*, delivered the opinion of the court.

Two issues are before this court in this appeal: (1) whether the appealed claims are so "unduly broad and indefinite" as to constitute a failure to comply with the requirements of 35 U.S.C. 112, second paragraph; and (2) whether the appealed claims are obvious in view of the prior art of record within the meaning of 35 U.S.C. 103.

Those issues arise in an appeal from a decision of the Board of Appeals [2] affirming the Examiner's rejection of claims 48 and 51 of appellants' application.[3] Claims 22–24, 26–31, and 35–38 were allowed by the Examiner.

Appellants' invention relates to fiber-reactive dyestuffs which are particularly useful for the dyeing and printing of cellulose-containing textile materials. The invention in issue particularly relates to a dyestuff having the formula shown in the following appealed claim:

51. A dyestuff which in the free acid state corresponds to the formula



wherein F stands for the radical of a metal-free sulfonic acid group-containing azo dyestuff, R is a member selected from the group consisting of hydrogen and

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] The Board consisted of Messrs. Magil and Lidoff, Examiners-in-Chief, and Sterman, Acting Examiner-in-Chief. Mr. Lidoff wrote the opinion of the Board.
[3] Serial No. 171,269, filed February 5, 1962, for "Dyestuffs."

lower alkyl, *m* is an integer from 1 to 8 and Hal is a member selected from the group consisting of Cl and Br.

Appealed claim 48 is more specific and requires that "R" be hydrogen, "Hal" be chlorine, "*m*" be 1, and that "F" be "the dyestuff residue of a metal-free sulfonic acid group-containing monoazo dyestuff."

Appellants explain that such fiber-reactive dyestuffs are distinguished by the presence of a characteristic fiber-reactive moiety or radical, as illustrated by the grouping nearest the right hand bracket of claim 51. Appellants submit that the function of this moiety is to react with the cellulose-containing textile materials, thus firmly bonding the dyestuffs thereto. The resulting dyed fibers are said to have outstanding resistance to wet processing and possess excellent general fastness properties. Appellants emphasize that the concept of fiber-reactive dyestuffs was not new at the time of their invention. Other such dyestuffs were known which contained different moieties or radicals for performing the so-called "hook" function.

We shall first consider the rejection of both appealed claims under 35 U.S.C. 112, second paragraph, as "being unduly broad and indefinite." The original statement of that rejection appears to have been made in an "Advisory Action of October 7, 1964," a paper which is not part of the record before this court. It may be noted that the Examiner's final rejection is dated January 7, 1964 and that several subsequent amendments were entered by the Examiner, requiring several restatements of position on his part.

In their brief on appeal to the Board, the appellants acknowledged the Examiner's position with the following statement:

> * * * Belatedly in the Advisory Action of October 7, 1964, the Examiner also states that "support is seen only wherein the bridging group
>
> 
>
> is directly linked to a nuclear carbon atom of F." It is not clear whether this is intended to form a new ground of rejection or not; it does not come within the scope of the rejections which were outstanding at the time the Advisory Action was written. To hasten prosecution; it will be answered herein.

In that brief, appellants controverted the foregoing rejection, relying on working Example 273 of the specification for its showing of a specific dyestuff in which the



group is linked to a nuclear carbon atom of "F" *through* the bridging group —NHOCCH$_2$—. They also pointed to the specification for its disclosure that dyestuffs are easily obtained by reacting amino group-containing azo dyestuffs having nuclear-positioned *and/or externally linked* amino groups with compound such as 2,3-dichloroquinoxaline-6-carboxylic acid chloride. This, appellants thought, overcame the Examiner's holding that only direct linking was shown.

The Examiner was unpersuaded. In elaborating upon the ground of rejection, the Examiner stated that the breadth of the definition of "F" in the appealed claims outlined the importance of how the fiber reactive radical is linked to the azo dye.[4] He considered that portion of the specification relied upon by the appellants as being "prophetic in character," and characterized the matter as one of "indefiniteness." He stated, "[a]s the claims now read it is impossible to tell how the bridging group

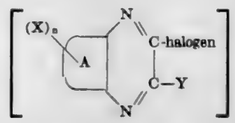
is linked to F."

The Board affirmed that ground of rejection, stating:

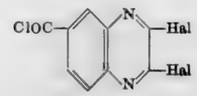
> The Examiner has also rejected claims 48 and 51 as failing to comply with the requirements of 35 U.S.C. 112 in that it is not indicated therein how the bridging group
>
>
>
> is linked to the azo dye molecule. We have considered all of appellants' arguments but must agree with the Examiner's position *since it is not clear what is intended by the terms "the dyestuff residue" or "the radical of * * * azo dyestuff"* [see note 4, supra] and it cannot be determined where the substituted carboxamido group is attached. We find no support in the specification for exocyclic substitution. Where the linkage is not directly on the nucleus, it is taught to be attached through a bridging member and not to a non-nuclear substituent in the azo dyestuff moiety. [Emphasis added.]

Appellants' position here on that issue is that the particular mode of attachment of the bridging group of appellants' fiber-reactive moiety to their azo dye molecule is immaterial to their invention and need not be specified in their claims. They urge that their disclosure, as a whole, teaches that the particular mode of attachment of the bridging group in issue to the azo dye molecule is immaterial to their invention.

In the specification, it is explained that:

> Among the great number of dyestuffs obtainable according to this process those products are especially easily obtained which are derived from amino group-containing azo dyestuffs of the benzene-azo-benzene, benzene-azo-naphthalene, naphthalene-azo-naphthalene, benzene-azo-aminopyrazole and -pyrazolone series and of the hetero-azo-aryl series and the aminoanthraquinone series with nuclear-positioned and/or externally linked amino groups, by the reaction with compounds of the Formula (II)
>
> 
>
> which contain in the 5- or 6-membered nucleus A [disclosed as meaning a five- or six-membered isocyclic or heterocyclic ring] a reactive grouping, for example a carboxylic acid chloride, sulfonic acid chloride, isocyanate, urethane, halotriazinylamino, halopyrimidinylamino or also a dichloroquinoxalinoyl or dichloroquinoxalinoyl-methylene group. * * * [Brackets added.]

Appellants argue that when nucleus A is a 6-membered carbocyclic group and contains a reactive carboxylic acid chloride group, it includes reactants of the formula (Formula VI of appellants' brief):



When this compound is condensed with an amino group-containing metal-free sulfonic acid group-containing azo dyestuff wherein the amino group is nuclear-positioned or externally linked to the azo dyestuff, the resulting dyestuff is said by appellants to fall within the

[4] It is helpful in understanding the rejection to recall at this point that "F" in appealed claim 51 "stands for the radical of a metal-free sulfonic acid group-containing azo dyestuff," whereas the corresponding portion of the dyestuff in claim 48, denominated F$_1$, is "the dyestuff residue of a metal-free sulfonic acid group-containing monoazo dyestuff."

scope of the appealed claims. Thus, it is, in appellants' view, the amino group which supplies



in the claimed bridging group



In summary, it is appellants' position that, contrary to the Examiner's assertion, anyone skilled in the art of dyestuff chemistry would appreciate that claims 48 and 51 embrace linkage of the bridging group



to the azo dye molecule through either a nuclear carbon atom of the azo dyestuff reactant or an externally linked group thereof.

Using claim 51 as an example, when "*m*" is 1 and R is hydrogen, in the case of direct bridging to a nuclear carbon atom, appellants argue that the azo dyestuff reactant could be represented by F_3—NH_2 wherein the amino group is linked to a nuclear carbon atom of the azo dyestuff reactant. In the case of an externally-linked amino group, the azo dyestuff reactant could be represented by F_4—X—NH_2 wherein X is a conventional dyestuff bridging group between amino and a nuclear carbon atom of an azo dyestuff, F_4—X— also being designated by F— in claim 51. In short, to one skilled in the art, claim 51 (when "*m*" is 1) represents, in appellants' view, the condensation product which may be obtained from



the amino group thereof being bonded to the azo dyestuff directly via a nuclear carbon atom or indirectly by a conventional linking moiety, with a compound of Formula VI above.

When "*m*" is greater than one, the amino azo dyestuff reactant contains more than one

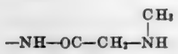


group, either directly or indirectly attached to a nuclear carbon atom of the azo dyestuff. Appellants assert that those two bridging possibilities are all that claims 48 and 51 cover and indeed represent all that these claims could cover from the standpoint of a skilled dyestuff chemist.

Moreover, appellants continue that there is clear support for the foregoing, not only from the general disclosure of appellants' application, but also from the working examples in the specification. In particular Example 273 illustrates linking of the bridging group



to an externally - linked amino group via —NH—OC—CH_2—. To those skilled in the art, appellants argue, preparation of the dyestuff of Example 273 could also be via condensation of the 2,3-dichloro substituted reactant of Formula VI above and the disulfonic acid reactant of Example 273 having a



substituent in lieu of a 1-amino substituent, followed by the described coupling reaction since the claims embrace the resultant product irrespective of its method of preparation.

The Solicitor points out in response to appellants' arguments that all but one of the 274 working examples submitted by the appellants are characterized by a bridging group which is "directly connected to a nuclear carbon atom of the azo dye moiety." He recognizes, however, that from the one exception found in Example 273, which is emphasized by appellants, it is apparent that the group

NH—OC—CH_2

intervenes between the

group and the nearest nuclear carbon atom. Thus, the Solicitor characterizes the rejection as based upon the appellants' failure to particularly point out and distinctly claim his invention within the statutory requirements of 35 U.S.C. 112, paragraph 2, first sentence.[5]

Assuming, as the Solicitor does, that claims 48 and 51 embrace at least two types of linkages, i.e., direct, and "externally-linked," it should be noted that the Patent Office has raised no issue as to support for direct linkage to a nuclear-positioned carbon. Thus, it can be said that the Examiner and Board were not satisfied that the single Example 273 was adequately representative of the "large indefinite number of compounds covered by the claims at bar, which would include such an external linkage."

In *In re Cavallito*, 48 CCPA 720, 726, 282 F.2d 363, 367, 127 USPQ 206, 209 (1960), this court stated:

*** * * The sufficiency of a disclosure depends not on the number but rather on the nature of the claimed compounds *per se* and the nature of the supporting disclosures. If a claim covers compounds which are closely related, a comparatively limited disclosure may be sufficient to support it. If, however, the claim covers compounds which are related only in some structural respects, a more extensive supporting disclosure may be necessary to support it. Moreover, the selection of the examples and other exemplary material used as the disclosure to support a claim must be adequately representative of the area covered by it. * * * [Emphasis added.]**

The question then becomes one of whether the disclosure submitted by appellants, i.e., the written description of the invention, is adequately representative of the breadth of the claims here appealed.

Thus, under these circumstances, we view the "indefiniteness" aspects of the Patent Office position to be inextricably interwoven with the breadth rejection to the extent that separate discussion is unnecessary.

We agree with the Solicitor that appellants' arguments are not persuasive that the Board erred in sustaining this aspect of the Examiner's rejection. While the appellants would confine the bridging possibilities to those in which the

group is "directly attached," or "indirectly attached" to the nuclear carbon atom of the azo dyestuff, the Board specifically found no support in the specification for exocyclic substitution, as quoted above.

[5] The specification shall contain a written description of the invention * * *. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. * * *

The Board added that Example 273 is not adequately representative of all possible non-nuclear linkages, but is better interpreted as representing an azo dyestuff linked through a nuclear carbon atom to the quinoxaline by the particular bridging member there disclosed, i.e.,



The Board also observed that the terminology of the appealed claims was of such breadth that it included linkage of an azo dyestuff to the nitrogen of the quinoxaline carboxamide through an azo linkage or other linkage which is not suggested nor would be expected to produce a stable dyestuff product.

[1] We thus believe, as did the Examiner and the Board, that the appealed claims embrace subject matter not described by a "written description" which, in contemplation of law, may be said to be adequately representative of the breadth desired. See also *In re Lund*, 54 CCPA 1361, —, 376 F.2d 982, 985, 153 USPQ 625, 628 (1967); *In re Holmen*, 52 CCPA 1626, 347 F.2d 852, 146 USPQ 290 (1965).

[2] In affirming the decision of the Board, we wish to make it clear that nothing is here intended as a determination that a *single* example may not be relied upon in evaluating an invention, or that but a single example may not be a sufficient written description to support a particular broad claim. What we decide here is that the invention claimed in the appealed claims appears to be broader than the invention disclosed in the written description forming a part of the specification. *In re Sus*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301 (1962); see *In re Corr*, 52 CCPA 1505, 347 F.2d 578, 146 USPQ 69 (1965).

In view of our disposition of this appeal on the ground noted, we need not reach the merits of the issue arising under 35 U.S.C. 103. Nor need we decide whether claim 51 is broader than the written description of the invention in defining "*m*" as an integer from 1 through 8. While that rejection also arises under 35 U.S.C. 112, second paragraph, it is not necessary to here decide that aspect of the rejection.

In view of the foregoing, the decision of the Board is affirmed to the extent indicated.

AFFIRMED.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

DEFENSIVE PUBLICATIONS

PUBLISHED MARCH 25, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

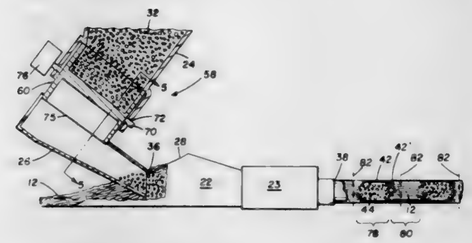
775,576

APPLICATION OF ADDITIVES AS CORES IN CIGARETTE FILTERS

Roy E. Hawkins and Tom B. Ritchie, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 489,331, Sept. 22, 1965. This application Oct. 23, 1968. Published Mar. 25, 1969

Class 156—180
2 Sheets Drawing. 17 Pages Specification



An apparatus and method for making fibrous tobacco smoke filters having finely divided additive cores, including spreading a continuous fibrous tow into a ribbon-like band which is shaped into a U-shape form capable of retaining finely divided additive material deposited through a hopper and funnel arrangement. Thereafter the tow is gathered and compressed into a rod having a longitudinal core of additive material. The additive hopper may include a valve adapted to deposit predetermined amounts of additive material at predetermined time intervals.

764,023

SYNTHESIS OF ACRYLONITRILE FROM PROPYLENE, AMMONIA AND OXYGEN

Edgar L. McDaniel and Howard S. Young, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 523,267, Jan. 27, 1966. This application Sept. 19, 1968. Published Mar. 25, 1969

Class 252—437
No Drawing. 13 Pages Specification

Acrylonitrile is prepared by reacting propylene, ammonia and oxygen in the vapor phase in the presence of a novel catalyst comprising an oxide of arsenic and an inorganic heteropoly acid containing phosphorus and vanadium and optionally tungsten, such as phospho-12-vanadic acid or phospho-12-vanadotungstic acid. The arsenic, phosphorus, vanadium and optionally tungsten all are in an oxidized form, the degree of oxidation of any or all of these components being variable within certain ranges as indicated by the following empirical formula:

$$As_aP_bV_cW_dO_e{\cdot}xH_2O$$

wherein:

a=0.1–30
b=1–4
c=2–12, and
d=0–10, and

wherein the sum of c and d does not exceed 12, and $e=\frac{1}{2}(a.m+b.n+c.p+d.q)$

and wherein:

m=average valence of As in catalyst n=average valence of P in catalyst p=average valence of V in catalyst q=average valence of W in catalyst, and X=0–10.

Preferred catalyst compositions have the following characteristics:

a=0.5–10

and

b=1–2

with c, d, e and x remaining as above.

The catalyst can be supported on suitable carriers, such as silica gel, kieselguhr, silicon carbide, etc.

Acrylonitrile is prepared by reacting propylene ammonia and oxygen at temperatures of 350–600° C., the preferred range being 425–575° C. While reactant ratios near stoichiometric values are preferred, the ratios can vary from propylene:oxygen ratios of 1:0.2–5 and propylene:ammonia ratios of 1:0.2–3.

613,735

AZIRIDINYL PHOSPHINE OXIDE OR SULFIDE-SULFUR DIOXIDE TREATMENT

Duane L. Kenaga, 4622 Chatham Court, Midland, Mich. 48640

Filed Feb. 3, 1967. Published Mar. 25, 1969
Class 117—62.1
No Drawing. 17 Pages Specification

A cellulosic substrate (e.g., wood, paper, or a textile) is impregnated with an aziridinyl phosphine oxide or sulfide [e.g., tris(1-aziridinyl) phosphine oxide oxide] by:

(1) contacting the substrate with a solution of the aziridinyl phosphine oxide or sulfide in an inert solvent; and
(2) contacting the impregnated cellulosic substrate with sulfur dioxide for a time sufficient to allow the sulfur dioxide to diffuse to the site of the aziridinyl phosphine oxide or sulfide in the impregnated cellulosic substrate and to combine chemically therewith.

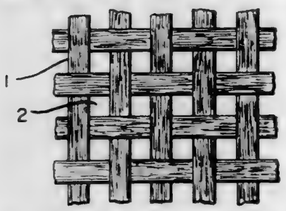
When cellulosic substrates are treated according to this process, curing of the aziridinyl phosphine oxide may be carried out at ambient temperatures. The treatment has increased stability against leaching by water if the substrate is treated to remove the solvent after impregnation by the aziridinyl phosphine oxide or sulfide and before the sulfur dioxide treatment.

618,431

CONVEYOR BELT FABRIC MADE FROM POLY(M-PHENYLENEISOPHTHALAMIDE)

Anton Fridrich Fridrichsen, Nashville, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington Del., a corporation of Delaware

Filed Feb. 24, 1967. Published Mar. 25, 1969
Class 117—138.8
1 Sheet Drawing. 10 Pages Specification



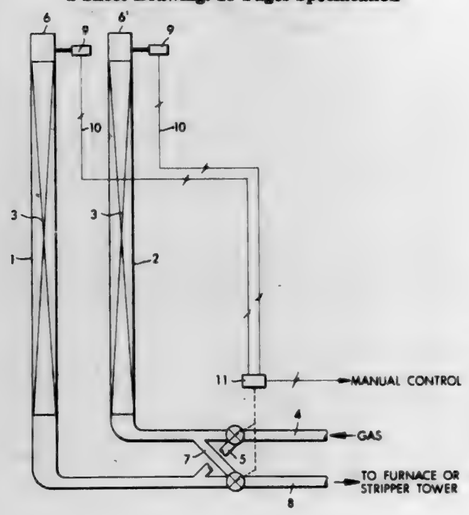
Porous fabric conveyor belts suitable for prolonged use at elevated temperatures are woven from synthetic fibers of aromatic polyamides, and ordered copolymers thereof, polyimides, polyoxadiazoles, polybenzimidazoles and other polymers known to retain desirable properties on prolonged exposure to elevated temperatures. Open area of these fabrics is desirably between 10 and 50%. The fabric is heat set then treated by conventional coating methods with a dispersion of a suitable stabilizing resin such as those comprising aromatic polyamides, polyimides or their polyamideimide precursors, polyoxadiazoles or their precursors, polybenzimidazoles and other similar resins stable to prolonged exposure at elevated temperatures, i.e. over 200° C. The coated fabric is then dried under moderate lengthwise tension at temperatures ranging up to 280° C. and converted to an endless belt by conventional seaming techniques. To prevent sticking of materials to be handled, the thus formed belt is treated in a conventional manner with a fluorocarbon release agent. A preferred fabric for use in such belts is made from poly(m-phenyleneisophthalamide) yarn that has been treated with poly(m-phenyleneisophthalamide) resin.

629,025

METHOD OF REDUCING NOISE AND AIR POLLUTION

Franklin W. Church, 185 Russell Road, Fanwood, N.J. 07023

Filed Apr. 6, 1967. Published Mar. 25, 1969
Class 55—75
1 Sheet Drawing. 13 Pages Specification



Air and noise pollution caused by the venting of light hydrocarbons to the atmosphere is prevented by adsorbing the hydrocarbons prior to their release. Light hydrocarbons, either aliphatic or aromatic, are passed through an adsorbent bed containing one or more selective solid adsorbents, and only trace amounts of hydrocarbon are vented into the atmosphere. This reduces air pollution caused by light hydrocarbons, as well as noise pollution caused by sudden venting. Two stacks, each having an adsorbent bed, are used so that one bed can be regenerated while the other is on stream. The system may be applied to refinery processing units and to off-site equipment such as storage tanks and tank trucks.

772,435

AQUEOUS WAX DISPERSIONS

Marion O. Brunson, Bracksville, Ohio (% Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662)

Continuation of application Ser. No. 654,359, July 19, 1967. This application Oct. 31, 1968. Published Mar. 25, 1969
Class 260—27
No Drawing. 15 Pages Specification

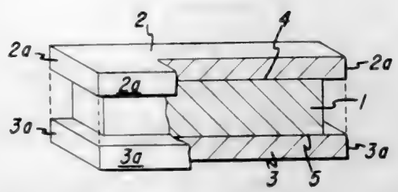
An aqueous wax composition containing an emulsifiable, low viscosity, modified polyethylene composition. The polyethylene composition has a saponification number of at least 6, a melt viscosity of 250–15,000 centipoise at 150° C. and an inherent viscosity of about .1 to about .5. The modified polyethylene composition is prepared by reacting a low viscosity crystallizable polyethylene having an inherent viscosity of about .1 to about .5 with an unsaturated polycarboxylic acid, an unsaturated polycarboxylic acid anhydride or an unsaturated polycarboxylic acid ester at a temperature of 200 to 400° C. Additional materials which can be included in the wax composition are bleached dewaxed shellac, maleic modified rosin and an acrylic interpolymer. The aqueous wax dispersion contains from about 10 to 40% by weight solids and finds use as a floor polishing composition.

689,485

PREPARATION OF METAL COMPOSITES HAVING AN ENCAPSULATED INNER LAYER AND COMPOSITE METALS PRODUCED THEREBY

Sadun S. Tör, Summer Hill Drive, Phoenix, Md. 21131

Filed Dec. 11, 1967. Published Mar. 25, 1969
Class 29—194
1 Sheet Drawing. 11 Pages Specification



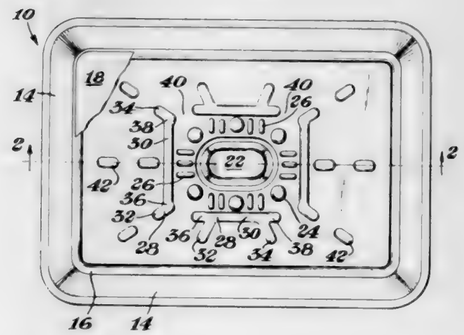
Three-layered products, preferably planar or tubular, which are useful as electrodes in corrosive electrolytes, comprise like outer layers of titanium, zirconium, tantalum or niobium, and an inner layer of copper, aluminum or iron that is bonded to each outer layer over substantially their entire interface by a metallurgical bond consisting essentially of direct outer layer-to-inner layer (explosion) bond and is encapsulated (to the extent required to protect it from corrosion) between overlapping portions of the outer layers by a continuous metallurgical seal that is of the same composition as the outer layers and bridges their overlapping portions. Products such as titanium/copper/titanium having a completely encapsulated copper layer are particularly useful as electrodes in electrolytic copper refining and chlorine reduction cells. The above products are prepared from three-layered explosion-bonded composites by selectively removing metal from the exposed surface(s) of the inner layer, e.g., by machining or chemical etching, thereby recessing the inner layer between overalpping portions of the outer layers, and then fusion bonding, e.g., by "TIG" welding, the overlapping portions directly to each other or to a like metal insert that has been positioned in the recess between the overlapping portions.

695,195

RESERVOIR TRAY

Robert F. Anderson, Midland, Mich. (3613 13th St., Menominee, Mich. 49858)

Filed Jan. 2, 1968. Published Mar. 25, 1969
Class 229—2.5
1 Sheet Drawing. 16 Pages Specification



The present invention pertains to a double bottom tray including a reservoir located between the two walls of the double bottom. The reservoir is constructed so as to collect and trap juices naturally exuding from products like fish, meats, and poultry by utilizing the principles of capillary attraction and fluid surface tension. Additionally, a gravity drainage system is taught as an improved means for directing the juices to points of entry into the reservoir. Yet further beneficial aspects of the invention include baffles located within the reservoir to direct and control the movement of captured juices as, for example, when the tray is tipped or jarred, and a strategic partitioning of portions of the reservoir into capillary tube-like areas for increasing the reservoir fluid retention characteristics.

695,830

STABILIZED ESTER LUBRICANTS

Theodore J. Peters, Readington Township, Hunterdon County, N.J. (County Line Road, R.F.D. 3, Somerville, N.J. 08876), and John F. Collins, deceased, late of Ventnor, N.J., by Muriel A. Collins, executrix, 110 S. Cambridge Ave., Ventnor, N.J. 08406

Filed Jan. 3, 1968. Published Mar. 25, 1969
Class 252—56
No Drawing. 15 Pages Specification

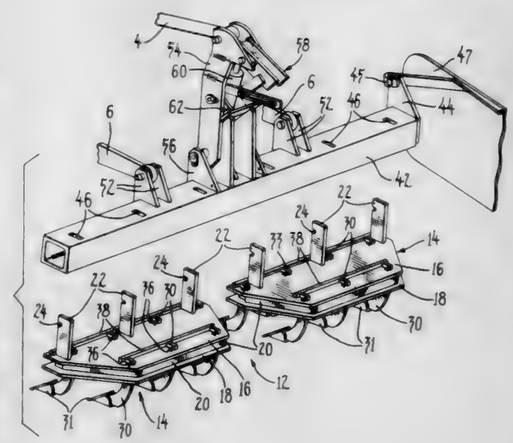
Synthetic-ester-type lubricants, particularly those intended for aircraft gas turbine lubrication, are improved with respect to stability in storage by incorporating therein from about 0.1 to about 10 weight percent of an epoxide of an unsaturated fatty oil or unsaturated fatty ester having from one to ten epoxy groups per molecule. The ester that is epoxidized can be a C_1 to C_{20} monohydric, dihydric, or trihydric alcohol ester of an unsaturated fatty acid of from 12 to 20 carbon atoms or a C_{12} to C_{20} unsaturated aliphatic alcohol ester of a C_1 to C_{20} fatty acid. Examples of epoxidized oils or esters include: epoxidized soybean oil having an average of about 5.3 epoxy groups per molecule; epoxidized decyl oleate having one epoxy group per molecule; and diethylene glycol diepoxy stearate. Ester type lubricants improved by these additives include: octyl decyl adipate; a mixture of the di-2-ethyl hexyl ester of sebacic acid and a complex ester obtained by reaction of the 2-ethyl hexyl half ester of sebacic acid with polyethylene glycol; and a mixture of octyl decyl adipate and di(2-ethyl hexyl) sebacate.

702,899

SCARIFYING TOOTH ATTACHMENT

Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Des Moines, Iowa, a corporation of Maryland

Filed Feb. 5, 1968. Published Mar. 25, 1969
Class 172—197
2 Sheets Drawing. 6 Pages Specification



A scarifier-scraper implement is mounted on a conventional tractor three-point hitch. The implement includes a rectangular hollow transverse beam pivoted to the hitch lower links and pivoted to the hitch upper link by a frame member. Plates on the ends of the beam are pivoted to the sides of a box scraper. The beam includes laterally spaced pairs of vertically aligned slots in its upper and lower walls. A scarifier assembly includes a pair of flat vertically spaced plates that are interconnected by vertical wall members welded to the plates. Laterally spaced vertical legs interconnect the plates and extend upwardly for insertion through the bar slots and tongue-and-groove retention. Laterally spaced pairs of vertically aligned slots are provided in front and rear staggered rows in the plates. Scarifier teeth have shanks insertable into the plate slots for retention by cotter pins inserted into upper holes in the shanks. Lateral reinforcement bars on the upper plate and the vertical wall members abut the shanks to reinforce the teeth. The shank rear edges abut the vertical walls and are notched at their upper ends to engage the upper plate bottom. The two spaced and staggered rows of teeth permit fine scarifying.

768,931

OXYMETHYLENE POLYMERS

Brian Edmund Jennings, Welwyn, and John Carsell McGowan, Harpenden, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

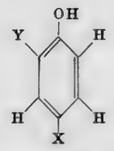
Continuation of application Ser. No. 715,445, Mar. 22, 1968. This application Oct. 18, 1968. Published Mar. 25, 1969

Claims priority, application Great Britain, Aug. 14, 1963, 32,132

Class 260—53

No Drawing. 19 Pages Specification

An oxymethylene copolymer containing 80–99.5% molar of oxymethylene units and 0.1 to 20% of units —RO— derived from phenols. Preferred phenols have the formula



wherein X is halogen or nitro and Y is hydrogen, halogen or nitro. The polymers are made by polymerizing at least one mole of a cyclic oligomer of formaldehyde, e.g. trioxane with the corresponding phenol with a catalyst suitable for polymerizing trioxane.

768,921

SENSITIZERS FOR FINE GRAIN PHOTOGRAPHIC SILVER HALIDE EMULSIONS, e.g., A LIPPMANN TYPE EMULSION

Norman W. Kalenda, % Kodak Park Works, Rochester, N.Y. 14650

Filed Oct. 18, 1968. Published Mar. 25, 1969

Class 96—107

No Drawing. 9 Pages Specification

Certain sulfonic acid and carboxylated derivatives of bis-(triazinylamino)stilbene, p-terphenyl, dibenzothiophene dioxide and chrysene such as bis(5-triazin-2-ylamino)-stilbene-2,2′-disulfonic acid (sodium salt); 4,4″-bis-(2,4-dimethoxy-5-sulfobenzamido)-p-terphenyl, triethanolamine salt; 4,4′-bis[2-phenoxy-4-(2-hydroxyethylamino)-1,3,5-triazin-6-ylamino]-stilbene-2,2′-disulfonic acid, sodium salt; chrysenesodium sulfonate; 4,4″-bis(4-sulfophenoxyacetamido)-p-terphenyl, triethanolamine salt; 3,7-bis(2-naphthoylamido)-2,8-disulfodibenzothiophene-5,5-dioxide, sodium salt; 3,7-bis(1,3-dicarboxypropylurylene)dibenzothiophene dioxide, sodium salt; 4,4′-bis[2,4-di(2-hydroxyethylamino)-1,3,5-triazin-6-ylamino]-stilbene-2,2′-disulfonic acid, sodium salt are effective sensitizers for increasing sensitivity of fine grain photographic silver halide emulsions, e.g., a Lippmann type emulsion. These compounds, for example, are useful in chemically sensitizing unfinished, fine grain, photographic silver halide emulsions.

REISSUES

MARCH 25, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,546

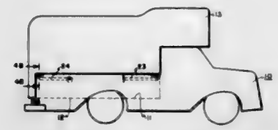
LOADING AND UNLOADING WINCH-SYSTEM FOR TRACTION VEHICLES

Reed Rasmussen, Layton, Utah, assignor to Quadramics, Inc., Clearfield, Utah, a corporation of Utah

Original No. 3,229,839, dated Jan. 18, 1966, Ser. No. 394,447, Sept. 4, 1964. Application for reissue Dec. 29, 1967, Ser. No. 698,979

Int. Cl. B60p *1/64, 1/12, 1/14*

U.S. Cl. 214—517 **10 Claims**



A device for loading and unloading transportable objects onto and off of the bed of a traction vehicle which includes a sprocket journaled to the bed of the vehicle, a rack secured to the bottom of the transportable object to engage the sprocket, and means for driving the sprocket. Cables can be attached to the transportable object and to winch means secured to the bed of the vehicle for drawing the transportable object onto the vehicle bed until the rack attached to the bottom of the object contacts the sprocket. The rack can be a regularly perforated strap with individual perforations which receive the teeth of the sprocket.

26,547

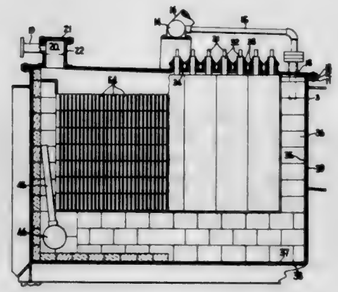
ELECTROLYTIC BIPOLAR ALKALI CHLORATE CELL

Sydney Forbes, Mount Lebanon, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Original No. 3,298,946, dated Jan. 17, 1967, Ser. No. 408,615, Nov. 3, 1964, which is a division of Ser. No. 183,974, Mar. 30, 1962, now Patent No. 3,203,882, dated Aug. 31, 1965. Application for reissue Aug. 30, 1967, Ser. No. 669,344

Int. Cl. B01k *3/00*

U.S. Cl. 204—268 **3 Claims**



1. An electrolytic alkali metal chlorate cell comprising an enclosed box, a plurality of bipolar electrodes in said box constructed and arranged to electrolyze brine in said box, *means in said cell dividing it into a plurality of individual units, each unit having a plurality of electrodes located therein,* means to pass current through said box and across said electrodes, an inclined cover member on said box *and above said units,* a gas collection zone located beneath said cover at the upper end of the inclined surface, said gas collection zone being restricted in size [and provided at the cover surface with a rupturable disc,] and means to pass electrolyte into said cell and remove the liquid products of electrolysis therefrom *to thereby maintain the cell box filled with electrolyte.*

26,548

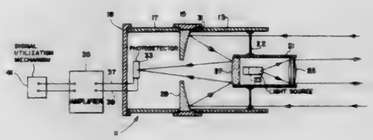
OPTICAL COMMUNICATIONS SYSTEM

Numa E. Thomas, deceased, late of Newport News, Va., by the National Aeronautics and Space Administration, assignee

Original No. 3,215,842, dated Nov. 2, 1965, Ser. No. 274,065, Apr. 18, 1963. Application for reissue Apr. 26, 1968, Ser. No. 741,824

Int. Cl. H04b *9/00*

U.S. Cl. 250—199 **11 Claims**



1. Apparatus for transmitting a signal between two sites comprising: a first unit at one site housing a lens and a source of light in position to be focused into a beam by said lens, a second unit at a remote site, said second unit including a multisurface reflector for returning the beam parallel to itself, at least one reflective surface of said reflector comprising an acoustically responsive diaphragm for modulating said beam, *said acoustically responsive diaphragm comprising a plastics having a thin reflective metallic coating thereon,* said first unit also containing optical means for collecting and focusing the returned beam, a photodetector for receiving and converting changes in beam intensity of the returned beam as a result of acoustical modulation by said diaphragm into electrical impulses, means for amplifying said electrical impulses and utilization means for converting the amplified impulses into the acoustics imparted to said diaphragm at said remote site.

26,549

ARC WELDING WITH A.C. POWER AND CORED ELECTRODE

Howard B. Cary, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio

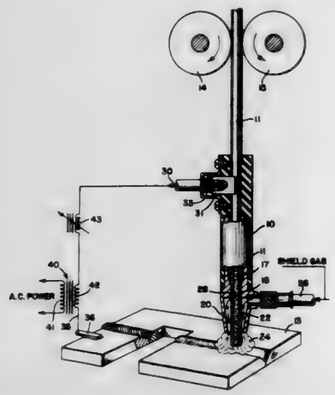
Original No. 3,309,490, dated Mar. 14, 1967, Ser. No. 540,788, Mar. 14, 1966, which is a continuation of Ser. No. 455,188, May 12, 1965, now abandoned, which in turn is a continuation-in-part of Ser. No. 246,916, Dec. 26, 1962, now abandoned. Application for reissue Aug. 23, 1967, Ser. No. 663,458

Int. Cl. B23k *7/16, 35/38*

U.S. Cl. 219—74 **17 Claims**

1. An arc welding electrode for welding steel by an arc created by an alternating current power supply, said

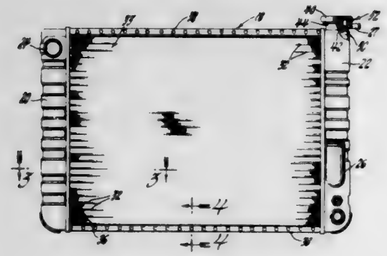
electrode consisting of a metallic tube filled with a composition comprising by weight 20 to 40 parts of potassium titanate, 15 to 45 parts of ferromanganese, 12 to 25 parts of ferrosilicon, and a trace to 20 parts of iron oxide.



26,550
CROSSFLOW RADIATORS

Paul K. Beatenbough, Medina, and Robert W. Bishop, Lockport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original No. 3,275,070, dated Sept. 27, 1966, Ser. No. 271,743, Apr. 9, 1963. Application for reissue July 28, 1967, Ser. No. 661,148
Int. Cl. F28b *9/10, 3/00;* **F28d** *1/02*
U.S. Cl. 165—111 **4 Claims**



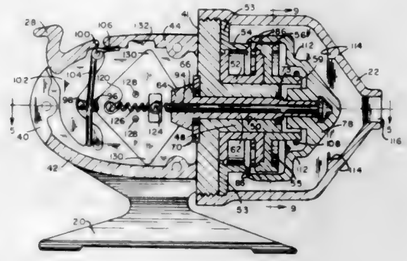
A crossflow radiator in an automotive engine cooling system so constructed that sole expansion space as defined within the system for liquid coolant is in one tank of the radiator.

26,551
LINE CONTROL MEANS FOR A SPINNING REEL

Alvin W. Fowler, Tarrant, Tex., assignor to Denison-Johnson, Inc., Mankato, Minn., a corporation of Minnesota

Original No. 3,223,346, dated Dec. 14, 1965, Ser. No. 254,182, Jan. 28, 1963. Application for reissue Dec. 6, 1967, Ser. No. 698,066
Int. Cl. A01k *89/00, 89/04*
U.S. Cl. 242—84.2 **4 Claims**

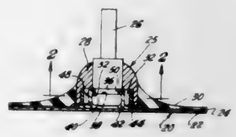
A spin casting fishing reel in which the velocity of the line being cast is controlled by a pair of annular flange elements carried one by the line pickup rotor and the other by the front cover of the reel, which elements telescopically and progressively overlap as the rotor is manually moved axially forward, to thereby bend and frictionally retard line movement as desired.



26,552
ABRASIVE DEVICE

Aleck Block, Los Angeles, and Joseph W. Purcell, El Monte, Calif., assignors to Merit Products, Inc., Los Angeles, Calif., a corporation of California

Original No. 3,270,468, dated Sept. 6, 1966, Ser. No. 291,830, July 1, 1963. Application for reissue June 26, 1967, Ser. No. 661,137
Int. Cl. B24d *17/00;* **B24b** *45/00*
U.S. Cl. 51—358 **34 Claims**



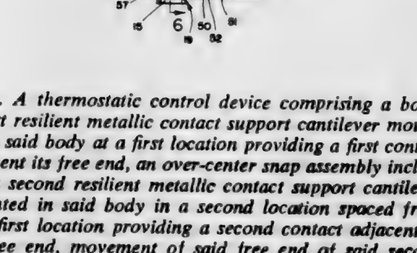
This invention relates to a power-driven abrasive device having a driving member and a driven member which may be an abrasive disk. The driving member has a non-circular socket which mates with a non-circular socket on the driven member. Cooperating shoulders are provided in the non-circular sockets of the driving member and the driven member for mutual releasable engagement in response to rotation of the driven member from a first rotary position to a second rotary position relative to the driving member. Such an arrangement makes it a simple matter to orient the replaceable driven member at the first rotary position relative to the driving member and then insert the driving member into the driven member and rotate the driven member to its binding position.

26,553
PACKAGING MACHINE

Robert G. Nutting, Glenview, Richard C. Wagner, Clarendon Hills, and Kenneth K. Christensen, Winfield, Ill., assignors, by mesne assignments, to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware

Original No. 3,230,687, dated Jan. 25, 1966, Ser. No. 102,048, Apr. 10, 1961. Application for reissue July 11, 1966, Ser. No. 570,112
Int. Cl. B65b *9/08, 3/30, 47/06*
U.S. Cl. 53—180 **5 Claims**

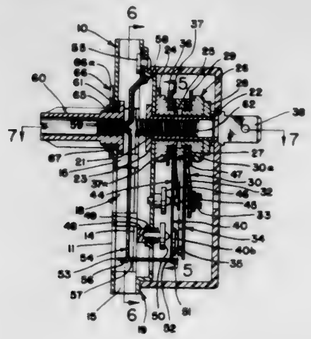
5. A package sealing machine comprising: means to convey a file of packages to be sealed along a predetermined path; means to convey sealing elements for said file of packages parallel with and synchronized with said file of packages, and including an elongated support along which said elements are spaced according to the positions of packages in said file; heating means for said sealing elements; means to force said sealing elements simultaneously into sealing engagement to seal a first group of said packages by moving said bar toward said file while maintaining the bar parallel to the file and moving at substantially the same speed longitudinally of the file; and means to move said sealing elements out of engagement with said first group of packages and return them counter to the movement of said file of packages out of contact with said file of packages whereby successive groups of packages are sealed in successive cycles.



26,554
NARROW TEMPERATURE DIFFERENTIAL THERMOSTATIC CONTROL

Howard W. Bletz, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio

Original No. 3,239,633, dated Mar. 8, 1966, Ser. No. 227,743, Oct. 2, 1962. Application for reissue July 28, 1967, Ser. No. 672,943
Int. Cl. H01h *37/12, 37/54, 37/74*
U.S. Cl. 337—347 **9 Claims**

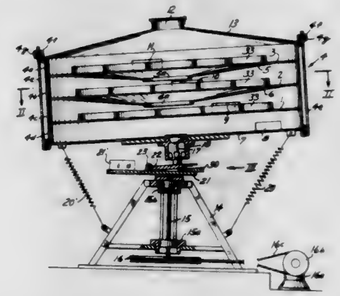


11. A thermostatic control device comprising a body, a first resilient metallic contact support cantilever mounted in said body at a first location providing a first contact adjacent its free end, an over-center snap assembly including a second resilient metallic contact support cantilever mounted in said body in a second location spaced from said first location providing a second contact adjacent to its free end, movement of said free end of said second contact support causing said second contact to move between a first position in engagement with said first contact and a second position spaced from said first contact, first and second electrical terminal means connected to said first and second contact supports, respectively, said terminal means being electrically connected when said contacts engage with said supports providing part of the electrical connection therebetween, said snap assembly also including snap spring means connected between said body and said free end of said second contact support operable to move said second contact between said first and second positions with snap action, cantilever mounted thermal responsive bimetallic spring means spaced from said contact supports operable to provide a thermally induced force having a magnitude which is a function of its temperature, the free end of said bimetallic spring means overlying said free end of said snap assembly, an elongated member directly connected between said free end of said thermal responsive spring means and the free end of said second contact support, said elongated member being provided with opposed surfaces with one engaging said free end of said snap assembly and the other engaging said free end of said bimetallic spring means, said elongated member operating to apply said thermally induced force to the free end of said second contact support, the magnitude of said thermally induced force being substantially unaffected by temperature changes of said contact supports caused by electrical flow therethrough, said snap spring means and said thermal responsive spring means cooperating to produce a first resulting force urging said second contact toward said first contact when said second contact first moves to said first position and cooperating to produce a second resulting force urging said second contact away from said first contact when said second contact first moves to said second position, first adjustment means adjustably determining the spacing between said contacts when said second contact is in said second position and thereby adjusting the differential in temperature of said thermal responsive means required between opening and closing of said contacts, and second adjusting means adjustably determining the temperature of said thermal responsive means which produces movement of said second contact from said second position to said first position without affecting said differential temperature.

26,555
SEPARATOR FOR GRAIN AND THE LIKE

Oskar Allgaier, Wangen, near Goppingen, and Oswald Micko, Geislingen, Steige, Germany, assignors to Allgaier Werke G.m.b.H., Uhinger, Wurttemberg, Germany

Original No. 3,217,561, dated Nov. 16, 1965, Ser. No. 235,613, Nov. 6, 1962. Application for reissue Nov. 3, 1967, Ser. No. 682,700
Claims priority, application Germany, Nov. 7, 1961, A 38,766
Int. Cl. G05g *3/00;* **F16h** *33/10;* **B07b** *1/38*
U.S. Cl. 74—600 **5 Claims**



A separator for grain and similar products, comprising a driver shaft, and an eccentric driven shaft, thereabove rotatably connected to a product-receiving casing for

wobbling. A supporting member is fixed to the driver shaft and a supported member to the driven shaft. A hinge means connects the members pivotally about a horizontal axis to adjust the inclination of the driven shaft. A means for moving the supported member relative the supporting member changes the eccentricity of the driven shaft independently of the inclination thereof, and securing means holds the supported member at any position of inclination and eccentricity.

26,556

PLASTIC REEL WITH ALUMINUM INSERT HUB

Arnold P. Hultgren, River Forest, Ill., assignor, by mesne assignments, to Amerline Corporation, a corporation of Illinois

Original No. 3,236,473, dated Feb. 22, 1966, Ser. No. 329,666, Dec. 11, 1963. Application for reissue June 27, 1966, Ser. No. 562,980

Int. Cl. B65h *75/18*

U.S. Cl. 242—71.8 **7 Claims**



A tape storage and winding reel for magnetic tape wherein the reel uses no mechanical fasteners. The reel includes a metallic hub which has first and second sides. A first flange of molded plastic is positioned on one side of the hub, and the flange includes an integral projecting connecting portion having an inner surface. A second flange of molded plastic is positioned on the second side of the hub and a tape winding channel is defined between the flanges. The second flange includes integral projecting connecting means having an outer surface. The outer and inner surfaces are in telescoping side by side relationship, and a plastic adhesive means is applied to the inner and outer surface to securely bond the two flanges together on the opposite sides of the hub.

26,557

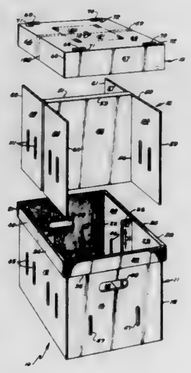
CONTAINER

Lewis C. Houston, Port St. Joe, Fla., assignor to St. Joe Paper Company, Jacksonville, Fla., a corporation of Florida

Original No. 3,258,188, dated June 28, 1966, Ser. No. 394,193, Sept. 3, 1964. Application for reissue Mar. 26, 1968, Ser. No. 719,797

Int. Cl. B65d *3/24, 5/48, 45/00*

U.S. Cl. 229—15 **16 Claims**



3. A [compartmented] container comprising a body portion and a *liner* [divider] portion, said body portion having a rectangular bottom, upstanding end walls and upstanding outer side walls, a first pair of upstanding inner side wall panels having inner edges connected along wall angle fold lines respectively to the side edges of one said end wall, a second pair of upstanding inner side wall panels having inner edges connected along wall angle fold lines respectively to the side edges of the other said end wall, an elongated upstanding flange having an inner side edge connected by a flange angle fold line along the outer side edge of each said side wall panel, each said flange having a free outer side edge opposite its said inner side edge which terminates inwardly of the container, said flanges connected to said first pair of side wall panels being closely adjacent respective said flanges connected to said second pair of side wall panels, means attached to said inner side wall panels for maintaining said outer side walls in their upstanding positions, [said divider portion including a pair of upstanding partition walls spaced in face to face relation generally parallel to said end walls and defining therebetween a space for the reception thereinto of said adjacent flanges,] said *liner* [divider] portion *including* [having] side wall portions *having outer nad inner edges and* [connected along their inner edges by fold lines to respective side edges of said partition walls, each said side wall portion] being *respectively* positioned contiguous with a respective said inner side wall panel with *said* [its] outer edge of said side wall portion nested within a respective wall angle and its said inner edge nested within a respective flange angle thereby to lock said adjacent flanges between said side wall portions of said *liner* [divider].

26,558

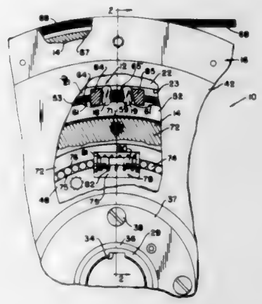
SELF-NEUTRALIZING MANUAL OVERRIDE CLUTCH

Giovan B. Candela, East Detroit, Mich., assignor to The Formsprag Company, Warren, Mich., a corporation of Michigan

Original No. 3,335,832, dated Aug. 15, 1967, Ser. No. 614,340, Feb. 6, 1967. Application for reissue Feb. 23, 1968, Ser. No. 709,506

Int. Cl. F16d *47/00, 67/00, 15/00*

U.S. Cl. 192—48.3 **17 Claims**



A device including a first rotatable servo input or driver member, a second rotatable manual override input or driver member and a rotatable output or driven member, disposed coaxially, and provision for a selective drive of the output member from one of the input members to the exclusion of the other input member. Such provisions include a force transmitting element, in the form of a sprag or equivalent, which is controlled by an operating element on the manual override input member in such a way as to interrupt a normal line of force transmission from the servo input member to the output member, and establish a line of force transmission from the manual input member to the output member when the servo transmission line is interrupted. Actually, there are a plurality of oppositely oriented sets of such sprags, affording selective servo and manual override drive connections to the output member in either direction of rotation. An automatically acting, self-neutralizing feature restores the manual override input member to a neutral, non-driving position when manual override effort is terminated and servo drive is to be resumed.

26,559

ADHESIVE DISPENSING APPARATUS FOR SHOE MACHINES

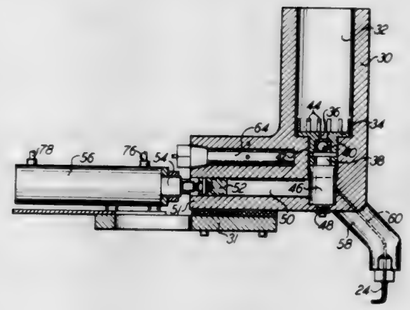
Alan G. Baker, Plymouth, Mass., assignor to Jacob S. Kamborian, West Newton, Mass.

Original No. 3,146,126, dated Aug. 25, 1964, Ser. No. 112,417, May 24, 1961. Application for reissue Aug. 1, 1966, Ser. No. 579,442

Int. Cl. B05c *11/00, 3/02*

U.S. Cl. 118—2 **8 Claims**

There is disclosed herein an apparatus for extruding a variable amount of adhesive from a chamber onto a workpiece in response to the movement of a plunger toward the chamber. A control is provided to terminate the movement of the plunger toward the chamber and impart immediate movement of the plunger away from the chamber to thereby stop the adhesive extrusion and enable adhesive to be drawn from a supply source into the chamber.



PLANT PATENTS

GRANTED MARCH 25, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,872

AZALEA PLANT

Raymond Yoshimura, 827 S. Gladys, San Gabriel, Calif. 91776

Filed Mar. 9, 1967, Ser. No. 622,004

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—57 **1 Claim**

1. The new and distinct variety of azalea plant substantially as herein shown and described, characterized particularly as to novelty by the slightly double, campanulate, predominantly Cardinal Red blooms that have small areas shading to Indian Lake, borne in great profusion during the winter months with many blooms on a stem, by its flowering habit that extends substantially throughout the year, by the long life of the blooms particularly during the winter months, and by its vigorous, upright growth habit.

2,873

CAMELLIA PLANT

James Howard Asper, Escondido, Calif., assignor to Monrovia Nursery Company, Azusa, Calif., a corporation of California

Filed Sept. 1, 1967, Ser. No. 665,188

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—61 **1 Claim**

A new camellia hybrid producing large flowers of a warm medium-pink color and having large, curled and loosely arranged petals; and characterized further by its vigorous growth habit and the early, profuse and continuous production of blooms in season.

2,874

CAMELLIA PLANT

James Howard Asper, Escondido, Calif., assignor to Monrovia Nursery Company, Azusa, Calif., a corporation of California

Filed Sept. 1, 1967, Ser. No. 665,189

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—61 **1 Claim**

A new camellia hybrid having a vigorous growth and early blooming habit and producing large spinel pink flowers continuously and profusely from early fall through early winter.

2,875

CAMELLIA PLANT

James Howard Asper, Escondido, Calif., assignor to Monrovia Nursery Company, Azusa, Calif., a corporation of California

Filed Sept. 1, 1967, Ser. No. 665,190

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—61 **1 Claim**

A new camellia hybrid having a relatively large medium pink flower with a loose and open center arrangement of large petals, characterized by its early and profusely blooming habit and vigorous plant growth.

PATENTS

GRANTED MARCH 25, 1969

GENERAL AND MECHANICAL

3,434,160

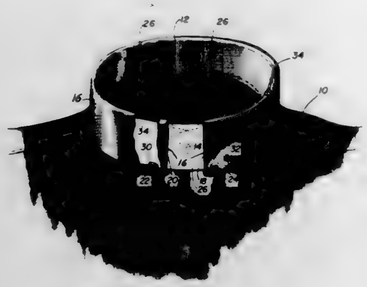
CLERICAL GARMENT WITH MILITARY COLLAR

John A. Toomey and Lawrence T. Toomey, both % R. J. Toomey Company, 75 Webster St., Worcester, Mass. 01603

Filed June 13, 1967, Ser. No. 645,753

Int. Cl. A41b *3/00, 1/12*

U.S. Cl. 2—129 13 Claims



A clerical shirt having a neckband and an attached folded-over soft collar thereon, said collar being secured to the garment only at the lower edge of the neckband at the corners of the lapel portions of the collar, thus providing entrances between the neckband and the lapels of the folded-over collar for the reception and holding of a separate relatively stiff collar between the neckband and the folded-over collar, the separable collar and the means for securing the soft collar to the neckband or garment including interengaging means for holding the separable collar in position and comprising a shoulder or notch in an edge of the separable stiff collar for reception of the securing means, the latter comprising tacking by stitching.

3,434,161

TEXTILE FABRIC TREATMENT

William K. Walsh, Raleigh, N.C., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York

No Drawing. Filed Oct. 5, 1965, Ser. No. 493,239

Int. Cl. D06c *27/00*

U.S. Cl. 2—243 5 Claims

Permanent-crease, wash-and-wear garments are made by impregnating a cellulose fiber-containing fabric with a solution of an unsymmetrical cross-linking and crease-proofing agent having a vinyl group and a reactive group capable of reaction with cellulose to form a cellulose ether or ester in the presence of a chemical catalyst without reacting the vinyl group, reacting the aforesaid reactive group with the cellulose of the fabric, washing the fabric to remove unreacted chemicals, cutting and shaping the fabric to form garments, and treating the shaped garments with high energy ionizing radiation to polymerize the vinyl group of the cross-linking agent.

3,434,162

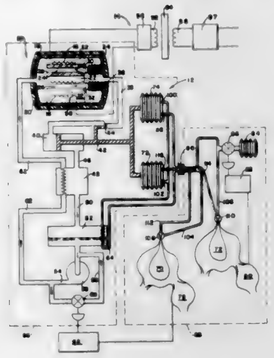
TOTALLY IMPLANTED ARTIFICIAL HEART POWER SYSTEM UTILIZING A RECHARGEABLE THERMAL ENERGY SOURCE

Robert W. Wolfe, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare

Filed Dec. 13, 1966, Ser. No. 601,449

Int. Cl. A61f *1/22*; F03g *7/06*; F01n *3/02*

U.S. Cl. 3—1 5 Claims



1. A power unit for supplying pulsatile fluid pressure to drive an artificial heart within a mammal comprising the combination of:

a Rankine Cycle Engine including a reciprocating piston—for supplying said pulsatile fluid pressure—driven in a cylinder by steam pressure, and a steam condenser connected downstream from said cylinder, said condenser having heat transfer means connected thereto for giving off heat of condensation to the blood of the mammal in which the power unit is adapted to be placed;

a thermal energy storage unit connected to said cylinder for supplying heat to said engine to generate steam for driving said piston, said thermal energy storage unit comprising molten lithium hydride which supplies said heat from its heat of fusion;

means for periodically melting said lithium hydride, comprising an electrical heating coil within said energy storage unit, and means to supply electrical energy to said heating coil from outside the body of the mammal; and

means to pump condensate from said condenser to said thermal energy storage unit.

3,434,163

PROSTHETIC HOLDER FOR USE WITH A MUTILATED OR DEFORMED HAND

Pasquale Saverino, 158—43 89th St., Howard Beach, N.Y. 11414

Filed Dec. 5, 1966, Ser. No. 599,135

Int. Cl. A61f *1/06*

U.S. Cl. 3—12.8 10 Claims

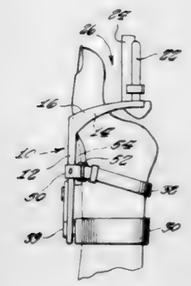
1. A prosthetic holder for use with a mutilated or deformed hand having only a thumb, comprising:

(a) a rigid arm securing portion,

(b) a mounting portion integral with said arm securing portion at its forward end and extending laterally therefrom,

(c) a standard at the free terminal end of said mounting portion projecting forwardly thereof and integral therewith,

(d) there being an opening in said mounting portion through which the thumb extends to lie in opposed spaced relation to said standard,



(e) a support wristband connected to the rear end of said arm securing portion,

(f) a securing wristband connected to an intermediate portion of said arm securing portion, and

(g) detachable abutment means connected to said standard, whereby an implement placed between the thumb and said abutment means is gripped therebetween by pressure exerted by the thumb to permit manipulation of the implement in the work operation for which it is intended.

3,434,164

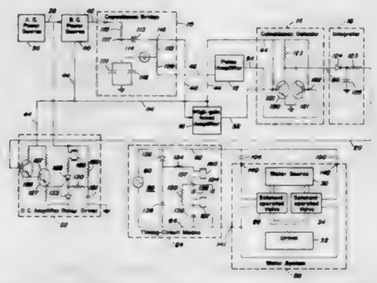
PROXIMITY-FLUSHED URINAL

Norman A. Forbes, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware

Filed Jan. 12, 1967, Ser. No. 608,775

Int. Cl. E03d *5/10, 5/12*

U.S. Cl. 4—100 9 Claims



A flushing control system having a proximity sensor for sensing the presence of a user at the urinal including a water valve responsive to the proximity sensor for starting the water flow at a slow rate through the urinal when a user approaches. Moreover, the system includes a second water valve responsive to the proximity sensor for starting a fast water flow through the urinal for a predetermined time after the user departs therefrom.

3,434,165

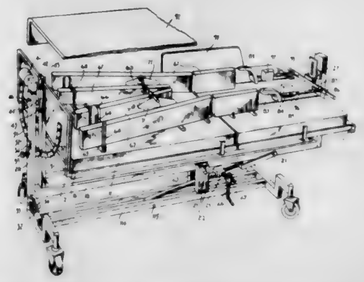
HOSPITAL BED

Francis Xavier Keane, Dublin, Ireland, assignor to Vickers Limited, Millbank, London, England, a British company

Filed July 3, 1967, Ser. No. 650,984

Int. Cl. A61g *7/10*; A61f *5/00*

U.S. Cl. 5—61 17 Claims



A hospital bed which has a patient supporting stretcher portion mounted for controlled oscillatory movement and including detachable lateral, head, foot, shoulder and leg supports holding the patient immobilized on the stretcher. The bed may also include cover members and the patient supporting surface may consist of hinged hatches which may be lowered to gain access to desired parts of the patient's body.

3,434,166

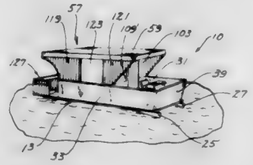
HOUSEBOAT

Roger B. Clymer, 108 Marshall St., Boone, Iowa 50036

Filed Sept. 22, 1967, Ser. No. 669,906

Int. Cl. B63b *29/02*; B60p *3/34*

U.S. Cl. 9—1 8 Claims



A houseboat having a collapsible room portion provided thereon, the room portion consisting of a wall means extending upwardly from the floor which extends between a pair of spaced apart pontoons. A top deck portion is operatively pivotally secured to the wall means and is movable from a lowered position on the wall means to a raised position above the wall means. The top deck means is pivotally secured to the wall means by a door means at each end thereof and the door means aids in maintaining the top deck means in its raised position.

3,434,167

TOW DISK

Michael Del Vecchio, 140 Regent Ave., Providence, R.I. 02908, and Frederick J. Stidhams, 7 Brooks Ave., Newport, R.I. 02840

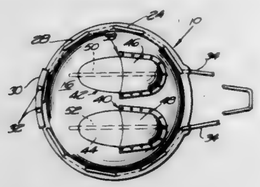
Continuation-in-part of application Ser. No. 258,254, Feb. 13, 1963. This application Nov. 27, 1964, Ser. No. 414,128

Int. Cl. A63c *5/00, 9/04, 15/00*

U.S. Cl. 9—310 2 Claims

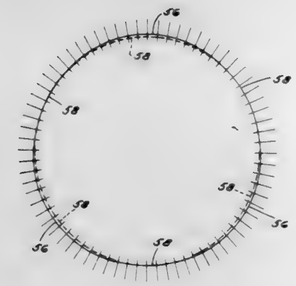
An aquatic device for use in skimming over water and that has a disk-like configuration, the device comprising

outer casing members between which a buoyant member is located, a lacing joining the members together at the



periphery thereof and forming a part of a tow loop that is connectable to a towing device.

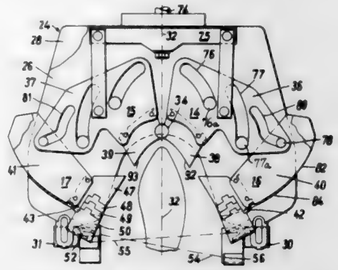
3,434,168
METHOD OF MAKING A LOBULAR THREADED FASTENER
Nicholas A. Bonacci, Detroit, Mich., assignor to Maynard Manufacturing Company, East Detroit, Mich., a corporation of Michigan
Filed Sept. 26, 1967, Ser. No. 670,631
Int. Cl. B21k *1/44;* **F16b** *25/00, 33/02*
U.S. Cl. 10—27 **4 Claims**



This disclosure relates to a method of making lobular threaded fasteners, including forming of a female die having a central cylindrical aperture and an odd number of uniformly circumferentially spaced scallops, forcing the fastener blank into the die, and generating a thread on the blank thereby blending the ends of the scallops into the circumference of the cylinder.

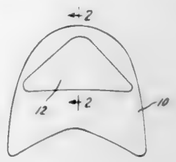
3,434,169
SHOEMAKING MACHINE
Martinus Teerling, Engelen, Netherlands, and Horst Ruppert, Bermbach, Taunus, Germany, assignors to Maschinenfabrik Moenus A.G., Frankfurt am Main, Germany, a firm
Filed Mar. 7, 1967, Ser. No. 621,335
Claims priority, application Germany, Mar. 9, 1966, M 68,688
Int. Cl. A43d *21/12, 23/04*
U.S. Cl. 12—12 **30 Claims**

Each side wiper of the shoemaking machine comprises a series of articulately connected sections which are movable into and away from engagement with the lasting margin of the upper in the ball and shank regions of the last when the side wipers move toward the axis of the last. In addition, the rearmost section of each side wiper is moved out of the plane of the remaining section or sections in automatic response to movement of side wipers to wiping positions to thereby insure that each section will exert against the lasting margin a pressure high enough to effect rapid setting of adhesive which is to bond the lasting margin to the insole. Movement of the rearmost section of each side wiper out of the plane of the remaining sections brings about a chain reaction in that the rearmost section entrains the next-to-the-rearmost section, and so forth, in order that the sections may



follow the outline of the ball and shank regions of the last while the foremost sections cooperate with the front wipers which engage the lasting margin in the toe region. In this way, the lasting margin can be wiped in a single operation, not only in the region of the toe but also in the ball and shank regions of the last.

3,434,170
METHOD OF REINFORCING SHOE PARTS
Richard J. Carey, East Milton, and Robert B. Dunlap, Medway, Mass., assignors to Compo Industries, Inc., Waltham, Mass., a corporation of Delaware
Filed May 12, 1967, Ser. No. 638,127
Int. Cl. A43d *13/00*
U.S. Cl. 12—146 **8 Claims**

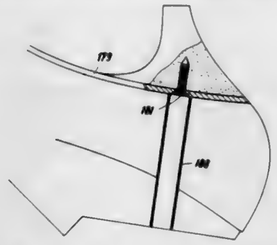


A method for reinforcing parts of shoe uppers by applying to the area of the upper to be reinforced while the same is held in a uniformly flat plane, a layer of heat-hardenable or moisture-curing elastomer that will remain dimensionally stable at a temperature above the temperature required to effect hardening if the former or that will remain dimensionally stable at the temperature required to effect forming and shaping of the uppers if the latter, and that which will stretch with the uppers during the molding thereof and by the application of heat, will be hardened if the former or that which will stretch with the uppers during the shaping thereof and by the application of moisture-laden air will be hardened if the latter.

3,434,171
HEEL ATTACHMENT BY SCREWNAIL
Georg Lischer and Jakob Gaus, Frankfurt am Main, Germany, assignors to Maschinenfabrik Moenus A.G., Frankfurt am Main, Germany
Original application Sept. 21, 1964, Ser. No. 397,711. Divided and this application Oct. 14, 1966, Ser. No. 586,710
Claims priority, application Germany, Oct. 1, 1963, M 58,386
Int. Cl. A43d *67/40;* **F16b** *33/02, 25/00*
U.S. Cl. 12—147 **2 Claims**

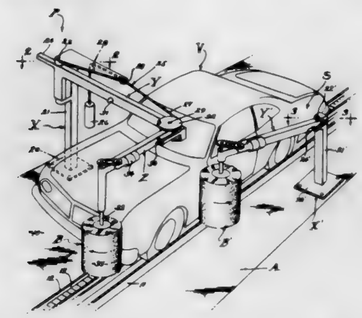
In a heel attaching process for securely anchoring a loose plastic heel to a lasted shoe having an insole by

means of a single screwnail actuated by a striking device, the steps of compressing the lasted shoe and heel together; aligning a screwnail having a double thread with the axis of the bore of the last but spaced from the insole; and then actuating the striking device to drive the screwnail through the bore of the last through the lasted insole



and into the heel for the purpose of preliminarily and finally anchoring the screwnail to prevent detachment thereof by mechanical means, thereby eliminating the necessity of preliminary boring the preliminary perforation of the insole and heel, and the necessity of removal of the last from the shoe during the attaching process.

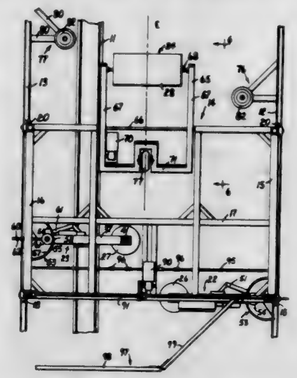
3,434,172
CAR WASH BRUSHING APPARATUS
Earl E. Wilson, 1328 Newport Ave., Long Beach, Calif. 90804
Filed Aug. 7, 1967, Ser. No. 658,679
Int. Cl. B60s *3/06;* **A47l** *1/02*
U.S. Cl. 15—21 **4 Claims**



This invention relates generally to automobile washing installations and more specifically to the functions therein of brushing the substantially vertically disposed planar surfaces of the vehicle body and particularly the front, sides, and back surfaces of the vehicle body, a characteristic feature of this invention being the provision of a single primary brush and a single secondary brush, the two of which are adapted to scrub entirely the four sides of the vehicle body.

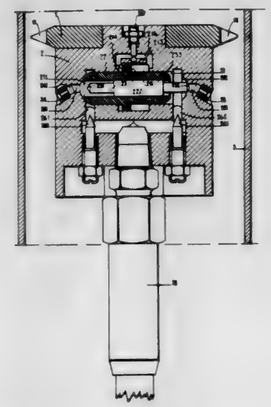
3,434,173
VEHICLE WASHING APPARATUS
Robert L. Kenyon and Donald Thompson, Missoula, Mont., assignors, by mesne assignments, to Ken-Vac Corporation, Missoula, Mont., a corporation of Montana
Filed Dec. 4, 1967, Ser. No. 687,558
Int. Cl. A46b *15/00*
U.S. Cl. 15—21 **10 Claims**

An automatic vehicle washing apparatus is described for washing a parked vehicle. The apparatus has an inverted U-shaped carriage that moves over the vehicle from front to rear and then moves back over the vehicle from rear to front. The carriage has two side brush assemblies and an overhead brush assembly that clean the vehicle as the carriage is moving. The brush assemblies are longitudinally spaced on the carriage to prevent the interference



of the brushes during the cleaning operation. Water is sprayed onto the vehicle as the carriage moves over the vehicle. The brush assemblies have deflectors that engage any sharp corners to swing the brushes outwardly to prevent the brush from becoming hooked on the corners.

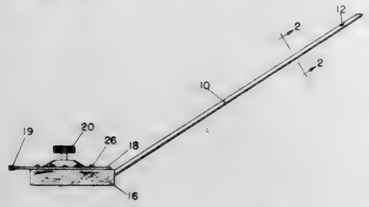
3,434,174
APPARATUS FOR CLEANING AND DESCALING TUBULAR ELEMENTS
Georges Ceries and Michel Fougeres, Gardanne, France, assignors to Pechiney-Compagnie de Produits Chimiques et Electrometallurgique, Paris, France
Filed Mar. 24, 1967, Ser. No. 625,830
Claims priority, application France, Apr. 4, 1966, 56,336
Int. Cl. F28g *3/10;* **B08b** *9/06, 7/04*
U.S. Cl. 15—104.07 **7 Claims**



This invention is addressed to a device for cleaning the interior surfaces of tubular elements comprising a body member having a cylindrical section formed within the body member in which a piston is mounted for reciprocal movement having needle members extending outwardly from the opposite ends thereof for passage into and out of engagement with nozzles extending through the wall of the body and in which a source of supply of fluid under pressure communicates through a supply pipe to the opposite ends of the cylinder whereby displacement of the piston in one direction enables fluid under pressure to flow from the opposite nozzles to effect rocking move-

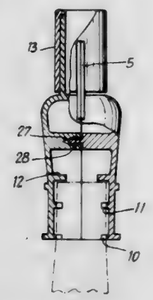
ment of the body to effect a corresponding hammer blow onto the tubular element and whereby displacement of the piston in the opposite direction responsive to the fluid flow operates to close off the other nozzle and free the first to effect rocking movement of the body in the opposite direction for impacting the tubular element.

3,434,175
FOOD TURNER AND GRILL CLEANER KIT COMBINATION
Sidney Crockett Bray, 203 E. 8th St., Edmond, Okla. 73034
Filed July 31, 1967, Ser. No. 657,324
Int. Cl. A47l *13/02, 13/46;* **A46b** *5/02*
U.S. Cl. 15—105 **1 Claim**



A combined cleaning implement and cooking implement kit having an intermediate cleaning pad, an elongated handle and a plate-like head member having equally spaced bulbous portions thereon and extending angularly from one end of the handle, and implements having heads with bulbous portions thereon which adjustably coact by the intermediate cleaning pad with the head of the handle by a common central screw means for adjustment of the heads of said implements with respect to the head of said handle.

3,434,176
SHELL-MOUNTED BROOM OR SIMILAR BRUSH-WEAR ARTICLE
Bernard Cazet, Castelsarrasin, France, assignor to B.I.P. Brevets Inventions Promotion S.A.
Filed Aug. 7, 1967, Ser. No. 658,767
Claims priority, application France, Aug. 8, 1967, 72,983
Int. Cl. A46b *3/08;* **A46d** *3/00*
U.S. Cl. 15—177 **7 Claims**



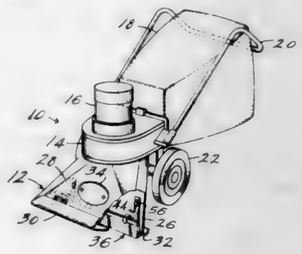
A broom construction includes two shell portions which are fitted together by aligning and interengaging projections on one portion into recesses on another and they are held together by a snap fit of a projection of one portion into a female receiving portion on the other. The shell portions together define a socket for receiving a handle at one end and a recess or skirt portion for receiving a bundle of fibers in the opposite end. The fibers are held in position by projecting teeth which are defined in two separate longitudinally spaced rows within the skirt portion, the rows of teeth being offset so as to engage the fibers in a manner such that they can fan out. The assembly is either locked by an encircling collar extending over the socket portion of the shells or by C-shaped securing clips which fit into recesses defined on each end of the shells or by a combination of both, and in some instances, by the addition of an encircling band around the exterior of the skirt portions.

3,434,177
SCOURING PAD
Robert D. Parry, 7240 Algonquin, Cincinnati, Ohio 45234
Filed Nov. 9, 1966, Ser. No. 593,055
Int. Cl. A47l *17/08, 17/06*
U.S. Cl. 15—209 **5 Claims**



A scouring pad and holder comprising, in combination and in preferred form, a handle, a confining cup flaring downwardly and outwardly in substantially conical configuration from one end of the handle, a stack of fabric layers with each having many fabric ends, a threaded stud molded through the center of the stack for forming a pad of the fabric layers, and a threaded bore in the handle for receiving the threaded stud, thereby retaining the pad within the cup and presenting the ends of the layers in a cleaning attitude.

3,434,178
APPARATUS FOR CLEANING FLOORS
Francis D. Dolan and Jack L. Burgoon, Toledo, Ohio, assignors, by mesne assignments, to Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio
Filed Nov. 9, 1966, Ser. No. 593,210
Int. Cl. A47l *9/06, 5/34*
U.S. Cl. 15—369 **2 Claims**



A vacuum cleaner brush is supported at a nozzle inlet by a resilient leaf spring. The brush is held against the floor solely by the leaf spring when the vacuum cleaner is in its normal operating position on the floor.

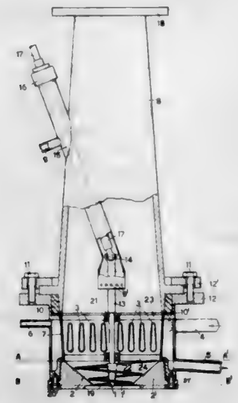
The brush is preferably at a slight forward angle of 10° to 20° so as to produce a whisking action on the floor as the cleaner is moved forwardly.

3,434,179
PRELOADED TORSION BAR DOOR HOLD-OPEN DEVICE
Joseph H. Marchione, Rockford, Ill., assignor to Atwood Vacuum Machine Company, Rockford, Ill., a corporation of Illinois
Filed Aug. 11, 1966, Ser. No. 571,854
Claims priority, application Great Britain, Nov. 27, 1965, 50,503/65
Int. Cl. E05d *11/10*
U.S. Cl. 16—145 **20 Claims**



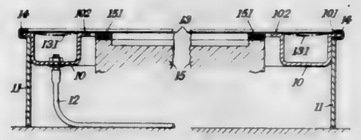
A door hold-open device embodying a preloaded torsion bar mounted independently of the door hinges.

3,434,180
APPARATUS FOR MELTING SYNTHETIC LINEAR POLYMERS AND FEEDING THEM TO A SPINNERET
Giacomo Cerutti and Alberto Lanza, Gozzano, Italy, assignors to Bemberg S.p.A., Milan, Italy, an Italian company
Filed Jan. 9, 1967, Ser. No. 608,083
Claims priority, application Italy, Jan. 19, 1966, 13,598/66
Int. Cl. D01b *1/04, 5/10*
U.S. Cl. 18—8 **6 Claims**



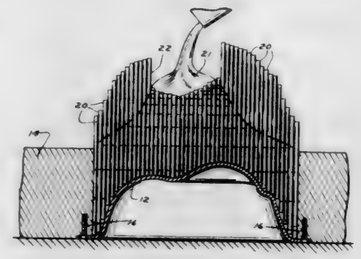
An apparatus for melting synthetic linear polymers and feeding them to a spinneret is provided with an agitator in the collecting chamber below the melting grid for preventing the molten material from sticking to the wall of said chamber.

3,434,181
APPARATUS FOR TENSIONING SHEET MATERIALS
George Y. Benzies, Woking, England, assignor to Vicker Aircraft Holdings Limited
Continuation of application Ser. No. 227,482, Oct. 1, 1962. This application Dec. 20, 1966, Ser. No. 603,390
Claims priority, application Great Britain, July 30, 1962, 29,233/62
Int. Cl. B28b *11/00;* **B32b** *31/04*
U.S. Cl. 18—19 **2 Claims**



An apparatus for producing mirrors from a thin flexible sheet of reflecting material is disclosed, wherein the sheet is placed over an annular trough having a substantially plane inner peripheral surface and an outer peripheral surface and the sheet is anchored along the outer peripheral surface. Thereupon the air is exhausted from the trough means so as to apply suction to and deflect the portion of the sheet between the inner and outer peripheral surfaces and thereby impart uniform tension to the portion of the sheet bounded by the inner peripheral surface. Finally a frame is secured to the tensioned portion of the sheet.

3,434,182
MOLD AND METHOD OF MAKING SAME
Paul S. Petersen, Minnetonka, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 21, 1966, Ser. No. 588,567
Int. Cl. B29c *17/00*
U.S. Cl. 18—35 **9 Claims**

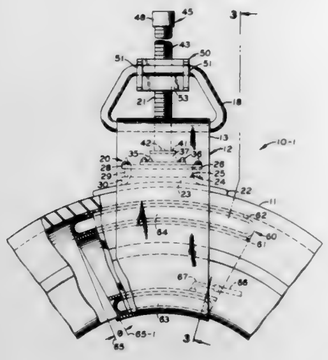


A mold formed from a thin shell and having a backing of elongated rods oriented in the direction of molding pressure, and wherein the rods are permanently bonded to each other and to the mold shell to support the mold shell for molding.

3,434,183
PORTABLE TIRE REPAIR DEVICE
Joseph P. Kaenan, Akron, Ohio, assignor to Patch Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 29, 1964, Ser. No. 400,006
Int. Cl. B29h *17/00*
U.S. Cl. 18—45 **1 Claim**

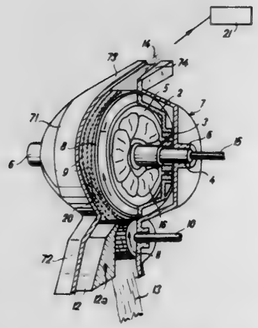
A portable tire patch pressurizing device for applying heat and pressure to a section of a tire to effectuate repair.

A clamping device encircles a portion of a tire to be repaired and provides suitable circumferential adjustment for the selective application of pressure and heat. The tire is prevented from internal deformation by a pressure bag assembly inserted under the clamping device and having an arcuate tubular member surrounded by an in-



flatable annular bladder which contacts the inside of the tire and which has the circumferential extremities of its radially inner portion undercut from radial alignment with the circumferential extremities of the radially outer portion to reduce forces tending to wrinkle the tire during inflation.

3,434,184
APPARATUS FOR SEPARATING FIBERS
Ctibor Doudlebsky, Ludvik Fajt, Frantisek Bucil, and Stanislav Kabele, Usti nad Orlice, Czechoslovakia, assignors to Vyzkumny Ustav Bavinarsky, Usti nad Orlice, Czechoslovakia
Filed Mar. 1, 1967, Ser. No. 619,862
Claims priority, application Czechoslovakia, Mar. 4, 1966, 1,465/66
Int. Cl. D01b *1/20*
U.S. Cl. 19—83 **10 Claims**



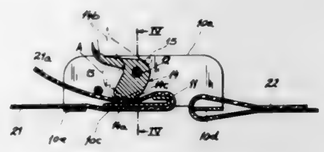
Apparatus for separating fibers which are thereupon fed into the spinning chamber of a ringless spinning machine. It comprises an electric motor whose cylindrical rotor carries fiber-separating projections and is surrounded by a stationary jacket. The jacket is provided with an inlet which accommodates the feed for unseparated fibers and with an outlet which conveys separated fibers to the spinning chamber.

3,434,185
LINGERIE CLASP
Robert S. Price, 110 Bridle Path Road, West Springfield, Mass. 01089
Continuation-in-part of application Ser. No. 493,214, Oct. 5, 1965. This application Dec. 14, 1967, Ser. No. 690,441
Int. Cl. A44b *11/10*
U.S. Cl. 24—74 **8 Claims**



A fastener or clasp for use in the lingerie field and like applications and comprising a frame having an opening therethrough, in which opening a deformable wedge may be inserted, with a strap or straps of the lingerie or the like being adjustably clamped between the wedge and frame.

3,434,186
RELEASABLE BUCKLE FOR STRAPPED LOADS
Stanley Rennert, % The Rennert Company, 91–97 Greene St., New York, N.Y. 10012
Continuation-in-part of application Ser. No. 439,025, Mar. 11, 1965. This application Aug. 10, 1966, Ser. No. 571,530
Int. Cl. A44b *11/12*
U.S. Cl. 24—191 **5 Claims**

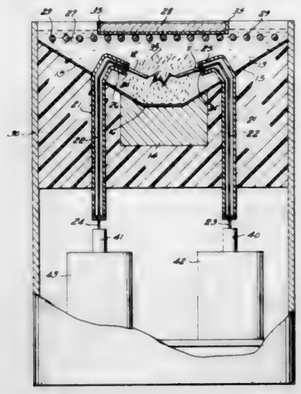


Strap buckle with a swingable locking element having a roughened cam surface for clamping an extremity of a strap against a bottom plate of a frame, a pin being positioned outside the arc of swing of the cam surface to prevent the loose end of the engaged strap extremity from contacting the roughened surface in a released position of the locking element.

3,434,187
APPARATUS FOR PACKING AND HARDENING MIXTURES
William H. Clark and Stanley A. Hall, Salt Lake City, Utah, assignors to Utah Research and Development Co., Inc., Salt Lake City, Utah, a corporation of Utah
Filed July 8, 1966, Ser. No. 563,766
Int. Cl. B28b *7/00, 11/00*
U.S. Cl. 25—41 **10 Claims**

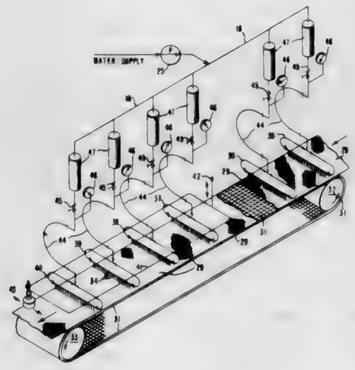
Apparatus for hardening mixtures supplied as flowable material supported within a pallet held above a rigid base member carrying a container into which the base of the pallet extends, with a pair of electrodes adapted to have

a high voltage supplied thereto extending into the container beneath the pallet so that when an electrical discharge is initiated between them the container holding a



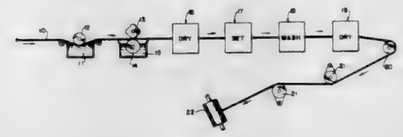
liquid which immerses the electrodes produces shock waves and tends rapidly to harden the material within the supporting pallet.

3,434,188
PROCESS FOR PRODUCING NONWOVEN FABRICS
Ronald John Summers, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 6, 1967, Ser. No. 607,790
Int. Cl. D04b *3/04*
U.S. Cl. 28—72.2 **7 Claims**



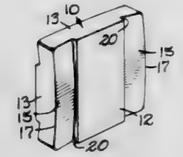
Nonwoven fabrics having the appearance and many of the properties of conventional woven textile fabrics are prepared from warp-like arrays of yarns. A layer of yarns is placed on an apertured support and treated with liquid streams of very small diameter formed at unusually high pressure. The treatment is continued until the fibers of adjacent yarns are interentangled to provide a strong nonwoven fabric which, upon removal from the apertured support, is useful for textile purposes without further treatment.

3,434,189
METHOD OF CONTINUOUSLY DYEING AND STRETCHING UNDRAWN YARN
Thomas M. Buck, New York, N.Y., and Fred B. Satterwhite, Williamsburg, Va., assignors, by mesne assignments, to The Klinger Manufacturing Company, Limited, London, England, a corporation of Great Britain
Filed Aug. 2, 1966, Ser. No. 569,717
Int. Cl. D02j *1/22;* **D06p** *3/00*
U.S. Cl. 28—75 **10 Claims**



Yarn in undrawn condition as produced by currently used extrusion processes is dyed and subsequently drawn. The yarn may be dyed a single colour throughout its length or may be differently dyed at intervals along its length by space dyeing to obtain colour pattern effects. Dye of one colour may be impressed at intervals by space dyeing upon a background of different colour. After dyeing the yarn is drawn to orientate the molecules. Apparatus for treating yarn includes means for space dyeing undrawn yarn and means for drawing the dyed yarn.

3,434,190
INDEXABLE CUTTER BLADE
Karl B. Kaiser, Rockford, Ill., assignor to The Ingersoll Milling Machine Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 23, 1966, Ser. No. 596,529
Int. Cl. B26d *1/00, 1/12;* **B23p** *15/28*
U.S. Cl. 29—95 **4 Claims**

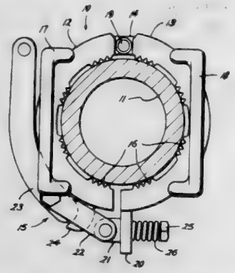


A flat wafer of cutting material in the form of an equilateral polygon is formed on one side face along alternate edges thereof with undercut narrow grooves, there being similar narrow grooves undercut in the opposite side of the wafer along the full lengths of the alternate edges of the polygon intervening between the first grooves. The bottom of each of said grooves constitutes a cutting face which is part of a cylinder having a radius several times the width of the side faces of the wafer, each cutting face being disposed relative to the edge of the wafer at an included angle of less than a right angle.

3,434,191
APPARATUS FOR PROTECTING WELL PIPE
Archie Durwood Timmons, Morgan City, La., assignor to Tri-State Oil Tool Industries, Inc., Bossier City, La., a corporation of Delaware
Original application Aug. 27, 1965, Ser. No. 483,194. Divided and this application Mar. 12, 1968, Ser. No. 712,439
Int. Cl. B23p *19/00, 19/04;* **E21b** *33/03*
U.S. Cl. 29—200 **7 Claims**

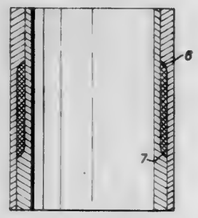
Apparatus for protecting a well pipe having a plurality of force transmitting elements adapted to engage a pipe

at a sufficient number of points to uniformly transmit force to the pipe without damaging the pipe. This abstract is neither intended to define the invention of the



application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

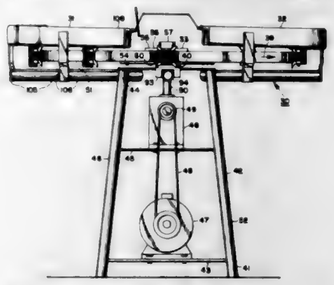
3,434,192
EXTRUSION OF COMPOSITE BODIES
Leslie Roy Ormerod, Didcot, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed May 5, 1966, Ser. No. 547,923
Claims priority, application Great Britain, May 11, 1965, 19,939/65
Int. Cl. G21c *3/04*
U.S. Cl. 29—411 **7 Claims**



A method of producing a sheathed nuclear fuel plate comprising the steps of forming a disc from a nuclear fuel material and a sheath material, forming the disc into a sleeve member which includes a region of sheathing material extending lengthwise with respect to said sleeve, interposing the said sleeve between sleeves of sheathing material and co-extruding the assembly. The resulting assembly is tubular and the tube is split lengthwise through the region of sheathing material to form a plate having essentially a core of nuclear fuel material enclosed in a case of sheathing material.

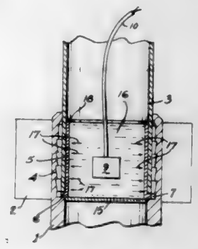
3,434,193
PROCESS OF MANUFACTURING HAIR ROLLERS
Harry W. Meyer, Clearwater, Fla., assignor, by mesne assignments, to The Industrial Development Corporation, Orlando, Fla., a corporation of Florida
Filed Jan. 18, 1965, Ser. No. 426,169
Int. Cl. B23p *11/02*
U.S. Cl. 29—419 **4 Claims**

A hair roller has a brush and an internally supported tubular net component that is provided with shrunken filaments at its ends to retain the support in a proper position in the assembly. With heat shrinkable netting material, the filaments at the ends of the supported tubular component are heat shrunk and then followed with a water or air quench to ambient temperatures before the brush is inserted in the tubular net. Heating and quenching are accomplished with an apparatus having spaced heaters with associated quenching devices, and a carriage for conveying the internally supported tubular component through the heaters. The carriage is equipped with cam



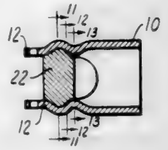
actuated holders for inverting the held items between heaters.

3,434,194
METHOD OF FORMING JOINT BETWEEN TUBE AND FITTING
Stanley James Whittaker, 2 Cartier Circle, and Cecil Rhodes, 35 Frontenac Crescent, both of Deep River, Ontario, Canada
Filed Nov. 9, 1966, Ser. No. 593,172
Int. Cl. B23p *11/00*; B23k *21/00*; B21d *39/00*
U.S. Cl. 29—421 **6 Claims**



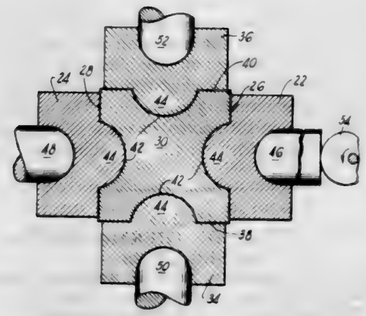
A method of forming a joint between a tube and fitting in which the tube material is of low-ductility and subject to brittleness after plastic distortion in which an interface area wth a chosen profile is defined in the fitting, the tube is embraced by a ring in the interface area and the ring and tube are subsequently distorted into contact with the fitting, uniformly and at high velocity. The fitting is shaped in the interface area so that the ring and tube distort sufficiently that the limiting cross-sectional width of material in the interface area is the same as that of the undistorted tube. Uniform high velocity distortion may be achieved by an explosive which may be liquid-coupled to the ring and tube for accomplishing the distortion.

3,434,195
METHOD OF FORMING A LASH-FREE UNIVERSAL JOINT
Irving R. Ritsema, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 27, 1967, Ser. No. 626,148
Int. Cl. B23p *11/00*
U.S. Cl. 29—437 **3 Claims**



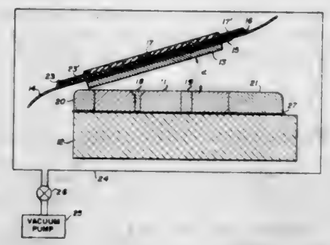
The following relates to a universal joint of the type sometimes referred to as a Hooke's Coupling and to a novel method of making same. The universal joint consists of two angularly disposed rotatable tubular members, each of which has a forked portion formed on the end thereof, and a block having two pairs of diametrically opposed protruding spherical surfaces formed thereon which are received in concave seats formed in the forked portion by deforming the forked portions around the protruding spherical surfaces of the block.

3,434,196
METHOD OF MAKING A UNIVERSAL JOINT
Thomas H. Lavengood, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,079
Int. Cl. F16d *3/34*; B23p *11/00*
U.S. Cl. 29—437 **5 Claims**



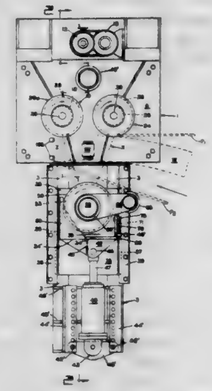
A motion transmiting universal joint having driving and driven rotatable elements provided with respective first and second integral yoke portions pivotally connected to a coupling for movement about two angularly disposed axes wherein the coupling is defined by a cube member having first and second pairs of aligned curved portions defined by opposite faces thereof which act as dies for the respective yoke portions which are simultaneously upset as by coining to pivotally secure the first and second yoke portions to the coupling.

3,434,197
EXPLOSIVE WELDING
Donald E. Davenport, Palo Alto, Calif., assignor to Singer-General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,103
Int. Cl. B23k *27/00, 29/00*
U.S. Cl. 29—470.1 **15 Claims**



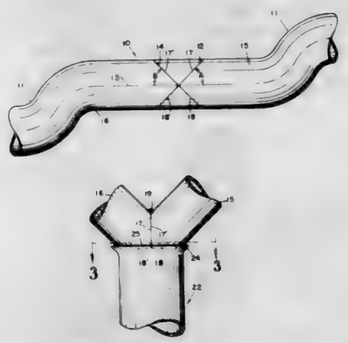
Welding of two or more metallic members is accomplished by explosively driving one member against the other at a sub-sonic rate while excluding the gaseous detonation products from the gap between the members. The members may be pre-cooled and are supported on anvils having similar acoustical properties.

3,434,198
BEAM FABRICATING METHOD
Attilio R. Bergantini, Napa, Calif., assignor to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Original application Feb. 4, 1963, Ser. No. 255,992, now Patent No. 3,260,438, dated July 12, 1966. Divided and this application Nov. 22, 1965, Ser. No. 521,759
Int. Cl. B23k *31/02*; B23p *19/04*
U.S. Cl. 29—472.3 **8 Claims**



Improved method of forming a beam from at least a pair of structural components wherein successive portions of the components are firstly drawn and clamped together in an improved fashion and thereafter while clamped together passed to and through a welding zone, where a filler weld material is continuously deposited at a point of jointure of the components.

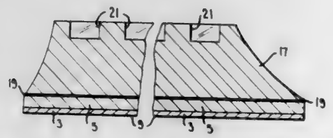
3,434,199
METHOD OF FABRICATING PIPES
James C. Arthur and Graham F. Thieman, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 3, 1966, Ser. No. 583,679
Int. Cl. F16l *41/00*
U.S. Cl. 29—476 **6 Claims**



1. A method of fabricating a pipe assembly, comprising the steps of forming a pair of cuts through a pipe to form first and second pipe sections, said cuts being in intersecting planes and at equal angle to the pipe axis whereby the cut end of each of said sections has a pair of angularly disposed faces of the same lengths as the

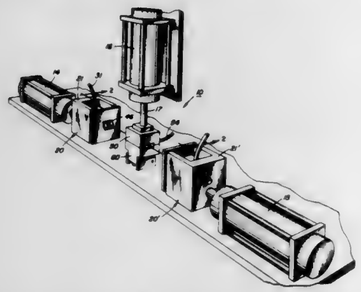
faces on the other section, joining said first and second sections along one pair of said faces to rigidly interconnect said sections at an angle to each other and to define an opening at their juncture, and connecting an open end of a second pipe to said sections at their juncture and with said open end extending around said opening.

3,434,200
METHOD OF MANUFACTURING HARD-FACED METAL PRODUCTS
Robert J. Russell, North Dighton, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,845
Int. Cl. B23p *17/04*
U.S. Cl. 29—527 **9 Claims**



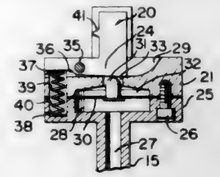
Three thin metal layers are provided, one of which is aluminum and which is interposed between the other two. One of the latter is composed of stainless steel and the other of a bonding metal for brazing or soldering. The bonding metal has a lower melting point than that of aluminum and steel. The three layers are metallurgically bonded preferably in the solid phase to form a laminated stock. The stock after suitable shaping is placed in a mold prior to the introduction of melted aluminum into the mold. Prior to this introduction the metal bonding layer of the stock has been heated to form a melt thereof without melting the other layers of the stock. The introduction of the aluminum occurs over the melted bonding metal layer so as to fill the mold and combine with the molten layer of bonding metal in the liquid phase. After cooling to solidify the aluminum and the combined molten metals the product is removed from the mold. It has a rupture- and void-free transition zone between the two masses of aluminum which were initially on opposite sides of the bonding metal.

3,434,201
TERMINATING AND ENCAPSULATING DEVICES IN A SINGLE MANUFACTURING OPERATION
Robert Holbrook Cushman, Princeton Junction, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,820
Int. Cl. H01j *9/18;* **B23k** *31/02*
U.S. Cl. 29—527 **7 Claims**



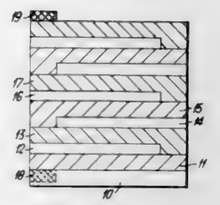
An electrical device is positioned in a mold, terminals positioned and soldered in place by injection casting. The mold is then expanded and the device encapsulated also by injection molding.

3,434,202
NECK REAMING AND FINISHING TOOLS
John L. Szajna, Norridge, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 15, 1966, Ser. No. 534,454
Int. Cl. B23b *29/02, 47/00;* **B23d** *79/04*
U.S. Cl. 29—566 **16 Claims**



A cutting tool for reaming, facing and grooving the necks of bottles is disclosed herein. The tool includes a body having a portion for extension into the neck of a bottle, a pivotally mounted cutting blade for grooving the interior of the neck and a chamber defined by the body and housing blade actuating provisions. The blade actuating provisions are in turn actuated via a passage communicating with the chamber and the exterior of the tool body.

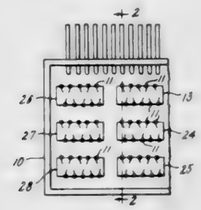
3,434,203
MANUFACTURE OF THERMO-ELECTRIC GENERATORS
William Thorp, Timperley, England, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Nov. 25, 1966, Ser. No. 596,889
Claims priority, application Great Britain, Nov. 27, 1965, 50,489/65
Int. Cl. H01l *15/00*
U.S. Cl. 29—573 **14 Claims**



A thermoelectric generator comprising a plurality of stacked pairs of layers of two different thermoelectric materials has each layer separated from the next, except for a narrow strip along one edge, by a layer of electrically insulating material. The thermoelectric generator is produced by a continuous reduction deposition process which ensures a satisfactory mechanical and electrical bond between adjacent layers of thermoelectric material.

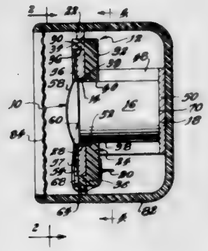
3,434,204
INTERCONNECTION STRUCTURE AND METHOD OF MAKING SAME
Dimitry G. Grabbe, Sea Cliff, N.Y., assignor to Photocircuits Corporation, Glen Cove, N.Y., a corporation of New York
Original application Jan. 19, 1965, Ser. No. 426,506, now Patent No. 3,386,009, dated May 28, 1968. Divided and this application May 26, 1967, Ser. No. 649,775
Int. Cl. B0j *17/00;* **H01l** *1/16;* **H05k** *3/30*
U.S. Cl. 29—577 **6 Claims**

1. A method of making an interconnection structure for a solid-state member comprising:
positioning a solid-state member having terminal regions at an edge therof on an insulating support having conductive terminals extending through a surface thereof in a predetermined pattern corresponding to said terminal regions of said solid-state member with said terminal regions of said solid-state member in close proximity to and in register with said terminals of said support;



masking said support and said solid-state member to expose said terminals of said support and said terminal regions of said solid-state member; and
depositing conductive material on said terminals of said support and said terminal regions of said solid-state member to bond together said terminals of said support and said terminal regions of said solid-state member.

3,434,205
METHOD OF MAKING ELECTRO-ACOUSTICAL DEVICES
Harold F. Mosier, Jr., Buchanan, Mich., assignor, by mesne assignments, to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 227,498, Oct. 1, 1962. This application June 24, 1966, Ser. No. 564,481
Int. Cl. H04r *31/00;* **G10k** *13/00*
U.S. Cl. 29—594 **14 Claims**

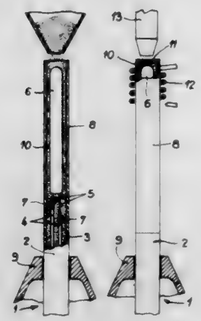


Methods of making electroacoustical devices by molding the elements in position are disclosed. In one embodiment, a magnetic gap for a voice coil is achieved by molding a cylindrical core within a circular opening of a pole piece. In the same process, a rim is molded on the pole piece for positioning a diaphragm. The cylindrical core in one embodiment is a permanent magnet, and in another embodiment is itself a pole piece. In still another embodiment of the invention two piezoelectric elements for use in a stereophonic phonograph pickup are molded together at opposite ends to provide a single assembly of backpad, piezoelectric elements and yoke. This assembly is positionable in a casing and secured in position by a snap-on cover. The stylus drive arm is also snapped into position by a snap-in clip.

3,434,206
METHOD OF MANUFACTURING A LAMINATED FOIL RESISTOR
Victor Sergeevich Umantsev, Krasnodar, U.S.S.R., assignor to Zavod Elektroizmeritelnykh Priborov, Krasnodar, U.S.S.R.
No Drawing. Filed May 12, 1964, Ser. No. 366,908
Int. Cl. H01c *17/00*
U.S. Cl. 29—610 **4 Claims**

This invention relates to the manufacture of a laminnated foil resistor. Either one sheet, or a plurality of stacked sheets of foil are placed in a forming die commensurately shaped to correspond to a base lamina. The foil is heated in the forming die to the recrystallization temperature of the foil and then the foil is removed from the die and adhered to the base lamina. The base lamina can be made of glass, ceramic or plastic. If the base lamina is made of metal, then an intermediate insulating layer must be interposed between the base lamina and the foil.

3,434,207
PROCESS FOR MAKING PYROMETRIC PROBES OR RODS
Marc Frachon, Saint-Genis-Laval, France, assignor to Coreci, Compagnie de Regulation et de Controle Industriel, Lyon, Rhone, France, a French joint-stock company
Filed Jan. 31, 1967, Ser. No. 612,946
Claims priority, application France, Feb. 4, 1966, 46,905
Int. Cl. H01c *7/04*
U.S. Cl. 29—612 **4 Claims**

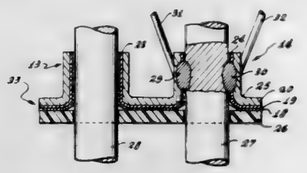


An elongated resistive temperature responsive element is secured by its connecting wires to the protruding ends of the inner conductors of a cable formed of a tubing filled with pulverulent refractory material in which the conductors are embedded. A length of tube is welded to the end of the cable tubing to form an extension thereof enclosing the element. The length of tube is filled with pulverulent refractory material and its outer end is closed by a disk welded in position.

3,434,208
CIRCUIT ASSEMBLY PROCESS
William H. Toomey, 3532 Mentone Ave., Los Angeles, Calif. 90034, and John W. Toomey, 18349 Chatsworth St., Northridge, Calif. 91324
Continuation of application Ser. No. 445,067, Apr. 2, 1965, now abandoned, which is a division of application Ser. No. 134,248, Aug. 28, 1961, now abandoned. This application Dec. 16, 1966, Ser. No. 602,298
Int. Cl. H05k *3/30;* **B44d** *1/18*
U.S. Cl. 29—626 **5 Claims**

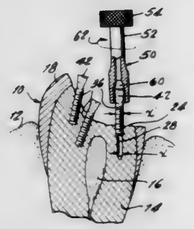
A method of fabricating printed electronic circuit electrical connections wherein a resilient male mold is formed with protrusions where electrical connections are desired; the circuit is deposited on the male mold, cov-

ering the protrusions; the conductive material on the ends of the protrusion is removed; the circuit including the protrusions is removed from the male mold and adhered to a suitable backing; holes are drilled or punched through



the backing under the protrusions; and individual module plates are separated by shearing. Conductive leads, as from components, are inserted in the protrusions and are electrically connected thereto, as by welding.

3,434,209
METHOD FOR BUILDING SUPERSTRUCTURES ON DENTITION
Bernard Weissman, 304 Ashland Place, Brooklyn, N.Y. 11217
Filed May 12, 1965, Ser. No. 455,259
Int. Cl. A61k *5/02*
U.S. Cl. 32—15 **3 Claims**



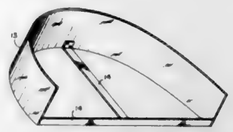
The invention is directed to a method of building a superstructure on a tooth comprising removing the decayed dentition, drilling a plurality of nonparallel channels into the tooth from the resulting excavated surface thereof, threading a rod into each channel so that a portion thereof projects above said surface, and building a superstructure on said surface. The invention is also directed to a novel combination comprising a reinforcing rod and a latching wrench therefor.

3,434,210
DENTAL CLASP
David L. Sage, 8729 La Tijera Blvd., Los Angeles, Calif. 90045
Filed Aug. 29, 1966, Ser. No. 575,799
Int. Cl. A61c *3/00, 13/12*
U.S. Cl. 32—40 **6 Claims**



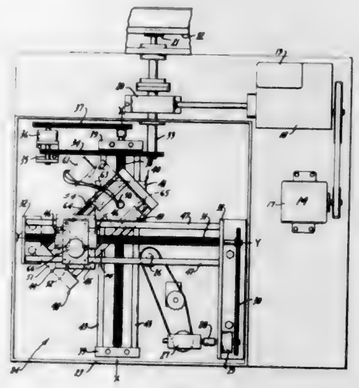
An improved dental clasp useful to secure removable appliances to teeth. The improved clasp is specifically adapted for machine manufacture, and includes a convoluted portion which permits rapid custom fitting to an individual tooth. A retention arm is secured to the convoluted portion, and the clasp may also include a wire hook or buccal tube adjacent the retention arm.

3,434,211
SATELLITE TRACKING AND PLOTTING DEVICE
William E. Hart, Berkshire, and William A. Allen, Clinton, Md., and Leslie L. Cunningham, Columbus, Ohio, assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 22, 1965, Ser. No. 502,732
Int. Cl. G01c *21/24*
U.S. Cl. 33—1 **2 Claims**



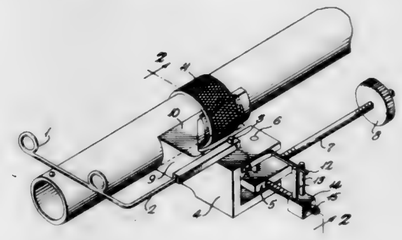
A hand held device through which the path of a satellite may be observed and traced in order to determine the observer's position on earth. Position is determined without the use of any electronics or apparatus aboard the satellite or on the ground. The device consists of transparent member and has a right ascension and declination grid-like system formed on a transparent material secured to it. Both the transparent member and the transparent material are held in an arcuate configuration by a support means.

3,434,212
MACHINE CONTROL FOR CUTTING GEOMETRIC SHAPES
Rudolph W. Kleine and Jon C. Wirth, Wauwatosa, Wis., assignors, by mesne assignments, to C.R.O. Engineering Co. Inc., Brookfield, Wis., a corporation of Wisconsin
Filed June 30, 1966, Ser. No. 561,771
Int. Cl. B43l *11/00*
U.S. Cl. 33—27 **13 Claims**



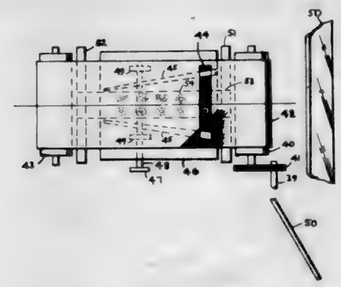
A metal cutting machine has a carriage mounted for movement in a Y direction and a tool support on the carriage for movement in an X direction. A circle generator is mounted on the carriage and has elements on a reduced scale which correspond to the carriage drive and tool support drive. The circle generator is connected to these drives through a loop arrangement which includes an electromechanical resolver having an output responsive to the circle generator position and which feeds said drives. Error correction means affect the output of the resolver. Remote control means are provided for the generator which selectively determine the size of the circle generated.

3,434,213
GUNSIGHT
Gilbert L. Lauder, 3635 Hedges St., Fresno, Calif. 93703
Filed Oct. 22, 1965, Ser. No. 502,649
Int. Cl. F41g *1/16*
U.S. Cl. 33—59 **2 Claims**



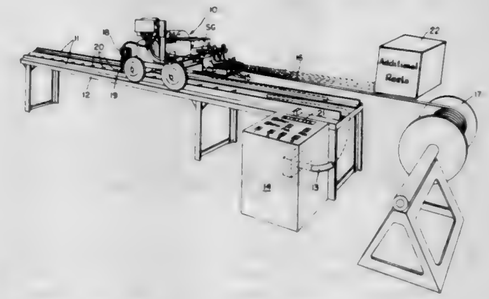
A front gunsight assembly is mounted on a vertical axis pivot supported alongside the gun barrel and is coupled to reversely rotate a rearwardly extending pivotal arm with a weight adjustable along it. The sight is biased to a normal position centrally over the gun barrel by a spring fixed on the pivot support and engaging at an adjustable radius a lateral arm on the sight assembly. When the barrel is swung transversely, it initially leads the sight according to the acceleration of the barrel, the inertia of the pivotal parts and the stiffness of the spring.

3,434,214
MEASURING DEVICE FOR SAFETY DISTANCES BETWEEN MOVING VEHICLES
James S. Pratt, 24 91st St., Brooklyn, N.Y. 11209
Filed Oct. 20, 1965, Ser. No. 498,963
Int. Cl. G01c *3/26*
U.S. Cl. 33—64 **5 Claims**



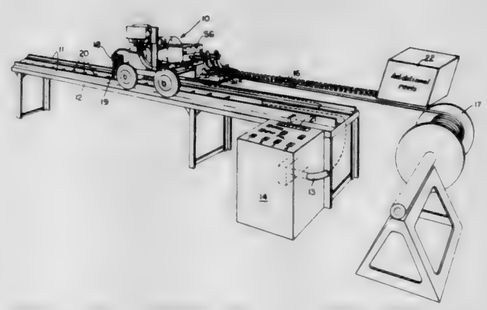
A measuring device for vehicles for determining the safe distance to follow a preceding vehicle is obtained by mounting a support on the vehicle in front of the operator. The support contains indicia spaced apart at predetermined distances and positioned for the operator of the vehicle to view the relationship between the indicia and portions of the preceding vehicle. By adjusting the distance of the vehicle from the preceding vehicle until the preceding vehicle is aligned with portions of the indicia, a safe distance for following the preceding vehicle is obtained.

3,434,215
APPARATUS FOR DISPENSING AND MEASURING STRAND MATERIAL
Frank G. Herkness, Philadelphia, and Charles W. Simmons, Jr., Huntingdon Valley, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 1, 1966, Ser. No. 591,234
Int. Cl. G01b *3/00*
U.S. Cl. 33—127 **1 Claim**



Apparatus for dispensing and measuring a plurality of separate strands of wire is provided. Strand gripping devices for gripping the ends of the wire are provided to hold the wire until the proper lengths are attained. The wires are then selectively and individually released at the desired length.

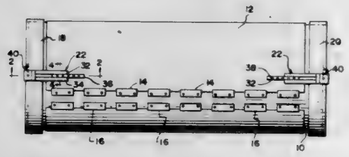
3,434,216
APPARATUS FOR DISPENSING AND MEASURING STRAND MATERIAL
James F. Spry, Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 3, 1966, Ser. No. 591,905
Int. Cl. G01b *5/04*
U.S. Cl. 33—136 **4 Claims**



An electrical control system controls apparatus for dispensing and measuring a plurality of cables. Solenoid operated clamping devices hold the ends of the cable until the proper lengths are attained. The cables are then selectively and individually released at the desired length. Various counting, forward and reverse control circuits are employed.

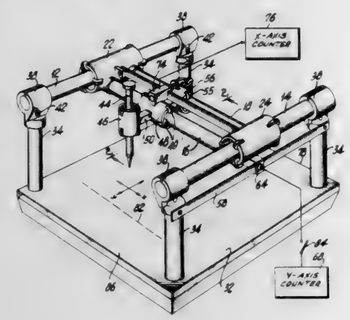
3,434,217
PRE-REGISTER APPARATUS FOR PRINTING PRESS
James J. Abbott, Jr., 8835 W. 93rd Place, Hickory Hills, Ill. 60457
Filed May 2, 1966, Ser. No. 547,036
Int. Cl. B41b *1/06*
U.S. Cl. 33—184.5 2 Claims

A pre-register gauge for accurate registration of a plurality of printing plate cylinders. A bracket member having a horizontal portion which is adapted to lie upon the printing plate cylinder surface and a vertical portion on one side of the horizontal portion for contacting the end of the cylinder, is provided. A transparent member, having register marks which may be aligned with corresponding register marks on the printing plate, extends from the other side of the horizontal portion across the printing plate cylinder surface. The gauge is placed on the



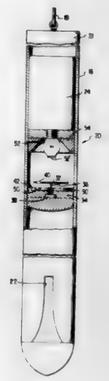
end of the cylinder and the vertical portion abuts the end of the cylinder. The gauge is held on the printing place cylinder by a magnet attached to the horizontal portion and may be easily and rapidly removed from the cylinder and repositioned on another cylinder to provide for aligning the latter mentioned register marks with the first mentioned marks. Each printing plate cylinder may include a fixed stop member to facilitate predetermined positioning of the gauge.

3,434,218
COORDINATE MEASURING MACHINE
John T. Potter, Plainview, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Nov. 25, 1966, Ser. No. 596,843
Int. Cl. G01b *5/14*
U.S. Cl. 33—189 2 Claims



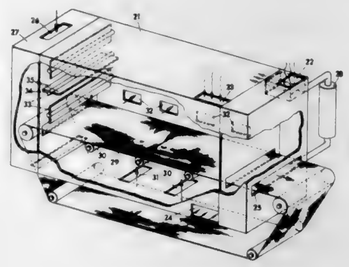
The specification and drawings disclose a probe mount for a coordinate measuring machine which allows the probe to be mounted on both sides of the cross beam which carries the mount. Probes mounted on both sides of the beam operate in conjunction with a switch that permits the probes to be moved without changing the indicated measured distance to any point in order to measure from one extreme position of the measuring machine bed to the other.

3,434,219
APPARATUS FOR MEASUREMENT OF AZIMUTH
Donald C. Bowman, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 533,051
Int. Cl. E21b *47/022, 47/024*
U.S. Cl. 33—205 5 Claims



An apparatus for orienting a tool within a bore hole. An instrument housing is lowered into the bore hole and contains a circular disc upon which is mounted a magnetic compass. Near the edge of the disc a small aperture is located. A light source above the disc shines through the aperture on to one of a group of photodiodes mounted at spaced positions around a circle so that as the disc orients itself under the influence of the earth's magnetic field the aperture permits light to shine on one of the photodiodes. Each photodiode is serially connected with a resistor in a bridge circuit, the values of the several resistors being different. The bridge circuit output indicates which photodiode is beneath the aperture and thus indicates the orientation of the apparatus within the bore hole.

3,434,220
MICROWAVE DRYING PROCESS FOR SYNTHETIC POLYMERS
Eric O. Forster, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 10, 1967, Ser. No. 674,155
Int. Cl. F26b *3/34*
U.S. Cl. 34—1 14 Claims



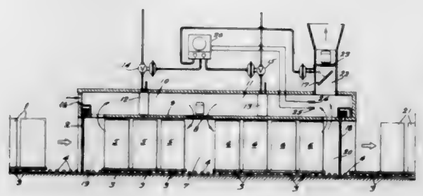
Volatile polar vehicles such as water or organic solvents, are removed from essentially nonpolar synthetic polymers by passing the polymer through a first resonating cavity operating at a microwave frequency of 915 mHz. for a time sufficient to reduce the volatiles content to about 5 wt. percent and subsequently passing the partially dried polymer through a second resonating cavity operating at a microwave frequency of 2450 mHz. for a time sufficient to reduce the polar vehicle content to below 10 p.p.m., e.g. less than 1 p.p.m.

3,434,221
REDRY VENEER DRYING METHOD AND APPARATUS
Albert S. Hammond, Tacoma, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Apr. 13, 1967, Ser. No. 630,567
Int. Cl. F26b *7/00*
U.S. Cl. 34—6 4 Claims



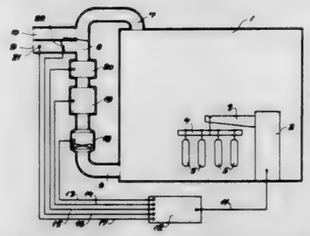
A method and apparatus for drying wood veneer which does not become adequately dry when passed through drying zones and is therefore termed "redry veneer." The method utilizes gaps which develop in the drying zones between portions of first pass veneer, due to shrinkages and temporary stoppages in supply, by feeding the redry veneer into these gaps to be conveyed through less than all of the drying zones at normal speeds for first pass veneer. The apparatus includes means to feed redry veneer into an intermediate point between drying zones.

3,434,222
METHOD AND AN APPARATUS FOR THE DRYING OF WOOD IN A CHANNEL
Lars Malmquist, Huddinge, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Aug. 3, 1967, Ser. No. 658,213
Claims priority, application Sweden, Aug. 22, 1966, 11,280/66
Int. Cl. F26b *21/10, 21/04, 3/04*
U.S. Cl. 34—16.5 4 Claims



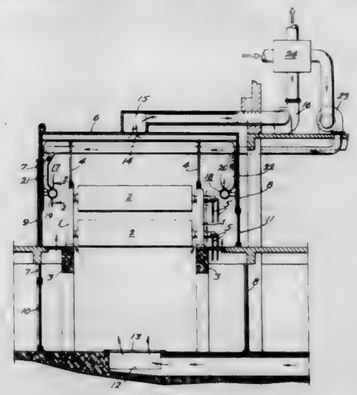
A dryer for wood having an elongated channel through which wood is advanced longitudinally. Gaseous drying medium is introduced intermediate the ends of the channel to flow countercurrently in the first part of the channel and concurrently in the second part of the channel. The two flows are merged after passage through the channel for re-introduction and the temperature and humidity of the merged flows are regulated to maintain the temperature and humidity of the concurrent flow after its passage through the channel at a substantially constant value.

3,434,223
APPARATUS FOR CHANGING THE MOISTURE CONTENT OF A MATERIAL BY THE ACTION OF AIR
Per Julius Leth Moller, Roskilde, Denmark, assignor to Slagteriernes Forskningsinstitut, Roskilde, Denmark
Filed Apr. 18, 1967, Ser. No. 631,751
Claims priority, application Denmark, Apr. 20, 1966, 2,012/66
Int. Cl. F26b *21/08, 21/02*
U.S. Cl. 34—46 3 Claims



Apparatus for changing the moisture content of a material by the action of air, in which the material is contained in a closed chamber which is operatively associated with a ventilator and a throttle valve by which air may be recycled or outside air may be supplied to the closed chamber. The opening and closing of the throttle valve and the adjustment of the vintilator is controlled by a control assembly adapted to measure at a given instant the difference between the moisture content of the material to be treated and the desired moisture content and to emit control impulses corresponding to the measured difference. A sensing device for the dew point of the outside air is coupled to the control assembly for discontinuing suction when the dew point of the air relative to the equilibrium moisture of the material reaches a value at which the air is unable to change the moisture content of the material in the desired direction at any given time.

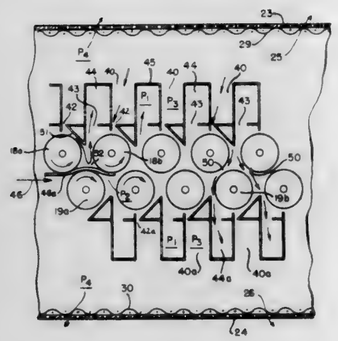
3,434,224
VENTILATING APPARATUS FOR A PAPER MACHINE
Lars Blomgren, Bandhagen, and Ake Johansson, Klinten, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed June 5, 1967, Ser. No. 643,726
Claims priority, application Sweden, June 14, 1966, 8,074/66
Int. Cl. F26b *13/08*
U.S. Cl. 34—114 1 Claim



A ventilating apparatus for the dryer section of a paper machine, said apparatus including rotatable air

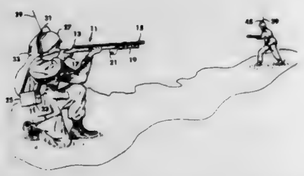
ducts on each side of the dryer section, which air ducts are provided with openings to discharge adjustable jets of ventilation air in order to control cross-flow tendencies inside a casing for the dryer section and thereby to prevent uneven drying profile of the paper web being dried.

3,434,225
DRIER FOR FILM PROCESSORS
Earle M. Knibiehly, Annandale, Va., assignor to LogEtronics, Inc., Springfield, Va.
Filed Sept. 5, 1967, Ser. No. 665,355
Int. Cl. F26b *13/06*
U.S. Cl. 34—160 **8 Claims**



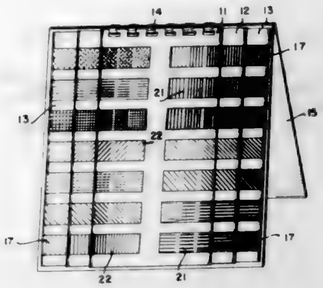
A plurality of rollers adapted to transport film through a processor drying zone are associated with baffles defining an air inlet and an air exhaust located between each adjacent pair of rollers and extending respectively to air inlet and exhaust plenums. The baffles are so oriented relative to the rollers that, when a sheet of film is in engagement with the rollers, an air flow pocket is formed adjacent the film causing air flow turbulence extending over a limited region of the film between a pair of adjacent rollers, and the partially saturated air is then quickly exhausted without recirculation over other sections of the film.

3,434,226
PULSE DISCRIMINATING HIT INDICATOR ARRANGEMENT
John W. Schaller, Timonium, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed Feb. 28, 1967, Ser. No. 619,398
Int. Cl. F41g *3/26;* **A63f** *9/02;* **G01s** *3/00*
U.S. Cl. 35—25 **7 Claims**



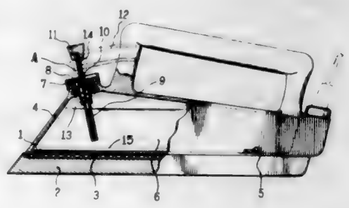
A hit indicator arrangement is disclosed for simulated hit-kill field practice which utilizes a pulse discriminator to prevent pulses having less than a predetermined time duration from actuating a light source in response to signals detected by a radio frequency receiver. The arrangement is an improvement particularly applicable to hit indicator arrangements as shown in U.S. Patent No. 3,104,478.

3,434,227
COLOR SELECTOR AND SPECIFIER
George C. Brown, Jr., Douglaston, N.Y., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed May 22, 1967, Ser. No. 639,965
Int. Cl. G09b *11/00*
U.S. Cl. 35—28.3 **4 Claims**



A color selector and specifier comprising a plurality of stepped sheets each having printing ink sample areas printed thereon. Each sheet is folded to provide a back portion having printing ink sample areas thereon divided into separable coupons.

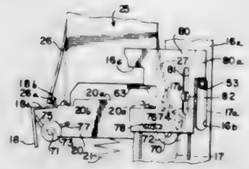
3,434,228
IRONS INCLUDING MANUALLY OPERATED SPRAY MEANS
Fukuyuki Tsunoda, 152–2 Shimonose, Tamiya-cho, Tokushima, Japan
Filed Oct. 16, 1967, Ser. No. 675,634
Int. Cl. D06f *75/06, 75/10, 75/32*
U.S. Cl. 38—78 **2 Claims**



An iron comprises an enclosed space for containing water within the body thereof. An inlet to said space is provided in a suitable portion of said body and a cap is screwed to said inlet. A spraying device supported by said cap has a stationary pipe and a sliding member, the upper end of which is provided with a nozzle and a lever.

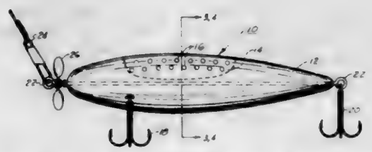
3,434,229
SLIDE CHANGING DEVICE
Lorenz V. Claussen, Northeim, Germany, assignor to GAF Corporation, a corporation of Delaware
Filed Jan. 17, 1967, Ser. No. 609,904
Int. Cl. G09f *11/30*
U.S. Cl. 40—79 **18 Claims**

A pair of movably mounted rails separate a stack-type magazine into supply and take-up areas. These rails, which extend between opposing marginal portions of a pair of slides, may be moved away from each other to place the supply and take-up areas in communication with each other for movement of slides longitudinally of the magazine from the supply area to the take-up area and vice versa. Biasing means are provided in the take-



up area for simultaneously returning all slides therein to the supply area when the rails are in their spread apart position. This permits the operator at any time to return all slides in the take-up magazine to the supply magazine for removal and replacement.

3,434,230
FISH LURE
Robert W. Littlefield, 327 Boulevard, Pompton Plains, N.J. 07444
Filed Jan. 11, 1966, Ser. No. 519,941
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.06 **1 Claim**



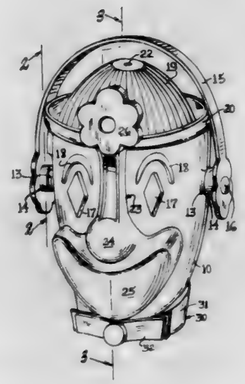
A fishing lure of monolithic, flexible plastic construction containing an axial slot-like cavity which gapes laterally when the lure is flexed to receive bait material and closes to hold the bait material when in unflexed condition. The lure body has an elongated generally cylindrical shape, and the body has transverse openings which also pass through the cavity.

3,434,231
FISHING TOOL
Arlie L. King, Box 46, Bowerston, Ohio 44695
Filed Sept. 30, 1966, Ser. No. 583,403
Int. Cl. A01k *97/00;* **A22c** *25/10, 25/02*
U.S. Cl. 43—53.5 **1 Claim**



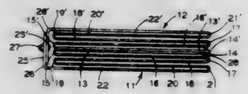
A multipurpose fisherman's tool which includes a scale for measuring a fish, a fish scale remover, a plug and fly remover, and a fishhook removing device, all of the devices being contained upon a single base.

3,434,232
TAKE-APART SIMULATED FACIAL TOY
Sidney A. Tarrson, 777 S. Tripp Ave., Chicago, Ill. 60624
Filed Feb. 23, 1967, Ser. No. 618,180
Int. Cl. A63h *33/08*
U.S. Cl. 46—11 **4 Claims**



A toy having a plurality of components removably assembled into a single portable simulated facial toy with each component having an individual and utilitarian purpose.

3,434,233
COMBINATION BOOK AND PLAYHOUSE
Jesse W. Dean, 3878 Cannon Place, Bronx, N.Y. 10463, and Louis Silverstein, 57 Hicks St., Brooklyn, N.Y. 11201
Filed Mar. 24, 1966, Ser. No. 537,113
Int. Cl. A63h *33/16*
U.S. Cl. 46—21 **7 Claims**



A combination children's book and playhouse based on a single unit construction made up of laterally related, hingedly connected panels bearing printed matter on surface portions thereof, such unit providing an element of a book and being adapted to be associated with a similar unit to form a booklike construction. Alternatively, the unit or units are adapted to be manipulated to bring the panels thereof into polygonal relation to thus form a playhouse.

3,434,234
DIVING DUCK TOY
Melvin P. Watts, Cortland, Ind. 47228, and George H. Schleter, 1110 South Ave., Pittsburgh, Pa. 15221
Filed July 13, 1964, Ser. No. 382,993
Int. Cl. A63h *23/10, 23/04*
U.S. Cl. 46—92 **2 Claims**

1. A toy duck comprising a hollow body adapted to float, and an actuating mechanism mounted inside of said

body, said actuating mechanism comprising: a duck-propelling means for moving the duck forwardly, a transverse propeller-actuating pulley, a power-supplying means for driving said propeller-actuating pulley, a mechanical connection between said propeller-actuating pulley and said duck-propelling means, a transverse idler-pulley disposed in front of said propeller-actuating pulley, a belt connected between the two pulleys, a weight carried by said belt whereby to shift the center of gravity forward sufficiently to cause a forward diving action of the duck at given intervals when the belt is in such a position that said weight is in the front part of the duck, while the duck is swimming in water.



3,434,235

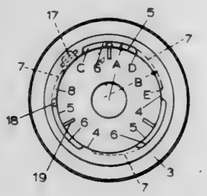
FLOWER VASE AND HOLDER

Robert G. Gordon and James C. Tweddell, Bethel Park, Pa., assignors to Jas. H. Matthews & Co., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1967, Ser. No. 625,840

Int. Cl. A01g *5/00;* **A47g** *7/07;* **B65d** *25/24*

U.S. Cl. 47—41.1 **9 Claims**



A flower vase and holder therefor, wherein the vase is securely maintained in the holder when in use by means of cooperating wedging surfaces.

3,434,236

SASH LOCK

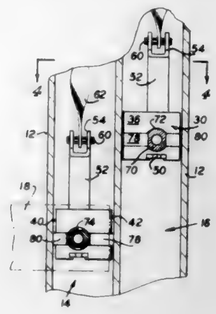
Ralph J. Weidner, Stony Brook, and James Benigno, Brooklyn, N.Y., assignors to Kassl Window Company, Inc., Plainview, N.Y., a corporation of New York

Filed June 7. 1967, Ser. No. 644,376

Int. Cl. E05d *15/22*

U.S. Cl. 49—176 **7 Claims**

Herein is described and shown a window construction having a support frame and a sash unit mounted therein for vertical movement. The sash is additionally pivoted out of the frame on an axis normal thereto. Particular attention is paid to the construction of a mount for the axle defining the pivot axis and its added function as a locking mechanism restraining vertical movement when the sash is pivoted and as a holder for the terminal section of a counterbalance mechanism.



3,434,237

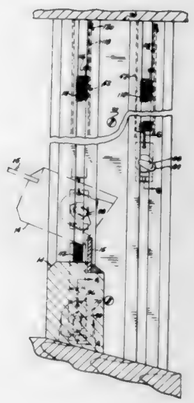
SELF-LOCKING SPRING SASH BALANCE FOR TILTABLY-REMOVABLE SASH WINDOWS

Gordon W. Love, deceased, late of Birmingham, Mich., by Mildred W. Love, 962 Abbey Road, Birmingham, Mich. 48008, and Stanley A. Simon, 1420 Holden Ave., Detroit, Mich. 48208, co-executors

Filed Apr. 12, 1967, Ser. No. 630,791

Int. Cl. E05d *15/28*

U.S. Cl. 49—181 **5 Claims**



A self-locking spring sash balance for tiltably-removable sliding sash windows wherein the sash can only be swung inward for cleaning or removal, such swinging locking the spring sash balance in its attained position by a camming action of the spring-attached slide block against the channel sash guide. Accidental and unintended sash removal with consequent dropping and possible pane breakage is impeded by a bulbous wedge-shaped pivot element normally seated in a stiffly-yieldable C-shaped or U-shaped pivot block, the stiff arms of which normally resist yielding but which can be wedged apart by the bulbous element to intentionally remove the sash by a quick forceful pull.

3,434,238

WINDOW FRAME OF STRUCTURAL METAL OR SYNTHETIC MATERIAL

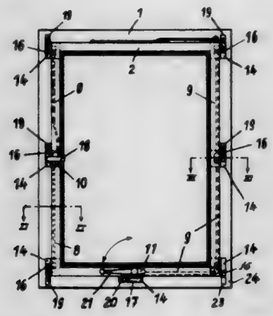
Heinz Müller, Bad Homburg vor der Hohe, Germany, assignor to Heinz Mathes KG., Bad Homburg vor der Hohe, Germany

Filed July 27, 1966, Ser. No. 568,265

Claims priority, application Germany, July 28, 1965, M 66,145

Int. Cl. E05d *15/50, 7/00*

U.S. Cl. 49—192 **8 Claims**



Window consisting of an outer frame and an inner frame both made up of hollow generally U-shaped sections opening toward the inside of the window with cover strips covering the open side of the frames. Interengageable elements are carried on the frames with some of those on the inner frame being moveable, and actuating means on the inner frame includes parts disposed inside the inner frame and connected to the moveable elements.

3,434,239

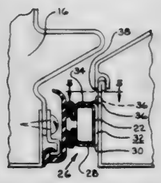
SNAP-ON VACUUM BREAK DEVICE FOR REFRIGERATORS

Eric H. Schwenker, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Mar. 25, 1968, Ser. No. 715,686

Int. Cl. E06b *7/16, 7/18*

U.S. Cl. 49—478 **4 Claims**



A partial vacuum relief device for refrigeration apparatus. The device is adapted to clip onto a magnetic door gasket and to provide an air flow path from the refrigeration apparatus enclosure to the ambient atmosphere surrounding the refrigeration apparatus. The air flow path is closed by a flexible flap which acts in the manner of a check valve to allow air to enter the enclosure but not to escape therefrom.

3,434,240

APPARATUS FOR FINISHING ENDLESS METALLIC BELTS

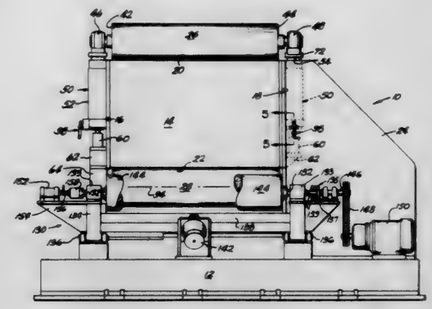
Vernon A. Phelps, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan

Filed Nov. 21, 1966, Ser. No. 595,802

Int. Cl. B24b *29/00, 7/12*

U.S. Cl. 51—5 **10 Claims**

Apparatus for grinding and buffing endless sheet metal belts comprising a vertically disposed C-shaped rigid frame structure, rolls mounted on the frame structure above and below the upper arm of the C-shaped member, the upper arm being supported on extensible jack assemblies so that belts of different sizes can be finished, grinding and buffing means positioned adjacent to opposite sides of the lower roll for grinding and buffing a belt, and drive means for rotating the lower roll.



3,434,241

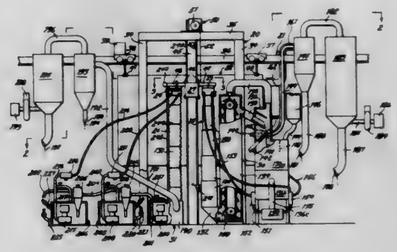
APPARATUS FOR SURFACE-FINISHING METALWORK

Elmer H. Greenberg, Philadelphia, Pa., and William B. Greenberg, 1510 Brinton Park Drive, Wynnewood, Pa. 19096; said Elmer H. Greenberg assignor to said William B. Greenberg

Continuation-in-part of application Ser. No. 314,725, Oct. 8, 1963. This application Nov. 3, 1966, Ser. No. 591,757

Int. Cl. B24c *3/00*

U.S. Cl. 51—14 **12 Claims**



A work conveyor with means for projecting different finishing materials against the work at successive locations along the path of work movement and means for collecting together the different finishing materials, separating the different finishing materials from each other, and returning the finishing materials for repeated projection.

3,434,242

MACHINE TOOL

Jan Micheal Corey, 838 S. Coleman, Mesa, Ariz. 85201

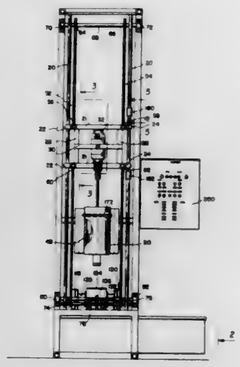
Filed Mar. 31, 1967, Ser. No. 627,503

Int. Cl. B24b *5/08, 3/46;* **F16h** *9/00*

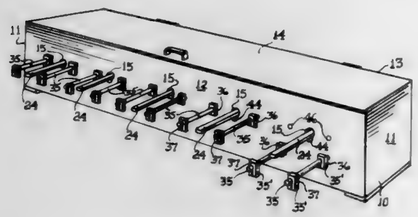
U.S. Cl. 51—34 **12 Claims**

A machine tool wherein a honing device or other tool is mounted on a reciprocating carriage and moved relative to work held by the frame of the machine, the carriage being reciprocated by reversible mechanism com-

prising a pair of clutches engageable with oppositely rotating shafts and wherein limit devices at opposite ends of the stroke of the carriage alternately operate the clutches to reverse movement of the carriage at each opposite end of its stroke; and wherein means is provided to cooperate with said limit devices for causing a time delayed dwell at various positions of the stroke of said carriage.



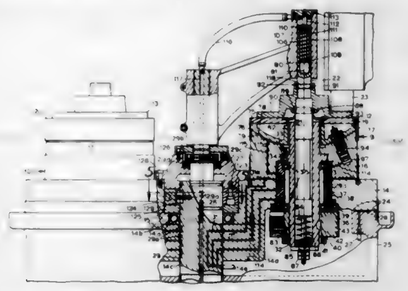
3,434,243
RECIPROCATING LAPPING MACHINE FOR RAILROAD CAR AIR BRAKES
Lawrence Day and Joseph Dobrick, Chicago, and Arthur Kay, Evanston, Ill., assignors to Spitfire Tool & Machine Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 21. 1966, Ser. No. 595,764
Int. Cl. B24b *21/08, 19/26*
U.S. Cl. 51—59 **6 Claims**



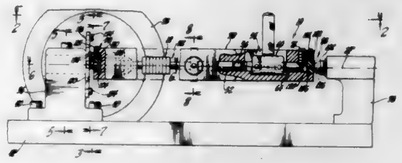
A reciprocating lapping machine for railroad car air brakes, having one or more stations each provided with parallelly extending spaced apart work supporting rods between which an abrasive or lapping carrying member is reciprocated in parallel relation with respect to the rods in lapping engagement with the work.

3,434,244
GRINDING MACHINERY FOR FINISHING BRAKE DISCS
Jacob Decker, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 3, 1967, Ser. No. 627,815
Int. Cl. B24b *5/02, 29/00, 39/04*
U.S. Cl. 51—106 **8 Claims**

A method for grinding a brake disc flat and square with its axis of rotation and the provision of a special fixture apparatus useful in performing the method to locate, orient and hold the disc using its axis of rotation as the reference and to support the disc solidly during the grinding process.

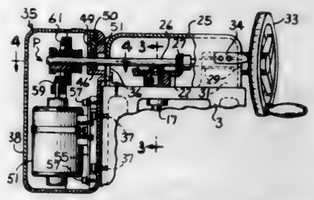


3,434,245
APPARATUS AND METHOD FOR GRINDING INSERTS
Robert J. Stuart, Bloomfield Hills, Mich., assignor to Dex-A-Grind, Inc., Birmingham, Mich., a corporation of Michigan
Filed Sept. 13, 1965, Ser. No. 486,920
Int. Cl. B24b *7/00, 9/00, 5/00*
U.S. Cl. 51—124 **30 Claims**



A work holder and, more particularly, a work holder particularly suitable for grinding indexable-throwaway inserts of the type having a pair of parallel faces and a plurality of plane sides thereabout extending between the faces with an arcuate surface tangent to and joining adjacent sides, which work holder includes means for rotating the inserts about a first axis to grind the arcuate surfaces and means for independently rotating the inserts about a second axis which is in parallel and spaced relationship with the first axis to successively position the sides for grinding thereof.

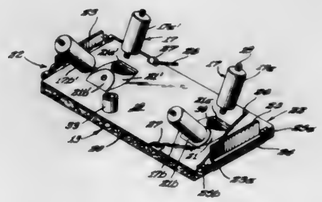
3,434,246
POWER DRIVEN TOOL-POSITIONING MECHANISM
William J. Adlaf, North Riverside, Ill., assignor to Esterline Corporation, Broadview, Ill., a corporation of Delaware
Filed Apr. 27, 1966, Ser. No. 545,708
Int. Cl. B24b *49/00, 51/00*
U.S. Cl. 51—165 **9 Claims**



A surface grinder has a power-operated drive mechanism for raising and lowering the grinding wheel carriage

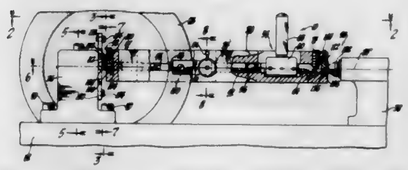
relative to the work table. This drive mechanism has a clutch and a friction drive from a motor to the clutch. When the carriage reaches the end of its travel, the friction drive and motor continue to operate but the clutch itself slips, preventing transmission of power to parts of the drive mechanism coupled thereto. With the motor shut off, a calibrated hand wheel is used to operate the drive mechanism. The hand wheel shaft drives through the clutch and motor, which provide a slight friction drag to facilitate fine adjustments of the carriage at the work.

3,434,247
VIBRATORY TOOL
Nicholas T. Anton, Park Ridge, and Lew H. Daughetee, Northbrook, Ill., assignors to Wen Products, Inc., Chicago, Ill., a corporation of Illinois
Filed May 25, 1966, Ser. No. 552,814
Int. Cl. B24b *23/04*
U.S. Cl. 51—170 **8 Claims**



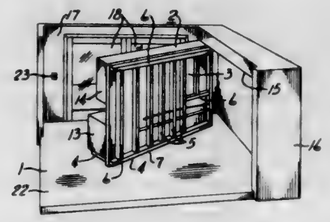
A vibratory tool of the hand-sander type wherein the shoe or plate means is affixed to the frame by means of a plurality of resilient mounts disposed in angular relationship relative to the plane of the shoe or plate means to confine the shoe or plate means for essentially a single longitudinal line of motion. A power unit comprises an electromagnet including a core and an armature pivotally mounted on the core for swinging movement toward and away from the core in a plane parallel to the shoe or plate means, thereby producing a driving movement along the line of relative motion prescribed by the resilient mount arrangement. A working surface defining sheet clamp assembly releasably affixes an abrading sheet to the base unit and includes a pivotally mounted clamping member joined to an operating lever which, as it moves into its closed or locking position, resiliently deforms to maintain the clamping member against the sheet under pressure to achieve a better releasable captivation of the sheet.

3,434,248
APPARATUS AND METHOD FOR GRINDING INSERTS
Neil F. D. Martin, 22115 Metamora Drive, Birmingham, Mich. 48010
Filed Oct. 20, 1965, Ser. No. 498,842
Int. Cl. B24b *47/02, 5/00, 41/06*
U.S. Cl. 51—234 **28 Claims**



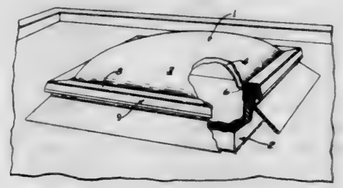
A method and apparatus for grinding indexable-throwaway inserts of the type having a pair of parallel faces and a plurality of plane sides thereabout extending between the faces with an arcuate surface joining adjacent sides so that one of the faces has a greater area than the other face, and more particularly, to a method and apparatus for rotating a plurality of inserts about an axis which is at an inclined angle relative to the faces for grinding the arcuate surfaces and for grinding the sides so that each of the sides forms an acuate angle with one of the faces and forms an obtuse angle with the other face whereby one face of each insert has a larger area than the other face.

3,434,249
MOBILE WALL UNIT
Reed W. Richey, 9345 Highland Road, Pittsburgh, Pa. 15237
Filed Aug. 28, 1967, Ser. No. 663,605
Int. Cl. E04h *14/00, 1/02;* **E04b** *5/48*
U.S. Cl. 52—1 **3 Claims**



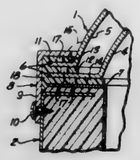
A mobile wall unit supported for movement along a stationary floor space of a dwelling or other building capable of being positioned selectively in different positions on the floor space and permit articles carried on the mobile wall unit to be readily accessible in any of a multitude of positions in the building. Flexible coupling connections from a stationary member of the building are made to the mobile wall unit to permit movement of the latter relative to the former and provide a means of utility supply to the articles carried on the mobile wall unit.

3,434,250
DUAL DOME SKYLIGHT
Elmer C. Kiekhaefer, Winter Haven, Fla., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,926
Int. Cl. E04b *7/18, 1/62;* **E06b** *5/00*
U.S. Cl. 52—22 **5 Claims**



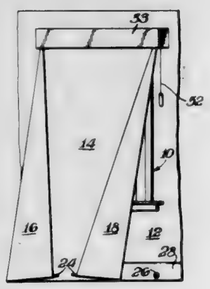
An expansion joint mounting for the peripheral edge of a dual dome skylight in which a cushion member is disposed between the panes to bias them apart and into light pressure contact with clamping elements of the curb and frame and providing a substantial area of frictional slippage between the panes and the clamping elements. The cushion member is of spring material having spaced members with flanged lips embedded in a rubber-like seal secured in the frame. The spaced members of the cushion may be joined by an integral fold at the inner edge thereof.

3,434,251
DUAL PANE SKYLIGHT
Elmer C. Kiekhaefer, Winter Haven, Fla., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,928
Int. Cl. E04b 7/18, 1/62; E06b 5/00
U.S. Cl. 52—22 4 Claims



A dual pane skylight supported on a heat insulation gasket on the upper surface of a curb and having at heat insulation gasket between the peripheral edge portions of the panes. A frame secured to the outer wall of the curb extends upwardly and is flanged inwardly over the peripheral edge portions of the panes with a heat insulation gasket between the flange and the upper pane. The gaskets may be of foamed plastic and may have a lip on their outer edges to confine the panes within the frame.

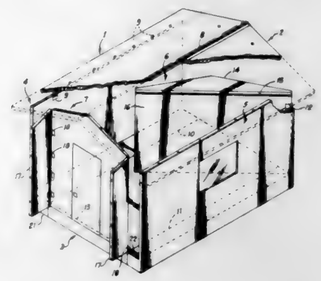
3,434,252
GUARD FOR FIRE AND SMOKE PROTECTION
Howard Franklin Dobson, 410 Rogers Road, Dunlieth, Wilmington, Del. 19801
Filed Mar. 31, 1967, Ser. No. 627,424
Int. Cl. A62b 3/00; E04b 1/347; E06b 9/08
U.S. Cl. 52—29 10 Claims



A roll of fire resistant material is mounted in an elevated position on the side wall of a building such that when released the material unrolls to form a protective enclosure comprising the material and the enclosed floor and wall portions of the building.

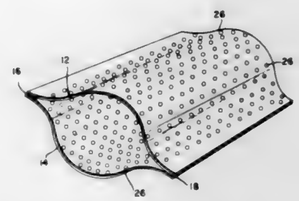
3,434,253
FOLDABLE UTILITY BUILDING
Frank M. Hatcher, 800 5th Ave., Fort Worth, Tex. 76104
Filed Jan. 15, 1968, Ser. No. 697,975
Int. Cl. E04b 7/16, 1/343
U.S. Cl. 52—69 2 Claims

Certain specific improvements in a foldable building structure having a pair of oppositely inclined roof portions and having bottom, side, and end portions, said portions being connected one to another by hinges whereby they may be folded compactly one upon another about



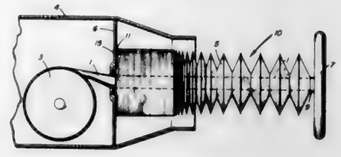
said hinges in the folded positions thereof, for convenience in transporting and storing.

3,434,254
DEPLOYABLE BOOM
Charles P. Rubin, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Oct. 4, 1965, Ser. No. 514,157
Int. Cl. E04h 12/18; H01q 1/08; B65h 75/00
U.S. Cl. 52—108 4 Claims



An extendable boom formed of a pair of mated strips of thin spring material joined at margins and curved in cross section outwardly and oppositely so that when the boom is flattened and rolled into a coil, the margins and curved portions will lie juxtaposed without exceeding the yield of strength of the material.

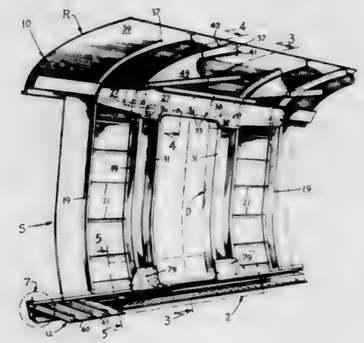
3,434,255
SPACECRAFT EXTENDIBLE BOOM SUNSHADE
David W. Rabenhorst, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 2, 1968, Ser. No. 702,689
Int. Cl. E04h 12/08; B65h 75/00
U.S. Cl. 52—108 6 Claims



The subject invention relates to a sunshade developed in response to the problem of preventing thermal bending of booms extended from satellites into solar pressure zones. So far as is known, the device is the first

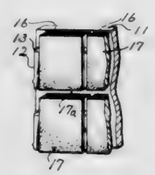
sunshade which may be adapted for use with satellite booms and associated housings already in existance and approved for flight experiments. For example, the sunshade of the present invention may be stored in a collapsed position within a presently available boom housing and erected simultaneously with an existing boom in order to shade its entire extended length from solar radiation effects.

3,434,256
DOORWAY CONSTRUCTION
Walter S. Eggert, Jr., Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1967, Ser. No. 662,523
Int. Cl. E06b 1/12; B61d 17/12
U.S. Cl. 52—208 5 Claims



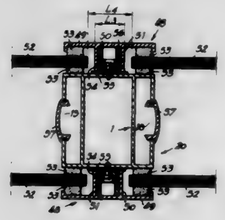
A doorway construction for a railway car in which a rectangular channel member is incorporated in the side frame unit of the car prior to the assembly of the unit to the floor underframing, and the subsequent assembly of the roof to the side frame unit. The side frame and floor underframe include side sill members which combine to form a box section below the floor level for great torsional strength, and combine with the door channel member to form a double box section at the door opening. The roof structure includes a sleeper member which likewise combines with the upper portion of the door channel member to produce a box section above the doorway opening.

3,434,257
TILE-SETTING FRAME APPARATUS
Youukou Sakuma, 9–10 Kiribatake, Kanagawa-ku, Yokohama-shi, Japan
Filed Jan. 18, 1967, Ser. No. 610,143
Int. Cl. E04f 13/08
U.S. Cl. 52—387 1 Claim



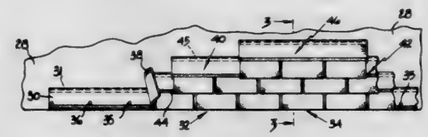
A tile setting frame having integral T-shaped ribs thereon which interlock with grooves in the sides of the tiles and filler strips which extend between said tiles and overlap the surface thereof.

3,434,258
PARTITIONS AND THE LIKE HAVING NO SOUND BRIDGES
Ghislain Leurent, Mouscron, Belgium, assignor to Societe Industrielle de Transformation des Plastiques, Societe Anonyme, Tourcoing, Nord, France
Filed Oct. 26, 1966, Ser. No. 589,729
Claims priority, application Belgium, July 19, 1966, 45,864
Int. Cl. E04b 1/62; E04f 15/14, 15/22
U.S. Cl. 52—397 10 Claims



A partition or similar structure without sound bridge including a plurality of interconnected uprights and crosspieces forming a resistant structure and delimiting a plurality of openings, a plurality of panels applied against said structure via sound insulating strips and covering said openings, a plurality of clipping elements fastened on said structure, said clipping elements having a hooking part on either side and being made of a sound insulating material, and a plurality of butt-covers having each two hooking ribs, said butt-covers being fixed on said clipping elements in such a manner that their hooking ribs cooperate with said hooking parts of said clipping elements and that they make contact with said panels via other sound insulating strips said panels being thus fastened on said structure, said hooking ribs having such a length that they do not make contact with said structure when the butt-covers are fixed on said clipping elements.

3,434,259
ROOFING SHINGLE
Raymond Le Rae Corbin, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed June 3, 1966, Ser. No. 555,164
Int. Cl. E04b 1/34, 1/36, 1/28
U.S. Cl. 52—420 4 Claims



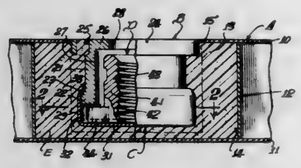
Asphalt roofing shingles are secured directly to the roof structure by pressure sensitive adhesive. Additionally, self-sealing adhesive can be provided on the side edges of shingles so that the butt joints between adjacent shingles on a roof are sealed to prevent water from traveling through the joints to the roof structure.

3,434,260
TILED ROOFS
George Harold Carter, Reigate, Surrey, England, assignor to Redland Tiles Limited, Reigate, England, a British company
Filed Jan. 30, 1967, Ser. No. 612,509
Claims priority, application Great Britain, Feb. 1, 1966, 4,442/66; Mar. 23, 1966, 22,959/66
Int. Cl. E04c *1/34*; E04b *7/02*; E04d *13/04*
U.S. Cl. 52—471 8 Claims



A series of separately formed gutters underlies the joins between adjacent tiles disposed side-by-side. Water penetrating the joins is drained by the underlying gutter on to the next lower tile or on to the aligned next lower channel. Each gutter has a plane bottom wall from which projects downwardly a locating flange perpendicular to the length of the gutter.

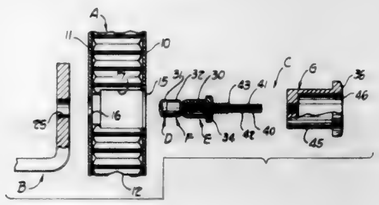
3,434,261
MOLDED-IN INSERT WITH FLOATING NUT
Frederick W. Rohe, Placentia, Calif.
(P.O. Box 1407, Santa Ana, Calif. 92702)
Original application Mar. 30, 1964, Ser. No. 355,809, now Patent No. 3,313,078, dated Apr. 11, 1967. Divided and this application Feb. 8, 1967, Ser. No. 638,675
Int. Cl. E04b *1/40*; E04c *2/38*; F16b *39/00*
U.S. Cl. 52—617 6 Claims



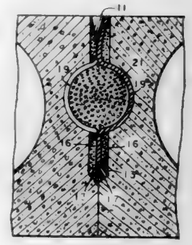
A fastener for installation in lightweight sandwich panels (e.g. with honeycomb core structure) anchorage being provided by embedding it in a body of solidified potting compound within a hole in the panel. The fastener comprises a tubular shell, a floating nut enclosed therein, and a cap closing the inner end of the shell and co-operating therewith to define a socket in which the nut is enclosed with limited clearance for self-aligning (floating) adjustment to a bolt inserted therein, while being held against rotation. Radially projecting keys (lugs) on opposite sides of the nut are received in diametrically opposite keyway notches in the inner end of the shell to provide the floating, torque-holding connection. The keys are retained in the notches by the closure cap. A head on the outer end of the shell is fitted in a circular aperture in the skin sheet at one side of the sandwich panel, to provide a closure for the potting hole in the panel. Flats or other non-circular external surfaces of the shell interlock with the potting body to lock the shell against rotation in the panel.

3,434,262
BLIND FASTENER FOR SANDWICH PANEL AND METHOD
Frank W. Lawrence, Mentor, Ohio, assignor to The National Screw & Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 8, 1967, Ser. No. 666,345
Int. Cl. E04b *2/28*; E04c *2/34*; E06b *3/54*
U.S. Cl. 52—617 8 Claims

A method of and/or fastener for securing together or assembling a so-called sandwich-type member comprising facing members separated by a core member, for example, so-called honeycomb structural material, and a supporting or supported member where one side of the assembly is blind, that is, not accessible to the operator, and an assembly comprising such a member and a support or supporting member.

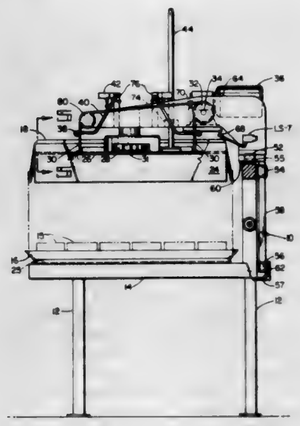


3,434,263
SHEAR LINK AND METHOD OF USING SAME
Melvin H. Beckman, Rockford, Robert K. Unter, Roscoe, and Samuel K. Wald, Rockford, Ill., assignors to Keystone Consolidated Industries, Inc., a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,798
Int. Cl. E04b *2/18*, *1/38*; E04c *5/18*
U.S. Cl. 52—715 7 Claims



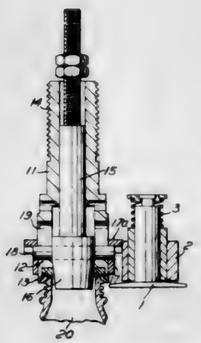
A shear link adapted to be positioned between adjoining precast concrete units and extended into recesses therein to aid in forming a grout key in the facing recesses providing resistance to shear stress, and a method for forming a grout key between such units including use of the shear link in the key. One form of link utilizes a metal plate having a rippled top edge, outwardly bent feet at the opposite edge and one or more rows of alternate oppositely bowed vertical bands which are expanded in the recess between the units. Another form of link utilizes a split disk having a wedge-shaped receptor space and split therefrom partially across the remainder of the disk; the receptor space receiving a wedge to expand the disk. Additional forms of link utilize a circular or deformed elliptical ring of metal which is expanded by a suitable wedge or tool to expand the ring. One form of ring is circular and has a split and opening cooperating with a wedge; another form of ring is elliptical with an opening at one edge and an inwardly bent portion opposite the opening, a plunger is inserted through the opening to abut the deformed portion and expand the ring; and a third form utilizes an elliptical ring having opposed openings receiving a threaded bolt having an enlarged head at one end and cooperating with a nut at the exterior of the opposite end of the ring.

3,434,264
APPARATUS FOR STACKING PALLETIZED GROUPS OF ARTICLES IN A CONTAINER
Vincent N. Delaney, New Hartford, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed Nov. 17, 1966, Ser. No. 595,074
Int. Cl. B65b *57/00*, *35/50*; B65d *19/22*
U.S. Cl. 53—59 20 Claims



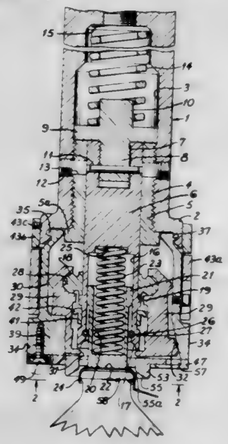
Machines for packing articles in a container, more particularly, an apparatus for vacuum handling groups of articles on a pallet.

3,434,265
CLOSING CONTAINERS
Walter Harvie Wyard, Worcester, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed May 4, 1966, Ser. No. 547,464
Claims priority, application Great Britain, May 6, 1965, 19,208/65
Int. Cl. B65b *57/08*
U.S. Cl. 53—77 8 Claims



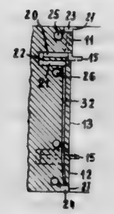
There is disclosed apparatus for tailoring in the skirt of a metal closure cap applied to the screw-threaded neck of a container, threads which mate with the neck threads, the apparatus comprising a capping head arranged to press the crown of the cap against the mouth rim of the container neck, and a thread-rolling device having a thread-spinning roller arranged to tailor the threads in the skirt of the cap, said capping head including a sensing plunger mounted and disposed to enter the mouth of a container having no cap applied thereover or to be displaced by engagement with a cap applied on a container thus to sense the presence or absence of closure caps, and means movable with the plunger and cooperable with the thread-rolling device to be effective whenever the plunger has entered a container mouth devoid of a cap to prevent the thread-rolling device from presenting said roller in thread-spinning position.

3,434,266
CAP CRIMPING APPARATUS
Edward M. Wolf, Cranford, and Stanley J. Koll, Keansburg, N.J., assignors to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,681
Int. Cl. B65b *7/28*; B67b *3/10*
U.S. Cl. 53—353 7 Claims



A segmented crimping annulus for applying lightweight metal tear off caps to the necks of bottles. A bottle guide and ear wiping device is provided whereby a cap tearing ear is precisely positioned adjacent to the neck of the bottle as a plurality of crimping jaws form the cap skirt in tightly underneath the lip of the bottle.

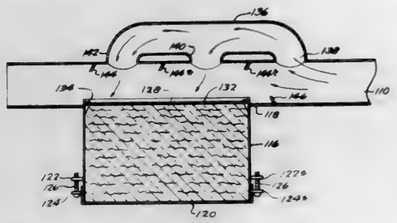
3,434,267
APPARATUS FOR PURIFYING AIR
Gregori Messen-Jaschin, Sarnen, Switzerland, assignor to G. A. Messen-Jaschin, Sarnen, Switzerland, a firm
Filed Sept. 1, 1965, Ser. No. 484,257
Claims priority, application Switzerland, Sept. 3, 1964, 11,529/64; Apr. 14, 1965, 5,384/65
Int. Cl. B03c *3/00*
U.S. Cl. 55—101 9 Claims



An installation for purifying air from exhaust gases, the installation having a plurality of electro-filtering devices located in rows along a street below the street level, air inlet openings located above the street level and directed sidewise against the traffic lane of the street. Each

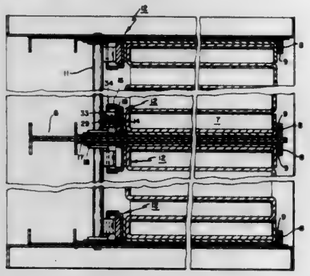
electro-filter having one inlet opening and a fan to pass gas from said inlet opening through the electrofilter.

3,434,268
EXHAUST GAS FILTER SYSTEM
Marshall J. McKenzie, 1014 S. Massachusetts, Sedalia, Mo. 65301
Filed July 25, 1967, Ser. No. 655,932
Int. Cl. B01d *53/34*
U.S. Cl. 55—418 **3 Claims**



An engine exhaust filter system having a polyethylene glycol coated glass fiber filter cartridge secured together with neoprene in a container secured to the bottom of an exhaust pipe and a conduit for directing the exhaust to the filter are disclosed.

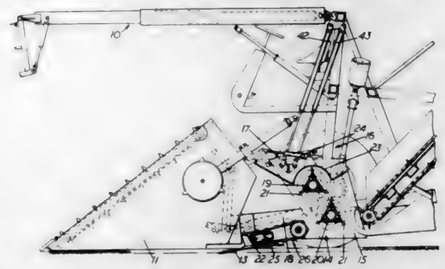
3,434,269
FILTER CELL RETAINING APPARATUS
Philip L. Hyatt, Prospect, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Aug. 9, 1967, Ser. No. 659,362
Int. Cl. B01d *46/12*
U.S. Cl. 55—490 **5 Claims**



A retaining apparatus for retaining a filter cell in sealed position against a peripheral seal on a cell support housing including an expansible-compressible retaining bar assembly positioned between a stop member and an adjacent edge of the filter cell to urge the cell into fast engagement with its seal.

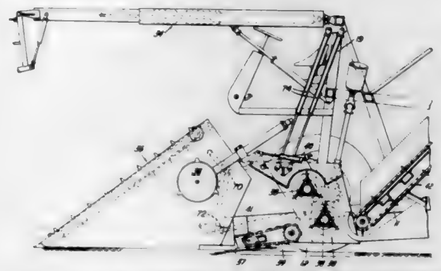
3,434,270
HARVESTER SUSPENSION SYSTEM
James K. Gaunt, Essendon, Victoria, Jacek J. Zagorski, Balwyn, Victoria, Alfred Player, Box Hill, Victoria, and Mintauts W. Fogels, Essendon, Victoria, Australia, assignors to Massey-Ferguson (Australia) Limited, Victoria, Australia
Filed Sept. 17, 1965, Ser. No. 488,159
Claims priority, application Great Britain, Sept. 28, 1964, 39,509/64
Int. Cl. A01d *45/02, 61/04*
U.S. Cl. 56—15 **15 Claims**

A harvesting machine having a wheel supported frame, a crop processing unit suspended from the frame by a resilient means such as a gas accumulator actuated hydraulic cylinder and a valve controlled hydraulic cylinder. The processing unit is also supported by dual ground engaging shoes connected to the unit by cross connected hydraulic cylinders. Changes in pressure in the cross connected cylinders are used to contact the valve con-



trolled hydraulic cylinder to raise and lower the unit relative to the frame to maintain a constant pressure in the cross connected cylinders and hence a constant weight on the ground engaging cylinders.

3,434,271
POWER UNIT AND FRAME
James K. Gaunt, Essendon, Victoria, Jacek J. Zagorski, Balwyn, Victoria, Alfred Player, Box Hill, Victoria, and Mintauts W. Fogels, Essendon, Victoria, Australia, assignors to Massey-Ferguson (Australia) Limited, Victoria, Australia
Filed Sept. 16, 1965, Ser. No. 487,776
Claims priority, application Great Britain, Sept. 28, 1964, 39,505/64
Int. Cl. A01d *45/10*
U.S. Cl. 56—16 **1 Claim**

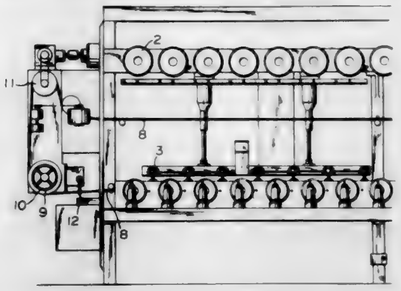


A tall row crop harvesting machine having a wheel supported chassis unit and a harvesting unit including crop gathering, base cutting, and chopping means, the harvesting unit being partially supported on the chassis unit by means of parallel links that are telescopic to permit forward movement of the harvesting unit relative to the chassis unit to permit servicing of components in the machine.

3,434,272
DOFFING ARRANGEMENT FOR CENTRIFUGAL SPINNING SYSTEM
Seigo Aoe and Kiyoji Hashimoto, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan
Filed May 20, 1968, Ser. No. 730,298
Claims priority, application Japan, May 27, 1967, 42/33,881
Int. Cl. D01h *13/26, 9/00, 1/08*
U.S. Cl. 57—34 **5 Claims**

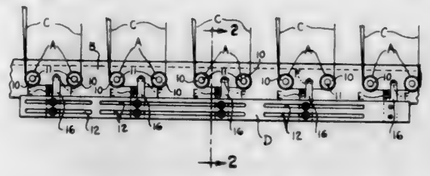
This invention relates to a doffing arrangement for spinning regenerated cellulosic materials by a centrifugal collecting device which comprises suction funnel assemblies with its elevating apparatus which guide yarns in collecting pots as usual at the spinning position and also continuously keep yarns through them by sucking in the elevated position at doffing, devices to cut the waste yarns

when the suction funnel assemblies are elevated and also lowered, a yarn receiver to accept waste yarns guided



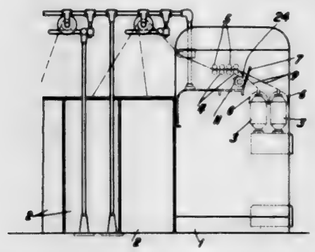
through the funnel assemblies at the elevated position and a collecting device of waste yarns.

3,434,273
TAPE CLEANING APPARATUS
George V. Lovell, Liberty, S.C., assignor of one-half to Fox B. Cahaly
Filed Aug. 29, 1967, Ser. No. 664,176
Int. Cl. D01h *11/00*
U.S. Cl. 57—56 **3 Claims**



A plurality of cleaning devices are provided for cleaning lint and the like from tapes used for driving the spindles on a textile strand processing machine, such as a spinning frame.

3,434,274
APPARATUS FOR WINDING ROVINGS HAVING ANTI-TANGLE PLATE STOP MOTION DEVICE
Edouard Doll, Saint-Gratien, France, assignor to Société à Responsabilité Limitée: Filatures et Tissages F. & Th. Frey, Guebwiller, France, a corporation of France
Filed Sept. 3, 1964, Ser. No. 394,180
Claims priority, application France, Oct. 2, 1963, 949,340; Feb. 10, 1964, 963,247
Int. Cl. D01h *13/16, 13/04;* **D01g** *31/00*
U.S. Cl. 57—80 **8 Claims**



1. In apparatus for winding rovings, the combination of a rotatable flyer rotation of which produces an air current; means for directing a roving to said flyer via passage through said air current; an anti-tangle plate mounted in the path of movement of the roving to said flyer and having an aperture through which the roving runs to said flyer and also having gripping means at one side of said aperture, said aperture and gripping means being positioned in said air current with said gripping means located downstream of said air current with respect to said aperture, whereby the end of a broken roving passing through said aperture will be blown by said air current to and gripped by said gripping means; and a stop motion device responsive to gripping of said broken roving end by said gripping means for stopping said apparatus.

3,434,275
ALTERNATE TWIST YARNS AND METHOD OF FORMING SAME
Stanley Backer, 5 Irving Road, Waban, Mass. 02168, and Peter Popper, 3319 Morningside Road, Wilmington, Del. 19803
Filed Apr. 26, 1967, Ser. No. 633,760
Int. Cl. D02g *3/22, 3/36*
U.S. Cl. 57—139 **3 Claims**



A combined yarn is formed from component strands by axially twisting one component in alternating directions in lengthwise intervals, and then attaching the component in the regions of twist reversal to another one or more components, which may be similarly twisted, oppositely twisted or untwisted. The combined yarn is torsionally balanced as a result of (1) twisting the components so that their unwinding torques exactly counterbalance, or (2) twisting the components so that their unwinding torques are unbalanced, thereby causing the combined yarn to rotate or ply until the ply torque exactly counterbalances the residual torque of the components.

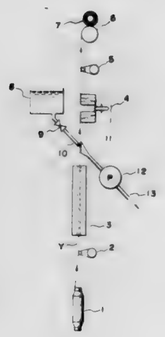
3,434,276
PRODUCTION OF BULKY PRODUCTS OF ACRYLIC COMPOSITE FIBERS
Yoshimasa Fujita, Kazumi Nakagawa, Keitaro Shimoda, and Koji Miyashita, Saidaiji, Japan, assignors to Japan Exlan Company Limited, Osaka, Japan
No Drawing. Filed Oct. 9, 1964, Ser. No. 402,931
Claims priority, application Japan, Oct. 14, 1963, 38/55,199
Int. Cl. D02g *3/04*
U.S. Cl. 57—140 **3 Claims**

The invention is directed to a method of making bulky yarn goods using a mixed spun yarn in which one portion of the fibers is made of an acrylic composite fiber having latent heat-developable coil crimps and another portion is a fiber made of a single highly shrinkable acrylic polymer or copolymer. Upon heating the mixed yarn under conditions tending to prevent the development of the coil crimps of the composite yarn, the single polymer fiber shrinks and affords protection for the composite fibers thus permitting the composite fibers to fully develop their latent crimps.

3,434,277
PROCESS FOR PRODUCING CRIMPED YARNS
Yutaka Maeda, Kaoru Maeda, Tetsuya Yamamoto, Tetsuo Kashiwagi, Yukihiro Hada, Tokue Kato, and Nagao Gomi, Yamanashi-ken, Japan, assignors to Fuji Keiki Kabushiki Kaisha, a corporation of Japan
Filed June 11, 1965, Ser. No. 463,269
Claims priority, application Japan, June 16, 1964, 39/34,361; July 15, 1964, 39/40,615; July 27, 1964, 39/42,732
Int. Cl. D01h *7/40*
U.S. Cl. 57—157 **7 Claims**

The present invention is a process for producing crimped yarns by crimping thermoplastic synthetic yarns

with false twisting comprising heating the yarn for more than .0125 $D^{0.7}$ seconds (D being the number of deniers), bringing said yarn into contact with liquid for a time less than 60% of the heating time without interrupting the



twist running so that proper amount of the liquid may be deposited on the yarns, leaving the yarn for wet-cooling time of more than .002 $D^{0.5}$ seconds (D being the number of deniers) and then making the yarn reach the twisting part.

3,434,278

PRODUCTION OF BULKED YARN

Wolfgang Martin, Ludwigshafen (Rhine), Hermann Linge, Carlsberg, Pfalz, and Hans Hendus and Friedrich Wenger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,171
Claims priority, application Germany, Dec. 24, 1964, B 79,896
Int. Cl. D02g *3/02*
U.S. Cl. 57—157 2 Claims

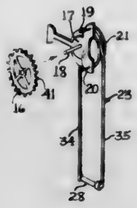
Production of crimped thermoplastic polyamide yarns by heating and false twisting polyamide multifilament yarns containing 0.05–1% by weight of a crystal nucleating agent.

3,434,279

PENDULUM HANGER

John L. Hancock, Villa Park, and Solomon Edward Koplar, Chicago, Ill., assignors, by mesne assignments, to Solomon Edward Koplar, Chicago, Ill.

Filed Apr. 26, 1967, Ser. No. 633,847
Int. Cl. G04b *17/16*
U.S. Cl. 58—134 3 Claims



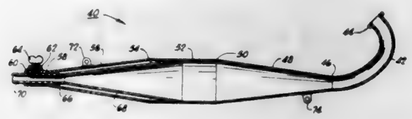
A pendulum hanger for a battery-powered motor-operated spring-driven clock mechanism having a balanced self-aligning mounting upon a circular support forming an oscillating element of an escapement mechanism.

3,434,280

EXHAUST CHAMBER

Joe H. Burkhart, 1402 Manvel, Chandler, Okla. 74834

Filed Nov. 20, 1967, Ser. No. 684,304
Int. Cl. F02b *27/00*
U.S. Cl. 60—32 8 Claims



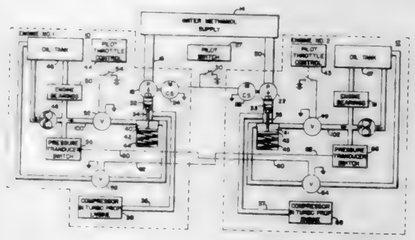
Apparatus for providing optimum exhaust control for a two-stroke cycle engine, the apparatus comprising an inlet pipe for receiving the engine exhaust output and for directing it into an expansion chamber having predetermined internal configuration and adjustable volume and baffle spacing. The expansion chamber is formed as a volume providing uniform expansion and baffling of exhaust gases, the volume containing a centrally-located pulsating portion having uniform cross-section and being adjustable as to its axial length.

3,434,281

STANDBY AUTOMATIC WATER-METHANOL SYSTEM FOR MULTIENGINE AIRCRAFT

John D. Donaldson, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed June 5, 1967, Ser. No. 643,546
Int. Cl. F02c *7/02*; F02k *11/00*
U.S. Cl. 60—39.15 5 Claims



This system operates to provide water-methanol to one engine of a multiengine aircraft when another engine fails or substantially fails during operation, such as during take-off, to increase the power of the engine and compensate for the loss in thrust caused by the engine failure.

3,434,282

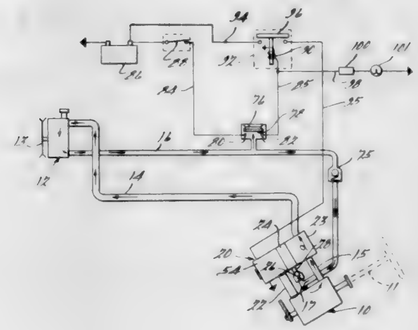
SAFETY BACKUP SYSTEM FOR POWER STEERING

Robert Edward Shelhart, Dearborn, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of New York

Filed Mar. 14, 1967, Ser. No. 623,066
Int. Cl. F15b *15/18*; F04b *21/00*; B62d *5/06*
U.S. Cl. 60—52 14 Claims

There is herein disclosed a power steering arrangement in which a main conventional hydraulic power steering

system is provided with an hydraulic safety backup system comprising an electrically operated motor-pump-



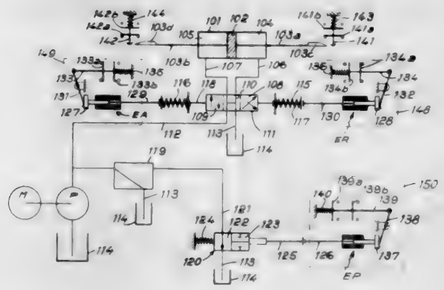
reservoir unit operable by a pressure responsive device upon reduction in pressure in the main system.

3,434,283

HYDRAULIC ANTISHOCK DEVICE

Jean Piret, Bougival, France, assignor to Societe Anonyme dite Societe des Automobiles SIMCA, Paris, France, a French company

Continuation of application Ser. No. 430,156, Feb. 3, 1965, now Patent No. 3,225,541, dated Dec. 28, 1965. This application Nov. 1, 1967, Ser. No. 679,712
Claims priority, application France, Nov. 3, 1966, 82,418
Int. Cl. F15b *13/44*
U.S. Cl. 60—52 5 Claims



A hydraulic antishock device for use with a hydraulic jack provided with a piston having two faces which are capable of being alternately connected, by means of a main distributor, with the delivery circuit of a pump, the return circuit of the pump to a tank or simultaneously, in the non-working position of the jack, with the two circuits. Two electromagnets for selectively operating the distributor, a pressure regulator interposed between the circuits. A master distributor is connected to the tank return circuit and is controlled by an electromagnet so as to cut off or to establish communication with the tank return circuit.

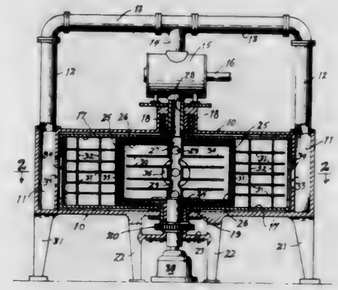
An electric circuit controlling the pump motor and the electromagnets includes two first double switches having sets of contacts, one set of which is interposed in the electric control circuit of an electromagnet so as to prevent excitation of the latter when another electromagnet is excited and a second set of contacts is interposed in the electric control circuit of the electromagnet of the master distributor so as to be closed when the master distributor occupies an extreme position and a second double switch connected with the first double switches and two end of travel switches so as to control the operation of the two electromagnets of the main distributor.

3,434,284

HYDRO-CENTRIFUGAL REACTOR

Fred M. Siptrott, 3011 Hardies Lane, Santa Rosa, Calif. 95401

Filed Jan. 9, 1967, Ser. No. 608,049
Int. Cl. F16h *41/04*
U.S. Cl. 60—54 5 Claims



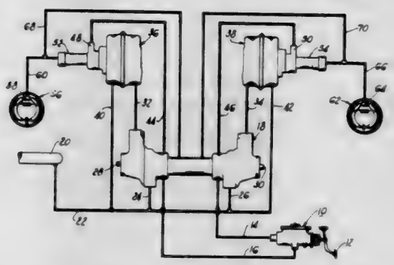
This invention involves a centrifugally operating force transmitting reactor in which a fluid mass is confined in a vertically disposed chamber and subjected to centrifugal force by rotation of the fluid mass, in which the force imparted to the fluid is intermittently projected through a plurality of concentrically aligned fluid conducting ports carried by oppositely moving elements through which the fluid mass with its centrifugally imparted force is eventually combined in a common fluid conducting conduit to perform useful work.

3,434,285

DUO SERVOMOTOR VALVE MEANS

Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

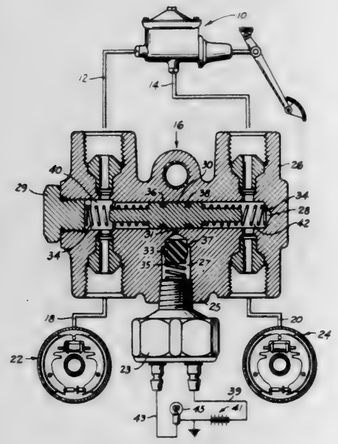
Filed May 22, 1967, Ser. No. 640,064
Int. Cl. F02b *73/00*; F15b *11/22*; G05d *11/02*
U.S. Cl. 60—54.5 14 Claims



A valve device for controlling simultaneously the operation of two differential pressure servo-devices in-

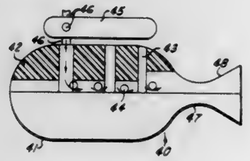
corporating valve means associated with a pressure responsive motor and having a reaction means comparing working pressures developed by said servo devices for balancing the working pressures by monitoring the valve operation.

3,434,286
PRESSURE FAILURE WARNING DEVICE
Sheldon F. Raizes, Marshallton, Del., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,676
Int. Cl. F15b *7/00;* **B60t** *11/10;* **H01h** *3/02*
U.S. Cl. 60—54.5 **8 Claims**



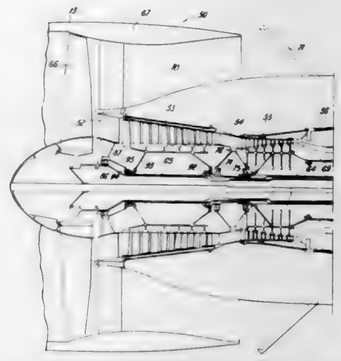
A warning device including a piston valve operatively positioned between separate hydraulic pressure circuits which valve has seals operatively related to an interposed port so that a pressure differential will communicate the higher pressure to a chamber within which a hydraulic stoplight switch is operatively related which chamber has means to trap the pressure introduced therein to maintain the operation of the switch after it has been actuated.

3,434,287
THRUST VECTOR CONTROL FOR SOLID PROPELLANT ROCKET MOTORS BY MEANS OF INJECTION
Leonard H. Caveny, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 617,968
Int. Cl. F02k *7/08, 9/06, 9/04*
U.S. Cl. 60—224 **6 Claims**



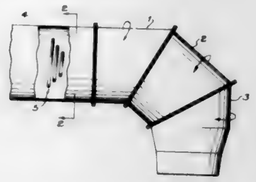
A trust vector control system for one or a cluster of booster type solid propellant rocket motors that includes a vortex injection into the solid propellant rocket motors in either a clockwise or counter-clockwise direction.

3,434,288
BY-PASS GAS TURBINE ENGINE
James Alexander Petrie, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British Company
Filed Feb. 27, 1967, Ser. No. 618,850
Claims priority, application Great Britain, Mar. 9, 1966, 10,462
Int. Cl. F02k *1/00, 3/04;* **F04d** *19/00*
U.S. Cl. 60—226 **11 Claims**



A by-pass gas turbine engine has coaxial shafts, which carry the compressors and turbines, mounted within two adjacent thrust bearings which are supported from the engine casing by a common support structure.

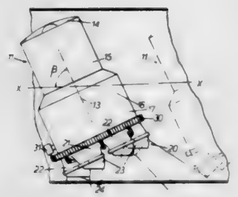
3,434,289
FUEL SUPPLY FOR AFTERBURNER
Heinrich Leibach, Puchheim, and Ralph Vedova, Munich, Germany, assignors to M.A.N. Turbo GmbH, Munich-Allach, Germany
Filed Jan. 27, 1967, Ser. No. 612,142
Claims priority, application Germany, Jan. 28, 1966, M 68,170
Int. Cl. F02k *1/24, 1/06*
U.S. Cl. 60—232 **2 Claims**



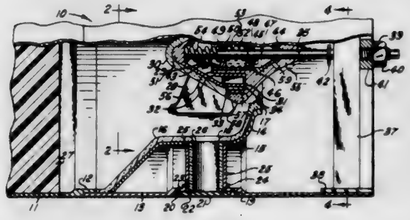
The fuel nozzle manifolds in an afterburner are segmented for injecting fuel in a non-uniform pattern to produce a uniform temperature distribution of the burning gases over the cross-section of the exhaust pipe.

3,434,290
NOZZLE ASSEMBLY
Roger A. Cresswell, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Aug. 10, 1967, Ser. No. 659,721
Claims priority, application Great Britain, Aug. 24, 1966, 38,038/66
Int. Cl. F02k *1/24;* **B64c** *15/00*
U.S. Cl. 60—232 **9 Claims**

A nozzle assembly, particularly for a lift jet engine, has multiple tubular outlets from a common annular chamber, each outlet having detachably mounted thereon a curved exit portion so that gases are discharged from the assembly in a common direction inclined to the axis of symmetry thereof.



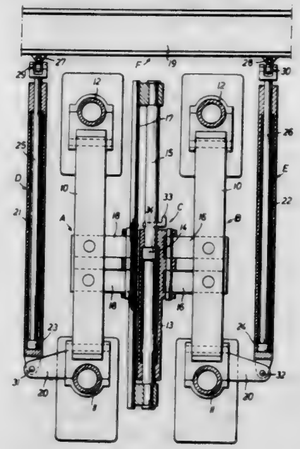
3,434,291
THRUST TERMINATION APPARATUS FOR SOLID PROPELLANT ROCKET MOTORS
Isidore H. Friedman, Jr., Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Apr. 4, 1967, Ser. No. 628,484
Int. Cl. F02k *9/04, 1/06;* **B64c** *15/10*
U.S. Cl. 60—254 **6 Claims**



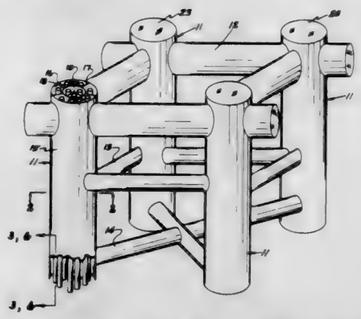
A thrust termination apparatus for solid propellant rocket motors that will terminate the thrust of the rocket motor without changing chamber pressure.

3,434,292
MINING SUPPORT ARRANGEMENT
Willy Heyer, Bochum-Gerthe, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany
Filed June 1, 1967, Ser. No. 642,825
Claims priority, application Germany, June 4, 1966, G 47,078
Int. Cl. E21d *23/16*
U.S. Cl. 61—45 **11 Claims**

Mining support arrangement including a pair of prop means, e.g., prop frames, medially interconnected by a common urging means, e.g., piston-cylinder means, for alternate advance in longitudinal direction of the prop means with respect to each other, guide means, e.g., a mining conveyor, extending crosswise of the longitudinal direction adjacent the prop means, and a pair of separate urging means, e.g., piston-cylinder means, each interconnecting the guide means and a corresponding prop means laterally outwardly outwardly of the prop means and common urging means for simultaneous actuation in the longitudinal direction to advance alternately the guide means and then both prop means together independently of the common urging means as well as for separate actuation to change the angle of the guide means with respect to the longitudinal direction of advance and in turn with respect to the disposition of the prop means.



3,434,293
FLOATABLE BASE FOR MARINE DRILLING PLATFORM AND METHOD OF OPERATION
Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex. 77024
Filed May 8, 1967, Ser. No. 636,820
Int. Cl. E02b *17/02;* **E02d** *21/00*
U.S. Cl. 61—46.5 **8 Claims**

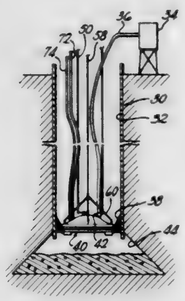


A floatable base for a marine drilling platform and its method of operation, the main support members of the base comprising large diameter hollow column or leg elements which function as buoyancy chambers for floating the base on a water body and which enclose a plurality of drilling-through conduits, each equipped with removable plugging means adapted to seal-off the conduits against entry of water during flotation of the base and to be readily removable to clear the conduits for drilling therethrough.

3,434,294
METHOD AND APPARATUS FOR FORMING CONCRETE PILES
John R. Hall, 2543 Antietam Drive, Ann Arbor, Mich. 48105
Filed July 3, 1967, Ser. No. 650,708
Int. Cl. E02d *5/36*
U.S. Cl. 61—53.6 **10 Claims**

A method of removing steel casing from caissons or piles as an incident to forming the piles, which includes

the steps of hermetically sealing the installed casing adjacent to the bottom thereof and then pumping a column of concrete to the underside of the hermetically sealed



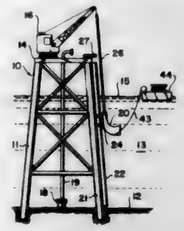
casing, utilizing the energy of the elevation head and the pressure head to raise the casing at the rate at which the concrete is being pumped into the hole defined by the casing; and apparatus for carrying out this method.

3,434,295
PIPE LAYING METHOD
William F. Manning, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 29, 1967, Ser. No. 649,933
Int. Cl. B63b *35/00*; F16l *1/00*; B63g *8/00*
U.S. Cl. 61—72.3 19 Claims



This specification discloses a method for laying pipe on a marine bottom without inducing extreme bending stresses in the pipe. A string of pipe having releasable clamps joining each section of pipe is suspended from a surface vessel by means of a small derrick or workover rig. A pair of submersible work vehicles having articulated arms terminating in manipulative tools are employed. Using an articulated arm, the first of the submersible work vehicles opens a respective clamp to release the lowest section of pipe from the suspended string of pipe, while supporting the released section of pipe, and transports this section of pipe to the open end of an unfinished pipeline held up just above the marine bottom by a second submersible work vehicle. Using its articulated arms, the second submersible work vehicle aligns the section of pipe, being transported by the first submersible work vehicle, with the open end of the unfinished pipeline and closes an open clamp to fix it sealably in place. With the first submersible work vehicle now supporting the extended open end of the unfinished pipeline, the second submersible work vehicle is disconnected from the unfinished pipeline and returns to the lower end of the suspended string of pipe to release and transport the now lowest section of pipe back to the first submersible work vehicle still supporting the open end of the unfinished pipeline. As the weight of a section of pipe is transferred to and from a submersible work vehicle, the ballast tanks thereof must be trimmed. Compressed air for blowing the ballast tanks is supplied from an air hose suspended from the surface vessel adjacent the string of pipe.

3,434,296
METHOD AND APPARATUS FOR CONNECTING AN UNDERWATER PIPELINE TO AN OFFSHORE INSTALLATION
Lloyd G. Otteman, Houston, Tex., and Ronald L. Geer, Hacienda Heights, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,876
Int. Cl. B63b *35/04*; F16l *1/00*; E21b *43/01*
U.S. Cl. 61—72.3 9 Claims



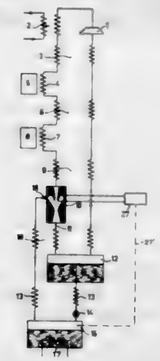
A method and apparatus for connecting a flowline to an offshore installation in which a flowline guide is lowered down a track attached to the installation and the guide positioned near the water floor after which an underwater flowline is pulled past the flowline guide and up to the water surface.

3,434,297
SUBMARINE CABLE BURYING MACHINE
Ralph W. Gretter, Mountainville, Francis J. Spollen, Elizabeth, and Gottfried O. Voigt, Metuchen, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Jan. 25, 1967, Ser. No. 611,766
Int. Cl. F16l *1/00*
U.S. Cl. 61—72.4 12 Claims



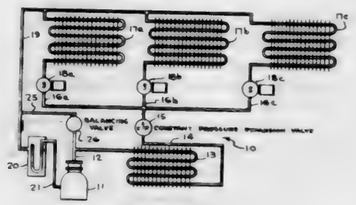
A remote controlled ocean cable burying machine features a cable acquisition system with a forwardly-extending boom having two pairs of relatively movable cable-enclosing jaws. Behind the rear jaw is a cable feeder that encloses the acquired cable and lifts it up into the cable entrenching guide in its raised position. Two drive tractors are used to improve traction during steering. A system is shown for automatically steering the tractors along the cable in response to movements of the boom.

3,434,298
APPARATUS AND EJECTOR FOR PRODUCING COLD
Johan Adriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,741
Claims priority, application Netherlands, July 1, 1966, 6609176
Int. Cl. F25b *41/00*
U.S. Cl. 62—115 10 Claims



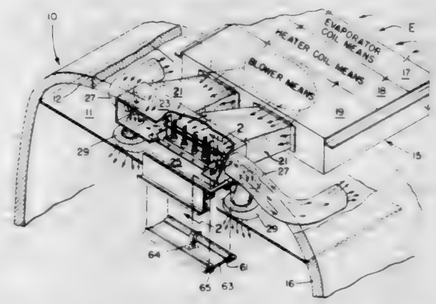
A cold producing apparatus has a high pressure medium at a temperature below its inversion temperature, an ejector through which the medium is first expanded and collected in a container, and additional pressure-reducing means through which the medium is further expanded to a lower temperature and pressure, the ejector having the inside walls of its jet pipe portion heatable for volatizing contaminations from the medium deposited upon the walls.

3,434,299
EVAPORATOR CONTROL WITH CONSTANT PRESSURE EXPANSION VALVE AND BY-PASS MEANS
Otto J. Nussbaum, Atlanta, Ga., assignor to Larkin Coils, Inc., Atlanta, Ga., a corporation of Georgia
Filed Mar. 6, 1967, Ser. No. 620,852
Int. Cl. F25b *5/00*, *41/00*
U.S. Cl. 62—199 4 Claims



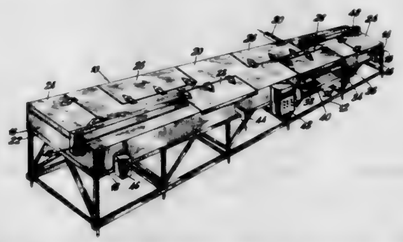
A refrigeration system including a compressor, a condenser, and evaporator means comprising plural separate evaporators or plural separate evaporator circuits or sections, wherein an automatic constant pressure expansion valve is provided between the condenser and the inlets to the plural evaporators or evaporator circuits to maintain a selected constant pressure at the valve outlet, locating the zone of transition of refrigerant from liquid to vapor beyond the evaporator means outlet. An accumulator is provided to trap liquid outflow from the evaporator means. A by-pass conduit regulated by a by-pass valve is connected between the compressor discharge side and the suction conduit.

3,434,300
AIR CONDITIONING VAPORIZER
Joseph F. Rueth, Warminster, and Charles A. Urian, Abington, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1967, Ser. No. 678,606
Int. Cl. F29d *17/04*; B60h *3/04*; F24f *3/16*
U.S. Cl. 62—309 4 Claims



Railway vehicle ceiling mounted air conditioning unit with tank containing vaporizer fluid on supply side of unit for freshening air which has been returned from the interior of the vehicle, and including a housing with cradle means for supporting the vaporizer tank.

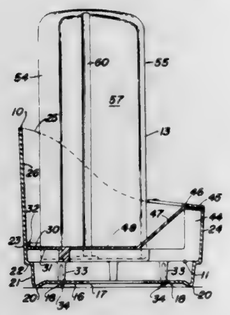
3,434,301
FOOD PRODUCT CRYOGENIC FREEZING SYSTEM
Jackson O. Hice, New York, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 613,281, Feb. 1, 1967. This application Feb. 9, 1968, Ser. No. 704,492
Int. Cl. F25d *25/04*, *17/02*
U.S. Cl. 62—374 7 Claims



Flat frames carrying various types of trays, pans, racks, or other means of supporting product to be frozen, are moved on the floor of and guided by side walls of an insulated low tunnel providing an elongated rectangular path for the frames as they are conveyed through the tunnel. Cryogenic liquefied gas (nitrogen) is injected into the tunnel either as a fluid or as a fluid spray at one or more selected stations in the tunnel. The frames are provided with a means of almost totally sealing one or more sections of the rectangular tunnel aperture in order to control the flow of the cryogenic vapor as it is expanded from the liquid to the gas phase. One such means is by using the end wall of each frame as a moving seal within the tunnel. Where shallow pans are used inside each frame and liquid or liquid spray is injected or pressure sprayed on the food or other product to be frozen the unflashed liquid is retained in the flat pan in direct contact with the product to be frozen, permitting immersion or semi-immersion heat transfer as the product is moved through the system, and the constant contact of the vaporizing liquid with the product until all liquid has been vaporized.

The super cold surface of the product supporting liquefying pan also acts as a prime coil surface and greatly accelerates the transfer of heat from the product to the body of the pan by contact, especially on the bottom of the product. A further effect of this very rapid rate of contact heat transfer is that any moisture layer on the bottom of each product unit is frozen so rapidly and to such a super cold temperature that the resultant ice which initially forms a bond between the product and the pan surface is further lowered in temperature to the point where some contraction occurs, breaking the product ice free from the pan and preventing sticking to the supporting pan, frame, or rack.

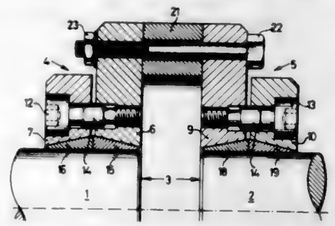
3,434,302
BOTTLE CHILLING DEVICE
Arthur M. Stoner, deceased, late of Madison, Conn., by Connecticut Bank and Trust Company of Hartford, Conn., executor, Richard C. Schneider, Pittsburgh, Pa., and Roger L. Paquin, Killingworth, Conn., assignors to Glacier Ware, Inc., Clinton, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 596,255, Nov. 22, 1966. This application Sept. 26, 1967, Ser. No. 677,823
Int. Cl. F25d *3/08*; **F28f** *7/00*
U.S. Cl. 62—457 **27 Claims**



The device chills a bottle and its contents while displaying the bottle and its label vertically. It has a pair of cold capsules containing freezable liquid, each having a cupped inner vertical bottle-engaging wall, an outer vertical arcuate wall, and arcuate vertical end walls. Support means hold a bottle and the two capsules vertically with the capsules nearly meeting at the rear of the bottle and with the label displayed at the front. A receptacle in the support means collects condensed moisture, and cam means enables the end walls of the capsules to swing the capsules toward and away from each other to accommodate different bottle sizes, while retaining them otherwise in approximately the same positions. A wedge or spring holds the bottle snugly against the inner arcuate walls of said capsules.

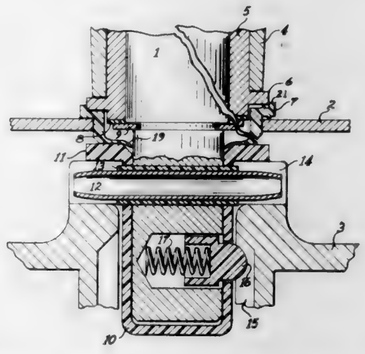
3,434,303
ARRANGEMENT FOR COUPLING SHAFTS
Albert Leyer, Ruschlikon, Zurich, Switzerland, assignor to Metallschlauchfabrik A.G., Lucerne, Switzerland
Filed Jan. 23, 1967, Ser. No. 611,125
Claims priority, application Switzerland, Jan. 26, 1966, 1,053/66
Int. Cl. F16d *3/00, 3/19, 3/52*
U.S. Cl. 64—6 **18 Claims**

An arrangement for coupling a pair of substantially aligned shaft end portions comprising a pair of boss means respectively mounted on each shaft end portion and force transmitting means between the boss means. Each of the boss means includes a pair of annular members pressed in axial direction toward each other and fixedly connected through conical ring means to the respective



shaft end portion. The force transmitting means are connected to one of each pair of annular members while the other annular member of each pair serves as additional means for transmitting a force from said one annular member to the respective shaft end portion.

3,434,304
SPINDLE INSULATING SEAL
Carl E. Meyerhoefer, Little Neck, N.Y., assignor to The Regina Corporation, Rahway, N.J., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 676,986
Int. Cl. F16d *3/00, 3/48*
U.S. Cl. 64—6 **3 Claims**

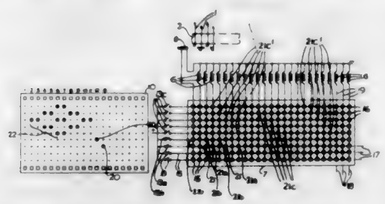


Disclosed is a floor care machine with that portion of the electrical motor driven spindle projecting through the motor housing, electrically insulated therefrom by a non-conducting cap fitted over its end and insulated from the part it drives by a non-conducting sleeve surrounding that length of the drive pin lying within the spindle. Additionally there is a collar like liquid seal bearing against the base of the non-conducting cap.

3,434,305
KNITTING MACHINES
William Bentley, Woodhouse Eaves, and Raymond Blood, Shepshed, England, assignors to William Cotton Limited
Filed Apr. 15, 1965, Ser. No. 448,299
Claims priority, application Great Britain, Apr. 18, 1964, 16,163/64
Int. Cl. D04b *39/00, 15/68, 15/78*
U.S. Cl. 66—5 **6 Claims**

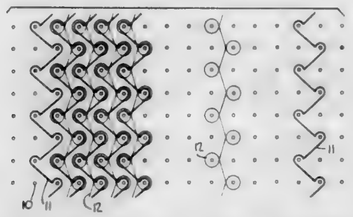
A knitting machine having patterning means with individual electric actuators arranged for selection control of needles, relatively movable program carrier and reader means having electric switch control points prearranged for control of required shape of a pattern in a fabric, an electric plug board having control points all connected on

one series of parallel axes to the switch control points and another series of parallel axes to said actuators so that



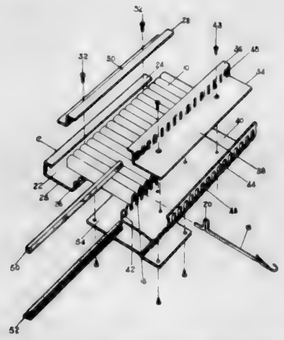
electric plugs can be set out on the plug board to provide for required positioning of the pattern widthwise of the fabric.

3,434,306
WARP KNIT TERRY FABRICS
Calvin Auville and Johann Gross, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,237
Int. Cl. D04b *23/00, 27/00*
U.S. Cl. 66—86 **4 Claims**



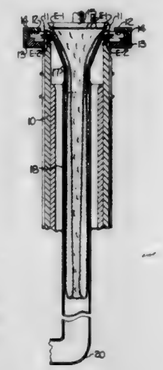
The process of knitting a two bar warp knit terry fabric with a set of pile yarns fed from the front bar, and a set of base yarns fed from the back bar by overfeeding the pile yarns relative to the base yarns by about 1.5 to 2.5 times.

3,434,307
NEEDLE BED OF HAND KNITTING MACHINE
Yoshiaki Mizuki, Tokyo, Japan, assignor to Empisal (Proprietary) Limited, Johannesburg, Transvaal, South Africa
Filed Apr. 13, 1967, Ser. No. 630,646
Claims priority, application Japan, Apr. 20, 1966, 41/36,666
Int. Cl. D04b *15/10*
U.S. Cl. 66—115 **4 Claims**



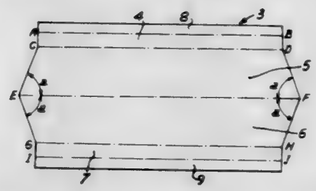
The needle bed of a domestic knitting machine is composed of a laterally-corrugated plate, with longitudinal stiffening structure front and back. The two stiffening structures may provide guides for the camslide and the front structure may be extended and apertured to provide a gate for the needles. There may be included a displaceable bar that forms part of the front structure and that confines the needles against upward movement. The plate may be stiffened by a substructure complemental to and nested in the underside of the plate.

3,434,308
METHOD OF KNITTING HOISERY BLANKS
Walter J. Barbee, Charlotte, N.C., assignor to B & S Machinery Company, Charlotte, N.C., a partnership
Filed July 24, 1968, Ser. No. 747,389
Int. Cl. D04b *15/88, 27/34, 35/00*
U.S. Cl. 66—149 **7 Claims**



A seamless hosiery blank is knit on a circular knitting machine in such a manner that the tubular blank is withdrawn from the machine in an everted (inside-out) condition. This eversion is accomplished by holding the initially knit end of the hosiery blank on the dial instrumentalities of the knitting machine while knitting the desired length of blank on the cylinder needles, releasing the terminal end of the blank from the cylinder needles to permit the blank to unfold and assume the everted condition, and then releasing the initially knit end of the blank from the dial instrumentalities and withdrawing the blank in the everted condition.

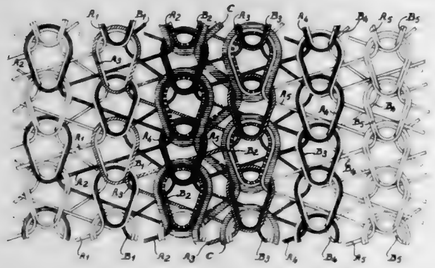
3,434,309
KNITTED COLLAR FOR A KNITTED ARTICLE OF WEAR
Jacques Bellot, Troyes, France, assignor to Societe de Tricolage Aube et Marne, French Societe Anonyme, Troyes, Aube, France
Filed Oct. 12, 1965, Ser. No. 495,181
Claims priority, application France, Oct. 13, 1964, 991,232
Int. Cl. A41b *3/00, 5/00, 7/00*
U.S. Cl. 66—172 **3 Claims**



A soft fold over pointed collar for knit wear is formed of a continuous strip of knitted material made up of a plurality of knitted courses. The knitted courses are formed of two series of the same length, separated by two series of converging-diverging length. The strip is folded over along a line between the maximum length

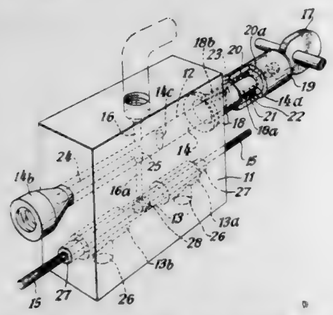
courses of converging-diverging series of courses with the ends of the fold line providing the pointed ends of the collar.

3,434,310
TUBULAR WARP-KNIT STOCKINGS HAVING A MOCK SEAM
Marius Antoine Perrier, Lyon, France, assignor to Manufactures Jean-Baptiste Martin, Jean Martin, Andre Charbin & Cie, Lyon, France, a French company
Filed Feb. 16, 1965, Ser. No. 433,078
Int. Cl. D04b *9/46, 21/00*
U.S. Cl. 66—181 **1 Claim**



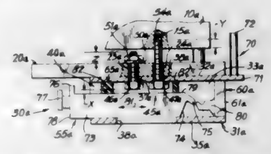
A tubular warp knit stocking is comprised of front and rear portions and a mock seam is provided in the middle of the rear portion of the stocking. The mock seam may be provided by substituting a warp yarn which is distinctive from the remaining warp yarns in the rear portion of the stocking or an additional warp yarn may be added at the centermost portion of the rear portion. The additional warp yarn may be disposed adjacent to and follow the same concatenations as one of the ordinary warp yarns of the rear portion, may be provided with its own distinct concatenations or may be laid in as a straight yarn.

3,434,311
APPLICATION OF TREATMENT MEDIA TO ELONGATE MATERIALS
Peter H. T. Dawson, Blackburn, England, assignor to Singer-Cobble Limited, Blackburn, England
Filed Mar. 9, 1966, Ser. No. 532,933
Claims priority, application Great Britain, Apr. 12, 1965, 15,355/65
Int. Cl. D06f *35/00;* **D06p** *1/00;* **F26b** *13/02*
U.S. Cl. 68—20 **8 Claims**



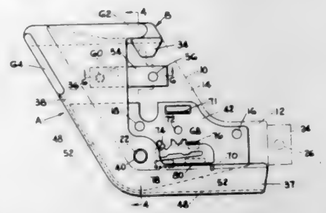
A method and apparatus are disclosed for applying treatment media, such as a dyestuff, to a moving yarn so that the media appears at intervals along the yarn. Excess media is removed from the yarn by passing the media carrying yarn in closely spaced disposition relative to a surface that is permeable to the media and causing a reduced pressure to be applied through the permeable surface to draw off the excess media.

3,434,312
LOCKING DEVICE FOR PORTABLE EQUIPMENT
Gerald Buchman, 2821 W. 12th St., Brooklyn, N.Y. 11224
Filed Apr. 24, 1967, Ser. No. 633,028
Int. Cl. E05b *73/00, 65/44;* **F16b** *41/00*
U.S. Cl. 70—58 **14 Claims**



To prevent the theft of portable equipment such as typewriters and cameras by a locking device that is easily attachable to portable equipment and in particular the desk or other surface on which the equipment normally rests. The locking device is operated by a key that is required for the removal of the portable equipment. A display cabinet on which cameras are positioned and locked in place in a manner in which they cannot be removed by rotating them, but at the same time are open to inspection, is also provided for.

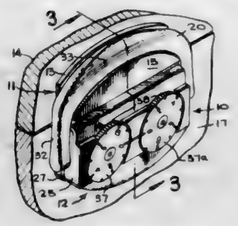
3,434,313
LATCHING AND LOCKING MEANS FOR LUGGAGE CASES OR THE LIKE
Irving Feinberg, Saddle Brook, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Sept. 13, 1967, Ser. No. 667,597
Int. Cl. A45c *13/10;* **E05b** *65/52*
U.S. Cl. 70—70 **9 Claims**



Latching and locking devices for luggage are disclosed in which a cover plate and a latching member thereon have similarly angulated legs, one of which is oriented longitudinally with respect to the edge of a supporting wall member and the other of which extends laterally to a hasp on a companion wall member. Portions of the latching member are exposed along one edge of the cover plate legs for finger engagement. The cover plate and latching member cooperate in concealing latching device parts and the hasp.

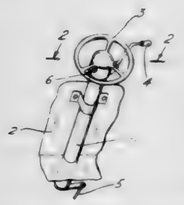
3,434,314
DRAWBOLT LATCHING DEVICE WITH COMBINATION LOCKING MECHANISM
Wallace E. Atkinson, Dinwiddie County, Va., assignor to Long Manufacturing Co., Inc., Petersburg, Va., a corporation of Virginia
Filed Sept. 21, 1967, Ser. No. 669,553
Int. Cl. E05b *37/12;* **A45c** *13/10*
U.S. Cl. 70—76 **10 Claims**

A drawbolt latching device for luggage receptacles and the like comprising a keeper mounted on the luggage cover having a circular segment projection and a drawbolt assembly mounted on the luggage body including a flat mounting base, a drawbolt body of generally rectangular, laterally elongated configuration pivoted to the base adjacent the line of separation between the luggage sections, a shackle pivoted to the drawbolt body eccentrically of the body pivot axis to be encircled about the keeper projection and latch the latter against the drawbolt assembly, the base having a T-shaped locking stud projecting into the drawbolt body,



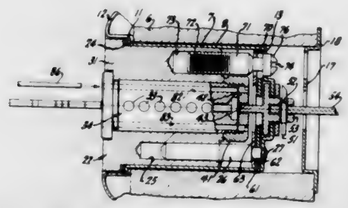
and the drawbolt body having plural dial and tumbler wheel assemblies disposed on parallel axes wherein the tumbler wheels have peripheral gates registrable with the head of the stud as the proper combination of dial positions of the dials to release the drawbolt body for pivotal movement to unlatch the shackle from the keeper.

3,434,315
MECHANISM FOR LOCKING THE TRANSMISSION OF A MOTOR VEHICLE
Pasquale Di Benedetto, Manhasset, N.Y., assignor to Edward Di Benedetto, Upper Brookville, N.Y.
Filed Nov. 29, 1966, Ser. No. 597,680
Int. Cl. G05g *5/00;* **B60r** *25/06*
U.S. Cl. 70—202 **1 Claim**



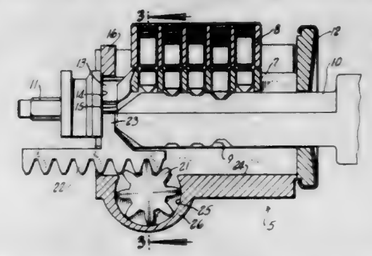
A locking means for the transmission of a motor vehicle to prevent theft and accidental movement of that vehicle. A locking means which prevents motion of the gear selector assembly for an automatic or manual transmission of a motor vehicle.

3,434,316
REMOVABLE LOCK CYLINDER MECHANISM
Ralph E. Neary, San Francisco, Calif., assignor to Schlage Lock Company, a corporation
Filed Sept. 1, 1966, Ser. No. 576,712
Int. Cl. E05b *9/04, 27/00*
U.S. Cl. 70—371 **8 Claims**



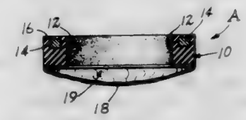
A removable lock cylinder receptacle is installed in a door and contains a lock cylinder unit releasably retained therein by a catch. A wire inserted lengthwise through the rotatable plug of the cylinder unit is rotated with the plug, by a proper key, into a position engaging and releasing the catch so that the lock cylinder unit can be withdrawn from the receptacle.

3,434,317
TUMBLER LOCK WITH AUTOMATIC KEY EJECTOR
Edward N. Jacobi, Milwaukee, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed July 24, 1967, Ser. No. 655,359
Int. Cl. E05b *17/12, 15/14, 63/00*
U.S. Cl. 70—388 **11 Claims**



A key controlled tumbler lock in which automatic ejection of the key is effected by a finger on a rack which slides in a guideway in one side wall of the lock casing with the finger projecting laterally into the keyway when the cylinder is in its locked position of rotation to have the end of the key collide therewith during insertion of the key, the rack being biased towards the front of the lock by a torsion spring having one end anchored to the casing and its other end attached to a pinion journaled in the casing and meshing with the rack. The insertion of the key thus rotates the pinion and loads the spring. In one embodiment of the disclosure, the rack consists of two side-by-side sections having a lost motion connection therebetween and successively meshing with the pinion so as to minimize the distance the rack protrudes from the rear of the lock casing upon insertion of the key.

3,434,318
DOOR AND TRUNK LOCK COVER
Gerald J. Thiry, Box 104, Hayward, Wis. 54843
Filed Nov. 21, 1966, Ser. No. 595,908
Int. Cl. E05b *17/18, 17/14;* **E05c** *19/16*
U.S. Cl. 70—455 **4 Claims**



A removable cover for exterior locks and handles of an automobile including a body member having a cavity formed therein with a plurality of magnets embedded in the periphery of the body.

3,434,319
BERYLLIUM PRODUCTS AND METHOD
Jean-Marie R. Logerot, Coublevie, France, assignor to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
No Drawing. Filed Oct. 13, 1966, Ser. No. 586,360
Claims priority, application France, Oct. 14, 1965, 34,967
Int. Cl. B21c *23/24;* **B21b** *45/00;* **B23k** *31/02*
U.S. Cl. 72—47 **14 Claims**

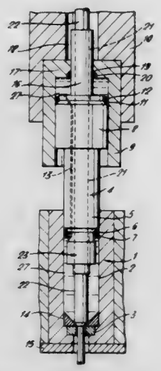
1. The metallurgical process for the improvement of the mechanical and physical properties of beryllium products comprising mechanically plating the beryllium with at

least one layer of a plastic metal selected from the group consisting of aluminum, magnesium, zinc and antimony at a temperature below 620° C. while mechanically working to effect a reduction in cross-section of at least 50%.

3,434,320
HYDROSTATIC EXTRUSION APPARATUS

Derek Green, Lytham St. Anne's, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Jan. 23, 1967, Ser. No. 611,011
Claims priority, application Great Britain, Feb. 4, 1966, 4,982/66
Int. Cl. B21d *22/10;* **B21c** *25/02, 33/00*
U.S. Cl. 72—60 **15 Claims**



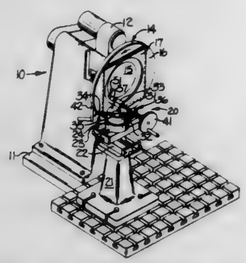
Hydrostatic extrusion apparatus wherein hydraulic liquid may be pressurised about a billet in the bore of an extrusion container to extrude the billet through a die located in the bore of the extrusion container. A tubular plug is sealed in the rear end of the bore of the extrusion container and a billet is fed into the extrusion container through the tubular plug.

Clamping and sealing means are provided between the tubular plug and the billet when inserted through the tubular plug into the bore of the extrusion container. In one arrangement the tubular plug is slidably sealed in the bore of the extrusion container to move into the bore to accommodate for shortening of the length of the billet as it is extruded.

3,434,321
COMPOUND WORK TOOL

Thomas M. Morgan, 1821 Beverly Drive, Charlotte, N.C. 28207

Filed Apr. 28, 1966, Ser. No. 545,997
Int. Cl. B21d *22/16*
U.S. Cl. 72—83 **10 Claims**

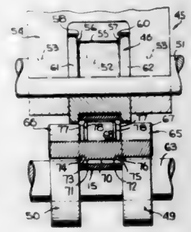


A compound work tool for applying a shaping force to rotating stock material wherein first and second elongate members are mounted for linear and pivotal movement with means carried by and through which the first elongate member extends for pivotally securing one end of the second elongate member thereto at a predetermined angle and wherein the first elongate member has a work point supported on one end thereof adapted to engage the stock material to transmit a shaping force thereto.

3,434,322
METHOD AND APPARATUS FOR ROLLING BEARING RACES

John H. Cowles, Forestville, and James W. Rollins, Winsted, Conn., assignors to The Torrington Company, Torrington, Conn., a corporation of Maine

Original application Jan. 10, 1964, Ser. No. 337,017, now Patent No. 3,288,548, dated Nov. 22, 1966. Divided and this application Aug. 24, 1966, Ser. No. 574,650
Int. Cl. B21b *19/14, 37/00*
U.S. Cl. 72—107 **12 Claims**



A method and apparatus of forming bearing races from tubular blanks using rollers placed internally and externally of the blank, the rollers, by cold working of the metal, thin a selected portion of the blank while at the same time increasing its diameter. The peripheral edge portions of the blank on axially opposite sides of the thinned selected portion retain substantially at least their original wall thickness due to their protection from cold working within confining regions on axially opposite sides of the opposed forming surfaces of the rollers.

3,434,323
EXTRUSION OF COMPOSITE BODIES

Leslie Roy Ormerod, Didcot, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed May 14, 1965, Ser. No. 455,854
Claims priority, application Great Britain, May 25, 1964, 21,576/64
Int. Cl. B21c *23/22;* **B23p** *17/04*
U.S. Cl. 72—258 **4 Claims**

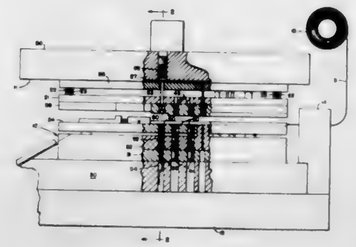


A method of forming a nuclear fuel element by extrusion comprising the formation of a composite slug of the required materials in preparation for extrusion and the incorporation of a layer of a bond assisting material between adjacent components of said slug, said material having the property of shattering under extrusion deformation.

3,434,324
TERMINAL FORMING MACHINE

Fritz V. Brosseit, Kansas City, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 23, 1966, Ser. No. 604,265
Int. Cl. B21d *43/28*
U.S. Cl. 72—324 **14 Claims**

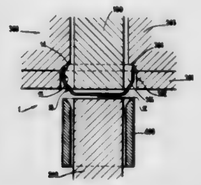


An insulation piercing terminal forming machine including an insulation piercing tab forming station comprising a punch and a cooperating die for forming an insulation piercing tab from a body of terminal material and for sharpening the tab in a first direction and an insulation piercing tab finishing station comprising a tab bending pin for bending the tab with respect to the body of terminal material, a two part member and a die for squeezing parts of the two part member into engagement with the tab and the tab bending pin to sharpen the tab in a second direction and for cooperation with the two part member to form terminal sides from the body of terminal material.

3,434,325
APPARATUS FOR THE MANUFACTURE OF CAPS FROM SHEET MATERIAL

Armando Podesta and Carlo Vignati, Milan, Italy, and Andre Berezist, Lyon, France, assignors to L'Aluminium Francais, Paris, France

Filed Nov. 23, 1965, Ser. No. 509,296
Claims priority, application France, Nov. 27, 1964, 996,615
Int. Cl. B21d *22/06, 51/16*
U.S. Cl. 72—354 **11 Claims**

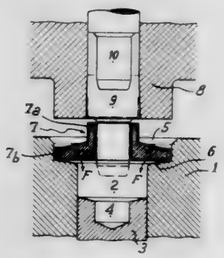


Apparatus for forming caps having a pre-rolled edge from sheet metal into a blank having an outer cylindrical section open at one end and closed at the other end by a relatively flat panel portion. The apparatus is formed of a first pusher member having an end portion on which the cap blank is adapted to be received, a second pusher member in endwise alignment with the first pusher member with means for endwise displacement of one or both of the pusher members in a direction towards and away from the other to engage the central planal portion of the cap blank therebetween, a guide member concentric with the first pusher member having a cylindrical section spaced outwardly from the first pusher member and a base portion of curvilinear shape, and an annular punch concentric with the second pusher member having an end portion dimensioned to be received within the annular space between the first pusher member and the cylindrical section of the guide member for engagement with the portion of the cap blank extending outwardly beyond the pusher members for displacement of the engaged edge portions with the curvilinear base of the guide member to roll the edge portion of the blank inwardly during formation of the cap while continued displacement of the punch operates to form the portions of the cap between the rolled edge and the planal section. The guide member may be formed of separate elements to facilitate the manufacture thereof and provide resiliency in the formation of the cap.

3,434,326
METHOD AND APPARATUS FOR MAKING ANNULAR PARTS OF U-SECTION

Robert G. C. Serret, Paris, France, assignor to Societe anonyme dite Etablissements Bauche (Coffres-forts Bauche et Nicolle et Cie), Montreuil, Seine-Saint-Denis, France, a French society

Filed Apr. 14, 1967, Ser. No. 630,979
Claims priority, application France, Apr. 19, 1966, 58,222
Int. Cl. B21d *22/02, 31/04*
U.S. Cl. 72—354 **6 Claims**



A method and apparatus for making annular articles of any desired shape from a blank consisting of a sleeve and a flange. The blank is placed in the second hole of a lower matrix having a first hole closed at its lower end by a movable closure member having a blank hole therein. The second hole is on the upper surface of the matrix and has a depth greater than the thickness of the flange of the blank. The sleeve is displaced with respect to flange and the flange is simultaneously displaced by an upper die member which fits into second hole to press against the flange and a plunger carried in the upper die member which forces the sleeve into the first hole to thereby form the finished article.

3,434,327
STRESS COINING

Eugene R. Speakman, Fullerton, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Nov. 1, 1966, Ser. No. 591,189
Int. Cl. B21d *31/00;* **B21c** *37/02;* **B23p** *11/02*
U.S. Cl. 72—377 **4 Claims**

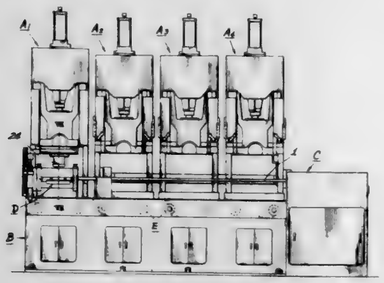
A method for stress coining the aperture of a metallic structural member wherein the entire longitudinal length

of the aperture is cold-worked causing the aperture wall material to become plastic and then permitting the wall



material to rebound into the elastic state assuming a residual compression stress.

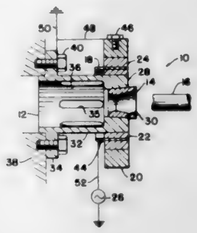
3,434,328
TRANSFER PRESS SYSTEM
Naonori Taniguchi and Akira Wachi, Sagamihara-shi, Kanagawa-ken, Japan, assignors to Kabushiki Kaisha Aida Tekkosho, Kanagawa-ken, Japan, a company of Japan
Filed Dec. 6, 1966, Ser. No. 599,545
Claims priority, application Japan, Dec. 6, 1965, 40/99,404; June 27, 1966, 41/60,202
Int. Cl. B21j *13/00*
U.S. Cl. 72—405 **6 Claims**



A transfer press system for treating a blank in progressive stages in a desired processing operation and which system includes a plurality of press units arranged in an aligned row and each including a framework, a separate bed unit common to all the press units, a separate transfer unit including common feed bars operably connected to the bed unit for successively transferring an intermediate product from the first press unit to the succeeding press units, connecting means individually connecting the framework of each press unit to the common bed unit and connecting means also connecting the transfer unit to said bed unit.

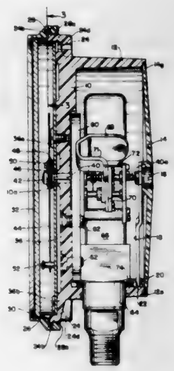
3,434,329
ELECTROSTRICTIVE EFFECT IN A TRANSDUCER FOR DRAWING WIRE, ROD OR TUBE
Ralph W. Goble, Boulder, Colo., assignor to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed Dec. 27, 1965, Ser. No. 516,478
Int. Cl. B21c *3/04*
U.S. Cl. 72—467 **10 Claims**

Structure for radially contracting and expanding a die for drawing wire, rod or tube at a predetermined frequency is disclosed. The structure includes an annular member for holding the drawing die, at least one radially polarized electromechanical transducer surrounding the annular drawing die holding member, means for energizing the electromechanical transducer at the predetermined frequency and means for supporting the annular member at a distance therefrom which is substantially a quarter



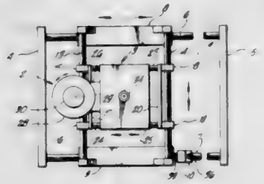
wave length of the resonant frequency of the structure by means permitting radial expansion and contraction of the annular member. A first annular ring, a second electromechanical transducer and a second annular ring may be provided radially outwardly of the annular drawing die holding member and first electromechanical transducer to increase the expanding and contracting force.

3,434,330
GAUGE CASING
Robert J. Ingham, Fairfield, and Robert D. Bissell, Orange, Conn., assignors to Dresser Industries, Inc., Stratford, Conn., a corporation of Delaware
Filed July 22, 1965, Ser. No. 474,090
Int. Cl. G01l *27/00, 7/04*
U.S. Cl. 73—1 **12 Claims**



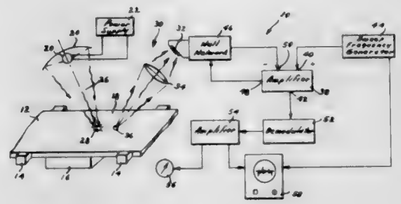
A fiber glass reinforced plastic casing for a pressure gauge. The casing is provided with a heavy protective front wall for the compartment for the gauge parts and an easily distortable back wall to permit blowout in case of rupture of the gauge parts. A special gauge glass supporting ring cooperates with the casing to minimize entry of moisture and dust. Means are provided so that the gauge may be calibrated by viewing the rear of the casing with the cover removed.

3,434,331
VECTOR MENSURATION DEVICE, METHOD FOR ITS USE, AND METHOD FOR ITS CALIBRATION
Jack R. Harper, Yorba Linda, and James Loughlin, Redondo Beach, Calif., assignors to FMA, Inc., Los Angeles, Calif., a corporation of California
Filed July 5, 1966, Ser. No. 562,830
Int. Cl. G01c *25/00*
U.S. Cl. 73—1 **13 Claims**



An apparatus and method for measuring the length and angle of lines on maps, photographs, charts, etc. A carrier carrying a microscope is movable on a frame above the line to be measured. The microscope is first positioned at a point at one end of the line and a post is then fixed on the frame in a position representative of the point. The carrier and microscope are then moved to the other end of the line and the distance and angle of movement of the microscope is indicated by means of a calibrated turret and gauge surrounding the post.

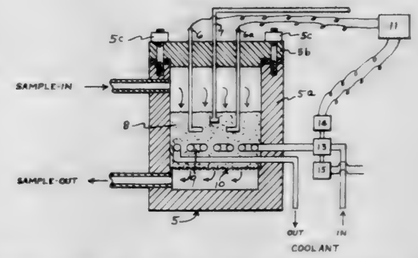
3,434,332
NONDESTRUCTIVE TESTER
Dale R. Maley, Boulder, Colo., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed July 26, 1965, Ser. No. 474,709
Int. Cl. G01n *25/00*
U.S. Cl. 73—15 **7 Claims**



An infrared nondestructive tester is disclosed herein which heats the workpiece and then scans the surface with a pickup to locate variations in the surface temperature. The pickup includes a temperature sensitive device, such as a thermistor which is in a feedback circuit that controls the gain of an amplifier. As the frequency of a signal sweeps over a predetermined range the gain increases at a particular frequency determined by the thermistor. This frequency indicates the surface temperature.

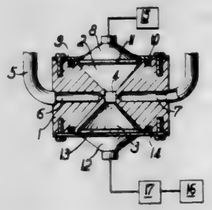
3,434,333
DEW POINT TEMPERATURE INDICATOR
Charles W. Lyle, Rte. 2, Havre de Grace, Md. 21078
Filed May 27, 1966, Ser. No. 554,298
Int. Cl. G01n *25/02*
U.S. Cl. 73—17 **13 Claims**

Apparatus to determine the dew point of a gas, having a container for hygroscopic material, there being controllable cooling means, electrodes and temperature responsive means carried by the container and extending into the hygroscopic material. Means are provided to circulate gas to be tested through the material so that moisture is



condensed from the gas into the cooled material which permits current to flow between the electrodes and operate current responsive means connected to the electrodes.

3,434,334
SONIC ANALYZER
Gerard Vandenbussche, Bobigny, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Dec. 13, 1966, Ser. No. 601,367
Claims priority, application France, Dec. 28, 1965, 44,062
Int. Cl. G01n *29/00*
U.S. Cl. 73—24 **3 Claims**



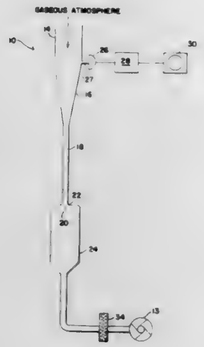
A sonic analyzer has two chambers interconnected by a passageway with means for introducing therein a gas to be analyzed. A variable frequency wave emitter acoustically communicates with one of the cavities and an electro-acoustic receiver is acoustically associated with the other cavity. The cavities and passageway are symmetrical with each other and have a symmetry of revolution with respect to the axis of the passageway.

3,434,335
APPARATUS FOR ACOUSTICALLY DETECTING MINUTE PARTICLES SUSPENDED IN A GASEOUS ATMOSPHERE
Gerhard Langer, Boulder, Colo., assignor to the United States of America as represented by the Director of the National Science Foundation
Filed July 29, 1966, Ser. No. 573,152
Int. Cl. G01n *31/00*
U.S. Cl. 73—28 **18 Claims**

1. A minute particle detecting device comprising:
a hollow tubular means of a predetermined diameter through which a stream of gaseous atmosphere containing minute particles is passed;
an entrance portion disposed in said hollow tubular means through which said gaseous atmosphere is introduced into said hollow tubular means;
a capillary restriction portion disposed in said hollow tubular means wherein the diameter of said capillary restriction portion is substantially less than said predetermined diameter;

a linear tapered frusto-conical tubular portion disposed in said hollow tubular means between and operatively connecting said entrance portion and said capillary restriction portion whereby said stream of gaseous atmosphere is provided with a smooth transition from said entrance portion to said capillary restriction portion permitting laminar flow to be maintained;

an exit portion in said hollow tubular means immediately adjacent the end of said capillary restriction portion;

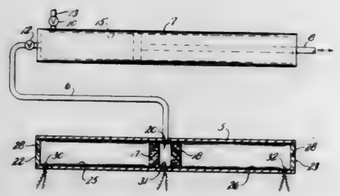


said exit portion being of substantially larger diameter than the diameter of said capillary restriction portion whereby an abrupt change in the diameter of said hollow tubular means is provided;

means operatively connected to said hollow tubular means to enable said stream of gaseous atmosphere to flow through said hollow tubular means;

and an acoustic sensing device in communication with said hollow tubular means whereby sound signals generated by each minute particle in said gaseous atmosphere passing through said hollow tubular means are detected by said acoustic sensing device.

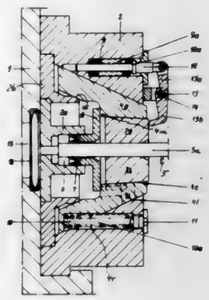
3,434,336
EXPLOSION BARRIER
George B. Harr, Pasadena, Calif., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 11, 1965, Ser. No. 478,945
Int. Cl. G01n *25/20, 33/22*
U.S. Cl. 73—35 **13 Claims**



Explosion test apparatus is composed of two chambers separated by plastic open-cell foam with electric igniting means in each chamber. Explosive gas introduced into the chamber on one side of the foam quickly fills the other chamber. The gas in one chamber is exploded by the igniting means. The foam prevents the explosion from spreading to the other chamber. It is proved that explosive gas is in the other chamber by exploding it.

Systems for explosive gaseous mixtures are described which include a plastic open-cell foam barrier.

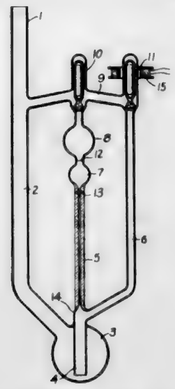
3,434,337
APPARATUS FOR CLAMPING AND SEALING PIPES OR THE LIKE
Alfons Goeke, Solingen, Germany, assignor to Th. Kieserling & Albrecht, Solingen, Germany
Filed Nov. 7, 1967, Ser. No. 681,149
Claims priority, application West Germany, Jan. 7, 1967, K 61,113
Int. Cl. G01m *3/28*
U.S. Cl. 73—49.8 **10 Claims**



Apparatus for sealing and clamping end portions of tubular workpieces during testing with a fluid comprises a housing having a cylinder for an annular elastic plunger which surrounds one end portion of the workpiece and is movable by testing fluid axially of the workpiece to effect axial movement of several wedges which in turn effect radial movement of several clamping elements serving to clamp the end portion of the workpiece. The wedges have conical inner faces which bear against complementary conical outer faces of the clamping elements and the taper of these inner and outer faces is such that a self-locking action develops between the wedges and the respective clamping elements. The wedges are further provided with conical outer faces which bear against complementary conical inner faces of the housing and whose taper is such that no self-locking action develops between the housing and the wedges. The clamping elements and the wedges are biased to starting positions by helical springs and the inner and outer faces of the wedges taper in the same direction. The wedges and the clamping elements automatically return to starting positions when the pressure of testing fluid decreases and the clamping elements are slidably coupled to the respective wedges.

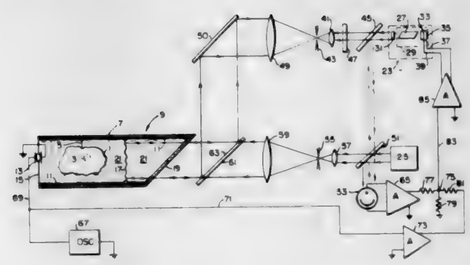
3,434,338
VISCOMETER
Theodore Tovrog, Evanston, and Arthur A. Krawetz, Chicago, Ill., assignors to Phoenix Chemical Laboratory Inc., Chicago, Ill.
Filed Oct. 1, 1965, Ser. No. 492,247
Int. Cl. G01n *11/04*
U.S. Cl. 73—55 **6 Claims**

A viscometer for measuring the viscosity of volatile, unstable, highly reactive or radioactive liquids. A vertical inlet tube, a vertical measuring tube and a vertical pressure equalizing tube terminate at their lower ends in a common liquid phenum. At their upper ends the inlet tube is connected to each of the remaining two tubes and a magnetically controlled valve is provided for each connection. The sample is introduced and the arrangement of tubes is subjected to elevated pressures through the single inlet tube. The measuring tube includes a capillary with two sample bulbs disposed vertically above the capillary. The sample



bulbs are filled by alternately opening and closing the inlet-measuring valve as the pressure in the system is varied slightly. The pressure equalizing tube counteracts the effect of sample vapor pressure on the viscosity readings.

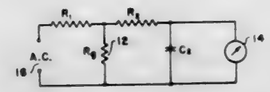
3,434,339
HOLOGRAPHIC METHOD AND APPARATUS FOR ACOUSTICAL FIELD RECORDING
Karl A. Stetson, West Acton, and Herbert A. Elion, Wellesley Hills, Mass., assignors to GCA Corporation, Bedford, Mass., a corporation of Delaware
Filed Sept. 22, 1966, Ser. No. 581,339
Int. Cl. G01n *9/24*
U.S. Cl. 73—67.6 **8 Claims**



A method and apparatus for recording acoustical fields and especially an acoustic field due to an acoustic wave transmitted through a test object. The acoustic wave strikes a vibratable light reflecting diaphragm. A laser beam reflects from the diaphragm onto a photographic plate and a second laser beam maintained at a frequency differing from that of the first beam by a frequency equal to the acoustic frequency also impinges on the plate to form a hologram.

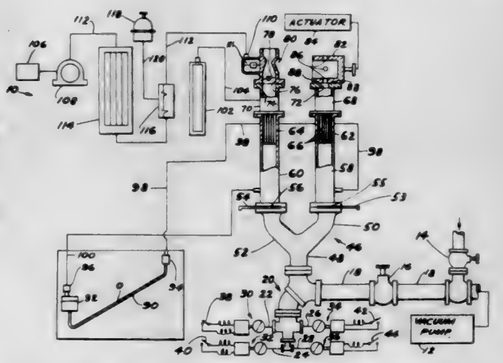
3,434,340
METHOD AND APPARATUS FOR OBSERVING MECHANICAL OSCILLATIONS
Murray Strasberg, Montgomery County, Md. (3531 Yuma St. NW., Washington, D.C. 20008), and Hugh M. Fitzpatrick, 4709 Merivale Road, Chevy Chase, Md. 20015
Filed Aug. 19, 1966, Ser. No. 574,288
Int. Cl. G01d *7/00*
U.S. Cl. 73—71.4 **18 Claims**

A circuit having a sensing element for converting recurring mechanical changes into electrical signals, the sensing element being of the type requiring a driving current. A source of mechanical change of a periodic nature is sensed by the sensing element. The sensing element is driven by a source of current having a frequency which is substantially the same as the frequency of the



periodic mechanical change. The electrical output of the sensor is filtered to remove the current having the frequency of the driving current and the residual current is fed to a display device either through a rectifier or directly to a meter or oscillograph.

3,434,341
CARBURETOR TEST EQUIPMENT
Arthur P. Zaske, Utica, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed July 28, 1966, Ser. No. 568,669
Int. Cl. G01m *15/00*
U.S. Cl. 73—118 **8 Claims**

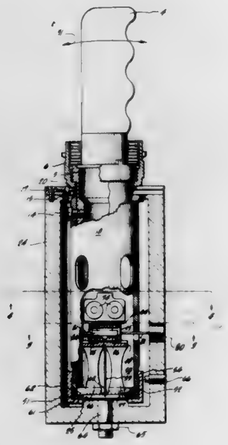


Typically, an apparatus for flow testing carburetors employs a first chamber-like passage connected at one end to the discharge end of the carburetor induction passage and connected at its opposite end to a branch of a Y-type conduit; a master having pre-calibrated orifices is operatively connected to one end of a second chamber-like passage having its other end connected to another branch of the Y-type conduit, with the master being so positioned as to have one of the calibrated orifices in communication with the second chamber-like passage; a vacuum pump is operatively connected to the remaining branch of the Y-type conduit and is effective for creating at selected values of vacuum within the two chamber-like passages; and gauging means responsive to the flow rate of a simulated fuel fluid are provided for indicating the rate of flow of such simulated fuel fluid during the time that a selected vacuum value has been established in the two chamber-like passages.

3,434,342
FORCE SENSING APPARATUS
Edward Kazmarek, Encino, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,786
Int. Cl. G01l *3/00*
U.S. Cl. 73—133 **11 Claims**

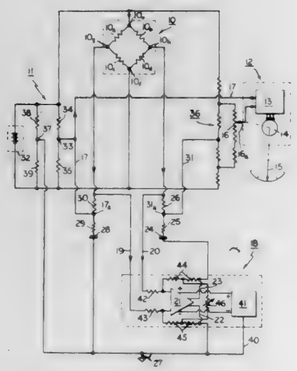
A tubular force receiving member is attached to a casing at a point intermediate of the ends of the member by a

flexible diaphragm that permits the member to pivot at the point of attachment. Force is applied at one end of the member and transverse bending beams are located at the other end of the member. Each bending beam is capable of being deflected in one plane only, remaining rigid in



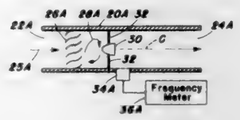
the transverse plane. One beam is connected between the member and a first transducer that senses the relative deflection of the one beam. The other beam is connected between the casing and a second transducer that senses the relative deflection of the other beam.

3,434,343
LOW FREQUENCY DAMPING CIRCUIT FOR STRAIN GAGE TRANSDUCERS
Donald A. Senour, Carlisle, Mass., assignor to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,071
Int. Cl. G01l *5/12*
U.S. Cl. 73—141 **4 Claims**



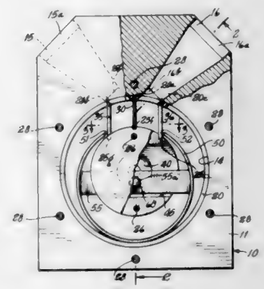
An electrical strain gage transducer measuring circuit is rendered substantially immune to disturbances of unwanted dynamic loadings and spurious electrical signals by action of an operational amplifier which automatically introduces out-of-phase signals cancelling and eliminating responses to undesirable A-C voltages.

3,434,344
SWIRL METER
Richard Brunner, New Brunswick, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed June 14, 1966, Ser. No. 557,490
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 **8 Claims**



A conductor having an inlet and outlet for flowing fluid is provided with a series of blades which induce fluid flowing therethrough to swirl. The conductor is also provided with a second member positioned downstream of the swirl blades for inducing an instability in the swirling fluid, whereby the swirling fluid is caused to precess by rotation of its swirl axis about the central axis of fluid flow through the conductor. Such instability inducing means may be a bullet-shaped member or a high pressure conduit facing the swirl blades or a low pressure conduit facing away from the swirl blades, and a sensor is included for measuring the frequency of precession which is linearly correlated with the mean flow rate of the fluid through the conductor. Accordingly, the apparatus is useful as a flow meter.

3,434,345
OSCILLATING PISTON-TYPE FLOW METER
Ronald B. Barber, Cheshire, Conn., assignor to Neptune Meter Company, a corporation of New Jersey
Filed Dec. 8, 1966, Ser. No. 600,173
Int. Cl. G01f *3/08*
U.S. Cl. 73—257 **4 Claims**

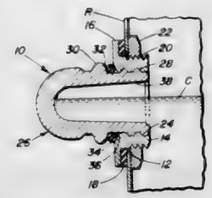


Oscillating piston-type flow meter including guides at opposite sides of adjacent ports to prevent piston from varying effective port area. Piston is guided by diametrical web extending through slot in hub, and by ball carried by web and moving in annular race in hub. Hub is formed by two half-hub members mounted on end plates and permitting ready disassembly of meter.

3,434,346
RADIATOR SIGHT GAUGES
Thomas R. Demyon, 6201 Loch Raven Blvd., Baltimore, Md. 21212
Filed Nov. 30, 1966, Ser. No. 598,075
Int. Cl. G01f *23/02*
U.S. Cl. 73—334 **3 Claims**

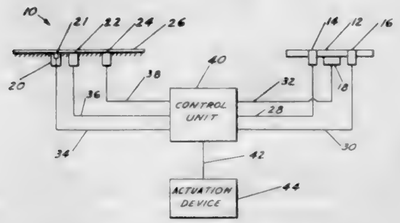
The smooth rounded contours of parison-molded hemispherical sight glasses cause difficulties with the hermetic seals required for radiator sight gauges. This is solved in

the here-disclosed improved sight gauges which employ ferrules that have sloped O-ring seats. These seats co-



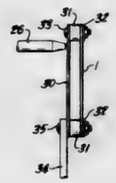
operate with the rounded beads of molded sight glasses when tightened to urge the O-ring inward.

3,434,347
ICE CONDITION DETECTING DEVICE
Leon J. Lockwood, Southfield, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed June 23, 1966, Ser. No. 559,835
Int. Cl. G01n *25/56*
U.S. Cl. 73—336 **12 Claims**



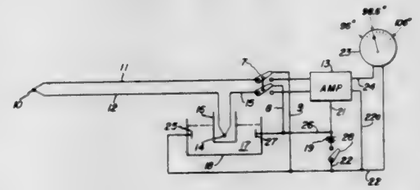
An atmospheric condition anticipating device for use with a selected surface employs a second controlled surface and temperature sensing elements for sensing the temperatures of both surfaces. Means are provided for maintaining the temperature of the controlled surface in a predetermined relationship with respect to the temperature of the selected surface and further means are provided for producing an output signal whenever condensation, frost, ice, snow or water has formed on the controlled surface and the temperature of the selected surface is below a predetermined value.

3,434,348
HUMIDITY SENSING ELEMENT
Walter J. Smith, Arlington, and Rienzi B. Parker, Weston, Mass., assignors, by mesne assignments, to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Original application May 12, 1964, Ser. No. 366,819, now Patent No. 3,301,057, dated Jan. 31, 1967. Divided and this application Nov. 14, 1966, Ser. No. 593,805
Int. Cl. G01h *25/58*
U.S. Cl. 73—337 **8 Claims**



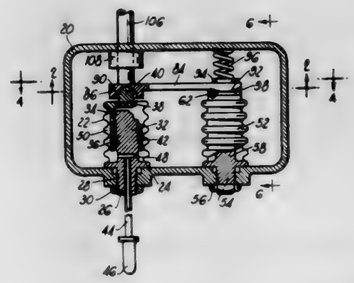
A humidity sensing unit including a moisture responsive element and a flexible backing member connected to the element and being coextensive with the element. The element includes a core formed of a material relatively insensitive to moisture changes and resistant to creep, and an outer layer bonded to the core and formed of a material having a high moisture sensitivity.

3,434,349
ELECTRONIC CLINICAL THERMOMETER
Peter G. Frischmann, Scottsdale, Ariz., assignor to General Electric Company, a corporation of New York
Filed Oct. 24, 1965, Ser. No. 504,472
Int. Cl. G01k *5/18*
U.S. Cl. 73—361 **4 Claims**



A thermocouple thermometer for clinical use in which the reference thermocouple is maintained at 98.6° F. by a self-regulating constant-temperature bath which includes a mixture of carbon black and paraethylphenol having electrical conduction properties to maintain the bath at 98.6° F. The device also includes a switching arrangement to sterilize the sensing thermocouple.

3,434,350
COMPENSATED TEMPERATURE SENSOR
John F. Kinney, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,238
Int. Cl. G01k *1/20*
U.S. Cl. 73—362.4 **7 Claims**

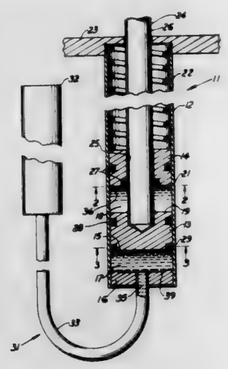


A temperature responsive device having a positionable output member connected to a pair of liquid filled temperature responsive bellows, one of which is a motor bellows responsive to a variable input temperature and the temperature of an environmental fluid and connected to actuate the positionable output member in response to the variable input temperature signal and the other of which is a compensated bellows responsive to the temperature of the environmental fluid and connected to compensate for the temperature effect of the environmental fluid on the motor bellows.

3,434,351
FLUID MOTOR

Edward J. Poitras, 198 Highland St., Holliston, Mass. 01746

Filed Mar. 6, 1967, Ser. No. 620,975
Int. Cl. G01k 5/44, 5/34; G05d 23/12
U.S. Cl. 73—368.3 9 Claims

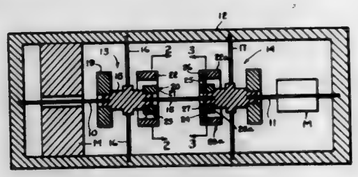


A fluid motor apparatus having individual chambers separated by a movable piston and maintained at equal fluid pressures by a biasing spring member. The individual chambers isolate the motor's fluid control and fluid sealing functions allowing the use of uniquely suited distinct fluids for each function.

3,434,352
ACCELEROMETERS

Wendell D. Jewell, West Hempstead, Lloyd A. Nevala, Lake Ronkonkoma, and Frederick Korn, Woodbury, N.Y., assignors to American Bosch Arma Corporation, a corporation of New York

Filed May 1, 1961, Ser. No. 107,285
Int. Cl. G01p 15/08
U.S. Cl. 73—517 2 Claims

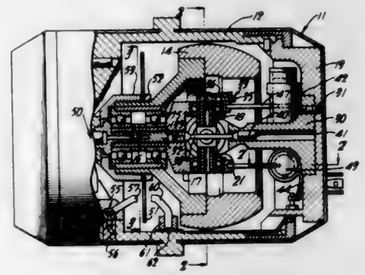


1. Vibrating-string accelerometer apparatus, comprising:
a frame;
a mass member;
a vibrating-string member;
means mounting said mass member and said vibrating-string member from said frame and to each other for producing different stressing of said vibrating-string member by said mass member for different accelerations of said frame;
said mass member comprising a first element connected to said vibrating-string member, a damping element concentric with said first element, and elastic vibration-absorptive means connecting said first element to said damping element for permitting vibratory motion of said damping element with respect to said first element and for absorbing energy of mechanical vibrations produced therein by undesired oscillations of said mass member; and
additional means connecting said first element to said frame for constraining motion of said mass with respect to said frame, said damping element being spaced from said additional means and free to vibrate without constraint by said frame.

3,434,353
RATE GYROSCOPE

Edgar R. Brastow, Woodland Hills, Andrew Voge, Canoga Park, and Richard R. Schaberg, Alhambra, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California

Filed Sept. 21, 1965, Ser. No. 488,859
Int. Cl. G01c 19/28
U.S. Cl. 74—5.6 11 Claims

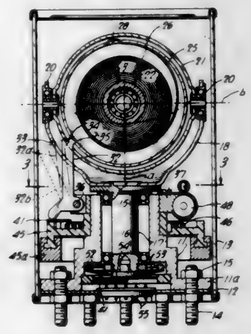


A rate gyroscope comprising a rotor capable of being driven at different speeds, means supporting the rotor for movement about a pivot axis perpendicular to its spin axis, a yieldable restraint tending to restrain movement of the rotor about the pivot axis, a pickoff device for emitting a signal responsive to angular acceleration of the rotor about its pivot axis, and a device responsive to the speed of the rotor for modifying such signal.

3,434,354
SPRING DRIVEN GYROSCOPE

Andrew Voge, Canoga Park, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California

Continuation-in-part of application Ser. No. 508,448, Nov. 18, 1965. This application Apr. 1, 1966, Ser. No. 547,682
Int. Cl. G01c 19/24
U.S. Cl. 74—5.12 13 Claims

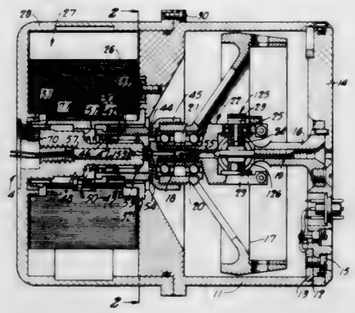


A gyroscope having inner and outer gimbals with a rotor drive spring intermediate the inner gimbal and the rotor and a combined rotor latching and gimbal caging member effective to first unlatch the rotor for rotation by the spring and, after a predetermined time period, to effect uncaging.

3,434,355
GYROSCOPE

Edgar R. Brastow, Woodland Hills, James Bjordahl, Arcadia, and Ronald F. Little, San Dimas, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California

Filed May 12, 1966, Ser. No. 549,719
Int. Cl. G01c 19/22
U.S. Cl. 74—5.12 4 Claims

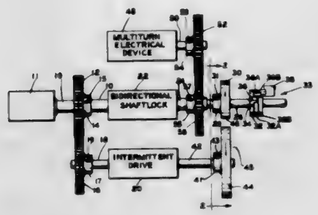


A spring driven gyroscope with a gimballed rotor and with a caging pin slideable in a part of the gyroscope housing and engageable with the gimbal means axially of the rotor, combined with a coupling device for coupling the spring drive means with the rotor, a latch for normally latching the spring drive device from driving the rotor, and means for releasing the latch and subsequently withdrawing the caging pin from engagement with the gimbal means.

3,434,356
SHAFT POSITION LIMITING DEVICE

Ernest Weiss, Maywood, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Apr. 26, 1967, Ser. No. 633,915
Int. Cl. F16h 35/18
U.S. Cl. 74—10.2 11 Claims

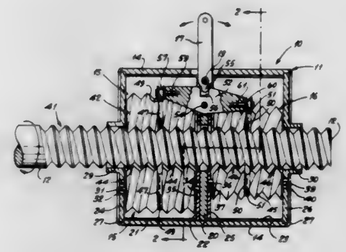


A device for limiting rotation of an output shaft to a predetermined angle yet providing for overrun of an input shaft beyond the predetermined angle. The input shaft and output shaft are drivably connected by a shaftlock during rotation within the predetermined angle. When the output shaft is rotated through the predetermined angle the shaftlock locks the output shaft against further rotation and disconnects the input shaft from the output shaft to permit overrun of the input shaft. Upon return of the input shaft to the predetermined angle the shaftlock unlocks the output shaft and drivably reconnects it to the input shaft.

3,434,357
LINEAR POWER AMPLIFIER MECHANISM

William J. Roantree, Port Washington, N.Y., assignor to Roantree Electro-Mech Corporation, Port Washington, N.Y., a corporation of New York

Filed Sept. 28, 1967, Ser. No. 671,369
Int. Cl. F16h 21/16
U.S. Cl. 74—25 14 Claims



The mechanism incorporates a driven rotatable lead screw along which a carriage travels in either direction in response to a small control force. Rotatably mounted upon the carriage are two sets (each set having one or more rollers) of threaded differential rollers, the threads of which mesh with the thread of the lead screw. Each set of rollers taken with the lead screw constitutes a system for converting rotary to linear motion, the effective linear speed of the system being varied by varying the contact diameters of the screw and roller. The two systems are disposed in opposition, whereby one system tends to drive the carriage in one direction and the other system tends to drive the carriage in the other direction, a control lever on the carriage being connected to both systems so as to vary them inversely. The mechanism amplifies a relatively weak linear command motion by drawing power from a prime power source, and by forcing a load to follow said command motion.

In a first disclosed embodiment a plurality of rollers are employed in each set, the rollers being self-phasing, that is, requiring no means for positively synchronizing them. In a second disclosed embodiment each set of rollers includes a single roller; such device also includes means whereby the rollers are positively held in phase.

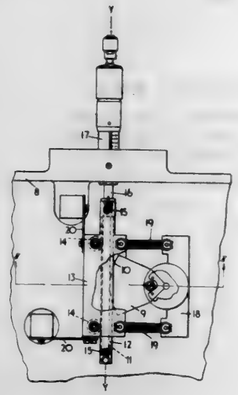
3,434,358
MECHANICAL DRIVES

Peter Charles Wildy and Donald Wilson, Camberley, England, assignors to Southern Instruments Limited, Camberley, Surrey, England, a British company

Filed Sept. 13, 1966, Ser. No. 579,022
Claims priority, application Great Britain, Oct. 1, 1965, 41,685/65; Mar. 18, 1966, 12,091/66
Int. Cl. F16h 25/18
U.S. Cl. 74—103 6 Claims

A mechanical drive which includes a driven member mounted for rotation about an axis and carrying a lever member having an arcuate peripheral portion which is frictionally engaged by a driving member in a tangential direction at right angles to the axis of the driven member,

the driven member being mounted for movement in a rectilinear path so that movement of the driving member



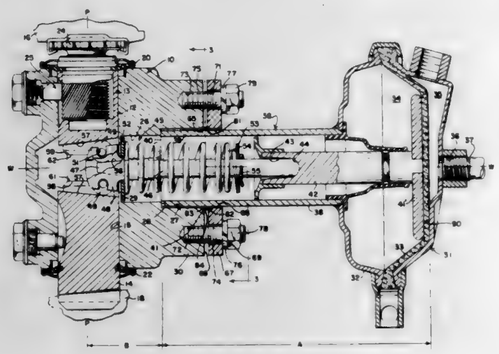
causes rolling contact and rotation of the driven member the driving and driven members being clamped together without imparting a reaction thrust to the driven member.

3,434,359

BRAKE ACTUATOR ASSEMBLY

William J. Williams, Ashtabula, and Donald A. Ray, Jefferson, Ohio, assignors, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 14, 1966, Ser. No. 557,562
Int. Cl. F16h *25/18, 21/44;* **B60t** *11/10*
U.S. Cl. 74—110 **10 Claims**



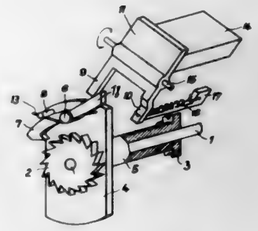
A brake assembly wherein a reciprocable wedge actuator projects into an actuator housing containing two oppositely slidable brake shoe associated plungers disposed in aligned bores having a common axis and a fluid pressure motor unit has a tubular support by which it is mounted on the housing with the wedge actuator extending between a fluid pressure responsive element of said motor and the inner ends of said plungers, the housing having a bore into which the support extends, an axially fixed axially outwardly facing abutment in the housing bore accurately located a predetermined distance from said plunger axis, a cooperating axially fixed axially inwardly facing abutment on said support having an accurately predetermined location relative to a limit stroke position of said motor, and retainer means for forcing said motor unit and actuator housing together to engage and maintain engagement of said abutments while permitting rotation of the motor unit about its axis without changing the axial location of the parts determined by said abutments.

3,434,360

SLIDE CHANGER DRIVE FOR PROJECTORS

Reinhard Sobotta, Braunschweig, Germany, assignor to Rollei-Werke Franke & Heidecke, Braunschweig, Germany

Filed July 6, 1966, Ser. No. 563,198
Claims priority, application Germany, July 13, 1965, R 41,082
Int. Cl. F16h *29/00*
U.S. Cl. 74—112 **10 Claims**



1. A slide changer drive for a slide projector having a slide changing mechanism actuated by a drive shaft on an axis of rotation, which shaft makes one revolution for each cycle of operation of said mechanism, which comprises:

(A) power shaft means comprising a power shaft on said axis of rotation;

(B) ratchet wheel means comprising a ratchet wheel secured to said power shaft;

(C) lever means pivotally disposed on a pivot axis generally parallel to said axis of rotation, and comprising a pawl engageable with and disengageable from said ratchet wheel;

(D) lever support means mounted on said drive shaft and carrying said lever means;

(E) spring means urging said pawl into engagement with said ratchet wheel; and

(F) motion arrestor means having a first position and a second position, and comprising a primary detent which, when said motion arrestor means are in said first position, is in the path of travel of said lever means when said pawl is in engagement with said ratchet wheel for abutting said lever means and causing said pawl to pivot out of engagement with said ratchet wheel, and which, when said motion arrestor means are in said second position, is out of said path of travel.

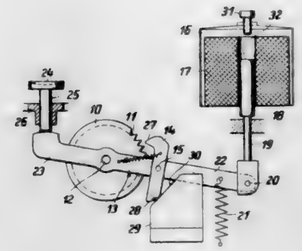
3,434,361

MAGNETIC STEPPING MECHANISM, ESPECIALLY FOR THE FEEDING MOVEMENTS OF GRINDING MACHINES

Robert Blohm, Kampchaussee 59/63, Hamburg 80, Germany

Filed Jan. 30, 1967, Ser. No. 612,708
Claims priority, application Germany, Feb. 10, 1966, B 85,752
Int. Cl. F16h *27/02*
U.S. Cl. 74—142 **5 Claims**

The electromagnetic stepping mechanism for the feeding movements with grinding machines comprises a toothed stepping wheel secured on a shaft the rotation of which actuates the drive for the height adjustment of the workpiece holder or the spindle carrying the grinding disk. The stepping wheel can be rotated in small steps by



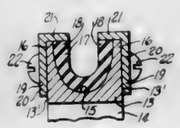
stepwise movements of a pawl which is actuated by a controlled electromagnet. The mechanism allows very small and exact feeding movements.

3,434,362

WHEEL FOR WIRE TYPE STONE-CUTTING SAWS

Casper R. Grage, Escondido, Calif., assignor to Continental Granite Corp., Escondido, Calif., a corporation of California

Filed Jan. 15, 1968, Ser. No. 697,850
Int. Cl. F16h *55/40*
U.S. Cl. 74—230.7 **3 Claims**



A large diameter wire-guiding pulley or wheel with square tubular spokes and a felly that has flat sides flush with the sides of the spokes and a round bottomed groove in the center of its periphery. A rubber rim, U-shaped in cross section, lines the groove in the felly and is removably secured in place by a pair of retainer rings detachably fixed to the sides of the felly by screws. The retainer rings are L-shaped in cross section and have one flange thereof in flat engagement with the sides of the felly and the other flange snugly encirculing the peripheral portions of the felly and rim.

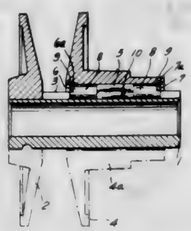
3,434,363

SHEAVE

Robert Ruprecht, Aichelberg, Kreis Esslingen, Kurt Heydlauf, Stuttgart-Zuffenhausen, and Herbert Braun, Bissingen (Enz), Germany, assignors to Ernst Heinkel Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany

Filed June 12, 1967, Ser. No. 645,165
Claims priority, application Germany, June 14, 1966, H 59,664
Int. Cl. F16h *55/52*
U.S. Cl. 74—230.17 **12 Claims**

An adjustable sheave having a shaft member on which a flange is mounted. A movable flange member is arranged on the shaft member with freedom of axial movement relative thereto and comprises an elongated hub which surrounds a portion of the shaft member coaxially and with clearance. Coupling means engages the movable flange member at least in the region of the respective axial ends of the hub and thus serves to center the latter with reference to the shaft and concomitantly couples the flange member to the shaft member with freedom of axial



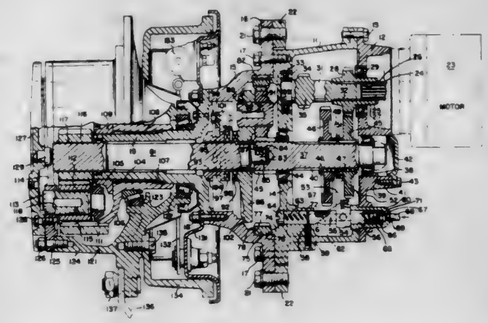
movement relative thereto while preventing relative rotation of the members.

3,434,364

VEHICLE DRIVE ASSEMBLY

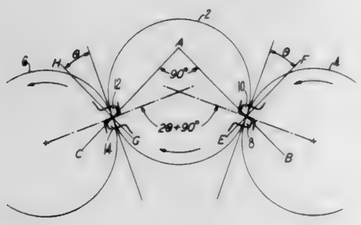
Beverly W. Keese, Neenah, Wis., assignor, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware

Filed Aug. 8, 1967, Ser. No. 659,142
Int. Cl. F16h *35/00*
U.S. Cl. 74—391 **12 Claims**



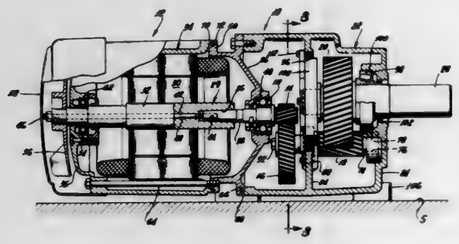
A vehicle drive assembly, particularly for an independent wheel drive, comprises a support structure attached to the vehicle frame and mounting a succession of gear mechanisms providing four gear reductions between the input and the wheel. These mechanisms comprise a selective two speed sliding gear mechanism driven by a motor, and a planetary gear reduction and a clutch between the output of the sliding gear mechanism and a shaft that in turn is connected to the wheel by a further planetary gear reduction. All of the gears in the two speed sliding gear mechanism are individual gears that may be replaced to provide gear sets of different ratio, so that any desired combination can be built into the mechanism without using conventional gear cluster combinations, and this reduces inventory as well as enlarging the number of combinations involved. Specifically the output shaft of the two speed mechanism carries the sun gear of the first planetary reduction mechanism, and the planet gear carrier of the first planetary reduction mechanism is selectively clutched to drive the sun gear of the second planetary reduction mechanism, the planet carrier of which is attached to the wheel.

3,434,365
GEAR ALIGNMENT MEANS
Raymond N. Quenneville, Suffield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,692
Int. Cl. F16h 57/02
U.S. Cl. 74—410 8 Claims



An idler gear is pivotally mounted on bearings between a drive gear and a driven gear for meshing therewith such that the angle formed by the intersection of the pressure line through the mesh between the idler gear and the drive gear and the pressure line through the mesh between the idler gear and the driven gear is substantially ninety degrees (90°).

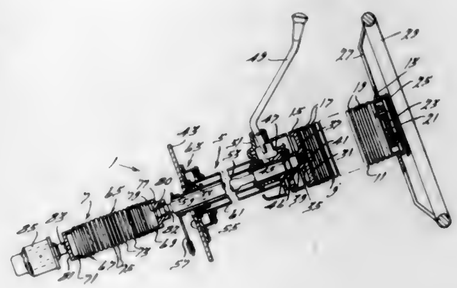
3,434,366
MODULAR DRIVE AND GEAR REDUCTION UNIT
Vito Raso, Buena Park, and Arlin C. Eisenhart, Fullerton, Calif., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed May 29, 1967, Ser. No. 641,971
Int. Cl. F16h 1/20
U.S. Cl. 74—421 11 Claims



Various drive modules and various transmission modules are adapted to be connected together interchangeably. The modules each have frames open at one end and bearing walls at the other. Registers at the frame openings align the bearings, and shaft components of the respective modules are connected together by a projection and socket arrangement. The shaft is supported only when the modules are connected together.

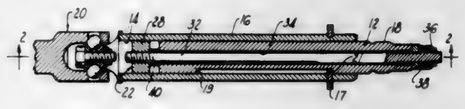
3,434,367
STEERING COLUMN
Dennis N. Renneker, Warren, and Throck M. Lowery, Bloomfield Township, Oakland County, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,061
Int. Cl. B62d 1/18
U.S. Cl. 74—492 10 Claims

Steering column having yieldable members at the upper and lower ends thereof adapted to deform independently of one another. The column jack and the shift tube are of a noncollapsible nature, while the yieldable members are shown in two forms, one being a thin walled hollow



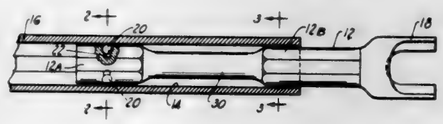
cylindrical member having a series of individual annular convolutions therein, and the other being a pair of mating telescoping steering shaft members.

3,434,368
NO-LASH AXIALLY MOVABLE STEERING COLUMN
Dean E. Runkle, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,241
Int. Cl. B62d 1/18
U.S. Cl. 74—493 10 Claims



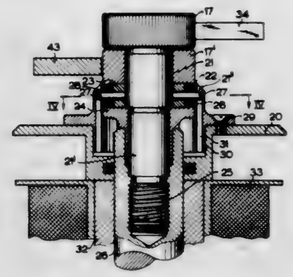
A steering column arrangement having two telescoping shafts and a device for eliminating lost motion or "lash" therebetween. The device includes an axially movable wedge-like member having angular wedge surfaces formed thereon which are skewed with respect to and engage mating angular wedge surfaces formed on one of the telescoping shafts so that axial movement of the wedge-like member will cause rotation and continuous frictional engagement of one of the shafts with respect to the other.

3,434,369
NO-LASH AXIALLY MOVABLE STEERING COLUMN
Dean E. Runkle, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,050
Int. Cl. B62d 1/18
U.S. Cl. 74—493 23 Claims



The following relates to a steering column arrangement having two telescoping shafts, the first of which has a polygonal shape and the second of which has a corresponding polygonal bore for receiving the first shaft. Force transmitting abutments which protrude from one of the shafts engage the adjacent polygonal surface of the other shaft at off-center locations to cause relative rotation and frictional engagement between the two shafts, thereby taking up rotational play and preventing subsequent uncontrolled relative rotation between the shafts. In order to limit overload forces from being exerted against the abutments and rendering them subsequently ineffective, one of the shafts is formed with a rotationally flexible section which is located between the abutments and a fail-safe portion formed on the shaft, wherein the fail-safe portion provides engagement between opposite ends of the mating shaft sides at torque levels above a predetermined value which cause flexure of the rotationally flexible section and reverse relative rotation between the shafts at the fail-safe location.

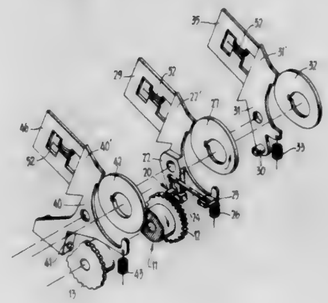
3,434,370
STENCIL CONTROL FOR PRODUCTION MACHINES, SUCH AS SEWING MACHINES, BY MEANS OF DRIVEN ROLLERS
Hans Scholl, Bielefeld, and Günther Hagemayer, Leopoldshohe, Kreis Lemgo, Germany, assignors to Kochs Adlernahmaschinen-Werke AG., Bielefeld, Germany
Filed Aug. 9, 1966, Ser. No. 571,328
Claims priority, application Germany, Sept. 10, 1965, K 56,864
Int. Cl. F16h 53/06
U.S. Cl. 74—569 7 Claims



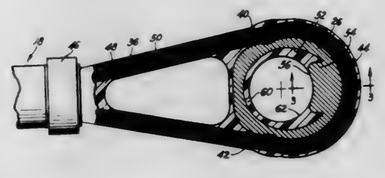
A device for the automatic sewing and trimming of fabric workpieces or fusing of sheet material held in clamping or holding frames according to the outline of pattern made to correspond with the workpieces and driven about by means of driven magnetic rollers. This device is provided with pattern means and auxiliary patterns cooperating with magnetic rollers driven by reverse drive means, for producing sharp-angled seams or edges on a workpiece, or when the occasion arises to allow the employment of a second process by a second working machine provided with driven magnetic rollers of other measurements cooperating with the main patterns only.

3,434,371
SILENT RATCHET
Thomas A. Hender, San Jose, and James E. Cushman, San Leandro, Calif., assignors to Friden, Inc., a corporation of Delaware
Filed Aug. 2, 1967, Ser. No. 657,948
Int. Cl. G05g 5/00
U.S. Cl. 74—576 6 Claims

In a silent ratchet for driving paper tape in a tape punch mechanism, one cam oscillates a pawl carrier and a second cam operates a camming lifter for retracting and setting the pawl. A third cam disengages a detent during pushing operation of the pawl. The followers of all three cams are normally held on high, inactive, position by permanent magnets and are released by timed pulses in a shunting coil.

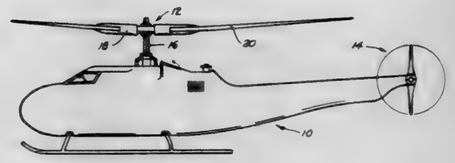


3,434,372
COUPLER
Thomas C. Delker, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 620,086
Int. Cl. F16b 17/00
U.S. Cl. 74—579 6 Claims



End fittings for an endless coupler between pin connections of structures whose horizontal planes may vary with respect to each other which have cavities for wrapping the coupler therearound while bounding it thereto with a central opening formed by a surface of compound curvature to permit rocking of the end fittings with respect to the pin surface.

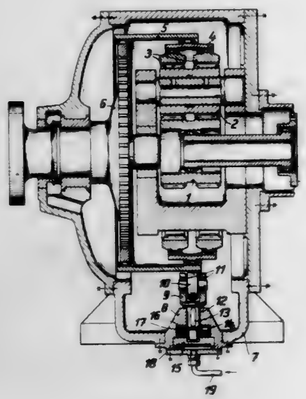
3,434,373
HELICOPTER TIE-BAR
Richard J. Ditlinger, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,094
Int. Cl. G05g 1/00
U.S. Cl. 74—581 16 Claims



A tie-bar coupling for use, for example, in a helicopter rotor system for connecting the rotor blades and rotor

arm assemblies consisting of endless loops of laminated adhesively integrated, parallel arranged filaments about novel end fittings, one of which may be connected to the helicopter rotor arm assembly and the other of which may be connected to the helicopter rotor blade, which loops are arranged on the end fittings so as to permit flapping of the rotor blades without creating deleterious bending moments in the tie-bar coupling.

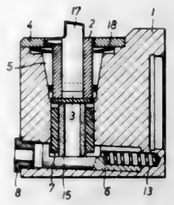
3,434,374
PLANETARY GEARING WITH A SUPPORTING DEVICE FOR THE OUTER CENTER GEAR
Hans A. Barwig and Gunther R. Heidrich, Munich, Germany, assignors to Alexander Wilhelm Stoeckicht, Munich-Solln, Germany
Filed Apr. 24, 1967, Ser. No. 633,145
Claims priority, application Germany, Apr. 27, 1966, Z 12,188
Int. Cl. F16h *1/28*
U.S. Cl. 74—801 **6 Claims**



A rotating outer ring gear with internal toothing is arranged concentrically around an inner sun gear with external toothing. At least one planet gear is disposed between and meshing with said outer ring gear and said sun gear. The outer ring gear being unsupported is centered with respect to the axis of gearing by the radial tooth forces resulting from torque transmission. When the outer ring gear is rotating under no torque or only small torque transmitting conditions said forces are not sufficient to center the outer ring gear. In this case centering is effected by an adjustable supporting member. The supporting member is automatically lifted into supporting position when the tooth forces are not sufficient to center the outer ring gear but is automatically retracted when the tooth forces are sufficient to center the outer ring gear.

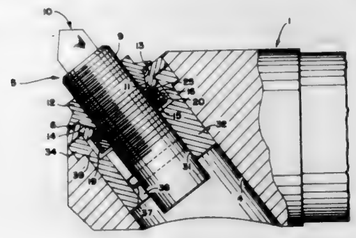
3,434,375
AUTOMATIC ADJUSTING DEVICE FOR CHIP-REMOVING TOOLS
Walter Clashausen, Remscheid, Germany, assignor to Gebruder Honsberg, Remscheid-Hasten, Germany
Filed Feb. 7, 1967, Ser. No. 614,437
Claims priority, application Germany, Feb. 8, 1966, H 58,467
Int. Cl. B23b *39/10, 47/18*
U.S. Cl. 77—58 **15 Claims**

Invention relates to an adjustable tool in which a cutter element support is adjustably mounted in a holder and a piezo-electric body in the holder is expansible by electrical energy to move the support in one direction in the holder with a one way clutch to prevent retraction of the support when the piezo-electric body contracts and with



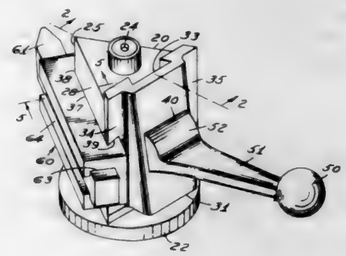
adjustable means to automatically fill the space between the support and the piezo-electric body when the latter contracts.

3,434,376
BORING BAR INSERT
Milton L. Benjamin, David D. Walker, and Wilbur N. Miles, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Apr. 3, 1967, Ser. No. 628,083
Int. Cl. B23b *29/02*
U.S. Cl. 77—58 **20 Claims**



A boring bar insert for adjustably holding a tool in selected positions in a boring bar. Rotation of a nut or bushing in threaded engagement with the tool shank causes inward and outward movement of the tool.

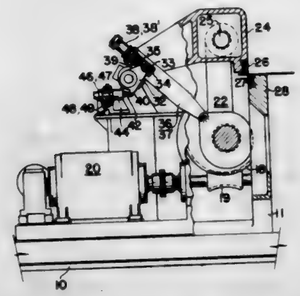
3,434,377
TOOL POST AND TOOL HOLDER
Herbert Stone, 822 Wyandotte Ave., Royal Oak, Mich. 48067
Filed Apr. 12, 1967, Ser. No. 630,382
Int. Cl. B23b *29/00*
U.S. Cl. 82—37 **9 Claims**



This invention relates to tool posts for machine tools and in particular relates to a tool post having a fixed

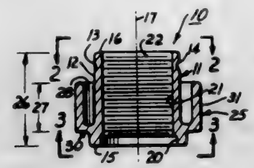
corner tenon and at least one movable corner tenon triangulated and cooperating with one another for engaging a mortised tool holder in a dovetail joint wherein the tool holder is not only cammed toward the post inwardly of the tool holder but also abutted by the post inwardly of the tool holder.

3,434,378
APPARATUS FOR SHEARING PLATE
Maurice Paul Sieger, Upper St. Clair Township, and Robert A. Stiveson, Monroeville, Pa., assignors to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 25, 1966, Ser. No. 589,401
Claims priority, application Great Britain, Nov. 8, 1965, 47,328/65
Int. Cl. B26d *5/08*
U.S. Cl. 83—556 **9 Claims**



The disclosure of this invention relates to a plate side trimming shear and comprises a shear frame having a stationary and a movable knife. The movable knife is carried by a link mounted on and movable by a first eccentric carried by a drive shaft. Connected to the movable knife is a second eccentric so that rotation of the first eccentric effects a cut and the rotation of the second eccentric displaces the movable knife away from the shearing edge of the plate. A strut extending between and connected to the eccentrics maintains the desired cycle relationship between two eccentrics.

3,434,379
INHERENTLY TORQUE-LIMITED FASTENER
George S. Wing, Torrance, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed May 5, 1967, Ser. No. 636,434
Int. Cl. F16b *31/00, 33/04, 39/28*
U.S. Cl. 85—61 **6 Claims**



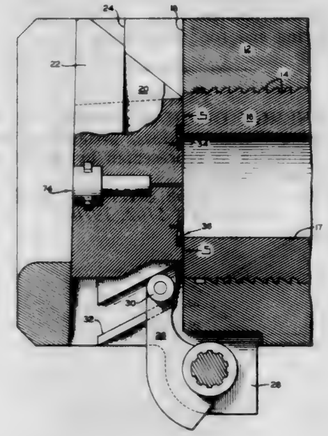
An inherently torque-limited fastener of the type which has a driving ring that separates from the threaded driven body upon the application of a predetermined torque to the driving ring, thereby leaving the driven body installed at said predeterminned torque level, and in particular to a fastener of this type which has a low profile.

3,434,380
SALVO-FIRING OPEN CHAMBER GUN
David Dardick, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Sept. 1, 1967, Ser. No. 665,139
Int. Cl. F41d *7/00*
U.S. Cl. 89—13 **8 Claims**



An open chamber gun for firing salvo-type ammunition containing a plurality of laterally spaced positionally fixed projectiles, the gun having a cluster of barrels at each firing station through which the projectiles are propelled simultaneously during firing, and adjusting means for relatively angularly displacing the barrels to vary the dispersion pattern of the projectiles in flight.

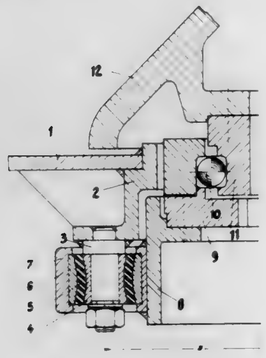
3,434,381
MULTIRING SEAL FOR OBTURATING THE BREECH OF LARGE CALIBER GUNS
Robert J. Thierry, Averill Park, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 23, 1968, Ser. No. 723,468
Int. Cl. F41f *11/08*
U.S. Cl. 89—26 **16 Claims**



In a large caliber gun of the type wherein the breech is closed by the sliding actuation of the breechblock at a slight angle to the transverse axis of the tube, the sealing of the closed breech is accomplished by a multiring assembly seated in the front face of the breechblock and composed of an elastomeric ring surrounded by a metallic backup ring which is, in turn, surrounded by a metallic camming ring. During the closing of the breech, the backup ring wipes the breech face of the gun tube to remove any foreign matter therefrom while the camming ring acts to preload the backup and elastomeric rings and thereby

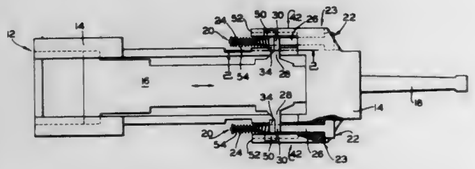
increase the ability thereof to seal the breech under the peak pressures produced during the firing of the gun.

3,434,382
SECURING A GUN TURRET ON AN ARMORED VEHICLE
Karl Kirsch, Haunstetten, and Siegfried Uhl and August Schiele, Augsburg, Germany, assignors to Keller & Knappich G.m.b.H., Augsburg, Germany, a corporation of Germany
Filed Feb. 20, 1967, Ser. No. 617,217
Claims priority, application Germany, Mar. 3, 1966, K 58,620
Int. Cl. F41h *5/18, 5/20*
U.S. Cl. 89—36 **5 Claims**



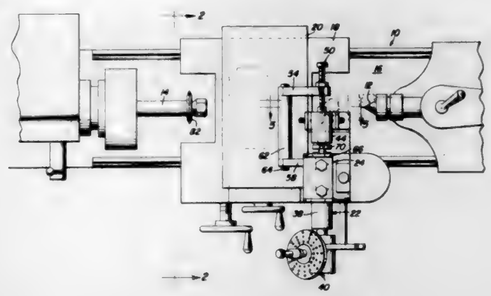
Armored vehicle having a gun turret mounted on a nonrotatable bearing ring, wherein the nonrotatable bearing ring is secured to the vehicle roof by means of a plurality of supporting bolts each mounted within a shock absorbing resilient ring means located between the bearing ring and roof structure.

3,434,383
ENERGY DISCHARGE DEVICE
John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 17, 1968, Ser. No. 722,045
Int. Cl. F41f *5/02, 19/00*
U.S. Cl. 89—42 **9 Claims**



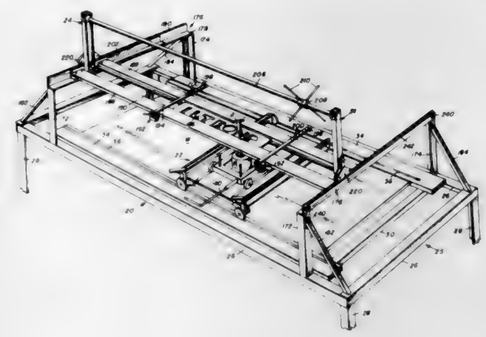
In an automatic gun comprising a mount and a recoil assembly slidingly mounted thereon for reciprocation responsive to cartridge discharge forces, an energy discharge device including a torsion spring is operationally disposed between the mount and recoil assembly for absorbing the energy produced by cartridge discharge and then releasing the torsion spring to discharge the energy therein at the end of the recoil stroke so that none remains therein to be transferred to the recoil assembly.

3,434,384
LATHE ATTACHMENT
David H. Cowles, Rte. 6, 3508 E. Orangeburg, Modesto, Calif. 95350
Filed Jan. 9, 1967, Ser. No. 607,966
Int. Cl. B23c *7/02;* **B23f** *23/00*
U.S. Cl. 90—11 **7 Claims**



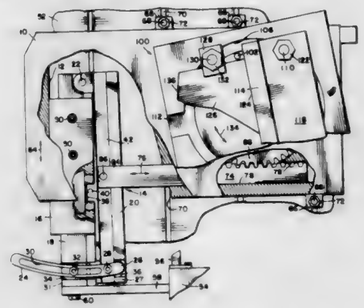
An attachment for lathes in the form of a work holder rotatably supporting and indexing the workpiece so that milling and drilling operations can be performed on a conventional lathe. The attachment is mounted in a vise on the cross feed of a lathe and connected with a dividing head for indexing the workpiece in predetermined positions.

3,434,385
COMBINATION ROUTER CARRIAGE, WORK HOLDER AND TEMPLATE HOLDER AND ADJUSTER
William B. Ray, P.O. Box 524, Ocala, Fla. 32670
Filed Mar. 22, 1967, Ser. No. 625,161
Int. Cl. B23c *1/16;* **B23l** *1/18;* **B27c** *5/10*
U.S. Cl. 90—13.1 **7 Claims**



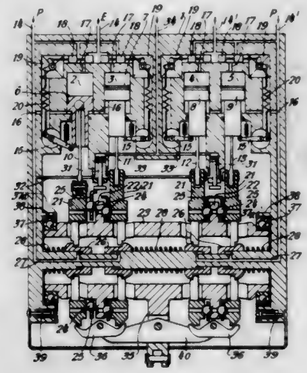
A combination router carriage, work holder and template holder and adjuster comprising a work holder having a base with means therein for receiving and holding the work in position. The router carriage has a main frame having vertically adjustable wheels which ride on tracks on the base to provide back and forth movement over the work positioned thereunder. The router is mounted on an upper frame having wheels riding on tracks on the main frame transverse to the base tracks. Means are provided for vertically adjusting the router on the upper frame. A template holder and adjuster is mounted on the base over the router carriage. The holder has means for retaining the template in lateral position while other means are provided to move the holder back and forth transversely of the base tracks. A guide pin is passed down through the template and engages the router carriage so that the router carriage may be traversed through the same path as that of the guide pin in the template to produce a corresponding design on the work.

3,434,386
ADJUSTABLE RADIUS ATTACHMENT
William A. Hobbs, R.R. 1, Daleville, Ind. 47334
Filed Mar. 20, 1967, Ser. No. 624,418
Int. Cl. B23d *3/02*
U.S. Cl. 90—24.3 **10 Claims**



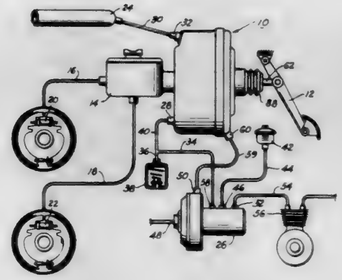
A radius attachment for a machine of the type having relative, rectilinear reciprocation between its bed and cutting tool, the attachment comprising an assembly rigidly connected to said cutting tool and movable therewith, a rack arranged for transverse reciprocation at a selective rate in response to reciprocation of the assembly, a spur gear mounted on an axis fixed relative to the machine bed and drivingly engaged with the rack, and a work platform mounted for oscillation about a common axis with the spur gear and means for drivingly connecting the spur gear to the work platform.

3,434,387
HYDRAULIC ACTUATORS
Stafford M. Ellis, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Mar. 2, 1966, Ser. No. 531,217
Claims priority, application Great Britain, Mar. 9, 1965, 9,848/65
Int. Cl. F01b *25/26;* **F15b** *5/00;* **F16d** *47/00*
U.S. Cl. 91—1 **11 Claims**



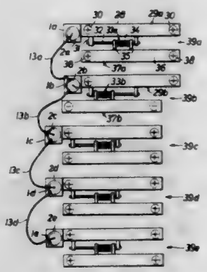
A redundant actuator system wherein a plurality of fluid actuator paths are provided with clutch coupling means which allow for disparity in position between the individual pistons of the actuator paths while still allowing the transmission of force thereby. A clutch re-engagement means and a switch indicator means are also provided in the system.

3,434,388
SERVOMOTOR CONTROL MEANS WITH PRIMARY AND SECONDARY PRESSURE SOURCES
Thomas M. Julow and Charlie N. French, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Mar. 17, 1967, Ser. No. 623,936
Int. Cl. F01b *29/00, 25/04*
U.S. Cl. 91—6 **7 Claims**



A servomotor control system having means utilizing primary and secondary pressure sources with means to change over to the secondary pressure source as the output of the servomotor approaches power run-out for the primary source.

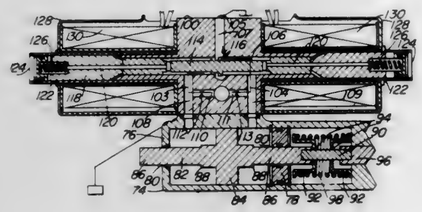
3,434,389
AUTOMATIC SEQUENCE CYCLE CONTROLLED ADVANCEABLE MINING PROP ARRANGEMENT
Hans-Theodor Grisebach, Cappenberg, near Lunen, Germany, assignor to Gewerkschaft Eisenhutte, Westfalia, Wethmar, near Lunen, Westphalia, Germany
Continuation of application Ser. No. 523,502, Jan. 19, 1966. This application Sept. 29, 1967, Ser. No. 671,896
Claims priority, application Germany, Jan. 21, 1965, G 42,622; Feb. 27, 1965, G 42,952
Int. Cl. E21d *15/16, 15/44;* **F01b** *31/12*
U.S. Cl. 91—36 **31 Claims**



Advanceable mining prop arrangement with hydraulically actuatable motive means controlled by motive valve means, with each prop being hydraulically actuatable to change its effective length for alternate extension into and retraction from supporting engagement with the mine roof and mine floor upon hydraulic actuation, in combination with automatic sequence valve control means operatively connected with the motive valve means, such sequence valve control means, for example, being separately posi-

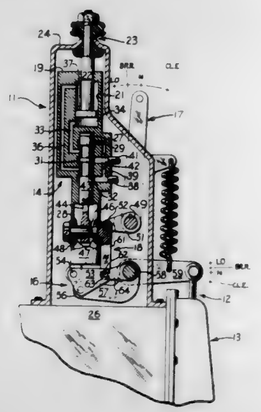
tioned at a remote distance from the prop unit sufficiently to permit switching of the sequence valve control means without danger to the operator from the resultant changes in condition of the prop unit and the mine roof area being supported thereby, said control means so combined with timing means as to operate them in an automatic timed cycle operation.

3,434,390
VALVE CONTROL APPARATUS
Paul C. Weiss, Evanston, Ill., assignor, by mesne assignments, to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Apr. 25, 1966, Ser. No. 544,931
Int. Cl. F15b *13/043, 13/044;* **F16k** *31/05*
U.S. Cl. 91—51 **10 Claims**



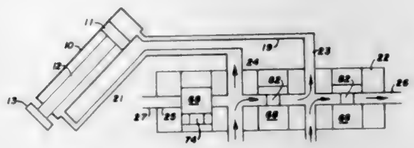
Apparatus for selectively controlling position of piston-like element within hydraulic cylinder wherein the piston is subject to a force in one direction and this force is opposed in a controllable manner by the steps of directing hydraulic fluid to flow from one pressure level to another through two restrictive orifices, maintaining the cylinder on one side of the piston in fluid communication orifices and selectively varying the size one of said orifices.

3,434,391
HYDRAULIC BOOSTER MECHANISM
Peter B. Olmsted, Washtenaw, Mich., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 12, 1967, Ser. No. 652,932
Int. Cl. F01b *15/00;* **F15b** *9/10, 13/10*
U.S. Cl. 91—216 **1 Claim**



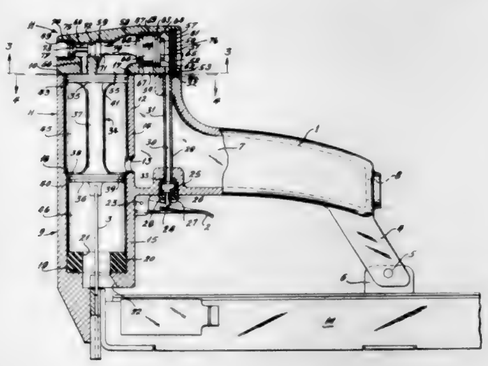
A hydraulic booster associated with a cable control unit of the type used on tractors and having a hydraulic cylinder connected by suitable linkage to engage a clutch and/or release a brake in the cable control and an actuating lever for operating the hydraulic cylinder wherein a portion of the force to be applied for engaging of the clutch or releasing of the brake is directly exerted by movement of the actuating lever by means of a bell crank lever interconnecting a mechanical extension from the control lever and the hydraulic cylinder with the cable control clutch.

3,434,392
HYDRAULIC SYSTEM FOR OPERATING A CYLINDER
Harvey S. Landers, 207 E. Broadway, Fort Worth, Tex. 76118
Filed Apr. 24, 1967, Ser. No. 632,969
Int. Cl. F15b *11/08, 13/04*
U.S. Cl. 91—414 **3 Claims**



The combination with a cylinder having a piston therein and an extending piston rod, first and second passage means connecting fluid pressure means with the piston and rod ends of said cylinder, transverse passage means connecting said first and second passage means and extending outwardly of each side thereof, and first, second and third valves in said transverse passage means, the second said valve being located between said first and second passage means and the first and third said valves being located outwardly and on each side of said first and second passage means.

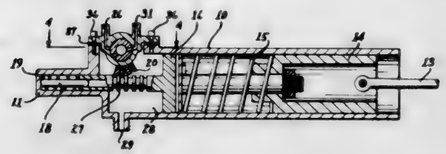
3,434,393
NAILING MACHINE
Anthony E. Cairatti, Herrin, Ill., assignor to Werner Schafroth, Herrin, Ill.
Filed Mar. 2, 1967, Ser. No. 620,173
Int. Cl. F15b *15/17*
U.S. Cl. 91—417 **13 Claims**



A nailing machine in which the main valve is mounted horizontally above the housing and completely within the cap and in which the driving piston mounted in a stationary cylinder over whose top no pressure fluid is directed to force the piston downwardly, so that pressure fluid does not spill in over the top of the cylinder and

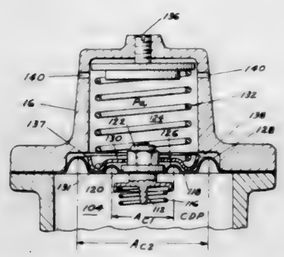
the cylinder does not move in a vertical direction, but the piston moves down because of the main valve positioned within the cap.

3,434,394
POWER BRAKES FOR AUTOMOTIVE VEHICLES
Oluf Fred Jensen, Rte. 2, Box 462, Apache Junction, Ariz. 85220
Filed Oct. 10, 1966, Ser. No. 585,594
Int. Cl. F15b *7/08*
U.S. Cl. 91—470 **4 Claims**



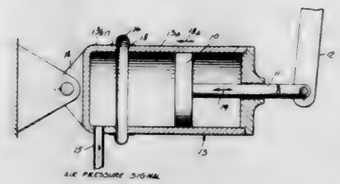
A power braking system having a control valve arranged to make use of the source of fluid pressure from the power steering apparatus of a motor vehicle to operate the power brakes.

3,434,395
PRESSURE RESPONSIVE MECHANISM
Ralph K. Londal, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Oct. 26, 1964, Ser. No. 406,502
Int. Cl. F15b *15/10;* **G05d** *7/03*
U.S. Cl. 92—6 **5 Claims**



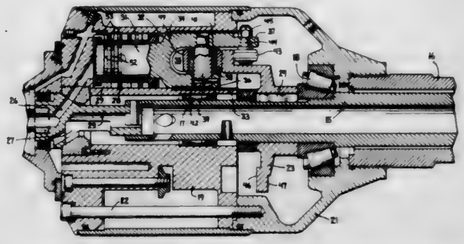
This application discloses a gas turbine engine bypass type fuel supply system including a fuel tank, a fuel pump and a fuel control for automatically scheduling the quantity of fuel supplied to the engine, as determined by the position of a manual power selector lever and other suitable engine operating parameters, the system including a force balance mechanism continuously controlling indirectly the quantity of fuel supplied to the engine by directly controlling the portion of the pump output that is bypassed to the pump inlet, the force balance mechanism including a lever actuating the fuel bypass valve and means responsive to an engine operating pressure, such as compressor discharge pressure, connected to said lever so as to apply an input force thereto, said pressure responsive means being formed to provide an effective area for pressures below a predetermined pressure and another different effective area for pressures above said predetermined pressure, whereby the input force has one linear relationship with respect to pressure for pressures below the predetermined pressure and another different linear relationship with respect to pressure for pressures above the predetermined pressure.

3,434,396
PISTON DIAPHRAGM COMBINATION
Donald A. Ely, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Feb. 20, 1967, Ser. No. 617,105
Int. Cl. F01b *19/04, 11/02;* **F16j** *3/00*
U.S. Cl. 92—36 **9 Claims**



A fluid device for converting a pressure signal to a mechanical movement having a cylinder formed of two parts interconnected by a flexible wall member and a piston carried and supported by one of the cylinder parts. The flexible wall member enabling the piston and one cylinder part to initially move together before the piston slides within the cylinder part with any change of the pressure in the cylinder.

3,434,397
BARREL ENGINE PISTONS
Halley H. Hamlin, Lyndhurst, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 22, 1967, Ser. No. 669,961
Int. Cl. F01b *3/04;* **F16h** *25/12, 25/16*
U.S. Cl. 92—71 **2 Claims**

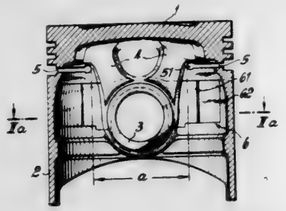


A piston for a barrel engine having a reduced diameter portion adaptable for reciprocating in a cylinder and having an enlarged diameter portion having first and second rollers attached thereto which are engageable with the top and bottom sides, respectively, of a harmonic cam on an output shaft. Guide shoes attached to the cylinder slidably engage a longitudinal slot in the enlarged diameter portion of the piston to prevent rotation of the piston.

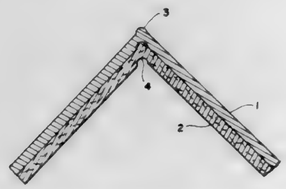
3,434,398
LIGHT METAL PISTON
Werner Gessinger, Kornwestheim, and Wilhelm Hocke, Stuttgart-Mohringen, Germany, assignors to Mahle Komm.-Ges., Stuttgart-Bad Cannstatt, Germany
Filed Sept. 8, 1967, Ser. No. 666,350
Claims priority, application Germany, Sept. 27, 1966, M 71,070
Int. Cl. F16j *1/04*
U.S. Cl. 92—228 **1 Claim**

A light metal piston has sheet metal inserts anchored in the piston pin bosses in the piston skirt for controlling thermal expansion of the skirt. Rectangular recesses in the outer surface of the skirt extend across the bosses. Ribs join the bosses to the piston head. Transverse slots extending between the ribs separate a portion of the skirt

from the piston head. The ends of these slots lie in that part of the piston above the recesses and which is reinforced by the ribs so as to be relatively resistant to bending stresses.

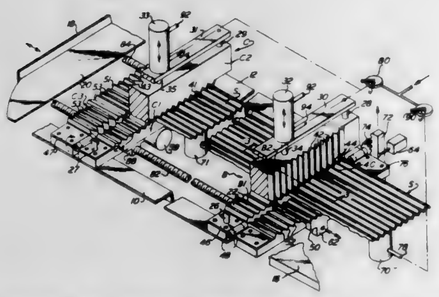


3,434,399
PROCESS FOR SCORING AND FOLDING STEEL FOIL-PAPERBOARD LAMINATES
Charles E. Palmer, Somers, Conn., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 29, 1966, Ser. No. 573,154
Int. Cl. B31b *1/26;* **B65d** *5/02*
U.S. Cl. 93—58 **10 Claims**



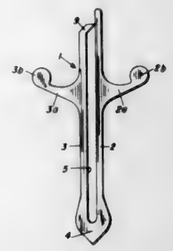
A process for folding a steel foil-paperboard laminate comprising scoring the laminate on the paperboard side sufficiently to deform the underlying steel foil and folding the laminate along the score line so that the resultant bead produced forms on the steel foil lamina.

3,434,400
APPARATUS FOR BENDING ACCORDION PLEATED STRIPS
Henry J. Hochfeld, New York, N.Y., assignor to American Fiber-Velope, Mfg. Co., Collingdale, Pa., a corporation of Delaware
Filed May 11, 1967, Ser. No. 637,833
Int. Cl. B31d *5/02*
U.S. Cl. 93—84 **10 Claims**



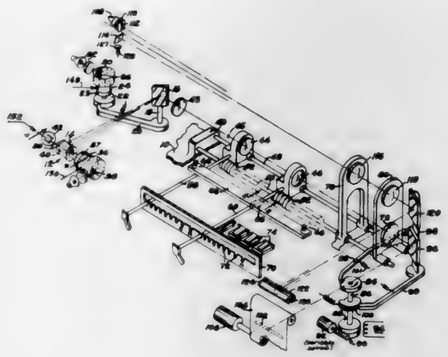
Apparatus for bending accordion pleated strips transverse to the pleats and forming gussets at the bent corners. Intermeshing serrated jaws clamp the accordion strips in pleated configuration. A hinged wing with flutes folds back a portion of the pleated strip extending beyond the clamped jaws against corresponding flutes in a side face thereof perpendicular to the intermeshing serrations and the foldline. V-notches in the wing at the ends of the flutes adjacent the foldline press out triangular corner gussets from between the pleats against a pyramidal lip defined by the intersection of the face flutes with the serrations.

3,434,401
SEALING STRIPS FOR CONCRETE SLABS
Jack L. Kiewit, Fort Collins, Colo., assignor to the United States of America as represented by the Secretary of the Interior
Continuation-in-part of application Ser. No. 542,698, Apr. 14, 1966. This application June 20, 1967, Ser. No. 653,310
Int. Cl. E01c *11/10*
U.S. Cl. 94—18 **5 Claims**



A combination waterstop and weakened plane forming strip composed of (a) two closely adjacent sheets of flexible material (e.g. rubber) joined together along one edge to form a slot therebetween and (b) a flange projecting from each of the outer faces of the slot-defining sheets to anchor the strip between adjacent concrete sections which result from cracking of the slab.

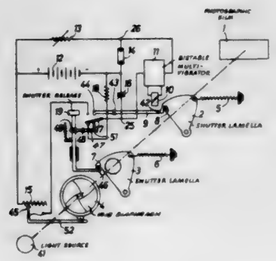
3,434,402
TURRET FONT PHOTOCOMPOSING MACHINE
John M. McCall, Huntington Station, N.Y., assignor to Fairchild Camera & Instrument Corp., Syosset, N.Y., a corporation of Delaware
Filed Jan. 11, 1966, Ser. No. 519,906
Int. Cl. B41b *13/00, 13/08*
U.S. Cl. 95—4.5 **22 Claims**



A photocomposing machine whose font element is a miniature internally flash-illuminated hollow cylinder of hour-glass external configuration with characters thereon aligned in axial rows and circumferential columns,

a stepper motor for rotating said font for row selection, a stepper motor for swinging an external reflector for column selection, and digital servos for stepping said motors under text-record (tape) control. Letter-spacing, word-spacing and justification functions are computer-controlled in joint response to the text-record decoder and to picket fence counter signals derived from a timed sweep of the character beam relative to the recording film. Provision for variable magnification of characters is included, with coupled adjustment of the sweep speed. The required word-space width for justification is obtained by a rapid preliminary decoding of each text-line segment of the text-record.

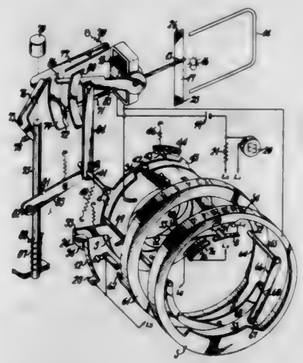
3,434,403
AUTOMATIC EXPOSURE CONTROL CIRCUIT
Friedrich Biedermann, Unterhaching, Munich, and Friedrich Bestenreiner, Grunwald, near Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Oct. 23, 1965, Ser. No. 503,260
Claims priority, application Germany, Nov. 6, 1964, A 47,539
Int. Cl. G01j *1/46*
U.S. Cl. 95—10 **16 Claims**



An automatic exposure control for photographic apparatus wherein an electromagnet is energized in response to output signal from a multivibrator circuit to close the shutter. The input of the multivibrator circuit is connected to a bridge circuit which compares the voltage drop across a photoresistor with the output voltage produced by an R-C unit independently of scene brightness. The bridge circuit produces a time dependent voltage in accordance with such comparison. When the time dependent voltage reaches a certain magnitude, the multivibrator circuit energizes the electromagnet to complete the exposure by closing the shutter.

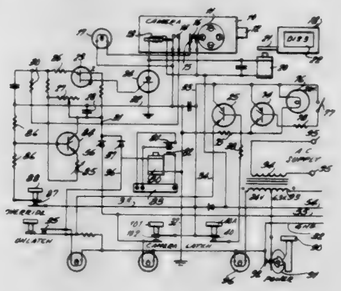
3,434,404
AUTOMATIC DIAPHRAGM SETTING SYSTEM FOR FLASH PHOTOGRAPHY
Tatsuo Kobayashi and Toshinobu Imura, Osaka, Japan, assignors to Minoltacamera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Apr. 13, 1966, Ser. No. 542,274
Claims priority, application Japan, Apr. 14, 1965, 40/22,039
Int. Cl. G01j *1/52*
U.S. Cl. 95—10 **4 Claims**

An automatic diaphragm setting system in which movement of a camera rangefinder adjusts the diaphragm aperture in accordance with the guide number being employed and including a control circuit for completing a circuit to an exposure meter to cause the exposure meter to indicate that the required diaphragm opening is within the diaphragm opening range capability of the camera when such is the case and for activating the exposure meter in another manner to indicate that the range has been adjusted



to a value requiring a diaphragm opening beyond the capability of the diaphragm of the camera when such is the case.

3,434,405
CAMERA CONTROL CIRCUIT
Hirsch Friedman, New York, N.Y., assignor to Cameras for Industry, Inc., Farmingdale, N.Y.
Filed Nov. 29, 1966, Ser. No. 597,599
Int. Cl. G03b *19/18*
U.S. Cl. 95—11 **10 Claims**

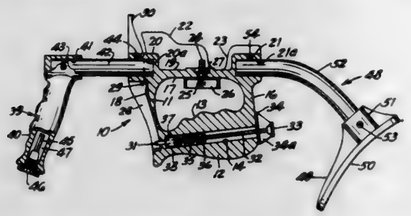


1. A camera control circuit for operating a solenoid controlled camera to take pictures at a predetermined rate comprising; an electric pulse oscillator coupled to a magnetic actuator in the camera for operating a shutter and for advancing a strip of film; a photo-burst current supply circuit coupled to the oscillator for supplying the oscillator circuit with operating current during a predetermined program at time intervals when the oscillator circuit generates pulses; and a time delay circuit coupled to the photo-burst circuit for supplying the photo-burst circuit with operating current during the time intervals when the photo-burst circuit generates operating current.

3,434,406
CAMERA MOUNTING DEVICE
Edward S. Aune, 325 W. 102nd St., Bloomington, Minn. 55420, and Lyle Robert Brown, 4928 36th Ave. S., Minneapolis, Minn. 55417
Filed Jan. 14, 1966, Ser. No. 521,489
Int. Cl. G03b *17/56*
U.S. Cl. 95—86 **6 Claims**

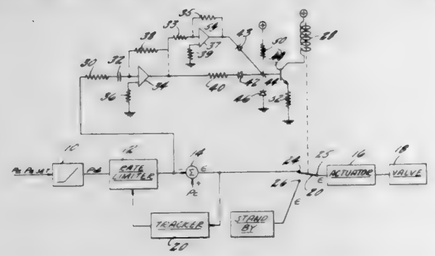
A camera mounting device comprising a generally rectangular shaped support frame, including a hand grip member to be gripped by the hand of a user and normally horizontally oriented. Front and rear frame mem-

bers affixed to the hand grip member and projecting upwardly therefrom, and a normally horizontally oriented camera support frame member affixed to the front and rear frame members and spaced above the hand grip member. An actuator element mounted on the frame and being engageable with the shutter mechanism of the



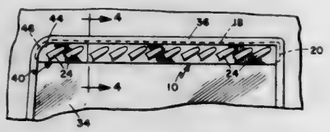
camera for actuating the same. And a thumb-engaging operator member connected with the actuator element for shifting the same and projecting rearwardly of the hand grip member whereby a user may support and operate the camera mounted on the support device with one hand.

3,434,407
CABIN PRESSURE FAULT DETECTOR
Stanley G. Best, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 28, 1967, Ser. No. 656,738
Int. Cl. B64d *13/04*
U.S. Cl. 98—1.5 **8 Claims**



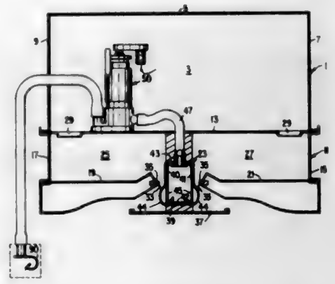
A device for detecting the faulty operation of an automatic cabin pressure regulator is described. The fault is detected by sensing the excess of the rate of change of a desired cabin pressure signal over a predetermined value as a result of either long term gradual changes or short term sudden variations. The detected fault signal is used to transfer the operation from the automatic control to a standby control.

3,434,408
VEHICLE WINDOW AIR VENT
Joe F. Rivers and Frank J. Rivers, both of 5355 Clairemont Mesa Blvd., San Diego, Calif. 92117
Filed July 14, 1966, Ser. No. 565,271
Int. Cl. B60h *1/24*
U.S. Cl. 98—2 **2 Claims**



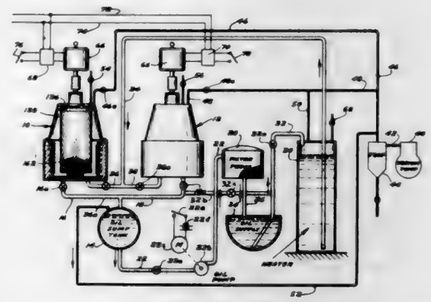
A vehicle window ventilator to fit above a sliding window, with exterior air scoops leading to transverse openings through the ventilator, the transverse openings being sharply reduced at the outlet ends thereof and being closable by a hinged baffle panel, and the ventilator has a replaceable adapter portion of construction similar to the main body portion of the ventilator.

3,434,409
AIR DISTRIBUTION UNIT
Daniel A. Fragnito, Solvay, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,731
Int. Cl. F24f *13/10, 7/04*
U.S. Cl. 98—41 **6 Claims**



An air discharge unit having a variable area discharge slot for use in an air conditioning system. The discharge slot area is controlled in response to duct pressure to reduce the discharge area of the unit upon an increase in duct pressure and increase the discharge area of the unit upon a decrease in duct pressure to maintain a constant discharge air quantity irrespective of duct pressure. A duct pressure operated control valve in the unit employs two calibrated orifices in series to provide control air pressure intermediate the duct pressure and ambient air pressure to vary the unit discharge area.

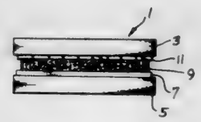
3,434,410
BOTTOM FEED QUENCH DRYER APPARATUS
Edward L. Galle, St. Paul, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Apr. 9, 1965, Ser. No. 446,801
Int. Cl. A23b *5/02;* **B01d** *1/00*
U.S. Cl. 99—246 **11 Claims**



A food dehydration apparatus composed of a plurality of tanks each connected to a source of vacuum and each containing a centrifuge basket just slightly smaller than the tank itself. Heaters are connected to the sides of the tanks for heating the contents of the tanks. During operation, food products to be dehydrated are placed in the centrifuge baskets, a vacuum is drawn within the tank,

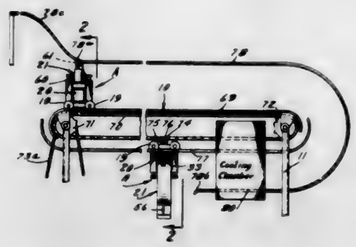
a heat transfer medium such as oil heated to about 400° F. is introduced to the tank and while the vacuum persists the centrifuge basket is rotated at about 400 r.p.m. to remove excess oil. The product is removed from one tank while the other is in operation.

3,434,411
VENTED CAULS
Gilbert D. Allen, Mount Clemens, Mich., and Gene A. Grove, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 11, 1964, Ser. No. 417,575
Int. Cl. B30b *15/06, 9/00*
U.S. Cl. 100—90 **6 Claims**



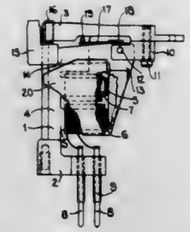
A caul plate grooved on both of its major surfaces with vent holes connecting the grooves in one surface with the grooves in the other. To eliminate blisters and delaminations of the surface material of the fiberboard previously caused by too rapid an escape of volatiles during the molding pressure application step, the vented caul plates are inserted between the fiberboard mat surface and the platen of the densifying press.

3,434,412
APPARATUS FOR BONDING A BRAKE LINING TO A BRAKE SHOE
Louis B. Katz, 855 6th St., Santa Monica, Calif. 90403
Filed Sept. 28, 1965, Ser. No. 490,842
Int. Cl. B30b *15/34*
U.S. Cl. 100—93 **11 Claims**



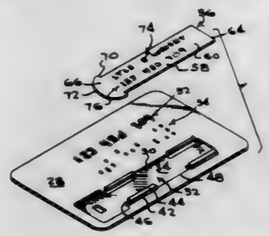
Apparatus for securing brake lining pads to a break shoe in which the brake shoe is supported on one clamping member and the lining pad is pressed against the shoe by a cooperative hinged rigid clamp member having a flexible pressure applying band, the lining pad being alignable on the shoe by movable side members activated by an electro-magnet positioned between the side members. For high speed production the clamping members are transported as units successively through a first station in which a cam closes the clamping members for pressing the lining against the shoe, a second station in which the lining is bonded to the shoe by heating, a third cooling station, and a discharge station in which the clamping members are opened and the shoe with the lining affixed thereto are discharged by gravity.

3,434,413
PRINT HAMMER MECHANISMS FOR HIGH SPEED PRINTERS
Ronald Henry Lee, Stevenage, and Albert John Keen, Letchworth, England, assignors to International Computers and Tabulators Limited, London, England, a British company
Filed Mar. 13, 1967, Ser. No. 622,604
Claims priority, application Great Britain, Jan. 6, 1967, 907/67
Int. Cl. B41j *9/00*
U.S. Cl. 101—93 **8 Claims**



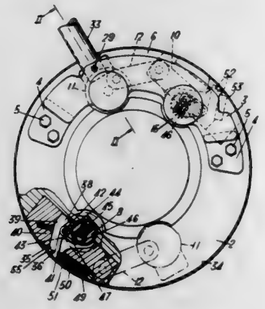
A multiple print hammer assembly built up by assembling individual print hammer assemblies into a trough-shaped alignment member is disclosed, the hammer assemblies being suitable for use in conjunction with so-called "on-the-fly" printing apparatus. Each individual print hammer assembly uses a unitary structure to form an integrated magnetic circuit in conjunction with an armature having an extension having the print hammer itself and electromagnet coils mounted on projections from the structure. Forward- and back-stops are provided. The alignment member may form a heat sink for all the individual hammer assemblies mounted on it. Electrical connections for the energisation of the electromagnet coils are provided by contact pins extending from the unitary structure and the pins are also used for the purpose of locating the individual hammer circuit in the alignment members. For high speed operation the armature may be supported on a low-friction bearing, for example a bearing of polytetrafluoroethylene, and the armature biassing spring may be separated from the stud upon which it bears by a resilient pad or a pad of low friction material. The forward stop, which is adjustable to limit the travel of the print hammer in response to operation of the armature, may be separated from the print hammer by a pad of resilient material.

3,434,414
CREDIT CARD ASSEMBLY
Lyle E. Wright, Lanham, Md., assignor to Check Data Control Corporation, Lanham, Md., a corporation of Maryland
Filed Oct. 3, 1966, Ser. No. 583,910
Int. Cl. B41l *47/02;* **G09f** *3/02;* **A41d** *25/04*
U.S. Cl. 101—369 **2 Claims**



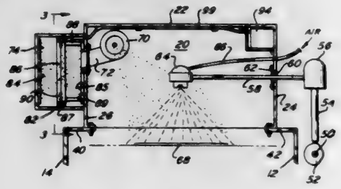
A separable credit card having a major body section with raised letter printing indicia thereon, and a removable clip with corresponding indicia, and a series of holders for the clip.

3,434,415
MECHANISM FOR MOUNTING WRAP-AROUND PLATES ON THE IMPRESSION CYLINDER
Toshio Ishii, Osaka, Japan, assignor to Hamada Printing Press Mfg. Co., Ltd., Osaka, Japan
Filed Dec. 6, 1965, Ser. No. 511,857
Claims priority, application Japan, Sept. 3, 1965, 40/54,183
Int. Cl. B41f *27/12*
U.S. Cl. 101—415.1 2 Claims



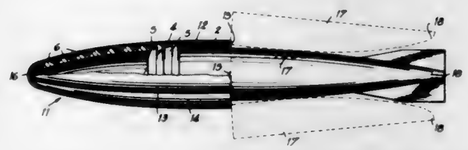
A locking arrangement for locking a wrap-around printing plate to an impression cylinder for a rotary typographic printing press. The cylinder has at least one recesse extending along the surface thereof, and a first shaft is rotatably mounted along the bottom of said recess and rotated by clamping means mounted on the end of said cylinder. A second shaft is mounted on plates on said first shaft and a plurality of movable pawls are rotatably mounted on said second shaft at spaced intervals therealong and positioned adjacent one edge of said recess. A plurality of fixed pawls are positioned along the other edge of said recess. Said movable pawls in a first rotational position of said first shaft project outwardly beyond the surface of said cylinder and in a second rotational position of said first shaft are moved downwardly into said recess and away from said one edge of said recess, so that when a wraparound printing plate has one edge hooked over said fixed pawls the other edge hooked over said movable pawls, actuation of said clamping means for rotating said first shaft and said movable pawls from the first rotational position to the second rotational position applies tension to said plate to fix it against the surface of said cylinder. Two springs are engaged with each movable pawl, a first spring positioned within said first shaft and a second spring lying at the one edge of said recess.

3,434,416
PRINTING PRESS EXCESS POWDER COLLECTOR
Anthony Q. Testone, Lansdale, Pa., assignor to Testone Electronics Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1966, Ser. No. 601,743
Int. Cl. B41f; B41l
U.S. Cl. 101—416 11 Claims



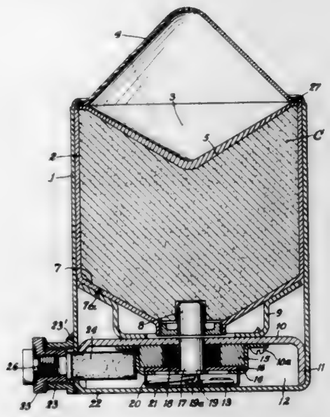
A printing press which has means to dispense aerosolized powder on freshly printed material to accelerate drying is provided with a collector to collect excess airborne powder which ordinarily creates a maintenance and health problem.

3,434,417
BOMB BRAKING SYSTEM
Fridolin Schroth, Koblenz, Germany, assignor to Les Forges de Zeebrugge S.A., Herstal-lez-Liege, Belgium, a company
Filed Apr. 3, 1967, Ser. No. 628,072
Claims priority, application Germany, July 26, 1966, Sch 39,315; Dec. 24, 1966, Sch 40,023
Int. Cl. F42b *25/00*
U.S. Cl. 102—4 4 Claims



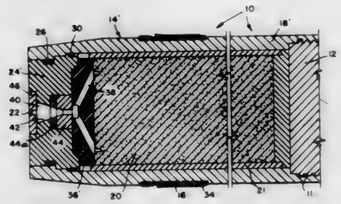
An air dropped missile has a nose provided with outer transverse corrugations and a nose-shaped cover adapted to momentarily cover these corrugations and having a smooth outer surface.

3,434,418
JUMPING MINE
Paul Madlener, Karlsruhe-Durlach, and Otto Pecksen, Berghausen, Baden, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany, a corporation of Germany
Filed June 13, 1967, Ser. No. 645,829
Claims priority, application Germany, July 6, 1966, J 31,245
Int. Cl. F42b *23/06*
U.S. Cl. 102—8 5 Claims



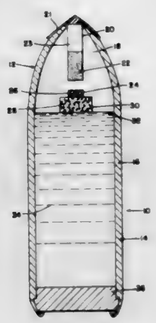
A jumping mine is formed by an interior container filled with a hollow charge explosive body and arranged to be ejected from a buried exterior ejector pot. The upper end of the interior container is provided with a conical cap for penetrating and removing a camouflage layer which covers the buried mine. An annular magneto-igniter is fixed to the bottom of the interior container and is provided with a withdrawable core so as to produce a powerful ignition voltage when the interior container with the explosive body therein is ejected by a propellant charge of pressure gases from the ejector pot. The movable core of the magnet is attached to a trigger wire assuring a detonation of the explosive body at a predetermined distance above the surface of the ground.

3,434,419
ROCKET ASSISTED PROJECTILE WITH MOVABLE PISTON BASE PLATE
Robert M. Dimond, 404 Robertson Road, Ridgecrest, Calif. 93555, and Howard H. Payne, 50–B Viewig Circle, China Lake, Calif. 93555
Filed Aug. 10, 1967, Ser. No. 660,878
Int. Cl. F24b *15/10*
U.S. Cl. 102—49.3 3 Claims



The rocket motor of a rocket assisted projectile (RAP) is provided with a piston-type base plate to equalize the external pressure on the motor case wall during firing.

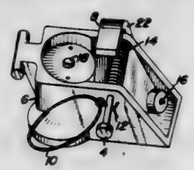
3,434,420
DISPERSAL PROJECTILE
Thomas Q. Ciccone, Langhorne, and James F. Kowalick, Southampton, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 30, 1968, Ser. No. 701,633
Int. Cl. F42b *13/12, 11/22*
U.S. Cl. 102—56 4 Claims



A small arms projectile having a hypersensitive, through-bulkhead type, explosive fuze in its nose portion and a chamber for propellant actuated liquid or solid dispersal in its body portion for dispersal through the rear of the projectile.

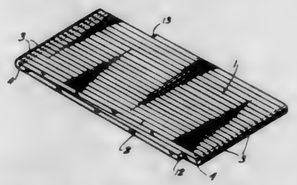
3,434,421
SAFETY LATCH FOR BOUCHON GRENADE FUZE
A. Samuel Berlin, Wilmington, Del., and Vincent C. Little, Fullerton, Toney E. Leadore, Havre de Grace, and Edwin J. Reid, Jr., Street, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 5, 1967, Ser. No. 665,948
Int. Cl. F42b *27/00*
U.S. Cl. 102—64 16 Claims

A device for arming an ordnance weapon comprising: a tubular fuze body, primer means, spring loaded firing pin assembly, said spring with transverse hollow center in alignment with receiving holes in said fuze body, externally disposed safety lever, delay element, detonator, cylindrical body reciprocally mounted for sliding movement through said receiving holes and said transverse hollow center of said spring, a first safe arming device



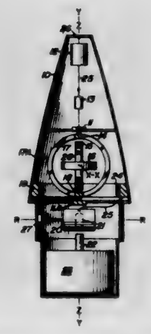
and second safe arming device serially to said first safe arming device.

3,434,422
CONTINUOUS ROD MAT
Irving Herman, Cedar Falls, and Donald Andreassen, Waterloo, Iowa, assignors to Chamberlain Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Apr. 22, 1959, Ser. No. 808,268
Int. Cl. F42b *13/48*
U.S. Cl. 102—67 5 Claims



1. A continuous rod mat, comprising a flat double layer coil formed of a single helically wound wire with the course of one layer in contact with the courses of the other layer and the bends joining the courses defining opposed edges of the mat, there being an opening extending lengthwise of the mat at the inside of the bends between courses of the layers along each of said opposed edges, said mat being formed in tubular shape with the bends of the wire forming the ends of the tube and the terminal ends of the wire secured together, and each opening having a wire of approximately the diameter of the opening extending lengthwise therethrough.

3,434,423
AIR-BURST FUZE SYSTEM FOR PROJECTILES
Jack Brothers, Succasunna, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed June 26, 1967, Ser. No. 650,155
Int. Cl. F42c *13/00*
U.S. Cl. 102—70.2 3 Claims



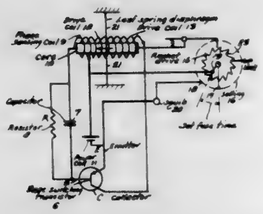
Air-burst fuze system for functioning an explosive projectile in flight along a curved trajectory. Gyroscopic control means having a fixed axis of rotation with respect

to the projectile in the plane of the trajectory is connected coaxially with annular rheostatic control means fixed to the projectile for increasing an initial preset triggering voltage on a firing diode in circuit with an electric detonator element. The latter is moved to an arm position in response to set back at launching.

3,434,424
ELECTROMECHANICAL FUZE TIMER REGULATION

Wilhelm J. Lohninger, Rockaway, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 28, 1966, Ser. No. 591,063
Int. Cl. F42c *13/08*; F42b *9/08*
U.S. Cl. 102—70.2 **13 Claims**

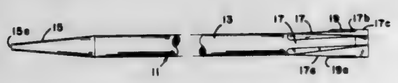


Electromechanical fuze timers for rotating projectiles in which the deviating forces created by projectile rotation are employed to vary the amplitude of oscillation of an elastic timing system. The elastic system oscillates coaxially with the axis of rotation of the projectile, and such oscillation is employed to actuate the fuze timer. The variation in amplitude of the elastic system is employed to correct the timer for deviations due to Coriolis and centrifugal forces generated by projectile rotation.

3,434,425
UNDERWATER PROJECTILE

John L. Critcher, Cockeysville, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland

Filed June 30, 1967, Ser. No. 650,374
Int. Cl. F42b *19/32*
U.S. Cl. 102—92.1 **11 Claims**



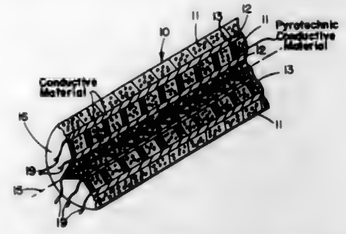
An efficient underwater projectile is disclosed having a frusto-conical nose end, a long thin shank and a finned rear section with a sleeve shroud disposed thereon. Dimensional relationships of projectile length, shank diameter, nose taper and tip diameter, and fin and shroud diameters are found to be critical for maximizing velocity, range and terminal energy within the operating depth range of up to 30 feet water depth.

3,434,426
COMBINED IGNITOR AND PROPELLENT GRAIN

Jay W. De Dapper, 10421 Lesterford Ave., Downey, Calif. 90241

Filed Nov. 30, 1956, Ser. No. 625,351
Int. Cl. F42c *11/00*; F42b *5/16, 9/08*
U.S. Cl. 102—100 **7 Claims**

1. A method of making an ignitor to ignite a propellant grain having a surface, said method including the steps of: coating strips of a material comprising an electrically conductive substance in a binder compatible with said grain on spaced areas of said surface of said grain, coating strips of a conductive pyrotechnic primer material on areas of said surface in electrical continuity with said strips of material comprising said electrically conductive substance, said conductive pyrotechnic primer material including

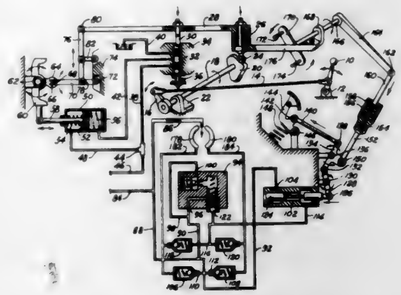


particles of pyrotechnic material and a binder compatible with said grain, said coatings overlapping to provide electrical contact therebetween; and curing said materials at a temperature compatible with grain heat sensitivity to effectively bond said strips of material comprising said electrically conductive substance and said strips of pyrotechnic material to said surface of said grain.

3,434,427
CONTROL MEANS FOR HYDROSTATIC TRANSMISSIONS

Donald F. Smith, Fort Wayne, Ind., and David B. Puryear and Donald W. Smith, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware

Filed Apr. 27, 1967, Ser. No. 634,243
Int. Cl. F04b *1/30*; F16h *39/46*
U.S. Cl. 103—38 **8 Claims**



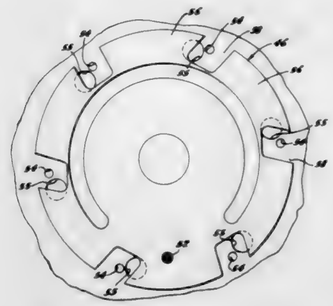
A linkage control system for the operation of a valve controlling an actuator for a swash plate, or the like, of a fluid pump having in addition to feedback provisions a cam mechanism for controlling the setting of the valve via a beam with a yoke connection to the beam to override the cam upon actuation and permit reestablishment of the previous control settings upon release of the yoke connection.

3,434,428
INTAKE CONTROL FOR MULTIPLE PISTON PUMP

Clarence E. Liles, Los Angeles, Calif., assignor to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio

Filed June 5, 1967, Ser. No. 643,706
Int. Cl. F04b *1/08*
U.S. Cl. 103—40 **7 Claims**

An automatic control for a multiple cylinder pump maintains substantially constant output pressure by regulating the intake flow in response to changes in the output pressure. A small intake port for each cylinder is used for stable operation of the pump at extremely low rates and an adjacent larger intake port for each cylinder is used additionally for larger output rates. An intake valve has an opening movement which uncovers the small ports

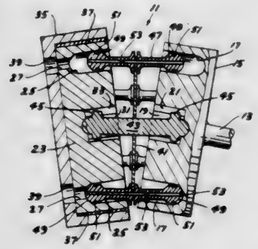


and the large ports progressively in overlapping sequence with a resultant combined rate of flow which varies with the opening movement of the valve in accord with a curve having a desirable gradually rising toe with the rest of the curve inclined at a desirably moderate slope.

3,434,429
FREE PISTON AND CYLINDER ASSEMBLY FOR HYDRAULIC PUMPS AND MOTORS

Richard R. Goodwin, Bloomfield Hills, Mich., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 14, 1967, Ser. No. 623,519
Int. Cl. F04b *1/02, 13/04, 3/00*
U.S. Cl. 103—162 **1 Claim**



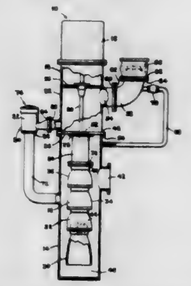
A fluid pump or motor having rotatable cylinder blocks joined together by a constant velocity joint. The cylinders in said rotatable cylinder blocks are positioned opposite one another and are acted upon by spherical pistons fixed upon common, nonflexible piston rods, through which a passage is bored for passage of the working fluid during rotation of the heads.

3,434,430
SELF-PRIMING PUMP SYSTEM WITH EXTERNAL ACTUATING MEANS

Merril Berman and John Slaughter, Denver, Colo., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Apr. 18, 1967, Ser. No. 631,672
Int. Cl. F04d *9/02*
U.S. Cl. 103—113 **12 Claims**

A pumping system for pumping liquids containing large quantities of gas or vapors adapted for pumping operations requiring stripping of liquid storage tanks. The system incorporates apparatus for repriming the pump including a bypass which communicates an accumulation of pump discharge with the suction well of the pump to reprime

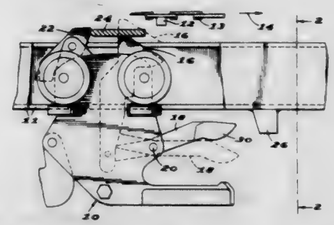


the pump and a repriming valve associated with the bypass to control the flow of repriming liquid. The repriming valve may be actuated manually or by predetermined operating parameters of the pumping system.

3,434,431
STOP FOR CONVEYOR CARRIERS

Clarence A. Dehne, Orchard Lake, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan

Filed Dec. 27, 1965, Ser. No. 516,305
Int. Cl. B61b *13/00*
U.S. Cl. 104—172 **9 Claims**

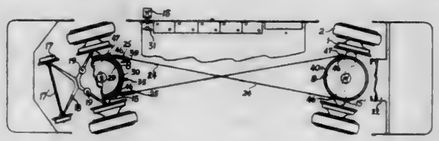


A device for stopping a conveyor carrier equipped with a driving dog movable to a nondriving position by a driving dog releasing member, comprising a first stop member which engages and moves the driving dog to nondriving position and another stop member which may be abutted by the driving dog, or in an alternate form by the dog releasing member, if the driving dog has been moved to nondriving position by the first stop member or alternately by the releasing member.

3,434,432
CONVERTIBLE RAIL-HIGHWAY VEHICLE

Arthur Seifert, P.O. Box 41, Soundview Station, Bronx, N.Y. 10472

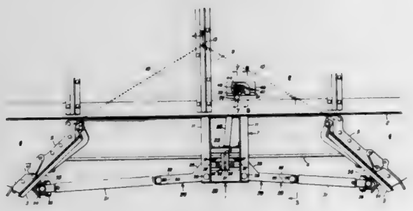
Filed Jan. 9, 1968, Ser. No. 696,538
Int. Cl. B61f *13/00, 1/06*; B61d *15/00*
U.S. Cl. 105—215 **8 Claims**



The transportation system disclosed herein is based on a bus having four wheel steering which comprises two mounting units each constituted of an upper and lower dished disk and the lower disks of which are drivingly

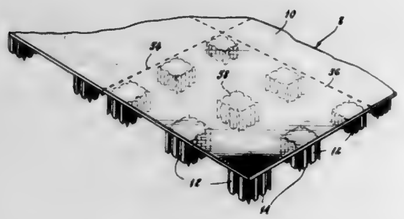
connected together, and having associated with the front drive unit thereof a pony guide wheel arrangement controlled by the operator of the bus.

3,434,433
HOPPER CAR DOOR OPERATING MECHANISM
Walter L. Floehr, Toledo, Ohio, assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 1, 1965, Ser. No. 460,028
Int. Cl. B61d *7/00, 9/00*
U.S. Cl. 105—249 13 Claims



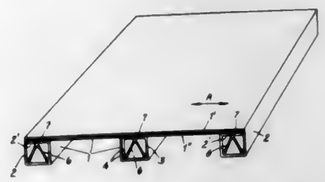
A mechanism for operating in unison a pair of opposed hinged doors of a railway hopper car, the mechanism having a frame fixed to the car between the doors, a pair of levers each having a fixed fulcrum on the frame and linked to one of the doors, a crosshead slideable linearly on the frame and linked to and acting through both levers for swinging the doors between open and closed positions, an operating shaft extending across the car for operation from either side and linked to the crosshead for shifting the latter, and a latch on each end of the shaft for locking the mechanism with the doors in closed position.

3,434,434
PALLET STRUCTURES AND METHODS FOR THEIR USE
John F. Horton, Jr., Babylon, N.Y., assignor to Cored Panels, Inc., Farmingdale, N.Y., a corporation of New York
Filed Apr. 20, 1965, Ser. No. 449,413
Int. Cl. B65d *19/22, 19/38*
U.S. Cl. 108—51 18 Claims



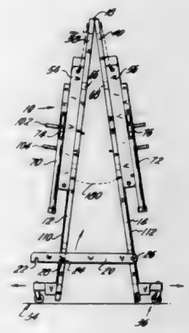
1. A pallet comprising a sheet of material; a plurality of cellular supports secured to one face of said sheet; the axis of greatest strength in compression of said supports being substantially normal to the plane of said sheet; each of said cellular supports being formed of sheet material whose length to thickness ratio and cell configuration and size are such that said support would fail in crushing rather than in buckling when subjected to a load coaxial with the cell walls of said support; said cellular supports being sufficiently spaced from one another to permit entry therebetween of the tines of a fork truck.

3,434,435
PROPPING MEANS FOR PACKING AND TRANSPORTING REQUISITES
Werner Achermann and Franz Achermann, both of 71 Rumlangstrasse, 8052 Zurich, Switzerland
Filed June 26, 1967, Ser. No. 653,592
Claims priority, application Switzerland, June 30, 1966, 9,676/66
Int. Cl. B65d *19/12, 19/16*
U.S. Cl. 108—56 16 Claims



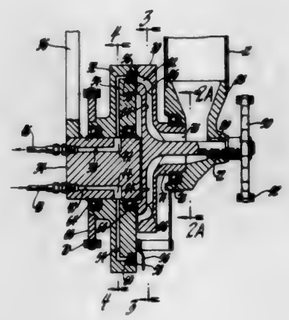
This invention provides a material handling assembly for use in packing, storing and transporting materials. The assembly includes a materials contacting member and means connecting at least one hollow, foldable joist member to the bottom of the said materials contacting member. A foldable, stiffener member is removably disposed within each said hollow joist member. The stiffener member has at least one V-shaped section having a pointed ridge formed by two legs of the V-shaped section. The ridge is pointed upwardly in a direction normal to the horizontal. A retaining means is located at the top of the said joist member to receive the pointed ridge of the stiffener member.

3,434,436
COLLAPSIBLE WORKBENCH
Alan J. Solo, Brooklyn, N.Y., assignor to Creative Environments Inc., New York, N.Y., a corporation of New York
Filed Jan. 20, 1967, Ser. No. 610,544
Int. Cl. A47b *3/14*
U.S. Cl. 108—128 6 Claims



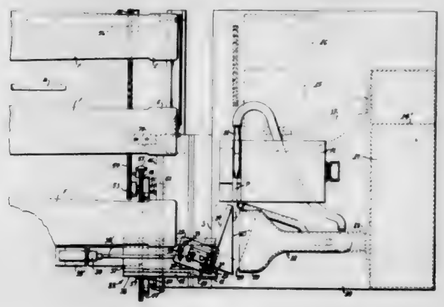
This invention and this disclosure are directed to a new and improved type work bench particularly useful for apartments and small homes which do not have sufficient space available to accommodate a permanent type work bench. More particularly, this invention and this disclosure are directed to an improved collapsible and convertible work bench generally in the form of an A frame hinged at the top and on each side provided with collapsible bench tables balanced against one another. This invention and this disclosure are further directed to such a convertible and collapsible work bench provided with tool and fastening means storage facilities.

3,434,437
PRECISION PLANTER WITH SEED ACCELERATOR
Alexander H. Mark, Livonia, and John E. Morrison, Jr., Royal Oak, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.
Continuation of application Ser. No. 378,002, June 25, 1964. This application Oct. 17, 1966, Ser. No. 587,350
Int. Cl. A01c *7/04, 5/06;* B65h *3/08*
U.S. Cl. 111—85 22 Claims



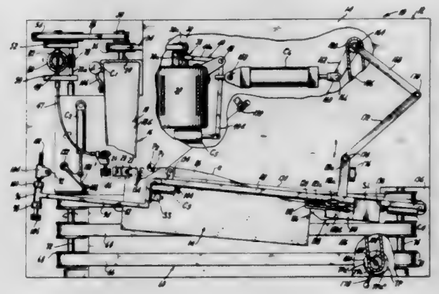
A seed planter having a seed carrying element that moves one or more seeds from a collecting area to a release point. Seed acceleration means acts on seeds from a supply to impart a directional velocity to individual seeds such as the transfer of these individual seeds to the carrying element in the collecting area takes place with a minimum differential velocity between the seed and the seed carrying element.

3,434,438
APPARATUS FOR AUTOMATICALLY CLOSING THE ENDS OF TUBULAR FABRIC ARTICLES
Joseph B. Forrest and Gene E. Hart, Charlotte, N.C., assignors to Southern Mill Equipment Corporation, Charlotte, N.C., a corporation of North Carolina
Filed May 8, 1967, Ser. No. 636,844
Int. Cl. D05b *23/00, 21/00, 37/00*
U.S. Cl. 112—2 20 Claims



An apparatus that automatically closes the end of a tubular fabric article, such as the toe of a stocking, by clamping the article inwardly adjacent the end and advancing it to the mouth of suction means that positions the article end outwardly of the clamping in a feeding disposition in which it is fed while clamping through closing means, such as a sewing machine.

3,434,439
MATERIAL STITCHING AND GUIDING APPARATUS
Ragnar W. Winberg, 115 W. Elder Ave., Floral Park, N.Y. 11001
Continuation of application Ser. No. 553,783, May 31, 1966. This application Dec. 28, 1967, Ser. No. 701,029
Int. Cl. D05b *23/00;* D05c *3/02, 7/04*
U.S. Cl. 112—2 23 Claims

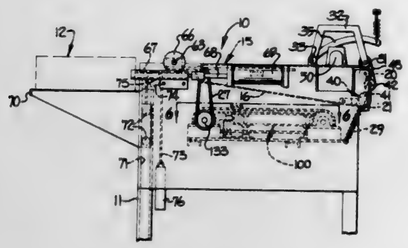


1. A machine for stitching material along a prescribed stitch line coextensive with and spaced inwardly from an edge thereof comprising a support, sewing mechanisms on said support including a reciprocating needle operable at a stitching location for successively stitching said material along said prescribed stitch line, said material being arranged forwardly of said stitching location and advanced toward and through said stitching location along a normal feed path relative to said needle, guide means engageable with said material and operable to impart steering motion to said material as the same is advanced toward said stitching location for displacing said material from side to side relative to said normal feed path such that said material will be stitched substantially along said stitch line, said guide means including an elongated guide rail projecting forwardly of said needle and a clamp movably mounted on and guided by said rail, means mounting said guide rail on said support for movement relative to said normal feed path, said clamp being engageable with said material contiguous to the trailing end of said edge when the leading end of said edge is initially positioned at said stitching location, means responsive to deviations of said edge relative to said normal feed path for moving said guide rail in a direction to restore said edge, said guide rail being effective in response to its movement to impart steering motion to said clamp as the latter is moved therealong and toward said stitching location to continuously orient and present successive edge-adjacent portions of said material in relation to said sewing mechanisms at said stitching location for stitching along said prescribed stitch line.

3,434,440
MECHANISM FOR AUTOMATICALLY CONVEYING, BAR TACKING AND STACKING INDIVIDUAL FLAT FLEXIBLE WORKPIECES
Theodore J. Meyer, Jr., Greenwood, and Homer W. Groce, Lyman, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,746
Int. Cl. D05b *13/00, 23/00*
U.S. Cl. 112—10 7 Claims

Apparatus for automatically conveying, bar tacking and stacking individual flat workpieces comprising conveying means sequentially operated for receiving the individual workpieces and sequentially conveying each individual workpiece to a first position, maintaining each individual workpiece in the first position for a predeter-

mined period of time and conveying each individual workpiece to a second posi.ion, bar tacking means adapted to apply a line of bar tacking to each individual workpiece when located and maintained in the first position, stacking means adapted to move and stack each individual workpiece when located in the second position, and unitary control and drive means adapted for independently controlling, timing and coordinating the operation of the conveying means, bar tacking and stacking means.



3,434,441
TAGGING MACHINE

Kenneth M. Given, deceased, late of Bronxville, N.Y., by Marian K. Given, executrix, 11 Beverly Gardens, Bronxville, N.Y. 10708

Filed May 2, 1966, Ser. No. 546,830
Int. Cl. D05b *3/12, 23/00;* **B65h** *69/00*
U.S. Cl. 112—104 **4 Claims**



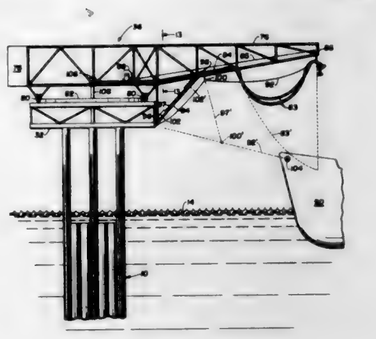
A mechanism for tying together loops of thread inserted through plural articles such as hosiery and gloves to join pairs and apply a tag in such a way that the knot is easily untied, but difficult to retie by hand to prevent dishonest exchange of tags and the need to cut strings to remove such tags.

3,434,442
OFFLOADING MOORED PRODUCTION STORAGE CRAFT

William F. Manning, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 451,398, Apr. 28, 1965. This application Apr. 19, 1967, Ser. No. 632,103
Int. Cl. B63b *35/44;* **B65d** *89/10*
U.S. Cl. 114—.5 **7 Claims**

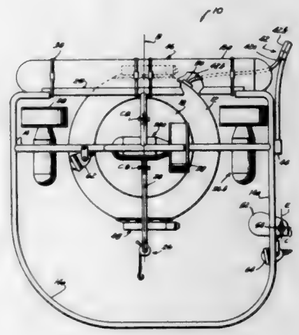
This specification discloses apparatus for the marine storage of fluids in a floating unit and for the offloading of said fluids from the floating unit to a tanker moored thereto. The floating storage and offloading unit, designed to be moored in deep water, has a spar buoy configuration provided by a storage tank comprising a central storage space enclosed by a plurality of long tubular elements which in at least one embodiment serve as buoyancy/ballast tanks as well as open-bottomed compartments for storing anchor and flowlines. On a production deck situated on the upper end of the storage tank, above the surface of the body of water in which the storage unit is moored, is an omnidirectional loading boom with a loading hose for transferring the stored fluid from the storage tank to a tanker.



3,434,443
UNDERWATER BUOYANCY TRANSPORT VEHICLE

Norman B. Estabrook, Pasadena, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 22, 1967, Ser. No. 685,052
Int. Cl. B63c *11/46;* **A63b** *35/12*
U.S. Cl. 114—16 **4 Claims**

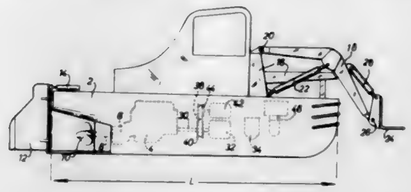


A load transport vehicle for use by a diver on the floor of the ocean is built around a generally spherical buoyancy container, and has means for selectively introducing gas into the container to provide buoyancy forces to lift the load. Diver controlled valving enables control of the proportion of liquid and gas in the spherical container. Fixed buoyancy tanks are provided at the top of the vehicle. The load to be transported is attached by a suspension yoke pivotally suspended from a transverse axis through the spherical container. A pair of fixed longitudinal propulsion units, and a pair of fixed vertical propulsion units enable triaxial maneuvering of the vehicle.

3,434,444
WATERCRAFT WITH SCOOP

Francis Richard Caddick, 74 Winifred Lane, Aughton, near Ormskirk, England

Continuation-in-part of application Ser. No. 547,972, Apr. 15, 1966, now Patent No. 3,326,379. This application Apr. 25, 1967, Ser. No. 633,445
Int. Cl. B63b *1/16, 35/00*
U.S. Cl. 114—57 **16 Claims**

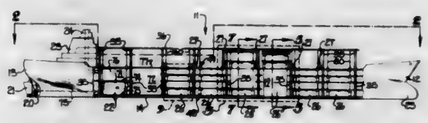


A watercraft having a generally rectangular shape and a scoop situated beyond the bow for lifting flotsam or other debris from the surface of navigable waters. Supporting the scoop for movement between raised and lowered positions is a boom structure extending over the top surface of the hull and pivoted rearwardly of the bow to a support on the hull. In the stern, a pair of stabilizing fins project rearwardly from the bottom surface of the craft in underlying and spaced relationship from an upper stern portion of the craft. Extending in horizontal planes, the fins each have a generally right-triangular shape including first side portions which merge with the opposite sides of the craft respectively and second side portions extending normal to the former transversely of the craft. The fins are spaced inwardly towards the bow from the rearmost surface of the upper stern portion. Between the fins and the upper stern portion, is an intermediate stern portion including two surfaces projecting upwardly in vertical planes from the hypotenuse-sides of the fins respectively. These intermediate stern portions also extend rearwardly and inwardly from the sides of the boat in converging fashion. A mounting bracket for the bottom of the rudder pin projects rearwardly from between the fins to a point generally below the rearmost surface of the upper stern portion.

3,434,445
CARGO SHIP CONSTRUCTION

Ernest W. Crumley, Apt. 502, Carlton Arms, Charleston, S.C.

Filed Dec. 21, 1966, Ser. No. 603,659
Int. Cl. B63b *25/02*
U.S. Cl. 114—72 **12 Claims**



A cargo ship construction in which the ship's hull is provided with a plurality of longitudinally spaced, vertically extending cargo spaces having a plurality of decks vertically movable on guide means with power means carried by the decks for movement therewith for selective movement of the decks between a storage position, a transfer position and an elevated position.

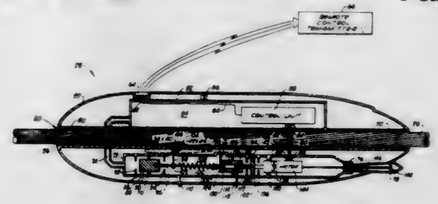
ERRATUM

For Class 114—235 see:
Patent No. 3,434,451

3,434,446
REMOTELY CONTROLLABLE PRESSURE RESPONSIVE APPARATUS

Jimmy R. Cole, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Oct. 2, 1967, Ser. No. 672,341
Int. Cl. B63b *21/56, 17/00*
U.S. Cl. 114—235 **6 Claims**

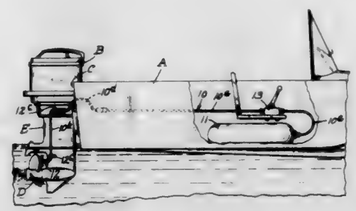


Apparatus for effecting depth keeping of a marine paravane wherein depth control is attained by utilizing the differential force resulting from water pressure acting upon a moveable diaphragm against the restoring force of a spring acting on the diaphragm, the differential force being transmitted to an actuating linkage which is connected such that proportional movement is applied to depth adjusting structure. The diaphragm member is positioned by spring tension which can be varied in response to acoustic or other type of energy transmission from a ship or surface station and the spring tension adjustment effectively selects the paravane operating depth.

3,434,447
PROPELLER-DRIVEN WATERCRAFT

Richard E. Christensen and Richard N. Christensen, both of Rte. 1, Olivia, Minn. 56277

Filed Jan. 4, 1968, Ser. No. 695,594
Int. Cl. B63h *1/14, 25/50*
U.S. Cl. 115—.5 **6 Claims**



A conduit connected to an engine of a boat, the conduit having an inlet end communicating with a source of fluid having a density less than that of water, and an outlet end disposed forwardly of the working portion of the propeller blade of the engine in radially spaced relationship to the propeller hub, and means for controlling the flow of fluid from the outlet end of the conduit to cause a controlled cavitation at the working portion of the propeller.

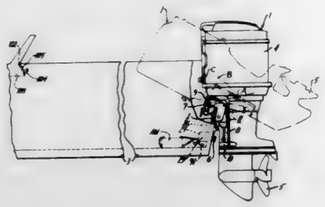
3,434,448
COMBINED IMPACT DAMPING AND POWER LIFT MECHANISM FOR AN OUTBOARD PROPULSION UNIT ASSEMBLY

William L. Woodfill, Oshkosh, Wis., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

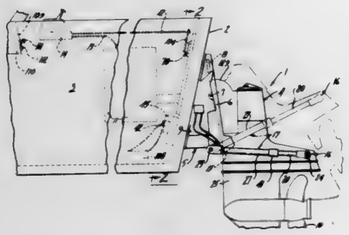
Filed Jan. 12, 1967, Ser. No. 608,903
Int. Cl. B63h *21/26;* **F15b** *13/04*
U.S. Cl. 115—41 **11 Claims**

The hydraulic system includes a cylinder piston assembly which extends between adjacent members pivoted rela-

tive to each other and which bridges the tilt axis of the outboard propulsion unit. The system includes means for holding forward and reverse thrust of the unit and provides for power and manual lifting of the unit, power trimming of the unit even while underway, and damping of the angular momentum imparted to the drive member upon impact with a submerged or floating object.



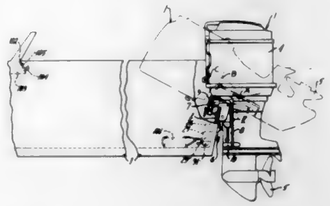
3,434,449
COMBINED IMPACT DAMPING AND POWER LIFT MECHANISM FOR AN OUTBOARD PROPULSION UNIT ASSEMBLY
Irving W. North, Neenah, Wis., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,934
Int. Cl. B63h *21/26, 5/14*
U.S. Cl. 115—41 **8 Claims**



The hydraulic system includes a cylinder-piston assembly which extends between adjacent members pivoted relative to each other and which bridges the tilt axis of the outboard propulsion unit assembly. The system includes means for holding forward and reverse thrust of the drive member of the unit assembly and provides for power lifting of the drive member under certain conditions, power trimming of the drive member under certain conditions even while underway, and damping of the angular momentum imparted to the drive member upon impact with a submerged or floating object. Hydraulic lock means are incorporated in the system to preclude upward trimming or raising of the drive member when operating under reverse thrust conditions.

3,434,450
MOUNTING ARRANGEMENT FOR HYDRAULIC IMPACT DAMPING AND POWER LIFT MEANS FOR AN OUTBOARD PROPULSION UNIT
Daniel F. McCormick, Oshkosh, Wis., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,935
Int. Cl. B63h *21/26, 5/12*
U.S. Cl. 115—41 **4 Claims**

The cylinder-piston assembly extends between adjacent members pivotal relative to each other and bridges the tilt axis of the outboard propulsion unit. During pivotal movement of the unit upwardly from a given operating trim position, operation of the assembly is characterized by a constantly decreasing lever arm and contraction to a position of the unit placing the center line of the assembly



in alignment with or on center relative to the tilt axis. With movement of the unit beyond the on center position of the assembly and up to the limit of tilt movement of the unit, the assembly becomes extended and its lever arm increases.

3,434,451
METHOD AND APPARATUS FOR UNDERWATER TOWING OF SEISMIC HYDROPHONE ARRAYS
Edward C. Brainard II, Marion, Mass., assignor to Braincon Corporation, Marion, Mass., a corporation of Massachusetts
Filed June 28, 1967, Ser. No. 649,609
Int. Cl. B63b *21/56, 23/00*
U.S. Cl. 114—235 **10 Claims**

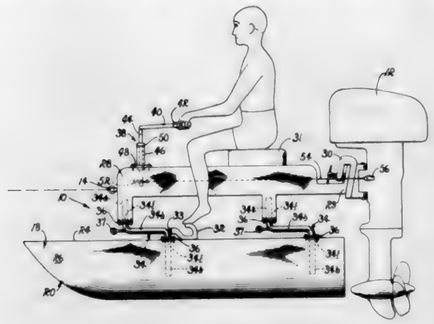


A method and apparatus for the continuous towing of seismic hydrophone arrays at a substantially constant depth in a body of water is described. A number of towed vehicles capable of generating hydrodynamic lift are coupled together in pairs, the vehicles in each pair being oriented to generate lift in opposite directions when under tow so as to provide counterbalancing forces which maintain one vehicle very close to the surface of the water and the other vehicle at a relatively fixed depth below the surface when under tow. A seismic hyprophone array is connected to each of the pairs of vehicles and is also maintained at a relatively fixed depth by them. The vehicles are towed from one of the deeper underwater vehicles by means of a towing cable extending downwardly from a ship or other water-borne vessel which carries a sound source for the generation of the acoustic signals which are to be detected by the hydrophone array.

3,434,452
WATER BORNE VEHICLE
Howard M. Crow, P.O. Box C, Three Rivers, Calif. 93271
Filed June 1, 1967, Ser. No. 642,879
Int. Cl. B63h *25/50*
U.S. Cl. 115—70 **9 Claims**

A steerable water borne sporting vehicle adapted to be towed, or propelled by an outboard motor, and having a pair of separable hull halves or semi-hulls connected by parallel linkage to a rider support frame, the semi-hulls being normally spaced apart for providing a relatively

stable "at rest" position in the water and movable toward each other, generally horizontally, incident to being propelled through the water, to a substantially closed position



in which the semi-hulls simulate a complete hull. Upon deceleration, the semi-hulls assume the spaced apart position.

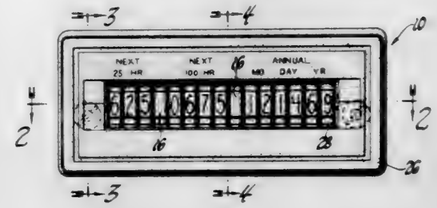
3,434,453
INDICATING DEVICE
Karl Felgner, Darmstadt, Germany, assignor to Hottinger Baldwin Mesztechnik G.m.b.H., Darmstadt, Germany, a corporation of Germany
Filed Sept. 12, 1966, Ser. No. 578,589
Claims priority, application Germany, Sept. 18, 1965, H 57,216
Int. Cl. G09f *9/00*
U.S. Cl. 116—129 **3 Claims**



A catch diametrically opposite the tip of a pointer of an indicating device rotates with the pointer into successive driving engagements with angularly-arrayed intermittent-motion star wheels; angularly-arrayed dials disposed behind apertures of a stationary graduated dial plate are turned by the star wheels to expose numerals which correctly characterize scale values during each of successive rotations of the pointer.

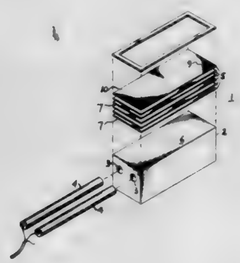
3,434,454
MAINTENANCE METER
G. Elmo Ashton, 31286 Churchill, Birmingham, Mich. 48009
Filed June 9, 1967, Ser. No. 644,930
Int. Cl. G09f *9/00*
U.S. Cl. 116—133 **6 Claims**

A maintenance indicator comprising a plurality of indicator discs rotatably supported on a shaft which is in turn supported by a housing. A resilient plastic foam material defines a pad which is supported by the housing and engages the respective disc so that each disc may be rotated to a predetermined position and maintained in the position by the pad. Each disc includes a plurality of indicia disposed about its peripheral surface with a notch in the peripheral surface between each indicia. There is included a cover plate having an aperture therein so that



one indicia on each disc is visible. The cover plate is removably connected to the housing by a snap tab and groove arrangement. The cover plate includes a pair of lips for engaging the grooves of the respective discs on each side of the aperture to positively prevent rotation of the disc when the cover plate is connected to the housing.

3,434,455
APPARATUS FOR TINNING PRINTED CIRCUITRY
Frank F. Maytone, Huntsville, Ala., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,470
Int. Cl. B05c *11/00;* **B23k** *5/00*
U.S. Cl. 118—72 **1 Claim**

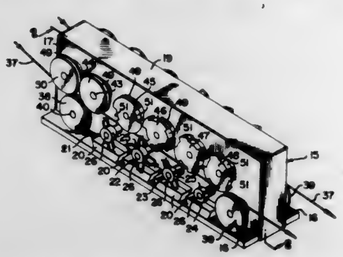


An apparatus for solder coating printed circuit boards comprising a plurality of wire mesh screen mounted to a planar surface of a heated base to form a reservoir for the retention of a molten solder within the interstices of the screens. As a circuit board is moved reciprocally over the outer screen surface, contaminants are removed from the circuit board and solder, wicked through the screen assembly, is coated onto the circuit board.

3,434,456
MACHINE FOR CIRCUMFERENTIAL COLOR CODING
Chester J. Geating, 1102 E. Joppa Road, Towson, Md. 21204
Filed Sept. 13, 1966, Ser. No. 579,026
Int. Cl. B05c *1/04, 1/12, 1/00*
U.S. Cl. 118—211 **10 Claims**

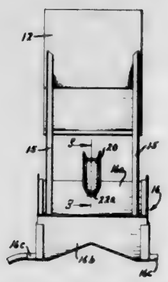
A wire coding system operated by pulling the wire past successive marking stations, which are phase displaced, and in which ink carriers comprising two resilient com-

ponents are employed to achieve 360° marking of the wire. The latter is forced to move sequentially inwardly and outwardly of the ink carriers, which normally contact



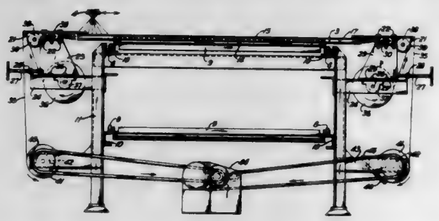
but are forced to separate and then return to contact as the wire moves inwardly, and again as the wire moves outwardly.

3,434,457
COATING EQUIPMENT ACCESSORY
Raymond H. Bass, Evansville, Ind., assignor to Ashdee Corp., Evansville, Ind., a corporation of Indiana
Filed Jan. 10, 1966, Ser. No. 519,777
Int. Cl. B05c *11/10, 5/02*
U.S. Cl. 118—301 2 Claims



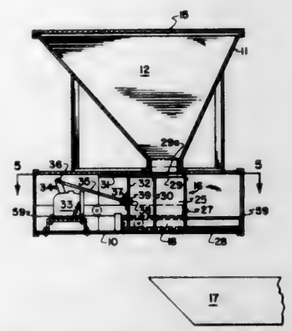
A diverter structure for pressure curtain coating equipment characterized by a trough member movable along an auxiliary reservoir to selectively intercept a portion of the curtain of coating material flowing onto a workpiece and passing the intercepted coating material into the auxiliary reservoir.

3,434,458
SPRAY COATING APPARATUS
George F. Huff, Fox Chapel, and Richard O. Voegtly, Harmony, Pa., assignors to Mine Safety Appliances Company, a corporation of Pennsylvania
Filed Mar. 23, 1966, Ser. No. 536,900
Int. Cl. B05b *15/04, 13/02;* B05c *5/00*
U.S. Cl. 118—301 2 Claims



A conveyor carries horizontal panels past a station where a coating is sprayed onto them from above. A movable strip of masking paper beside each side of the conveyor overlaps the edges of the panels to keep the spray from contacting the edge areas. The leading edge of each panel overlies the trailing edge of the panel in front of it to mask the trailing edge portion of each panel.

3,434,459
AUTOMATED ANIMAL FEEDER
Gloyd W. Green, 1123 West 5th North, Salt Lake City, Utah 84116
Filed Nov. 10, 1966, Ser. No. 593,522
Int. Cl. A01k *5/02*
U.S. Cl. 119—51.11 1 Claim



An automated feeder for dispensing measured amounts of feed including a drawer reciprocated by a timer controlled motor. The drawer is provided with a cutting blade and means for changing the capacity of the same. The drawer is positioned in a housing having an inlet opening to a hopper and an offset discharge opening to a trough.

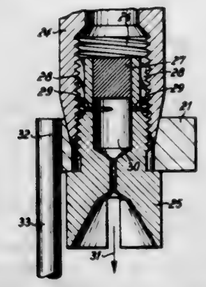
3,434,460
MULTICIRCUIT RECIRCULATION SYSTEM FOR VAPOR GENERATING POWER PLANT
Willburt W. Schroedter, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Nov. 30, 1966, Ser. No. 597,918
Int. Cl. F22d *7/00*
U.S. Cl. 122—406 8 Claims



The invention relates to a forced through flow vapor generator of the type commonly called combined circulation vapor generator in which a recirculation circuit is superimposed upon the through flow circuit in parallel flow relation therewith. The invention discloses the use of two or more recirculating circuits interconnected for parallel flow and encompassing two or more furnace heating surface portions. These circuits are provided with recirculating pump means and automatic or manual controls which enable the designer and operator to reduce or eliminate recirculation in selected circuits at selected operating loads of the vapor generator. Substantial improvement of the economy can thereby be achieved with respect to recirculating pump size as well as pumping power, and

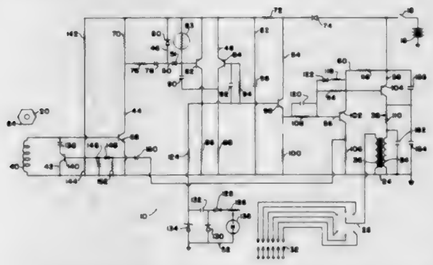
greater uniformity of the temperature of the working fluid passing through the tubular heating surface of the furnace walls.

3,434,461
SEALING ARRANGEMENT
Otto Beesch, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed June 30, 1966, Ser. No. 561,854
Claims priority, application Germany, July 10, 1965, B 82,786
Int. Cl. F02m *57/06*
U.S. Cl. 123—32 4 Claims



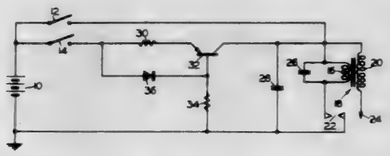
An elongated male member includes an externally screw-threaded portion having a leading end. The male member is provided with an axial bore extending therethrough but terminating inwardly short of the leading end. Two substantially radial bores extend transversely of and communicate with the axial bore. The screw-threaded portion is provided with two grooves in the outer surface thereof extending axially from the leading end and communicating with the transverse bores. A female member is adapted to screw-threadedly receive the male member therein on introduction of the male member with its leading end into the female member. A ring member surrounds the free end of the female member and either the inner surface of the ring member or the outer surface of the female member, or both, are tapered in such a manner that, when the ring member is pushed onto the female member, it will cause radial compression of the latter so that the inner surface of the female member will tightly engage the outer surface of the male member and prevent escape of fluid passing through this structure.

3,434,462
SEMICONDUCTOR IGNITION
Alfred Schneider, Detroit, William F. Shunn, Fraser, and Paul W. Roeske, Grosse Pointe Farms, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed June 21, 1965, Ser. No. 465,606
Int. Cl. F02p *1/00;* H05b *41/00*
U.S. Cl. 123—148 15 Claims



A pulsed semiconductor ignition system for an internal combustion engine including a switching semiconductor and a radio frequency protection circuit for the switching semiconductor for permitting high energy sparks at lower current drain and cost with less heat. The semiconductor ignition circuit further includes an improved switching compensating circuit, an improved power supply filter circuit integral with the ignition system, spurious and multiple signal suppression circuits, and an integral tachometer circuit.

3,434,463
TRANSISTORIZED IGNITION SYSTEM
Herbert Bartch, 2311 SE. 148th Ave., Portland, Oreg. 97233
Filed Jan. 30, 1967, Ser. No. 612,502
Int. Cl. F02p *3/04*
U.S. Cl. 123—148 12 Claims

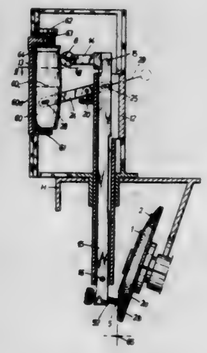


An ignition system for internal combustion engines is disclosed wherein the conventional ballast resistor and breaker points condenser are eliminated, a capacitor is connected in parallel with the primary winding of the conventional ignition transformer to form a high frequency resonant tank circuit, and the latter is connected to a battery source of potential through the conventional ignition breaker points and a transistorized current regulator.

ERRATUM

For Class 124—23 see:
Patent No. 3,434,465

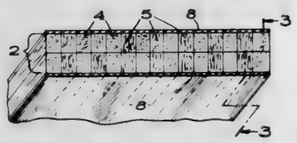
3,434,464
DEVICE WITH ADJUSTABLE TEMPLET FOR DRESSING PROFILED GRINDING WHEELS
Werner Blubaum, Coburg, Bavaria, Germany, assignor to Maschinenfabrik Kapp & Co., Coburg, Bavaria, Germany
Filed Jan. 24, 1966, Ser. No. 522,511
Claims priority, application Germany, Jan. 22, 1965, M 63,888
Int. Cl. B24b *53/04*
U.S. Cl. 125—11 2 Claims



A grinding wheel dresser embodying a templet body in which the templet body is angularly adjustable about a predetermined axis and is traversed by a feeler in the axial direction during the dressing operation. The templet body

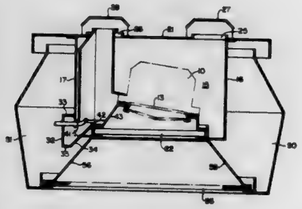
has one axially extending surface region which is a straight line parallel to the axis and another axially extending surface region circumferentially spaced from the first region and outwardly curved with respect to the body while the portion of the body between said regions curves outwardly an ever increasing amount from the first surface region to the second surface region.

3,434,465
LAMINATED ARCHERY BOW
William R. Stewart, Grayling, Mich., assignor to Bear Archery Company, Grayling, Mich., a corporation of Michigan
Filed July 14, 1966, Ser. No. 565,311
Int. Cl. F41b *5/00*
U.S. Cl. 124—23 **4 Claims**



An archery bow constructed of a plurality of core layers each including a plurality of longitudinal elements with the grain of alternate elements extending longitudinally of the layers while the grain of the lateral intermediate elements extends normal to the longitudinally extending grain elements.

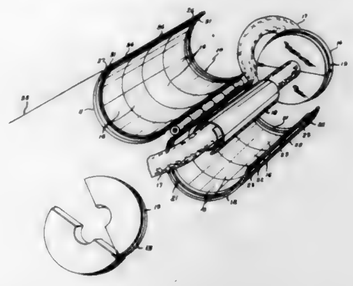
3,434,466
BALANCED FLUE ENCLOSED INFRA-RED HEATER
Louis P. Hine, Jr., Elyria, Ohio, assignor to Luxaire, Inc., Elyria, Ohio, a corporation of Delaware
Filed May 31, 1967, Ser. No. 642,475
Int. Cl. F24c *3/04;* **F23d** *13/14*
U.S. Cl. 126—92 **5 Claims**



A gas burning infra-red heater is enclosed in a housing with an infra-red transmissive closed window opposite the radiant surface and with a pair of hooded openings in an upper wall of the housing through which combustion air and combustion products are passed, both of said openings having the same area and being elongated and closely spaced and generally parallel so that variations of external air pressure and drafts affect both openings similarly.

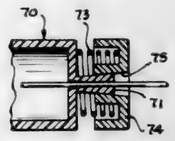
3,434,467
IMPLANTABLE RADIATION ASSEMBLY FOR CIRCULATING SYSTEMS
Donald R. Anderson and Edwin R. Ballinger, San Antonio, Tex., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 15, 1966, Ser. No. 572,876
Int. Cl. A61n *5/00, 5/10*
U.S. Cl. 128—1.1 **4 Claims**

An implantable radiation assembly for radiating body fluids has an alpha or beta emitter enclosed in a shielding material such as a stainless steel container. The body fluids are passed through the container either by the body duct such as a vein being positioned within the container



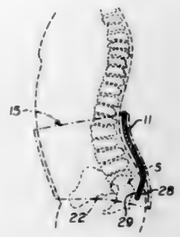
or by connecting the body ducts to a plastic tubing which passes through the container.

3,434,468
BLOOD SAMPLING DEVICE WITH CANNULA HOLDER
Courtland H. Barr, Sr., Los Angeles, Courtland H. Barr, Jr., La Canada, John W. Barr, Glendale, and James W. Lucas, Los Angeles, Calif., assignors, by mesne assignments, to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Original application Nov. 28, 1962, Ser. No. 240,553. Divided and this application Feb. 10, 1966, Ser. No. 526,529
Int. Cl. A61b *5/10;* **A61m** *5/00*
U.S. Cl. 128—2 **5 Claims**



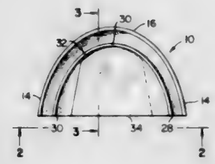
A cannula holder comprising a tubular body with an end wall having a tapered projection extending therefrom, the small end of the projection being adjacent the wall and a spring urged compression member with a tapered passage arranged to exert pressure on the projection whereby a cannula is retained in the holder.

3,434,469
ORTHOPEDIC APPLIANCE
Paul C. Swift, Los Angeles, Calif., assignor to Yardney Enterprises, Inc., a corporation of New York
Continuation-in-part of application Ser. No. 531,888, Mar. 4, 1966. This application June 3, 1966, Ser. No. 555,181
Int. Cl. A61f *5/02*
U.S. Cl. 128—78 **20 Claims**



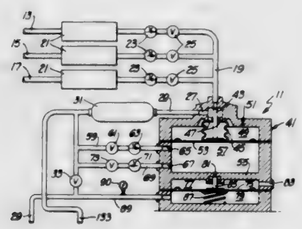
Orthopedic appliance with brace plate of resilient resinous material conforming to the lower back of a patient and held in contact therewith by a waistband, a forward projection at the lower edge of the brace plate entering between the buttocks and bearing upwardly upon the sacrum.

3,434,470
SNORE INHIBITING DEVICE
James C. Strickland, 181 Walter Hays Drive, Palo Alto, Calif. 94303
Filed May 27, 1966, Ser. No. 553,332
Int. Cl. A61f *5/56*
U.S. Cl. 128—136 **6 Claims**



An oral device to inhibit snoring wherein the device includes a plate adapted to be placed within the mouth in the U-shaped space defined by the upper teeth. The plate has mounting structure thereon which releasably grips the upper teeth, whereby the plate reduces the effective volume of the air flowing into and out of the mouth. The decreased air flow resulting from the presence of the plate inhibits snoring.

3,434,471
THERAPEUTIC INTERMITTENT POSITIVE PRESSURE RESPIRATOR
Max D. Liston, La Habra, Calif., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 6, 1966, Ser. No. 540,607
Int. Cl. A62b *7/00*
U.S. Cl. 128—145.8 **5 Claims**

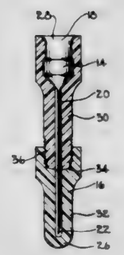


An intermittent positive pressure respirator including an automatic control for providing constant volume pulses of air or other breathable fluid to a user at predetermined intervals and providing an override responsive to the user's demands to provide a shorter interval. The automatic control includes a control chamber having a diaphragm which is coupled to the main supply valve to close off the passage of breathable fluid to the user, said diaphragm moving in response to a controlled pressure change within said chamber. A humidifier, heat exchanger and temperature control means are included for delivering air to the user at substantially 100 percent relative humidity and body temperature.

3,434,472
SURGICAL DRESSINGS
Peter Douglas Henriman, Knebworth, and David Austin Lickman, Harlow, England, assignors to T. J. Smith & Nephew Limited, Kingston-upon-Hull, Yorkshire, England
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,223
Claims priority, application Great Britain, Apr. 8, 1965, 15,009/65
Int. Cl. A61l *15/00*
U.S. Cl. 128—156 **13 Claims**

A surgical dressing comprising an absorbent pad having a non-woven net of thermoplastic material arranged over said pad to provide a wound-contacting surface for said dressing, which surface is non-adherent to wounds.

3,434,473
HYPODERMIC NEEDLE UNIT WITH INTEGRAL NEEDLE GUARD
James Gordon Smith, Dover, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1966, Ser. No. 594,506
Int. Cl. A61m *5/18;* **A45c** *11/00*
U.S. Cl. 128—221 **5 Claims**

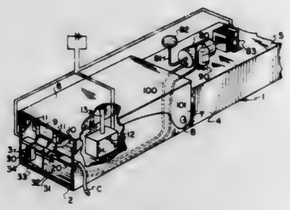


1. A disposable hypodermic needle unit comprising in combination a hypodermic needle and a tubular needle sheath, said needle having an enlarged diameter hub portion and a cannula portion, a first terminal end of said cannula being attached to and in communication with said hub portion, a second terminal end of said cannula forming a penetrating point at the end thereof, said cannula having a first length from said first terminal end to said second terminal end, said sheath being sealed at one end and open at the opposite end and having an internal configuration approximately mating the external configuration of said hypodermic needle, said sheath being adapted to be manually separated along its major axis into a plurality of detachable segments each said segment having a predetermined length less than said first length, said needle being positioned within said sheath, with the hub at the open end of said sheath and the penetrating point adjacent to the closed end of said sheath, said sheath being secured to said hub portion, whereby a hypodermic needle unit having an integral needle guard is obtained by removing one or more segments of said sheath.

3,434,474
CHICK VACCINATION DEVICE
Lamar W. Reynolds, Rte. 2, P.O. Box 140, Gainesville, Ga. 30501
Filed June 6, 1966, Ser. No. 555,321
Int. Cl. A61b *17/20*
U.S. Cl. 128—253 **3 Claims**

A chick vaccination method and apparatus wherein the upper half of a chick's beak is trimmed and vaccine is simultaneously injected into the oral cavity of the chick. The chick's beak is fitted about a stationary support, over an aperture of the support. The movement of the beak to-

ward the support simultaneously actuates a vaccine aspirating device which expels vaccine from the aperture of

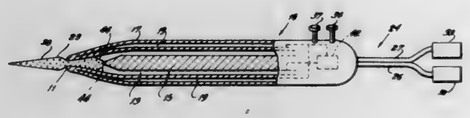


the support and a heated guillotine which trims the point from the upper half of the chick's beak.

3,434,475
PROCESS FOR THE TREATMENT OF CERTAIN CHEST AND LUNG DISORDERS
Richard H. Adler, Room 610, 120 Delaware Ave., Buffalo, N.Y. 14202
No Drawing. Filed June 24, 1966, Ser. No. 560,058
Int. Cl. A61m *31/00, 7/00;* **A61l** *13/00*
U.S. Cl. 128—260 **7 Claims**

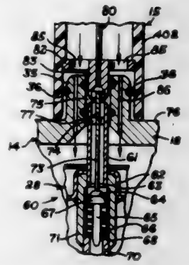
1. A method for producing pleural symphysis which comprises insufflating a finely divided dry powder into the pleural space within the thoracic cavity through a catheter inserted into the chest wall, said powder being administered from a three-phase self-propelling aerosol system comprising a free flowing powdered composition, at least one component of said composition being finely divided talc and at least one other component of said composition being particles of a non-toxic liquid propellent-sorbent material, and a vaporizable propellent, a portion of which propellent is held in said sorbent material under the vapor pressure of said propellent normally existing within the container, and the proportion of said propellent and said powdered composition being such that said powdered composition remains free flowing at all times.

3,434,476
PLASMA ARC SCALPEL
Robert F. Shaw, 2316 Leavenworth St., San Francisco, Calif. 94133, and Charles Sheer, Teaneck, N.J.; said Sheer assignor to said Shaw
Filed Apr. 7, 1966, Ser. No. 540,958
Int. Cl. A61b *17/36, 17/32*
U.S. Cl. 128—303.1 **21 Claims**



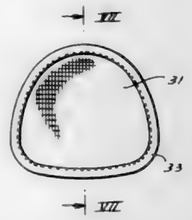
A plasma arc scalpel for bloodless surgery utilizing a stream of ionized gas discharged from an orifice of preselected diameter so as to effectuate tissue parting without thermal damage. In an alternative embodiment the needle-like jet of plasma is enveloped by a second stream or mantle of cool gas having a preselected speed and converging angle so as to more precisely control cutting. As another alternative an intermediate layer of cryogenic gas may be introduced to coagulate severed tissue.

3,434,477
SURGICAL INSTRUMENT
Edward R. Thomas, Jr., Bethesda, Md., assignor to Northwestern University, Evanston, Ill.
Filed Nov. 23, 1966, Ser. No. 596,705
Int. Cl. A61b *17/36*
U.S. Cl. 128—303.1 **19 Claims**



1. A cryosurgical system for performing surgical operations using very cold temperatures comprising, a base, a small instrument adapted to be secured to said base, said instrument including an elongated tubular housing having a heat sink secured in one end thereof, a probe secured in said one end for transfer of heat from said heat sink, said base including means for supplying a liquid refrigerant, a valve assembly in said base for cooperation with said supply means, a neck in the exterior surface of said base adapted to receive and hold said instrument, actuator means extending through said neck for cooperation with said valve assembly, means for actuating said valve assembly to permit the liquid refrigerant to flow upwardly through said neck into said instrument, and transfer means for conducting the liquid refrigerant from said neck to a position adjacent said heat sink and for spraying said liquid refrigerant onto said heat sink to substantially reduce the temperature thereof.

3,434,478
MOLDED GARMENT
Benjamin Liebowitz, Lewisboro, and Morris U. Cohen, Brooklyn, N.Y., assignors to Endsdown Company, Inc., New York, N.Y.
Filed Apr. 1, 1966, Ser. No. 539,542
Int. Cl. A41c *3/00*
U.S. Cl. 128—463 **12 Claims**

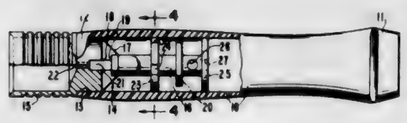


A fabric adapted to be molded to form a shaped, shape-retaining body, of which fabric garments or portions of wearing apparel may be formed such as brassieres, girdles and the like, comprises two sets of warp ends and one set of filler yarns, one of the sets of warp ends being composed of relatively soft highly flexible yarns arranged transverse to the filler yarns and forming a complete fabric therewith, and the other of the sets of warp ends being composed of substantially fully drawn thermoplastic monofilaments which while flexible are substantially stiffer than the yarns of the one set of warp ends.

3,434,479
PERMANGANATE TOBACCO SMOKE FILTER
Derek Elliott Till, Concord, Philip Leo Levins, Lexington, and David Hamilton Koch, Cambridge, Mass., assignors, by mesne assignments, to Liggett & Myers Tobacco Company, Durham, N.C., a corporation of New Jersey
No Drawing. Filed Sept. 15, 1966, Ser. No. 579,489
Int. Cl. A24d *1/04, 1/06;* **A24f** *25/00*
U.S. Cl. 131—10.9 **7 Claims**

A cigarette filter comprising a non-oxidizable, particulate support impregnated with at least one permanganate salt having a water solubility of not less than 100 grams per liter at room temperature in amounts of from about 5 to about 20 weight percent removes substantial quantities of nitrogen oxides from tobacco smoke without adverse effect on the taste of the smoke.

3,434,480
DISPOSABLE FILTER FOR TOBACCO-SMOKING DEVICE
Robert W. Dailey, Burlingame, Calif., assignor to Tar Gard Company, San Francisco, Calif.
Filed Apr. 29, 1966, Ser. No. 546,376
Int. Cl. A24f *13/02;* **A24d** *1/06*
U.S. Cl. 131—187 **4 Claims**



A disposable filter is disclosed wherein an insert for a hollow mouthpiece is provided with a shoulder sealably engaging the open end of the mouthpiece with a cup-shaped portion for receiving a cigarette on one side of the shoulder portion and a stem of lesser diameter than the shoulder portion on the other side thereof. A transverse slot is provided centrally of the insert defining a barrier to smoke passing from the cup-shaped portion through an orifice to a longitudinal slot adjacent the transverse slot. At least one annular shoulder barrier is provided on the stem downstream from the first barrier and provided with a plurality of slots in the peripheral portion.

3,434,481
WIGLET
Philip Mazzocco, 1041 Windermere Drive, Pittsburgh, Pa. 15218
Filed Feb. 29, 1968, Ser. No. 709,449
Int. Cl. A41g *3/00, 5/00*
U.S. Cl. 132—53 **4 Claims**



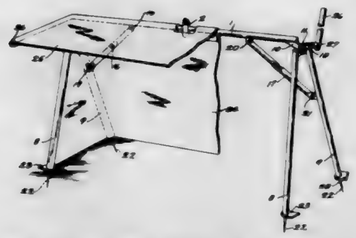
A wig or wiglet in which hairs are attached to radially and circumferentially extending bands which provide substantially 50 percent openings for ventilation, and which bands are attached to a leaf spring of a construction as to comfortably, securely and attractively hold the wiglet onto the head of the wearer.

3,434,482
COIN SORTING DEVICE WITH VIBRATING SORTING BAR
Gert Zimmermann, Auf dem Grat 28—30, Berlin 33, Germany
Filed Feb. 23, 1967, Ser. No. 618,196
Claims priority, application Germany, Mar. 5, 1966, Z 12,076
Int. Cl. G07d *3/00;* **B65g** *27/00*
U.S. Cl. 133—3 **5 Claims**



A single embodiment of coin sorting device is disclosed which includes a coin storage vessel having a coin feeding opening for feeding coins directly onto a substantially horizontally oriented sorting bar. The sorting bar and the coin storage vessel are resiliently mounted within a casing or housing and they are vibrated by an inexpensive electromagnetic vibrating device to cause feeding of coins in the storage vessel downwardly through a slot therein onto the bar. The sorting bar includes a substantially vertical coin guiding edge and the bar is advantageously tilted slightly toward the edge so that coins are advanced along the edge until they move over a portion of a stepped coin fall-out slot of the bar which is of a size comparable to the individual coin. The coins drop downwardly into one of a plurality of receiving vessels or drop shafts for each coin denomination.

3,434,483
PORTABLE WINDBREAKER
Elgin H. Topham, 3717 N. 19th St., Milwaukee, Wis. 53206
Filed June 19, 1967, Ser. No. 646,829
Int. Cl. E04h *9/00*
U.S. Cl. 135—5 **4 Claims**

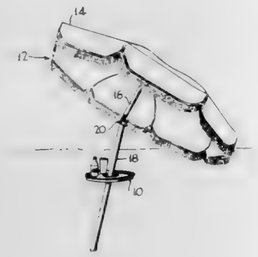


A portable windbreaker with a frame having a cross rod and supporting legs. The cross rod is hinged at its center, and the legs are pivotable relative to each other and to the cross rod to fold the windbreaker up. Spikes on the lower leg ends secure the device in the ground, and tabs above the spikes may be engaged to hammer the spikes into the ground. A weatherproof cover is mounted on the frame, and may include an awning portion supported by pivotal end bars which rest on the upper leg ends.

3,434,484
TILTABLE TABLE FOR AN UMBRELLA
Luciano L. Dilullo, Gloucester Township, Camden County, N.J. (300 Bucknell Ave., Blackwood, N.J. 08012)
Filed June 19, 1967, Ser. No. 647,165
Int. Cl. A47b *37/04;* **A45b** *3/00*
U.S. Cl. 135—16 **2 Claims**

A table is disposed to be placed around the pole of

an umbrella adapted to be inserted into the ground. When the pole of the umbrella is tilted at different angles,

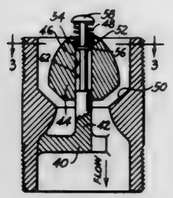


means are provided to tilt the angle of the table so that it can be maintained in a level position.

3,434,485
TRANSPORTATION OF VISCOUS LIQUIDS
James L. Lummus, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 343,466, Feb. 10, 1964. This application Sept. 30, 1965, Ser. No. 491,900
Int. Cl. F17d *1/16*
U.S. Cl. 137—13 **3 Claims**

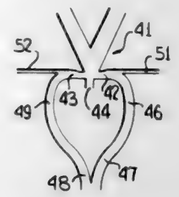
A viscous liquid is transported through a conduit. Flow is facilitated by introducing as a film at the internal surface of the conduit a less viscous liquid. The introduced filming liquid has elastic properties under conditions of use, so a force perpendicular to the direction of shear is developed in the film. This reduces inequalities in film thickness and reduces dispersion of the film into the main body of transported liquid.

3,434,486
FUEL TRANSFER DEVICE HAVING WATER SENSING SHUTOFF VALVE
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 12, 1967, Ser. No. 645,307
Int. Cl. F16k *13/00*
U.S. Cl. 137—67 **1 Claim**



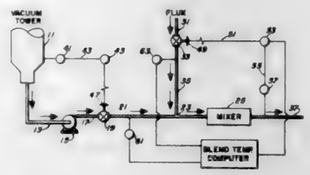
A water sensing shutoff mechanism which is used for interrupting the flow of fuel through a fuel transfer device in the event such fuel contains free water. This shutoff mechanism, which can be incorporated in the outlet of any fuel transfer device, includes a valve member for closing the outlet and preventing further flow therethrough, and water soluble pellets which are arranged so as to prevent closure of the valve member as long as the pellets remain solid, but permit closure thereof after dissolving in any undesirable free water contained in the fuel.

3,434,487
HIGH FREQUENCY PROPORTIONAL FLUID AMPLIFIER
Peter Bauer, Bethesda, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Oct. 15, 1964, Ser. No. 404,005
Int. Cl. F15c *1/08, 1/12, 1/14*
U.S. Cl. 137—81.5 **20 Claims**



1. A pure fluid amplifier having improved high frequency response characteristics comprising:
means for receiving a stream of fluid;
a fluid interaction region;
means for issuing a stream of fluid through said interaction region towards said means for receiving;
control stream means for controllably deflecting said stream of fluid;
means for developing a force field in which the positional stability of said stream varies as a function of the position of said stream in said interaction region;
means for oscillating said stream at small amplitudes of oscillation about a mean position such that in the absence of said control stream means said mean position coincides with a position of minimum stability and such that said amplitudes of oscillation are sufficiently small relative to the transverse dimension of said interaction region that in the absence of said control stream means said stream remains substantially proximate said position of minimum stability;
said control stream means deflecting the oscillating stream so that said mean position is shifted relative to said means for receiving.

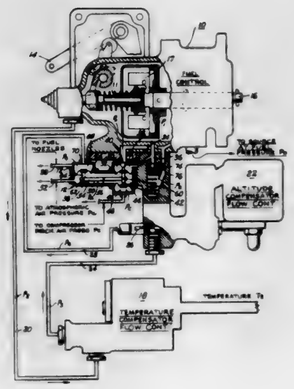
3,434,488
CONTROLLING THE PROPORTIONING OF BLENDED FLUIDS
Frank D. F. Talbot, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,244
Int. Cl. G05d *11/16;* **E03b** *1/00*
U.S. Cl. 137—90 **2 Claims**



Liquids of different temperatures such as fuel oil and flux are blended by sensing the temperature of each,

sensing the temperature of the blend, feeding these temperatures to a computer, and calculating the proper temperature for the blend desired. This computed blend temperature is then used by comparing it with actual instantaneous blend temperatures to reset or adjust the blend proportions.

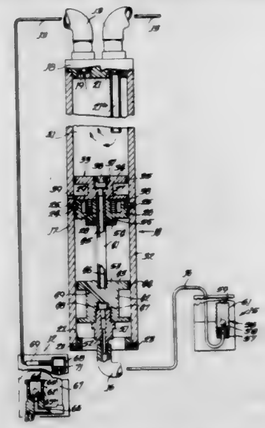
3,434,489
FAIL SAFE FLUID REGULATOR
Edward M. Pauwels, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,672
Int. Cl. G05d *11/02;* **F01b** *25/06*
U.S. Cl. 137—98 **3 Claims**



Fluid regulating apparatus having a movable fluid control valve and control means connected thereto wherein the control means includes a force balance lever carried in a chamber vented to a low pressure drain source and a plurality of fluid pressure responsive members each of which has one side exposed to the chamber and an opposite side exposed to an associated pressurized control fluid. The drain source pressure does not exceed any of the control fluid pressures so that leakage of the relatively higher pressure control fluids through the pressure responsive members in the event of failure thereof is confined to the drain source thereby isolating the control fluids to provide fail safe operation. Also, the force balance lever does not require fluid seals since it is wholly contained in the chamber vented to the drain source.

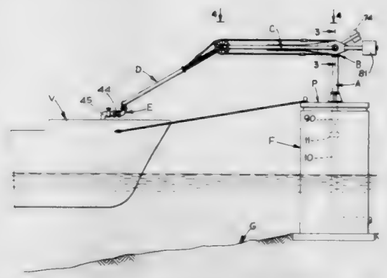
3,434,490
CHEMICAL SOLUTION FEEDER
Charles E. Lyall, Deerfield, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 557,504, June 14, 1966. This application May 17, 1968, Ser. No. 730,680
Int. Cl. F16k *15/18, 17/36, 21/00*
U.S. Cl. 137—101.31 **14 Claims**

A chemical solution feeder interposed in the line from a water conditioner control valve to a regenerant storage tank so that the chemical solution from the feeder will be fed into the water conditioner during the initial flow of regenerant, the feeder having a metering chamber communicating with a source of the chemical solution and an upper chamber with an outlet connected in the line extending between the control valve and the regenerant tank. A pair of reciprocable pistons, one in each chamber, are joined by a rigid transfer tube communicating between the chambers, and the upper chamber includes a positive



moving means to bias the pistons upward in their chambers.

3,434,491
FLUID TRANSFER APPARATUS
Peter J. Bily, Sunset Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 4, 1966, Ser. No. 570,227
Int. Cl. F16l *3/00, 55/00, 31/00*
U.S. Cl. 137—315 **5 Claims**

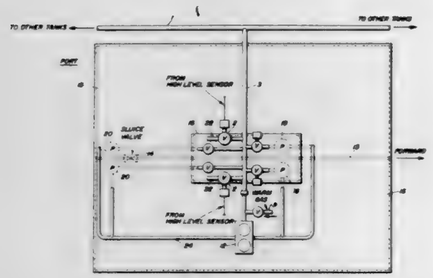


A double counterbalanced marine loading arm including an inboard arm section having a pair of generally coextensive and parallel tubular conduits rigidly interconnected by a frame structure, a generally T-shaped riser section upon which the inboard arm section is pivotally supported through swivel joints, an outboard arm section pivotally connected through swivel joints to the inboard arm section, and removable elbow-shaped conduit sections at each end of both inboard arm conduits for facilitating access to the swivel joint packings without requiring disconnection of the arm sections and riser.

3,434,492
SYSTEM FOR LOADING AND DISCHARGING LIQUEFIED GASES FROM STORAGE TANKS
Donald R. Yearwood, Brooklyn, Norman K. Basile, Bronx, and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen, Montclair, N.J.
Filed Apr. 28, 1966, Ser. No. 546,103
Int. Cl. B65d *5/40;* **F17c** *7/00, 9/00*
U.S. Cl. 137—394 **9 Claims**

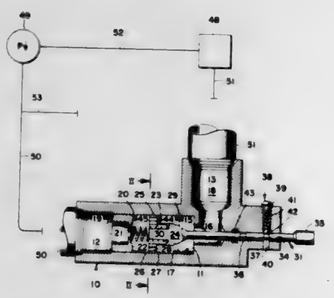
A system for delivering liquefied cargo gas into and discharging liquefied cargo gas from a plurality of stor-

age tanks, particularly on a ship. The system includes a cargo main which connects with each tank by means of a tank header and loading valves. A main cargo pump



is located near the bottom center of each tank, and a stripping pump is positioned at the rear of each tank. Motor controllers are associated with each pump, and the pump outputs are connected to the tank header.

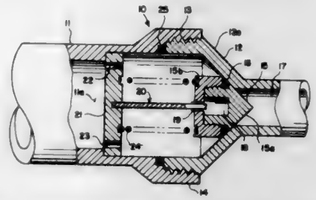
3,434,493
FLOW-SENSITIVE SHUTOFF VALVE
Bobby Owens, Sulphur Springs, Tex., assignor to LTV Electrosystems, Inc., Greenville, Tex., a corporation of Delaware
Filed Sept. 18, 1967, Ser. No. 668,512
Int. Cl. F16k *17/20*
U.S. Cl. 137—460 **6 Claims**



This invention provides a shutoff valve which is held in its open position by a detent during normal flow through the valve, but which responds to a small increase above a normal flow-rate by overriding the detent and shutting off the flow. A second detent holds the valve in its open position until manually overriden.

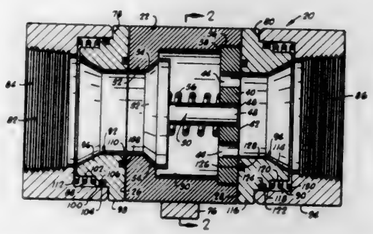
3,434,494
IN-LINE CHECK VALVE
Charles E. Upper, Williamsville, N.Y., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 282,034, May 21, 1963. This application Feb. 28, 1968, Ser. No. 709,077
Int. Cl. F16k *15/14, 21/16, 35/02*
U.S. Cl. 137—467 **8 Claims**

An in-line check valve normally closed, having a uniquely structured poppet in a housing which is urged toward a closed position by fluid pressure, with or without a helping spring, in one direction and adapted to be opened by fluid pressure in the other direction. Means is



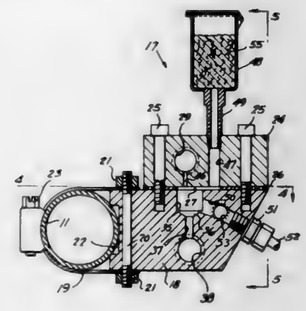
also disclosed whereby, upon being opened by said fluid pressure, the valve is locked open thereafter.

3,434,495
FLOW CONTROL APPARATUS HAVING DIFFERENTIAL AREA BODY SEALS
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Apr. 4, 1966, Ser. No. 539,705
Int. Cl. F16k *5/02, 15/00, 27/00*
U.S. Cl. 137—542 **16 Claims**



To provide improved flow control apparatus, wherein the seal means is so disposed with respect to the body means and the connection means as to create a differential pressure, which contributes to hold the seal means in sealing engagement with the body means, thus providing a fluid tight seal in the event that the valve is elongated as a result of fluid pressure.

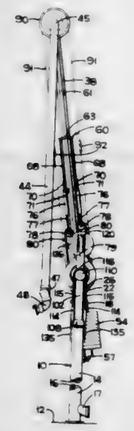
3,434,496
LIQUID SPRAY-CONTROL DEVICE
Morton E. Phelps, 715 Thomas St., Little Rock, Ark. 72202, and Tommy O. Bell, Hallsville, Tex. 75650
Filed Mar. 24, 1967, Ser. No. 625,676
Int. Cl. F15d *1/00*
U.S. Cl. 137—561 **10 Claims**



A liquid-metering device to furnish pumped liquid to spray jets at a constant or at an adjustable pressure. The metering device is connected between the pump output

line and the spray jets and has a return duct connected to the sump line to the liquid reservoir associated with the pump. The metering device has a relatively restricted inlet passage leading to an enlarged venturi chamber, the venturi chamber having a somewhat reduced venturi outlet passage leading to the return duct. The restricted inlet passage is parallel to, but is offset from the outlet passage to create turbulence in the enlarged venturi chamber. Another outlet passage extends laterally from the venturi chamber to the spray jet line, communicating with a portion of the tapered lower end of the enlarged venturi passage, so that the turbulent liquid partially passes through the lateral outlet passage at a substantially constant pressure. The suction in the enlarged venturi chamber may be relieved to a desired degree by the provision of an air vent. The air vent may be provided with an air filter. The amount of restriction in the air vent or filter controls the pressure of the liquid supplied to the spray jets.

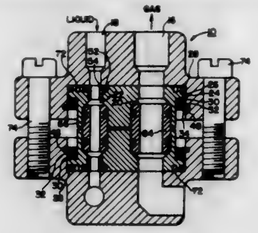
3,434,497
FLUID TRANSFERRING APPARATUS
Peter J. Bily, Sunset Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 526,994
Int. Cl. B67c *5/36, 5/60, 5/64*
U.S. Cl. 137—615 **8 Claims**



A fluid transferring apparatus of the marine loading arm type, including an upstanding support, an inner arm conduit mounted on the support for elevational movement about an inner axis, an outer arm conduit pivotally connected to the inner arm for elevational movement about an outer axis, a first mechanism for counterbalancing both inner and outer arms about the inner axis, a second mechanism for counterbalancing the outer arm about the outer axis, and a third mechanism for rotating or slewing the entire apparatus about an upstanding axis through the support.

3,434,498
DUAL-PASSAGE LINE-BREAKING VALVE
Arthur H. Eberhart, Hilliard, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1967, Ser. No. 612,480
Int. Cl. F16k *43/00;* **F16l** *21/02*
U.S. Cl. 137—625.18 **9 Claims**

This invention relates to the structure of a dual-line shut-off valve in which mirror image halves of the valve each contain a rotor which in one position provides through passages, and in an opposite position closes the passages and permits separation of the valve halves without a significant loss of fluid under a pressure or vacuum condition in the lines. The rotors are held in the respective valve halves by a retention and cam ring assembly which



urges the rotor into a tightly sealed condition in the opposite valve positions, but which also permits a limited release for travel between the opposite positions. The valve handle also cooperates under a vacuum condition in insuring a release of the tight seal.

3,434,499
SLIDE VALVE PLATE WITH A RELIEF DEVICE PARTICULARLY FOR SLIDE VALVES OF LARGE SIZE
Johannes Uerlichs, Duren-Birkesdorf, Germany, assignor to Rappold & Co. G.m.b.H., Duren-Birkesdorf, Germany
Filed May 1, 1967, Ser. No. 634,933
Claims priority, application Germany, June 23, 1966, R 43,527
Int. Cl. F16k *3/32*
U.S. Cl. 137—630.12 **6 Claims**

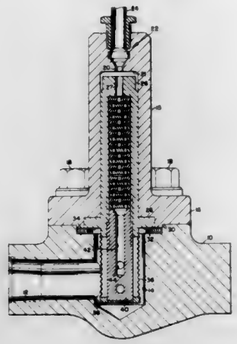


A slide valve plate particularly for plates of large diameter wherein a bottom plate is provided with a relief opening and an arched part cooperates with said bottom plate having at its circumference a sealing surface. Strengthening ribs are positioned between the bottom plate and the arched part. A relief valve plate cooperates with the relief opening and is operated by the actuation rod for the slide valve. An inset is provided at the relief opening for the sealing setting for the relief plate which may be easily removable and the arched part is provided with an opening for the actuating rod for the valve.

3,434,500
FLUID PRESSURE REDUCER
Lewis M. Burrows, North Quincy, Mass., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,631
Int. Cl. F15d *1/00*
U.S. Cl. 138—42 **15 Claims**

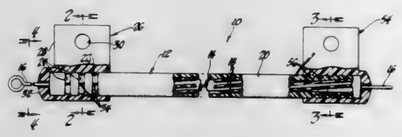
1. In a fluid pressure reducing device a pair of overlying members, means providing an outlet opening in one

of said members, means providing a fluid inlet opening in the other of said members, a raised annular surface on one of said members extending radially of and circumferentially about said outlet opening and cooperating to provide fluid flow restriction means connecting said inlet



opening and outlet opening, said flow restriction means provding an annular distribution of opposed flow streams directed radially inwardly of said outlet opening thereby tending to convert the kinetic energy of said flow streams to a pressure head, said flow restriction means being the sole source of fluid flow into said outlet opening.

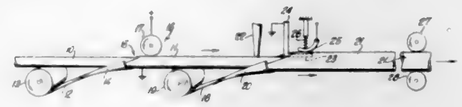
3,434,501
MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY
Winthrop B. Conrad, Franklin, Mich., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Original application May 19, 1966, Ser. No. 551,422. Divided and this application Feb. 13, 1967, Ser. No. 615,694
Int. Cl. F16l *9/12*
U.S. Cl. 138—109 **21 Claims**



A motion transmitting remote control assembly including a flexible conduit having an inner tubular member of organic polymeric material with a plurality of wires wrapped helically thereabout on a long lead and a casing of organic polymeric material enclosing the wires with irregularities, such as grooves, indentations or the like, formed in the surface of the casing, and a fitting of organic polymeric material adapted for attachment to a support structure being molded so that it is disposed in mechanical interlocking engagement with the casing.

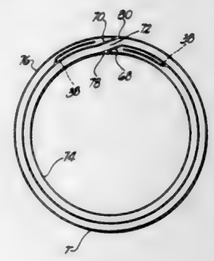
3,434,502
FLEXIBLE FIRE RESISTANT AIR DUCT
Charles D. Snelling, 2949 Greenleaf St., Allentown, Pa. 18104
Filed May 22, 1967, Ser. No. 639,958
Int. Cl. F16l *11/00, 11/14;* **D03d** *49/26*
U.S. Cl. 138—129 **9 Claims**

The flexible heating and air conditioning duct is disclosed comprising an inner wall and an outer wall concentrically surrounding the inner wall and defining an annulus therebetween. The annulus has confined in it throughout its cross section insulating material, both



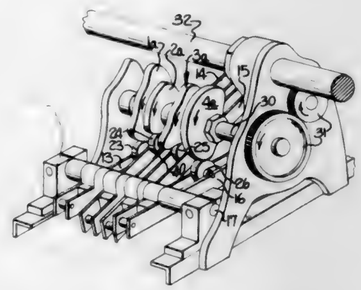
walls being made of flexible material, at least one wall being formed of metal foil to resist heat at said foil side.

3,434,503
METHOD OF MAKING TUBING AND PRODUCT THEREOF
David R. Knox, Huntington Woods, Mich., assignor to Bundy Corporation, a corporation of Michigan
Filed Oct. 12, 1966, Ser. No. 586,086
Int. Cl. F16l *9/18;* **B23k** *31/06*
U.S. Cl. 138—171 **48 Claims**



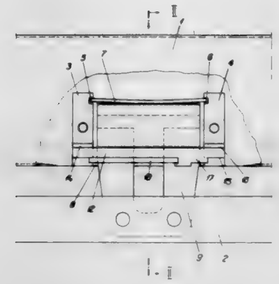
This invention relates to the manufacture of tubing from a sheet of corrosion-prone metal base having layers of corrosion-resistant metal on its faces by bending the edges of the sheet back upon the sheet with a thickness after folding equal to that of the original sheet, providing a taper to the folded edges, coiling the sheet to tube form and applying heat to melt the layer, which has a lower melting than the corrosion-prone base, at least at the folded ends to secure the sheet edges in place and form the tube, and the tubing produced thereby.

3,434,504
SHUTTLELESS TERRY LOOM WARP SHEDDING MEANS AND METHOD
Johnny D. Harkey, Concord, N.C., assignor to Cannon Mills Company, a corporation of North Carolina
Filed Oct. 17, 1967, Ser. No. 675,858
Int. Cl. D03d *39/22*
U.S. Cl. 139—25 **6 Claims**



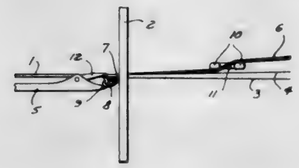
A warp shedding method and means in which an upper sheet of ground warps, which would otherwise remain in upper shed position during the corresponding pick of a shuttleless terry loom, is moved downwardly and then returned to upper shed position during a single pick of the loom so as to shield a corresponding downwardly moving sheet of relatively loose terry warps from the whipping tail of a cut length of filling being inserted in the shed by filling carriers as the sheet of terry warps is moved from upper shed position to lower shed position.

3,434,505
HEDDLE FRAME FOR LOOMS
Bernhard R. Koch, Zurich, Switzerland, assignor to Grob & Co. Aktiengesellschaft, Horzen, Zurich, Switzerland
Filed Dec. 21, 1966, Ser. No. 603,540
Claims priority, application Switzerland, May 11, 1966, 6,832/66
Int. Cl. D03c *9/06*
U.S. Cl. 139—92 **5 Claims**



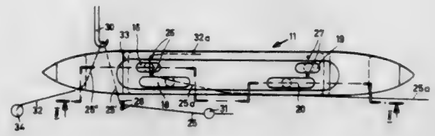
A heddle frame for a loom has hollow top and bottom frames to receive carrier brackets on which the heddle carrying rods are fixed. The brackets project into the hollow staves and engage with leaf springs carried by holding pieces fixed in the staves. Each bracket is locked by a sliding bolt which engages in recesses in the holding pieces. All the connecting elements are therefore disposed within the staves and consequently cannot become accidentally dislodged.

3,434,506
WEFT YARN ANCHORING ARRANGEMENT FOR NEEDLE LOOMS
Jakob Müller, Frick, Aargau, Switzerland
Filed Nov. 21, 1966, Ser. No. 596,012
Claims priority, application Switzerland, Nov. 20, 1965, 15,937/65
Int. Cl. D03d *47/46*
U.S. Cl. 139—124 **10 Claims**



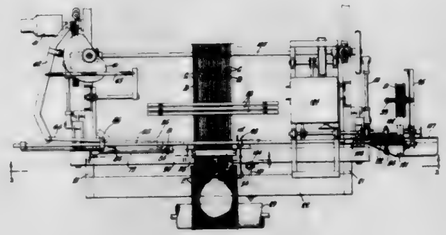
A weft inserting member is reciprocated through the warp sheds of a fabric woven on a needle loom, and places the weft thread by a dipping or turning motion into the open hook of a latch needle reciprocating in the warp direction so that a loop is formed which anchors the weft yarn.

3,434,507
WEAVING SHUTTLE
Alexis Freihofer, Tann-Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., formerly Casper Honegger, Switzerland, Ruti, Zurich, Switzerland
Filed Nov. 17, 1966, Ser. No. 595,128
Claims priority, application Switzerland, Dec. 23, 1965, 17,740/65
Int. Cl. D03d *47/14*
U.S. Cl. 139—125 **12 Claims**



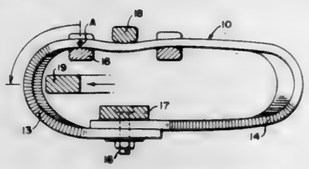
A shuttle for a weaving loom having a retaining arrangement which holds a weft yarn with a predetermined force for picking the yarn into the shed of the loom and from which the yarn can be drawn out after the pick has been completed. The retaining arrangement comprises at least two separate retaining means which provide different degrees of retaining force for holding the yarn and which are independently adjustable so that the retaining force provided by each can be individually varied to reliably retain the yarn during movement through the loom and to allow the yarn to be drawn out of the shuttle by a braking force without excessive springing back of the yarn.

3,434,508
APPARATUS FOR WEAVING STIFF FILAMENTARY MATERIAL
Daniel S. Alterman, Perkasie, and Lester Williams, Quakertown, Pa., assignors to Prodesco, Inc., Perkasie, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1967, Ser. No. 676,250
Int. Cl. D03d *47/14*
U.S. Cl. 139—130 **19 Claims**



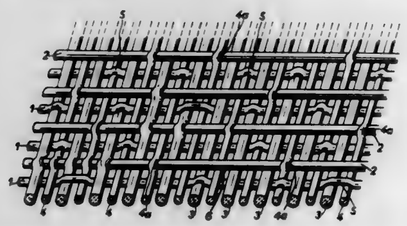
A loom for weaving stiff filamentary material in the weft or filling in which the filling strands are pulled through the shed of the loom from a stationary supply mounted on one side of the loom and including a positive feed means. The puller mechanism is mounted on the other side of the loom and is projected through the shed and withdrawn after gripping the free ends of the filling material. The gripping mechanism is actuated to grip the filling at the extended limit position of the puller and is actuated to release the filling near the retracted limit position of the puller. A severing mechanism is provided to sever the inserted filling strand from the supply prior to the beat-up of the loom. The severing mechanism severs the stiff filamentary material by impact shattering.

3,434,509
CHECK STRAP AND METHOD OF MAKING THE SAME
Chester R. Messer, Concord, N.H., assignor to Page Belting Company, Concord, N.H., a corporation of New Hampshire
Filed July 11, 1967, Ser. No. 652,520
Int. Cl. D03d 49/40, 11/00
U.S. Cl. 139—161 5 Claims



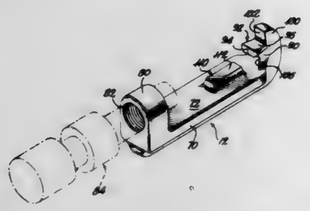
Check straps of conical formation made from nylon or the like fabric, characterized by shrinking an elongated edge area of the strap, thus imparting an edgewise curvature thereto and then joining the ends of the strap.

3,434,510
WOVEN FABRIC WITH INTERWOVEN DESIGN
Georges Neyert, 16 Rue du Jeu del l'Arc, Saint-Etienne, France
Filed Feb. 9, 1967, Ser. No. 614,936
Claims priority, application France, Sept. 9, 1966, 9,539; Nov. 24, 1966, 9,590
Int. Cl. D03d 11/00
U.S. Cl. 139—408 4 Claims



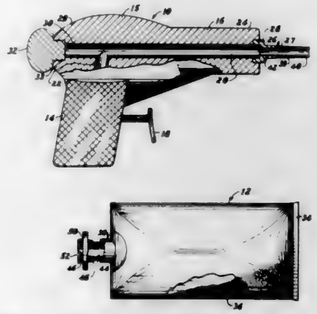
A woven fabric in which some of the foundation warp yarns are used to bind transversely extending pattern yarns into the fabric to form an interwoven design. The binding foundation yarns are of a transparent or translucent nature such that at points where they bind the pattern yarns into the fabric, these binding yarns are substantially invisible and thus do not obscure the interwoven design.

3,434,511
TOOL FOR SECURING A CABLE TO AN ELECTRICAL CONNECTOR
James Lenhart Mixon, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 27, 1967, Ser. No. 626,107
Int. Cl. B21f 7/00, 15/02; H01s 5/00
U.S. Cl. 140—117 9 Claims



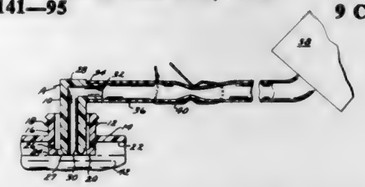
The tool comprises a rigid body means including a main elongated portion having a flat surface at one side thereof. A mounting portion extends laterally from the flat surface at one end of the body means and has a threaded hole formed therethrough for mounting a power unit therein, the power unit being adapted to drive a clamp member into place in an associated connector. The axis of the threaded hole is substantially parallel with the axis of the main elongated body portion. An integral lip means is formed on the opposite end of the body means and is offset laterally from said flat surface so as to be substantially aligned with the axis of the threaded hole. The body means includes a curved surface adjacent the lip means to provide clearance with an associated connector. An integral elongated rib is formed on the main elongated body portion and extends laterally from said flat surface. The rib is disposed adjacent the lip means and remote from the mounting portion and extends in a direction substantially parallel with the axis of said hole. The body means also includes an integral impact portion thereon adjacent to the lip means and spaced longitudinally from the lip means in a direction away from the mounting portion. The impact portion is offset laterally to a greater extent than said lip means and defines an impact surface inclined at an angle to the longitudinal axis of said threaded hole as well as the longitudinal axis of the main elongated body portion.

3,434,512
TOY DRINKING KIT
Betty J. Lowe, 539 Wood St., Greenfield, Ind. 46140
Filed June 13, 1966, Ser. No. 556,939
Int. Cl. B65b 1/04, 3/04
U.S. Cl. 141—18 7 Claims



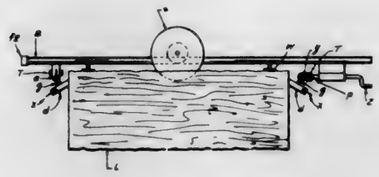
A toy which provides means independent of gravity for preparing a liquid drink and for drinking the drink, to simulate the gravity-free experience of space-travellers and thus stimulate a child's imagination.

3,434,513
COMBINED LIQUID DISPENSER AND LIQUID LEVEL INDICATOR
Richard M. O'Bannon, 188 Coral View Ave., Monterey Park, Calif. 91754
Filed Apr. 7, 1966, Ser. No. 540,976
Int. Cl. B65b 1/30, 39/00
U.S. Cl. 141—95 9 Claims



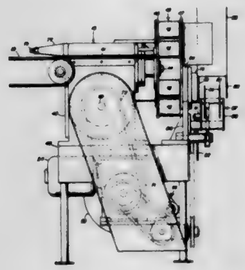
A combined liquid dispensing and liquid level indicating device for use in filling storage batteries of the type which include liquid inlets, with target rings situated a predetermined distance therebelow.

3,434,514
MACHINE FOR SAWING LUMBER FROM HOLLOW LOGS
Charles E. McManama, Potlatch, Idaho 83855
Filed Oct. 21, 1965, Ser. No. 499,250
Int. Cl. B27b 5/18
U.S. Cl. 143—47 5 Claims



A portable machine for sawing lumber from prostrate hollow logs where they lie having a circular saw which traverses upon a log in sawing, a rail to accurately guide the course of the saw through the log, and means of engagement to the log which also serves to adjust the machine radially upon the log to saw successive boards therefrom.

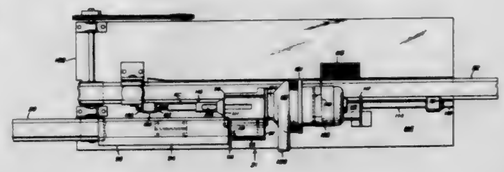
3,434,515
PINEAPPLE SLICE CORING AND LOADING MACHINE
John Farmer, Honolulu, Hawaii, assignor to Honolulu Iron Works Company, Honolulu, Hawaii, a corporation of Hawaii
Original application Sept. 29, 1961, Ser. No. 141,680, now Patent No. 3,246,678, dated Apr. 19, 1966. Divided and this application Oct. 23, 1965, Ser. No. 502,857
Int. Cl. A23n 3/12; A47j 25/00; B65b 5/00
U.S. Cl. 146—6 8 Claims



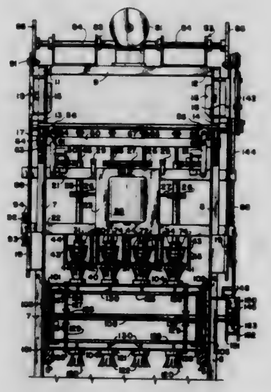
A machine for coring and canning pineapple slices combining an indexable multibarrelled turret with means for feeding uncored slices into a presented barrel, a coring tube and a pusher projectable into the barrel at sequential stops of the turret respectively for coring the slices and ejecting them from the barrel, and means for feeding empty cans to a position to receive the ejected slices.

3,434,516
MACHINE FOR CORING PINEAPPLE SLICES
John Farmer, Honolulu, Hawaii, assignor to Honolulu Iron Works Company, Honolulu, Hawaii, a corporation of Hawaii
Original application Sept. 29, 1961, Ser. No. 141,680, now Patent No. 3,246,678, dated Apr. 19, 1966. Divided and this application Oct. 23, 1965, Ser. No. 503,857
Int. Cl. A47j 25/00; A23n 3/12
U.S. Cl. 146—6 8 Claims

A machine for coring pineapple slices having a tube for laterally supporting a slice, a trough in advance of the tube for centering a slice thereon, and a pusher and coring tube concentric with and normally beyond opposite ends of the supporting tube respectively for pushing a slice through the supporting tube and coring the slice during such pushing.



3,434,517
AUTOMATIC CORING MACHINE
Fred A. Durand, Jr., and Charles R. May, Woodbury, Ga., assignors to National Biscuit Company, a corporation of New Jersey
Filed Aug. 15, 1966, Ser. No. 572,489
Int. Cl. A23n 3/12
U.S. Cl. 146—52 4 Claims

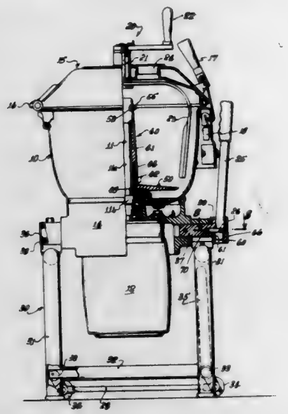


A machine for automatically coring pimento peppers in which a plurality of peppers are intermittently advanced to a coring station by individual pepper supporting means so that rotatable tubular coring means, combined with gripping withdrawal means may be employed to sever and lift the cores out of the husks without damage. The coring means are positioned at one station and the cores ejected by suitable means at a remote point so that they can be collected without interfering with the regular coring opertions.

3,434,518
FOOD HANDLING APPARATUS
Gilbert M. Motis, Northridge, Calif., assignor, by mesne assignments, to Unimaco Inc., Manhasset, N.Y.
Continuation of application Ser. No. 564,898, July 13, 1966. This application Apr. 18, 1968, Ser. No. 722,489
Int. Cl. B02c 18/12
U.S. Cl. 146—68 12 Claims

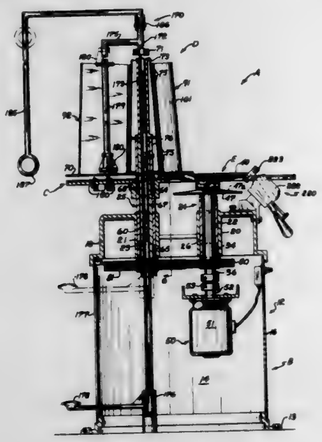
A tubular mandrel having a cutting and mixing blade secured at on end thereof that consists of a straight lead-

ing cutting edge and a tapering undersurface, said mandrel having a restraining means at the upper end thereof for



easily securing the mandrel to a drive shaft or for detaching said mandrel from said drive shaft.

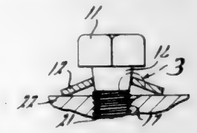
3,434,519
POWER CLEAVER
Louis A. Bettcher, Amherst, Ohio, assignor to Lab-O-Matic Corp., Vermilion, Ohio, a corporation of Ohio
Filed June 28, 1966, Ser. No. 561,180
Int. Cl. B26d *4/22, 4/34, 4/54*
U.S. Cl. 146—124 **17 Claims**



Cutting apparatus for severing sections from a comestible work body, such as a meat body or product, especially one that has bones or is frozen, including a rotatable assembly with a receptacle for slidably receiving and moving a work body in an endless path past a rotary knife that severs slices from the work body.

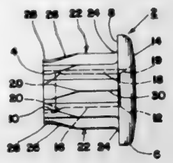
3,434,520
DISHED WASHER LOCK FOR THREADED ELEMENT
William A. Bedford, Jr., Cape Coral, Fla., assignor to Vare Corporation, New York, N.Y., a corporation of New York
Filed Feb. 14, 1967, Ser. No. 616,014
Int. Cl. F16b *39/24*
U.S. Cl. 151—38 **10 Claims**

A dished washer has a truncated conical aperture of greater angularity than a truncated conical section on a threaded element which is engaged by the deflected face



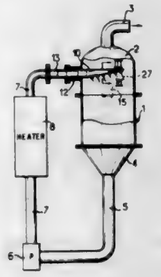
of the aperture when the washer is forced against a member with which the element is threadably engaged.

3,434,521
PLASTIC FASTENER WITH CURVED ENTRY SHOULDER IN BORE
Laurence H. Flora, North Olmsted, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 2, 1965, Ser. No. 476,306
Int. Cl. F16b *39/00*
U.S. Cl. 151—41.73 **3 Claims**



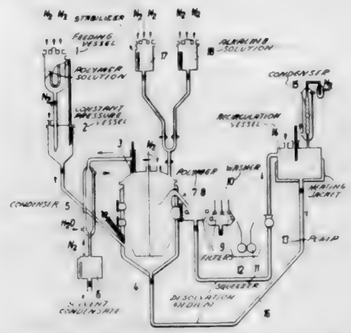
1. A fastening device made from a polymeric material comprising, an elongated body, a head attached to one end and projecting radially of said body, said body having a bore extending axially therethrough in a direction from said head for receiving a threaded member therein, a plurality of circumferentially spaced, generally arcuate lands extending axially from said head and projecting radially into said bore, a plurality of circumferentially spaced channels defined by and disposed between said lands and extending axially from said head, each of said lands terminating in a curved shoulder portion which curves smoothly outwardly so as to merge into the confronting surface of said bore, and the points of merger being spaced inwardly from the end of said body remote from said head.

3,434,522
SPRAY TYPE FLASH EVAPORATOR
Francois Laurenty, Le Champignon 62, Le Touquet-Paris-Plage, France
Filed Nov. 14, 1966, Ser. No. 593,983
Claims priority, application France, Sept. 21, 1966, 77,091
Int. Cl. B01d *1/16*
U.S. Cl. 159—3 **8 Claims**



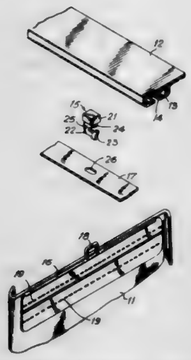
An evaporator vessel has a delivery pipe in its upper section, comprising a horizontal, circular tubular section, and a tubular spout whose lower face is upwardly inclined with respect to the axis of the tubular section. The spout has a top portion which is flat and disposed in a horizontal plane tangent to the uppermost element of the tubular section. The inclined bottom portion of the spout has a series of discharge nozzles therealong.

3,434,523
CONTINUOUS PROCESS AND PLANT FOR POLYMER SEPARATION FROM POLYMER SOLUTIONS
Elena Ceausescu and Victoria Fieroiu, Bucharest, Rumania, assignors to Ministerul Industriei Chimice, Bucharest, Rumania
Filed June 15, 1966, Ser. No. 557,665
Claims priority, application Rumania, June 16, 1965, 49,888
Int. Cl. B01d *43/00, 1/00*
U.S. Cl. 159—47 **2 Claims**



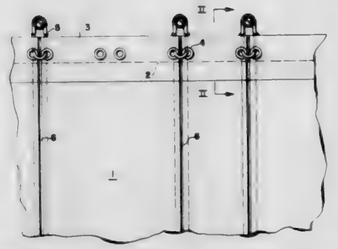
A system for the continuous recovery of polymers from an organic-solvent solution thereof wherein the solution is introduced through a constant-pressure lock into a vessel containing water and a dispersion-stabilizing agent agitated at a high rate at a location in the region of the stirrer blades and the polymer is removed from the surface of the medium in this vessel, is filtered, washed and squeezed while the water medium is removed from the bottom of the solvating vessel and dispersion-stabilizing agent replenished.

3,434,524
CURTAIN SUSPENSION DEVICE
Harvey C. Fein, 10 Sprague Drive, Valley Stream, N.Y. 11580
Continuation-in-part of application Ser. No. 571,543, Aug. 10, 1966. This application July 14, 1967, Ser. No. 659,271
Int. Cl. E05d *13/02, 15/06;* **A47h** *13/16*
U.S. Cl. 160—345 **9 Claims**



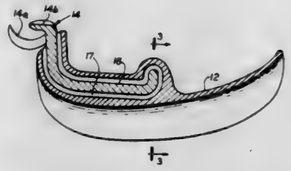
A curtain suspension device is provided for imparting a simulated pleated appearance to a curtain. A plurality of hangers are slidably mounted in a track and are interconnected by a flexible string or tape. A plurality of support elements are attached to the curtain with each support element removably suspended from a hanger element.

3,434,525
DISPOSABLE CURTAIN
Peter Graff, Dusseldorf, and Peter Bottcher, Kleinenbroich, Germany, assignors to Feldmuhle Aktiengesellschaft, Dusseldorf, Germany
Filed Dec. 26, 1967, Ser. No. 693,507
Int. Cl. A47h *13/00, 13/14*
U.S. Cl. 160—388 **2 Claims**



A disposable curtain of non-woven textile sheet material whose edge is reinforced by a folded reinforcing member of U-shaped cross section. Eyelets are arranged in pairs spaced along the edge reinforcement much farther apart than the spacing of the eyelets in each pair, and each pair is engaged by a common hanger to form folds in the curtain. The eyelets pass through a portion of the folded reinforcing member which projects beyond the edge of the curtain body.

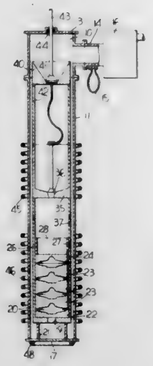
3,434,526
METHOD OF MAKING CAST MOVABLE JOINT
Emil M. Prosen, Bala-Cynwyd, Pa., assignor to Nobilium Products, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 54,229, Sept. 6, 1960. This application Mar. 15, 1965, Ser. No. 444,900
Int. Cl. B22d *31/00, 23/06;* **B22c** *9/12*
U.S. Cl. 164—69 **3 Claims**



1. The method of forming a removable dental restoration having a tooth clasp and a supporting part for the clasp, in which restoration the supporting part has a socket therein and the clasp has a projection of a shape similar to, smaller than and engaged non-removably in said socket so as to a provide for limited free play movement of the supporting part in all directions relative to said projection, said method comprising first preforming a casting by the lost wax technique of the clasp and its projection from a wax-up of the clasp and its projection on a refractory model, coating the projection on the clasp with a chemically soluble high heat-resistant refractory substance to a thickness corresponding to the extent of movement desired for the supporting part relatively to the clasp, firing said refractory substance, mounting the cast coated clasp on the aforementioned refractory model, forming a wax-up of the supporting part around the coated projection investing the resulting model, melting

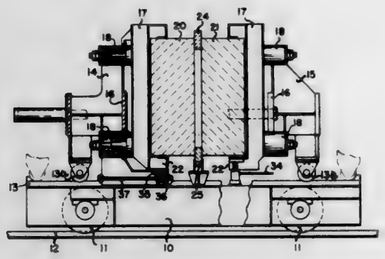
out the wax to provide a mould, casting the supporting part around the coated projection on the clasp, removing the casting from the mould and dissolving away the refractory coating substance to provide a pocket clearance in said casting corresponding to the thickness of said heat-resistant refractory coating.

3,434,527
METHOD FOR ULTRA-HIGH PURITY PRECISION CASTING
Edward L. Bedell, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 6, 1966, Ser. No. 519,133
Int. Cl. B22d *27/16, 27/04*
U.S. Cl. 164—69 **3 Claims**



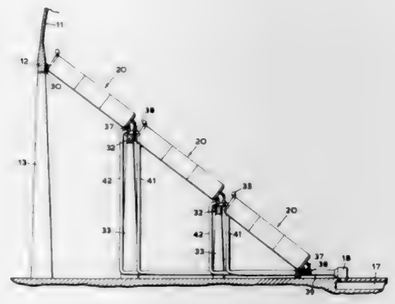
A process and apparatus for vacuum casting a plurality of high purity metal parts wherein the metal is cast into a plurality of preheated, vertically oriented, side-fed mold cavities subjected to a high vacuum environment. Each mold cavity is provided with a blind riser extending upward from the upper mold surface. The cooling of the cast metal is controlled so that solidification advances slowly from the lower and outer portions of the cavity and terminating completely within the blind riser. The controlled solidification causes the nonvolatile impurities to be concentrated in the blind riser, which is subsequently cut from the main body of the casting.

3,434,528
MOLD STRUCTURE LEVELING DEVICE
William Stone McGeeney, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1966, Ser. No. 555,484
Int. Cl. B22d *33/00;* **B22c** *21/10, 21/08*
U.S. Cl. 164—339 **2 Claims**



The present disclosure provides a device for leveling and maintaining a mold element in a predetermined position. More particularly, it provides in a mold assembly, including at least one mold and a pouring gate, a flask for carrying said mold, a frame for supporting the flask in a manner to allow movement thereof relative to the frame, a first means for moving said flask relative to said gate to position the mold with respect to said gate, and a second means for maintaining the flask in the obtained position. In the preferred form of the present disclosure, there is provided a carriage movable relative to a pouring station which includes a pouring gate, said carriage including a longitudinal frame, a upright flask carried by said frame, a mold block carried by said flask, said mold block at its one end assuring a sealed condition with a portion of the pouring gate, means arranged at one end of said carriage engageable with said flask for raising and lowering the flask to level said mold relative to said pouring gate, separate holding means for said flask arranged at the bottom thereof and between said carriage for maintaining the mold in its leveled position.

3,434,529
DRY COOLING TOWERS
John Harold Daltry, Rugby England, assignor to The English Electric Company Limited, London, England, a British Company
Filed Dec. 12, 1966, Ser. No. 600,818
Claims priority, application Great Britain, Dec. 14, 1965, 53,046/65
Int. Cl. F28C *5/00*
U.S. Cl. 165—47 **2 Claims**



Referring to the drawings, in a dry cooling tower the base of the tower shell **10** is supported clear of the ground to provide a peripheral opening and coolers **20** are disposed around and within said peripheral opening. The coolers **20** are grouped in sectors **19** each comprising a plurality of rows, said rows being at different levels so that, between them, they extend over the height of said peripheral opening. Each row is provided with a pair of water ring mains **37**, **38** which extend parallel to and adjacent the lower end of said row and each cooler of said row is connected at its lower end across said ring mains. The arrangement of the present invention provides a dry cooling tower in which the coolers have good thermal and hydraulic performance.

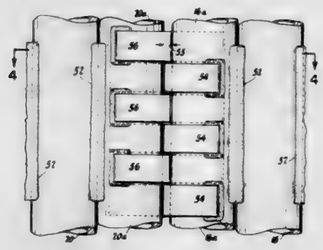
3,434,530
ENVIRONMENTAL GROWTH CHAMBER CONSTRUCTION
Noel Davis, Russell Township, Geauga County, Ohio, assignor to Integrated Development and Manufacturing Co., Chagrin Falls, Ohio, a corporation of Ohio
Filed Mar. 8, 1967, Ser. No. 621,493
Int. Cl. F24f *3/14;* **F28f** *13/12*
U.S. Cl. 165—60 **4 Claims**

The invention is directed to an environmental growth chamber adapted to provide controlled conditions of temperature, humidity and light for biological testing purposes. This chamber includes one or more modular self-contained housing units adapted to be readily placed in and removed from the chamber. Each of the modular units comprises an elongated, box-like structure having an air inlet and an air outlet and means for modifying the



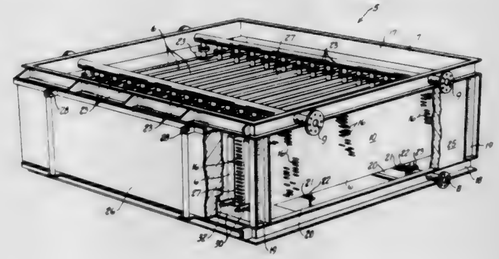
temperature and humidity of the air passing therethrough. These temperatures and humidity modifying means include a first cooling means located adjacent the air inlet and adapted to cool the air to a point above the dewpoint of the air. Also included is a second cooling means located downstream of the first cooling means and adapted to further cool the air to a point slightly below the final required dewpoint.

3,434,531
SEMIRIGID TUBE SUPPORTING TIE
Frank W. Hochmuth, West Simsbury, and Jay H. Freiday, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed June 22, 1967, Ser. No. 648,111
Int. Cl. F28f *9/00*
U.S. Cl. 165—67 **6 Claims**



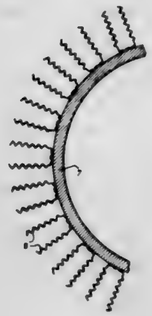
A tube supporting tie for transversely tying together two closely spaced parallel tubes having a near side and a far side. The tie comprises at least one right-hand S-shaped strap bridging the near side of the one tube and the far side of the other tube, and a left-hand S-shaped strap bridging the near side of the other tube and the far side of the one tube, whereby differential or transverse displacement of the tubes will primarily produce tensional stresses only.

3,434,532
HEAT EXCHANGER FOR WASTE HEAT RECOVERY
Per Henriksson, Kungsangen, Sweden, assignor to David Dalin, Vensberg, Tosse, Sweden
Filed Mar. 23, 1967, Ser. No. 625,354
Int. Cl. F28f *3/00*
U.S. Cl. 165—75 **4 Claims**



A heat exchanger having modular heat exchange elements, each consisting of a pair of rectangular flat plates and narrow end, top and bottom wall members that cooperate with the plates to define a box-like chamber. The modules are arranged in side-by-side relation with their plates parallel, to define channels between them through which hot gas can flow, and they are connected at their bottoms with a feed water inlet and at their tops with a steam or hot water outlet. Extended surface elements project outwardly from the plates for high heat transfer efficiency.

3,434,533
GILLED PIPES FOR HEAT EXCHANGE
Edmond Pignal, Thonon-les-Bains, Haute-Savoie, France, assignor to Biraghi (Societe Anonyme), Paris, France, a company of France
Filed Nov. 9, 1966, Ser. No. 593,138
Claims priority, application Switzerland, Nov. 26, 1965, 16,369/65
Int. Cl. F28f *1/14*
U.S. Cl. 165—183 **2 Claims**



In order to increase the heat exchange coefficient and the mechanical strength characteristics of heat exchangers,

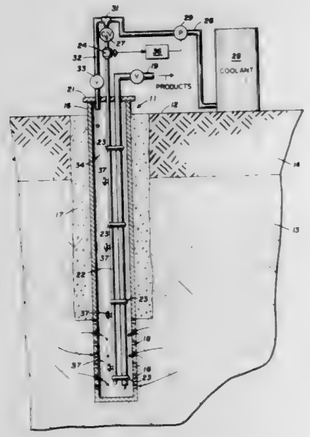
the invention provides gills or fins that have corrugated legs and an integral foot portion including at least two parallel and axially extending and outwardly protruding ribs adapted to be welded to the surface of the heat exchange tube.

3,434,534

SYSTEM FOR AUTOMATIC INJECTION OF COOLANT INTO THERMAL RECOVERY WELLS

George R. Hollabaugh, Irving Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Dec. 26, 1967, Ser. No. 693,369
Int. Cl. E21b *7/18, 43/24, 43/25*
U.S. Cl. 166—53 10 Claims



A system for the automatic injection of a coolant into a thermal recovery well to control downhole temperatures. A tubing string provides for the withdrawal of products of the thermal recovery procedure from the well. A conduit mounted on the tubing string is filled with a heat-expansible fluid. The change in pressure of the fluid, by its expansion at certain temperatures, in this conduit is a signal to begin introduction of coolant into the well. For example, a pressure relief valve may be connected to the conduit and it remains closed when the temperature within the well is less than a specified temperature. The valve opens at an increased pressure when the fluid within the conduit expands to reflect temperatures greater than the specified temperature. The open valve generates a signal as a change in pressure by venting fluid from the conduit into the well. Flow control means, upon occurrence of this signal, introduce a coolant into the well to control downhole temperatures.

3,434,535

MULTIPLE TUBING STRING SUPPORT AND SAFETY VALVE INSTALLATION

John S. Page, Lakewood, Calif.; Eulah N. Page, executrix of the will of said John S. Page, deceased, and sole heir of the estate of said John S. Page, assignor, by mesne assignments, to Cook Testing Co., Long Beach, Calif., a corporation of Nevada

Filed Apr. 3, 1967, Ser. No. 627,893
Int. Cl. E21b *43/12*
U.S. Cl. 166—72 7 Claims

The disclosure concerns installation in a well fluid pressurized tubing string of a control fluid pressure responsive sub-surface safety valve, without killing the well,



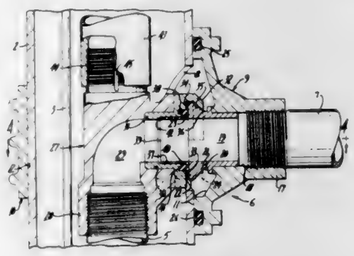
and in such manner that the sub-surface string will not be disturbed despite great damage to the well head.

3,434,536

WELL SYSTEM COUPLER

Howard A. Tubbs, 406 S. Elizabeth St., Whitewater, Wis. 53190

Filed Apr. 17, 1967, Ser. No. 631,218
Int. Cl. E21b *41/00*
U.S. Cl. 166—88 9 Claims



A coupler for connecting supply and delivery pipes in a well system, wherein a saddle having a male coupling is attached to the well casing and a female coupling attached to the supply pipe is lowered onto the male coupling. Locating pins on the saddle position the latter relative to an opening in the casing, and a sealing ring of flowable rubber seals the saddle to the casing. The male and female couplings are press fit into supporting structure of cast metal.

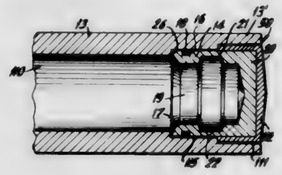
3,434,537

WELL COMPLETION APPARATUS

Solis Myron Zandmer, 111 Glen Ave., Banff, Alberta, Canada

Filed Oct. 11, 1967, Ser. No. 674,586
Int. Cl. E21b *33/12, 33/13*
U.S. Cl. 166—100 12 Claims

Well completion apparatus of the kind wherein a bore hole casing is adapted to be positioned in a bore hole and duct forming devices of acid resistant metal are secured to the casing in alignment with holes in the casing wall. The invention provides for a novel plug construction for temporarily closing the duct forming devices. The plugs are of acid soluble metal, have an annular zone of reduced radial thickness and are press-fitted into a complementarily shaped opening of the duct forming devices. The external free surface of the plug is covered by a relatively thin metallic cover member press-fitted into a space formed between the wall of the duct forming device and the plug, the cover member protecting the plug from mud attack.



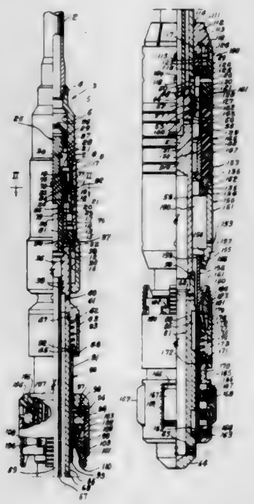
The invention also discloses a novel safety cap construction for temporarily closing the end of the duct forming device adjacent the casing, the safety cap comprising a plurality of narrow passages permitting flow of fluid from the interior of the casing into the duct forming device but preventing entry of liquid or solid matter into the interior of the casing.

3,434,538

RETRIEVABLE BRIDGE PLUG

Marion D. Kilgore and Robert C. Pumpelly, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Sept. 26, 1966, Ser. No. 581,849
Int. Cl. E21b *33/124, 33/128, 41/00*
U.S. Cl. 166—123 13 Claims



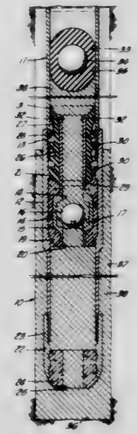
A retrievable bridge plug that is arranged to be run into a well bore to isolate a portion of the well bore. The bridge plug can be set in compression and/or tension and includes, in addition to a deformable packing member, upper and lower toothed slips that are engageable with the wall of the well bore to prevent movement of the bridge plug therein. The bridge plug is run into the well bore on a running tool that is connected to the tubing string. The running tool is releasably connected to the bridge plug so that it can be removed therefrom after the bridge plug is set. A valve mechanism, carried by the bridge plug, is operated by the running tool. When the running tool is connected, the valve is open permitting fluid to pass through the mandrel to equalize the pressure across the bridge plug. The valve is closed upon removal of the running tool from the plug. A by-pass passageway extends through the bridge plug between the packing member and mandrel permitting the plug to be moved through the well bore more rapidly. A by-pass valve, carried by the mandrel closes the by-pass passageway when the bridge plug is set.

3,434,539

PLUGS FOR USE IN TREATING WELLS WITH LIQUIDS

John B. Merritt, Rolling Hills, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware

Filed Mar. 6, 1967, Ser. No. 620,865
Int. Cl. E21b *33/16*
U.S. Cl. 166—153 9 Claims



A top plug having a rigid, spherical core surrounded by a concentric, resilient shell separates an underlying column of well treating liquid, such as cement grout, from an overlying column of pumped fluid in a well casing. A collar member, either formed as a part of the casing or provided by a bottom cementing plug, has a passage for discharging the treating liquid from the casing into the well bore. After the liquid has been displaced, the top plug closes this passage and stalls the pump. The top plug is non-extrudible through the passage.

3,434,540

SAND CONTROL METHOD USING A PARTICULATE PACK WITH EXTERNAL AND INTERNAL PARTICLE SIZE DISTRIBUTION RELATIONSHIPS

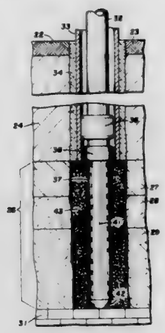
Nathan Stein, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Oct. 12, 1967, Ser. No. 674,800
Int. Cl. E21b *47/00, 43/04*; B01d *23/10*
U.S. Cl. 166—250 5 Claims

A method for controlling the movement of solid particles by fluid flowing from a subterranean formation into a wellbore. A particulate pack is placed in the wellbore to rest against the formation. The pack is formed of particles arranged with a particle size distribution so that:

(1) the particle size of the 15 weight percentile of the fines in the distribution of the pack's particles is less than four times the particle size of the 85 weight percentile of the fines in the distribution of the formation's particles, and

(2) the pack's particles have a particle size distribution that, in all divisions thereof about any particle size into coarser and finer fractions, the particle size of the 15 weight percentile of the fines in the coarser fraction is less than four times the particle size of the 85 weight percentile of the fines in the finer fraction.



A separate pack may be provided for each strata comprising the formation. However, one pack may serve all strata forming the formation but with the pack's design being based upon the strata with the smaller particle size of the 85 weight percentile of the fines in the particle size distribution of such strata.

3,434,541
IN SITU COMBUSTION PROCESS
Evin L. Cook and Alvin W. Talash, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Oct. 11, 1967, Ser. No. 674,630
Int. Cl. E21b *43/00, 43/16, 43/24*
U.S. Cl. 166—256 **11 Claims**

This specification discloses an in situ combustion process in which the production well or wells are alternately choked and opened to effect an increase in oil recovery. The production well is choked, preferably to the extent of shutting it in, until an increase in bottomhole pressure of at least 10 atmospheres is obtained. Thereafter, the production well is opened and hydrocarbon fluids are recovered therefrom as the bottomhole pressure declines. Preferably, the choking step is instituted after gas permeability is established between the injection and production wells. Also, the choking and opening steps may be repeated at appropriate intervals during the process.

3,434,542
WATERFLOOD PROCESS EMPLOYING SURFACTANT AND GRADED VISCOSITY
Billy J. Dotson, Grand Prairie, and Carl Connally, Jr., Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Oct. 9, 1967, Ser. No. 673,944
Int. Cl. E21b *43/20*
U.S. Cl. 166—273 **13 Claims**

This specification discloses an improvement in a method of waterflooding a subterranean formation to recover oil therefrom. The improvement comprises employing a surfactant solution to improve the microscopic displacement efficiency and a solution of a thickening agent to alleviate premature breakthrough. The surfactant is a mixture of petroleum sulfonates having a median molecular weight of from about 375 to about 430, having molecular weights from 290 to 590, no more than 10 percent by weight thereof having an average molecular weight less than 290, and no more than 15 percent by weight thereof having an average molecular weight greater than 590. The thickening agent is the heteropolysaccharide designated polysaccharide B–1459. The polysaccharide B–1459 is employed in diminishing concentrations to provide a graded viscosity between that of the oil and that of the flooding water.

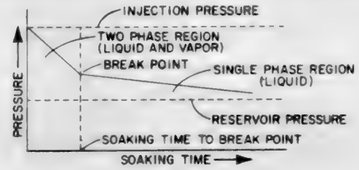
3,434,543
METHOD AND APPARATUS FOR SEPARATING SECTIONS OF WELL PIPE
Derrel D. Webb, Houston, Tex., assignor to Houston Engineers, Inc., Houston, Tex.
Filed Mar. 14, 1966, Ser. No. 534,189
Int. Cl. E21b *23/04, 33/12, 43/00*
U.S. Cl. 166—277 **10 Claims**



A method and apparatus for separating threadedly connected sections of pipe in which a tool comprising a body having upper and lower dogs carried therefrom is lowered into a well pipe on a running string so as to dispose such dogs opposite the threadedly connected sections above and below a specific threaded connection, respectively. The dogs are urged outwardly into griping engagement with such pipe sections by means of hydraulic fluid conducted downwardly through the running string. The running string is then rotated to urge the upper and lower dogs, when so engaged, in opposite rotational directions so as to unscrew the upper pipe section from the lower pipe section. Preferably, the string is so rotated in a right-hand direction so as to urge the upper dogs in a left-hand direction and the lower dogs in a right-hand direction. The dogs are carried from the body of the tool for longitudinal movement relative to one another as the pipe sections are unscrewed.

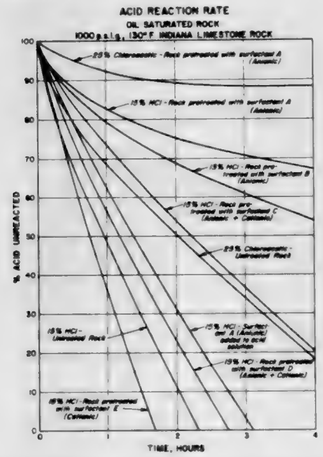
3,434,544
METHOD FOR CONDUCTING CYCLIC STEAM INJECTION IN RECOVERY OF HYDROCARBONS
Abdus Satter and Forrest F. Craig, Jr., Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,835
Int. Cl. E21b *43/24*
U.S. Cl. 166—303 **3 Claims**

In the cyclic method of steam stimulation of an oil well steam is injected for a period of from several days to several weeks, then stopped and usually after a time—generally a few days—during which the steam is allowed to diffuse through the formation, the well is produced. There is considerable uncertainty in the art as to how long this soak period should be to secure efficient production. Too short a period of soaking is wasteful, much of the injected heat is lost in the initial production of live steam. Too long a soaking period allows the temperature to drop too low to obtain any value from oil viscosity reduction. The process described teaches a means for a definite determination



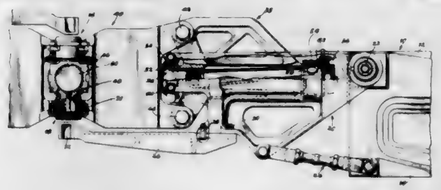
of conditions under which both maximum heat utilization and oil recovery can be obtained.

3,434,545
ACID TREATING SUBTERRANEAN FORMATIONS
Caurino C. Bombardieri, Calgary, Alberta, Canada, assignor to Esso Production Research Company, a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,770
Int. Cl. E21b *43/27, 43/22*
U.S. Cl. 166—307 **15 Claims**



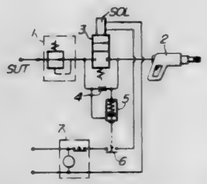
An acid treating process in which a surface active agent is injected into a subterranean formation surrounding a fluid injection or production well, the surfactant is followed with a hydrocarbon oil, the injected fluids are held in the formation for an extended period, and an acid solution is thereafter injected into the formation behind the oil.

3,434,546
ROTOR BLADE GRIP BEARING
George L. Rodriguez, Arlington, and Richard W. Pitt, Fort Worth, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Sept. 14, 1966, Ser. No. 579,327
Int. Cl. B64c *11/06, 11/32*; F16c *27/02*
U.S. Cl. 170—160.58 **5 Claims**



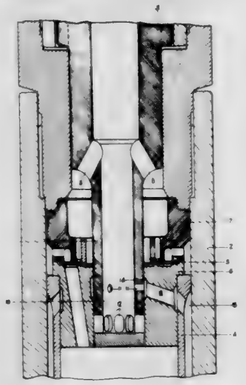
A full floating sleeve bearing incorporated in the cyclic pitch change bearings for helicopter rotors avoids concentrated wear areas on the bearings and reduces feedback forces to the pilot's controls.

3,434,547
TORQUE CONTROL DEVICE FOR AIR WRENCHES
Tetsuo Mitani and Masao Kato, Kobe-shi, Japan, assignors to Kobe Steel, Ltd., and The Nippon Airbrake Co., Ltd., Kobe-shi, Japan
Filed Mar. 27, 1967, Ser. No. 626,189
Claims priority, application Japan, Apr. 2, 1966, 41/21,861
Int. Cl. B23q *5/06*; F15b *21/02*
U.S. Cl. 173—12 **1 Claim**



A torque control device for a pneumatic wrench with a pressure reducing valve for regulating the pressure of air to be supplied to the wrench, a change-over valve provided in a passage for the air, and a timer adapted to actuate the changeover valve in response to a pressure variation in the passage and to return the changeover valve to its original position after expiration of a predetermined period of time, so that the pneumatic wrench operates under a certain pressure of the air supplied for a predetermined period of time. A specific embodiment includes a ratchet-type switch inserted in the electric circuit for energizing and de-energizing the changeover valve, which cooperates with the timer.

3,434,548
DOWN-THE-HOLE ROCK DRILL WITH FLUSHING FLUID BYPASS CONTROL
William J. Thomas, Florida North, Transvaal, and Louis B. Botha, Craighall Park, Johannesburg, Transvaal, Republic of South Africa, assignors to Thos. Barlow and Sons Limited, Braamfontein, Johannesburg, Transvaal, Republic of South Africa
Filed Oct. 11, 1967, Ser. No. 674,480
Claims priority, application Republic of South Africa, Oct. 19, 1966, 66/6,324
Int. Cl. E21b *9/35, 21/00*; B25d *17/14*
U.S. Cl. 173—18 **7 Claims**



In a down-the-hole drilling hammer there is a permanent restricted bypass for live actuating fluid from ahead of the valve chest to the drill bit and a second bypass

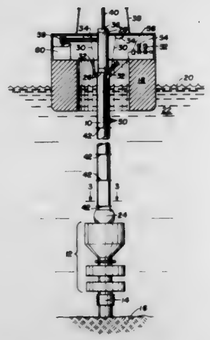
which offers very low resistance to the flow of fluid, the second bypass being opened when the hammer is lifted off the bottom of the hole that is being drilled.

3,434,549
SHOTHOLE DRILLING METHOD
Raymond E. Lowe, Livingston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 29, 1966, Ser. No. 568,938
Int. Cl. E21b 47/00, 7/00
U.S. Cl. 175—1 4 Claims



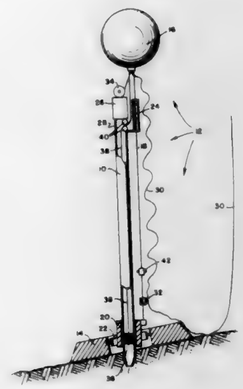
A method of drilling and explosively charging a seismic shothole wherein a shothole is drilled in the earth with a non-coring bit having a removable center portion obstructing a central fluid course through a drill string associated with the bit, removing the center portion to a non-obstructing position after the hole has been drilled, lowering an explosive charge through the drill string course and the bit to the hole bottom, and removing the string, bit and center portion from the shothole prior to detonating said explosive charge.

3,434,550
METHOD AND APPARATUS FOR LIGHTENING THE LOAD ON A SUBSEA CONDUCTOR PIPE
Robert D. Townsend, Jr., Esher, England, assignor to Mobil Oil Corporation, a corporation of New York
Filed June 6, 1966, Ser. No. 555,305
Int. Cl. E21b 7/12, 15/02; E21c 19/00
U.S. Cl. 175—5 8 Claims



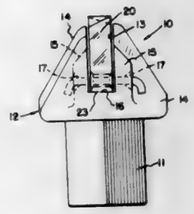
This specification discloses a subsea conductor pipe communicating between a borehole in the formations underlying a marine bottom and a surface facility to provide a guide for a drill string suspended therein and for transporting drilling mud back to the surface facility from the borehole. Means are provided for injecting gas into the conductor pipe, at the lower end thereof, for lessening the weight of the contained drilling mud to lower the tensioning force necessary to prevent a structural or buckling failure of the conductor pipe. The gas utilized can be air, or when desirable, an inert gas. The gas can be injected only at the bottom of the conductor pipe or at spaced axial intervals to lighten the drilling mud in a program that would result in a hydrostatic head approximating that of the surrounding sea water.

3,434,551
BUOYANT CORING APPARATUS
Andre M. Rosfelder, La Jolla, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 26, 1967, Ser. No. 649,438
Int. Cl. E21b 7/12, 9/20, 25/00
U.S. Cl. 175—6 10 Claims



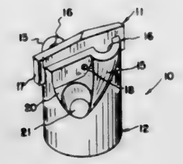
The description discloses a buoyant rig for supporting coring operations of an underwater coring barrel. The buoyant rig includes a float and a bottom weighted stand which are interconnected by at least one guide wire. The core barrel slidably extends through the weighted stand and is positioned parallel to the guide wire and is slidable therealong by a guide means. When the core barrel is powered the barrel will be guided along the guide wire as it penetrates the ocean bottom. A gimbal connection between the core barrel and the stand for uneven ocean bottoms and the guide wire may be separated from the stand after a sample is obtained so that the float will raise the core barrel and the remaining rigging apparatus to the ocean surface.

3,434,552
SELF-CENTERING CUTTER BIT FOR DRILLS
Arnold B. Bower, Jr., St. Clair Shores, Mich., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1967, Ser. No. 621,619
Int. Cl. E21c 13/01
U.S. Cl. 175—410 4 Claims



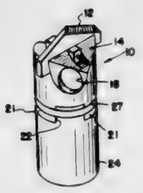
A self-centering cutter bit for drills, useful in drilling mine roof bolt holes, comprising a cutter bit having its head provided with an open, transverse slot which loosely receives a removable, plate-like cutter insert, the insert being loosely fastened by a pin extending through an oversized hole formed in the insert to permit limited endwise movement of the insert, wherein the insert self-centers relative to the axis of the cutter bit during drilling.

3,434,553
DRILL CUTTER BIT
Elbert J. Weller, Detroit, Mich., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1967, Ser. No. 621,620
Int. Cl. E21c 13/01
U.S. Cl. 175—410 2 Claims



The end of the tubular drill shaft used, for example, in rock drilling is bent and configured to support and receive a cutter insert directly, thereby eliminating the use of a separate holder upon which the cutter is normally mounted. The end of the drill shaft is also configured to form a passage to the interior of the shaft for dust removal.

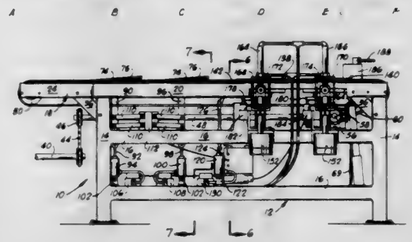
3,434,554
CUTTER BIT FOR DRILLS
Arnold B. Bower, Jr., St. Clair Shores, Mich., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1967, Ser. No. 621,621
Int. Cl. E21c 13/01
U.S. Cl. 175—410 3 Claims



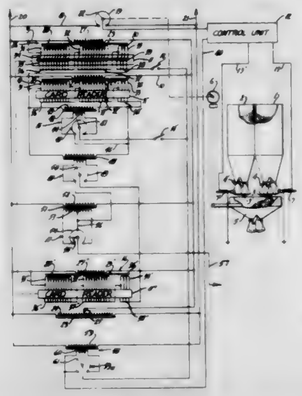
A hollow, closed-top holder having a hard carbide cutter insert fastened to its upper end, with its lower end formed for releasably fastening to the upper end of a hollow, rotary drill shaft, and with openings formed in the holder, closely adjacent to its upper end below the insert, for passing fluid through the holder and drill shaft for thereby removing dust formed at the cutter insert.

3,434,555
TRIMMING WEIGHING MACHINE
Luther E. Wyatt, Oklahoma City, Okla., assignor to Smico, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Jan. 19, 1967, Ser. No. 610,420
Int. Cl. G01g 13/24
U.S. Cl. 177—52 21 Claims

A machine for automatically and continuously positioning a plurality of partially filled bags or containers in a position to receive trim material as required to top off the containers and bring them up to a desired final weight. A framework of the machine has an elongated, horizontally conveying conveyor movably mounted thereon so that the conveyor can be moved bodily in a vertical direction relative to the framework. Vertically movable container arresting platforms are provided for lifting containers from the conveyor at preselected times during their movement therealong, and means is provided for subsequently establishing relative movement between the conveyor and container arresting platforms so that the containers are relocated on the conveyor with a desired distance separating them. Movable scale platforms correspondingly spaced from each other are also mounted on the framework for vertical movement relative to the framework and the conveyor, and are positioned relative to the container arresting platforms so that containers relocated on the conveyor after being arrested by the container arresting platforms then move to a position over the scale platforms. Means are provided for moving the conveyor and scale platforms relative to each other to transfer the containers to the scale platforms from the conveyor. An electro-mechanical system of synchronization is provided so that the movements of conveyor, container arresting platforms and scale platforms are synchronized.



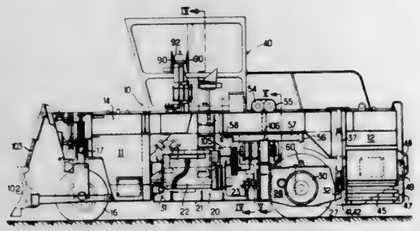
3,434,556
BATCHING CONTROL SYSTEM
Alton G. Bale, Jr., Greendale, Wis., assignor to Wisconsin Electrical Mfg. Co., Inc.
Filed Mar. 22, 1965, Ser. No. 441,461
Int. Cl. G01g 19/38
U.S. Cl. 177—70 18 Claims



A material batching system having quantity preset transformers for various materials. Each transformer includes a primary winding and an isolated tapped secondary. The primaries are connected in parallel to an adjustable batch size transformer. The secondaries are divided into separate typed sections and selectively connected in an output circuit through a punch code card reader in which the material to be delivered is coded. The alternating current outputs of the several preset transformers are selectively and sequentially inserted into

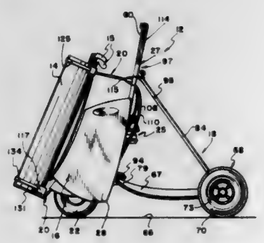
a balancing circuit with the A.C. signals cumulatively connected as successive materials are delivered. Moisture compensating transformers are connected in circuit with the preset transformers to compensate for moisture in the products and further may include a "slump" compensating potentiometer for minor adjustment of water variations in a given batch.

3,434,557
SELF-PROPELLED COMPACTOR ROLLER
Jean Michel Paramythioti, Paris, France, assignor to Societe Anonyme des Anciens Etablissements Albaret, Rantigny, France, a French corporation
Filed Mar. 24, 1967, Ser. No. 625,867
Claims priority, application France, Apr. 5, 1966, 56,413
Int. Cl. B62d *11/04, 57/00*
U.S. Cl. 180—6.48 11 Claims



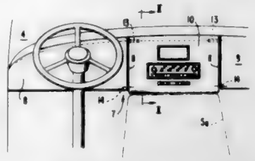
A self-propelled compactor roller for both depth and finish compacting, having sets of steering and driving wheels with respect to which a chassis is supported by fluid-actuated jacks, two driving units being mounted to either side of the longitudinal axis of the chassis, each unit being articulated on the chassis about an axis parallel to said longitudinal axis, each unit having wheels constituting the driving wheels.

3,434,558
COLLAPSIBLE SELF-POWERED VEHICLE STRUCTURE
John F. Allen, Municipal Airport, McPherson, Kans. 67460
Filed Nov. 28, 1966, Ser. No. 597,253
Int. Cl. B62d *61/06;* B62k *15/00*
U.S. Cl. 180—26 7 Claims



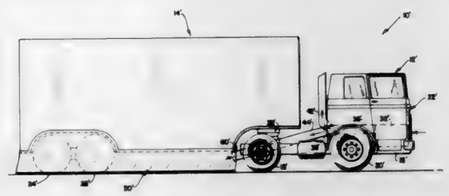
This invention is a collapsible self-powered vehicle including a support frame; wheel members mounted on the support frame; a motor means mounted on the support frame connected to the wheel members to drive the same; an upright handle member connected to the frame; a support platform mounted on wheel means releasably connected to the support frame; and a stabilizer member pivotally connected to the frame and the handle member in order to maintain the platform in a trailing position. More specifically, this invention is a portable vehicle including a generally horizontally extended support platform to receive the operator thereon and having the same releasably connected to a main drive unit so as to be movable to a generally upright position for storage and transporting purposes.

3,434,559
INSTRUMENT PANEL OF VEHICLES, ESPECIALLY COMMERCIAL-TYPE VEHICLES
Hans Froitzheim, Sindelfingen, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 25, 1966, Ser. No. 574,992
Claims priority, application Germany, Aug. 27, 1965, D 48,066
Int. Cl. B62d *25/14;* B60k *37/00*
U.S. Cl. 180—90 15 Claims



An instrument panel for commercial vehicles of the type having a cab mounted over the front wheels or of short-hood construction, such that the engine, drive train and the cover therefor extend into the driver's compartment, wherein at least that portion of the instrument panel which is disposed above the engine cover is mounted pivotably upon a fixed vehicle part, so that it may be swung away from the engine cover to render the engine and drive train readily accessible from within the driver's compartment.

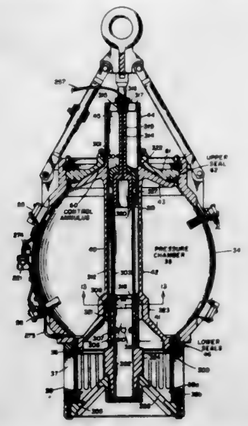
3,434,560
TRACTOR-TRAILER WITH GROUND EFFECT DEVICE
Willard F. Rockwell, Jr., Pittsburgh, Pa., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,693
Int. Cl. B60v *1/00;* B60d *1/08*
U.S. Cl. 180—119 2 Claims



A tractor-trailer over-the-road vehicle in which a ground effect device is employed to selectively relieve a portion of the load on the trailer wheels while retaining sufficient traction for normal directional control and braking. Control means in the tractor permits instantaneous deactivation of the ground effect device when additional trailer wheel traction is required.

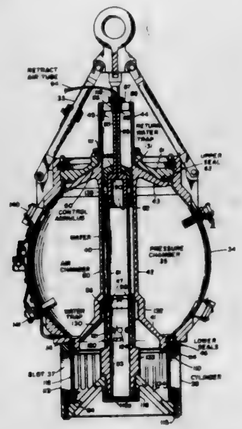
3,434,561
FUEL MIXING AND IGNITION SYSTEM IN PNEUMATIC ACOUSTIC SOURCE
George B. Loper, Duncanville, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Aug. 28, 1967, Ser. No. 663,663
Int. Cl. G10k *11/00*
U.S. Cl. 181—.5 14 Claims

The specification discloses a repetitive acoustic source having a chamber in which an air-diesel fuel mixture is ignited to form high pressure gasses which are rapidly released through a port by a quick-acting valve to generate an acoustic pulse in water. The fuel mixing and ignition system comprises an arrangement for injecting air in a swirling path in the chamber and a plurality



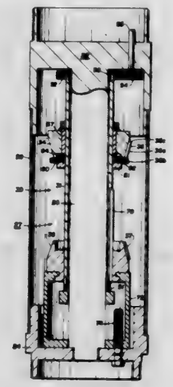
of diesel fuel injectors and igniters alternately located in two spaced planes. Shields are provided to shield each igniter from the direct air to reduce cooling of the igniters. Each injector injects diesel fuel toward an igniter in an opposite plane on a side unobstructed by an associated shield.

3,434,562
AIR FEED DEVICE FOR VALVE RETRACT SYSTEM IN PNEUMATIC ACOUSTIC SOURCE
Malcolm O. Johnson, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Aug. 28, 1967, Ser. No. 663,677
Int. Cl. G10k *11/00*
U.S. Cl. 181—.5 1 Claim



The specification discloses a repetitive marine acoustic source formed by a rigid chamber for confining high pressure gases and having a controllable spool-shaped valve for rapidly releasing the high pressure gases into the water to generate an acoustic pulse. The valve has an aperture extending axially therethrough in which is secured a retract piston slidably mounted within a retract chamber. Gas is fed to the retract chamber through the top of the source by way of a flexible conduit and an aperture extending through the retract piston for retracting the spool-shaped valve to its closed position following the generation of an acoustic pulse.

3,434,563
ACOUSTIC WELL LOGGING TOOL
Joseph Zemanek, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 29, 1967, Ser. No. 641,988
Int. Cl. G01v *1/00*
U.S. Cl. 181—.5 6 Claims

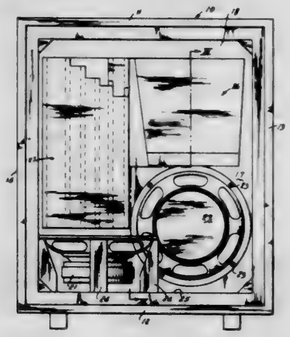


This specification discloses an acoustic logging tool of the type having spaced transmitting and receiving transducers. The transducers are inclined toward one another and the logging tool includes acoustic attenuating means for reducing acoustic cross-feed between the transducers. The attenuating means comprises a baffle member interposed between the transducers and positioned adjacent one of the transducers.

ERRATUM

For Class 181—.5 see:
Patent No. 3,434,568

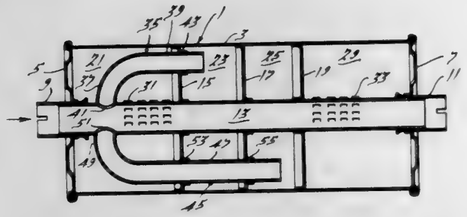
3,434,564
SOUND REPRODUCTION SYSTEM
Edward L. Sechrist, R.R. 3, Goshen, Ind. 46526
Filed Mar. 25, 1968, Ser. No. 715,856
Int. Cl. G10k *13/00;* H04r *7/16*
U.S. Cl. 181—31 6 Claims



A sound reproduction system having a housing with a lateral slot in one face thereof near the top, the housing enclosing a plurality of moving cone speakers, one of

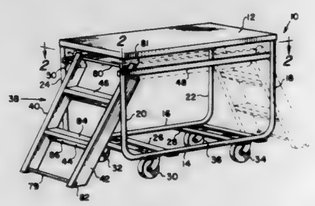
which projects sound waves through the front of the housing near the bottom thereof, and the other of which faces upwardly and projects sound waves toward the top of the housing from the bottom thereof, a plurality of resonance chambers located within the housing, one of which is positioned above the front sound projecting speaker between the speaker and the slot and the other of which is positioned above the upwardly facing speaker and contains a plurality of individual resonance chambers, each of which differs in size from the other.

3,434,565
SILENCER WITH ANGLED TUNING TUBE LEADING TO HELMHOLTZ RESONATOR
Richard L. Fischer, Jackson, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Dec. 21, 1967, Ser. No. 692,361
Int. Cl. F01n *1/00*
U.S. Cl. 181—48 **1 Claim**



Low frequencies are silenced in an exhaust gas muffler by means of a resonator chamber connected to the exhaust gas stream by a tuning tube which is bent at a right angle, to obtain a maximum length of tuning tube in a minimum length of muffler.

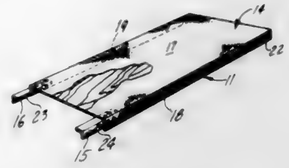
3,434,566
SUPPORT APPARATUS
Frank P. Miller, 331 W. Leakwood Ave., La Habra, Calif. 90631
Filed June 5, 1967, Ser. No. 643,601
Int. Cl. E04g *3/16, 3/00;* **A64c** *1/00*
U.S. Cl. 182—15 **10 Claims**



A support apparatus such as a movable cart having associated therewith a step ladder which is arranged to be concealed under the top of the cart or inclined at opposite ends of the cart.

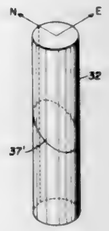
3,434,567
WORK PLATFORM FOR SCAFFOLDS
William B. Wilkins, Roxboro, N.C., assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 9, 1966, Ser. No. 600,443
Int. Cl. A64b *7/16;* **E04g** *1/16, 5/08*
U.S. Cl. 182—222 **7 Claims**

A work platform adapted to attach to horizontally spaced elements of a scaffold and of composite laminated construction providing an outer skin of sheet metal and inner laminae of wood or other low-cost laminating material. The platform is shaped and arranged to correlate



its tread surface in contiguous relation with the tread surface of another similar platform in horizontal series relation therewith in the same scaffold.

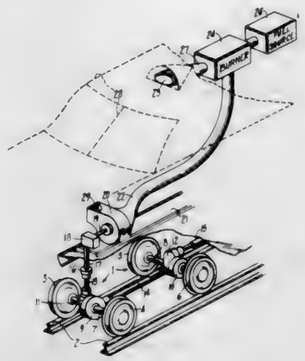
3,434,568
THREE-DIMENSIONAL DISPLAY OF BOREHOLE LOGS
Richard L. Caldwell, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 30, 1966, Ser. No. 583,284
Int. Cl. G01v *1/34*
U.S. Cl. 181—.5 **2 Claims**



The specification discloses the formation of a three-dimensional light transparency from borehole data obtained at a plurality of depths by scanning the borehole walls with a sensing device comprising a periodically operated acoustic transmitter and receiver. From the data obtained from the scanning operations, there is formed a two-dimensional light transparency having visible patterns representative of the characteristics of the borehole walls. One dimension represents the data obtained from each scanning operation and the other dimension is representative of the depth at which the scanning operation is carried out. The two-dimensional light transparency is folded into a three-dimensional cylinder wherein the dimension in the direction of the axis of the cylinder represents depth.

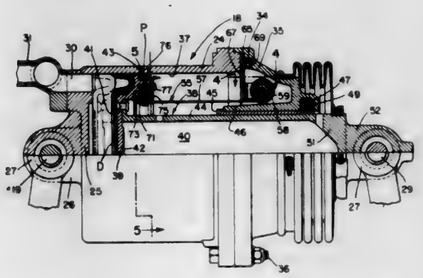
3,434,569
DYNAMIC BRAKING SYSTEM FOR WHEELED VEHICLES
George T. Peters, Farmington, and Charles Oickle, Jr., New Britain, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 20, 1967, Ser. No. 654,785
Int. Cl. B60t *1/00, 7/12;* **B64c** *25/68*
U.S. Cl. 188—2 **2 Claims**

The wheels of a vehicle are connected through a suitable power train to drive an air compressor for compressing atmosphere which dissipates some of the energy in the rotating axle, the compressed atmosphere being utilized to supply reverse thrust so as to add an additional braking factor to the dynamic braking capability of the



vehicle; the compressed atmosphere may be heated to further increase the reverse thrust for additional braking power.

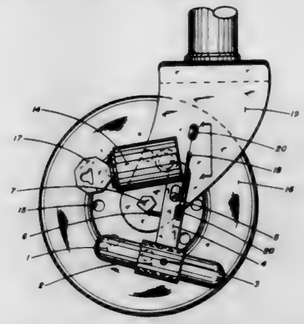
3,434,570
DISK BRAKE APPARATUS
Omar E. Freholm, Jenkintown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 15, 1967, Ser. No. 638,246
Int. Cl. B61h *13/00;* **F16d** *55/08, 63/00*
U.S. Cl. 188—59 **4 Claims**



Disk brake apparatus for railway passenger cars including an air actuated cylinder for moving brake shoes into engagement with a rotating disk. An air piston cylinder is provided having a piston movable in a cylinder and including a plurality of strips of spring material each having one end formed into a coil and mounted on a freely rotating drum carried by the cylinder, and having the other end anchored to the piston. When air is released from the cylinder during a non-duty cycle of the brake, the plurality of strips continues to act upon the piston to cause the brake linings to lightly drag the rotating disk.

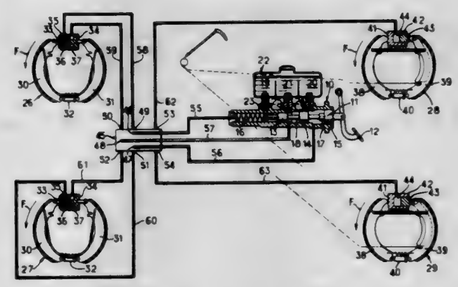
3,434,571
MAGNETIC OPERATED LOCKING DEVICE
James Edward Shuler, 304 Flaxen Circle, Las Vegas, Nev. 89107
Filed Mar. 5, 1968, Ser. No. 710,691
Int. Cl. F16d *65/28, 63/00, 65/00*
U.S. Cl. 188—69 **1 Claim**

This invention relates to a magnetic operated locking apparatus mounted on a four-wheel cart, such as a grocery or shopping cart, which prevents the rotation of the wheels when passing over a metal bar in or on the



ground located at the perimeter of the property, thus discouraging the removal of the cart from the premises.

3,434,572
BRAKING SYSTEMS FOR AUTOMOBILE VEHICLES
Pierre Andre Georges Lepelletier, Chatou, Yvelines, France, assignor to Societe Anonyme Francaose du Ferodo, Paris, France, a corporation of France
Filed Aug. 2, 1966, Ser. No. 569,656
Int. Cl. B60t *11/10*
U.S. Cl. 188—152 **4 Claims**

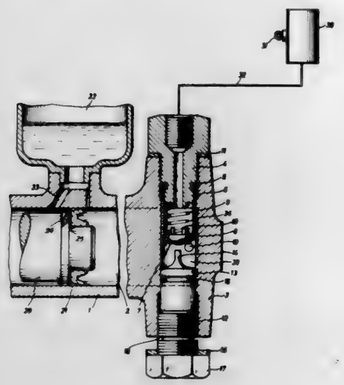


In a braking installation for the front and rear wheels of automotive vehicles, a master cylinder applies primary pressure individually to the front brakes and pressure is transmitted to the rear brakes by means of a pressure-compounding device which receives the primary and secondary pressures. The pressure-compounding device comprises a cylinder having a multiple piston therein having separate chambers for the application of the primary pressure on each side and for the secondary pressure, and a resultant chamber which alone provides the braking pressure for the rear wheel brakes.

3,434,573
ARRANGEMENT FOR EVACUATING GASES FROM HYDRAULIC SYSTEMS
Giorgio Eggstein, Turin, Italy, assignor to Ernst Heinkel AG, Stuttgart-Zuffenhausen, Germany
Filed Nov. 17, 1966, Ser. No. 595,087
Claims priority, application Germany, Dec. 7, 1965, H 57,896
Int. Cl. B60t *11/10;* **F16k** *15/00, 17/00*
U.S. Cl. 188—152 **1 Claim**

An arrangement for evacuating air from hydraulic braking systems in which a check valve is located between the cylinder and piston unit of the braking system and the

wheel cylinder provided with a bleeding screw to permit, when the check valve is in operating position, flow of fluid only in direction from the cylinder and piston unit to the wheel cylinder so that gases contained in the hydraulic brake fluid may be evacuated from the system



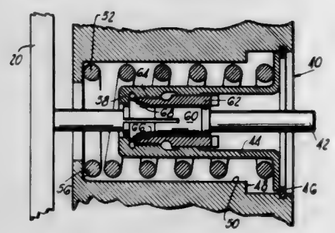
through the bleeding screw during pumping of fluid by operation of the unit, and in which adjustable valve actuating means cooperate with the valve body of the check valve to hold the latter away from the valve seat during normal operation of the braking system to equalize fluid pressure at both sides of the valve seat.

3,434,574

AUTOMATIC BRAKE ADJUSTER MECHANISM

Philip Barone, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed June 12, 1967, Ser. No. 645,308
Int. Cl. F16d *65/38, 55/00*
U.S. Cl. 188—196 **2 Claims**



The following relates to an automatic brake adjuster mechanism for use with an aircraft disc brake wherein a frictional clamping mechanism is utilized to determine the released position of the pressure plate. The clamping mechanism is located within the spring follower and is adjustable so that the frictional clamping force can be varied to suit any size or type brake with which it is utilized.

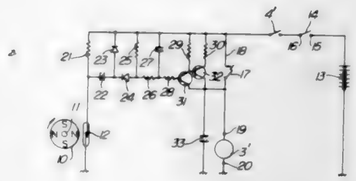
3,434,575

MOTOR CONTROL AND BRAKE HOLDER

Akira Mizuno, Kariya-shi, Japan, assignor to Goshi Kaisha Mizuno Kogeisha, Kariya-shi, Japan, a corporation of Japan

Filed Feb. 2, 1967, Ser. No. 613,489
Claims priority, application Japan, Nov. 17, 1966, 41/75,638
Int. Cl. F16d *67/00, 23/00;* **B60t** *11/10*
U.S. Cl. 192—3 **4 Claims**

A braking system for vehicle having a non-return solenoid valve which is opened when energized, travel detecting means, a control circuit for passing a travel signal generated by said travel detecting means to said valve,



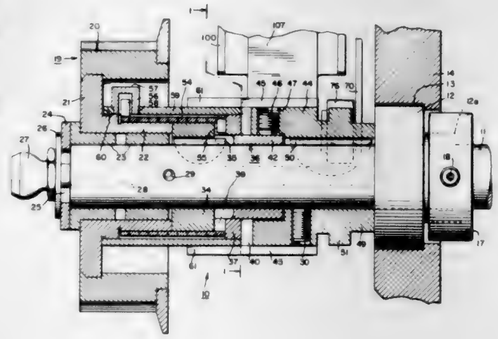
and an accelerator switch operatively connected to the valve to bring said valve in non-return position during starting of the vehicle.

3,434,576

COIL CLUTCH WITH LATCH AND POSITION BRAKE

Edwin O. Blodgett, Rochester, N.Y., assignor to Friden, Inc., a corporation of Delaware

Filed Mar. 31, 1967, Ser. No. 627,377
Int. Cl. F16d *67/02, 11/06, 13/04*
U.S. Cl. 192—12 **15 Claims**



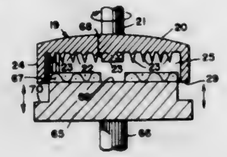
A clutch having a helical wire spring encircling cylindrical driving and driven members. One end of the spring is secured to a clutch disconnect sleeve housing having external clutch-control protuberances. The other end of the spring is affixed to a sleeve secured to the shaft. A stop member is secured to the shaft and has external stop protuberances. Interruption of clutch drive is effected by a clutch control member which engageably spans both the protuberances and is movable into and out of engagement therewith to halt rotational movement thereof. Upon moving into engageable relation with the protuberances, the stop member first engages a protuberance on the housing to halt the latter and unwrap the spring from the driving member, to effect interruption of clutch drive of the driven shaft, and thereafter is engaged by the protuberance on the stop member to halt the driven shaft at a preselected precise angular position. A cam operated detent member thereupon engages a stop member protuberance to resist the tendency of the spring to return to wrapped driving engagement.

3,434,577

CLUTCH DEVICES

Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804

Application Dec. 13, 1965, Ser. No. 513,400, now Patent No. 3,386,122, dated June 4, 1968, which is a continuation-in-part of application Ser. No. 285,261, June 4, 1963, now Patent No. 3,261,069, dated July 19, 1966. Divided and this application May 9, 1968, Ser. No. 727,944
Int. Cl. F16d *11/00, 13/00, 23/00*
U.S. Cl. 192—46 **10 Claims**



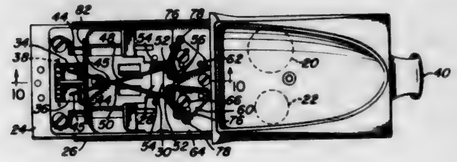
Rotatable devices with clutch face containing sloping projections adapted to penetrate and remain seated in porous, opposing clutch face and releasably grip same; uses thereof in opposed disc-face, disengageable clutches and in one-way drives.

3,434,578

COIN SLIDE LATCH AND CALIPER ASSEMBLY

Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed Dec. 4, 1967, Ser. No. 687,536
Int. Cl. G07f *5/06, 3/02*
U.S. Cl. 194—92 **30 Claims**



The reciprocable coin slide plate carries a latch keeper to be engaged by a movable latch, for limiting advancement of the slide plate whenever a coin or slug advanced by the slide plate fails to satisfy a calipering test. A calipering means includes a single length of resilient stainless steel wire bent to establish a pivotal end portion, an opposite free end, or sweep end, and an intermediate portion, the latter portion being bent and shaped to provide a calipering head comprising two parallel wire sections spaced apart to receive therebetween a coin to be calipered. If the coin proves acceptable, the calipering head may rock about the pivotal end portion of the wire, thereby to impart a swinging motion to the sweep end of the wire, which, translated to the movable latch, conditions the latch for keeper disengagement upon advancement of the slide plate. Proper control of the latch depends upon the ability of the wire to flex temporarily in all directions laterally of the length of the wire, particularly at the sweep end thereof.

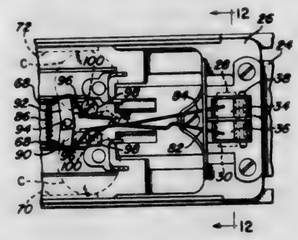
3,434,579

COIN SLIDE CONSTRUCTION

Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed Dec. 4, 1967, Ser. No. 687,537
Int. Cl. G07f *5/04, 3/02*
U.S. Cl. 194—92 **15 Claims**

The coin slide mechanism is characterized by coin-calipering arms of stiff spring wire which is resilient and flexible in all directons transverse to its length, said arms having free ends biased against a cam surface within limits imposed by a stationary restraining bar track. The resilient caliper arms at their free ends are movable toward and from one another while biased against the track, to actuate a pair of slide plate control latches which limit advancement of the slide plate whenever unacceptable coins or slugs are advanced for calipering, and when no coins



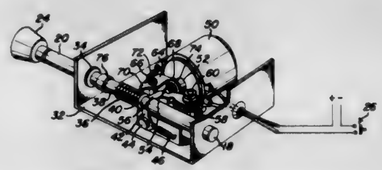
are advanced by the slide plate. The latches, though normally movable by the resilient caliper arms to latch and unlatch the slide plate, are themselevs adapted to flex the caliper arms under certain conditions of slide plate abuse, to prevent damage to or permanent distortion of operating parts of the calipering and latching mechanism. The caliper arms may be formed of resilient stainless steel wire, or equivalent.

3,434,580

MANUAL ACTUATOR FOR SERVICE MACHINES

Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed July 28, 1967, Ser. No. 656,767
Int. Cl. G07f *5/10*
U.S. Cl. 194—9 **23 Claims**



The actuator includes a manually reciprocable operating shaft to activate the starter of a dispensing machine. The operating shaft normally is locked against advancement toward the starter, but may be released for manual advancement by the deposit of a proper coin or coins in a coin slide which may be located at a distance from the actuator. The coin slide and the actuator are associated to the extent that the actuator includes solenoid means controlled by one or more electric switches to be closed whenever proper coins are accepted by the coil slide. The operating shaft of the actuator includes means to foil attempts made for free play, and all operative elements thereof are inaccessible for unauthorized manipulation.

3,434,581

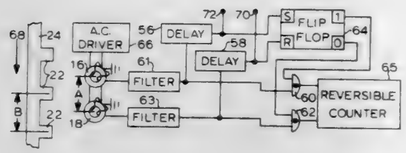
POSITION DETECTOR

Narendra M. Shukla, 651 Delaware, and Jag Mohan Garg, 681 Merrick, both of Detroit, Mich. 48202

Continuation of application Ser. No. 667,011, Sept. 11, 1967, which is a continuation of application Ser. No. 474,202, July 2, 1965. This application Apr. 26, 1968, Ser. No. 724,641
Int. Cl. B41j *29/42, 19/00, 25/18*
U.S. Cl. 197—187 **6 Claims**

An apparatus for determining the position of and the direction of movement of an object with respect to a transducer having a pair of ferrite cores which are pre-

vented from switching by the field from a permanent magnet having its poles aligned with the cores. A group of spaced permeable shunts on the moveable object deflect the magnetic field away from the cores allowing

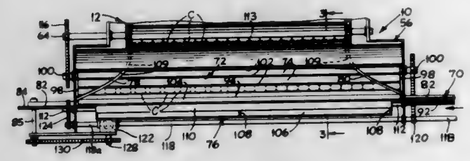


them to change remanent magnetic states under the influence of a driving pulse. The order of switching of the cores and the number of times the cores switch indicates the direction of movement and the distance moved or position of the body.

3,434,582
NONSHOCK CONTAINER HANDLING APPARATUS

James L. Reimers, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Jan. 5, 1967, Ser. No. 607,460
Int. Cl. B65g *47/04*
U.S. Cl. 198—31 **15 Claims**



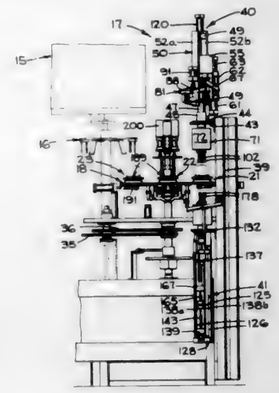
A container handling apparatus having a conveyor for continuously conveying spaced rows of spaced containers at high speeds in a first direction, a deflecting vane timed with the conveyor for transversely deflecting each moving row of containers off the conveyor, spaced pockets of a continuously driven combining reel for receiving and frictionally stopping the movement in said first direction of each row of spaced containers, and a pair of stationary arcuate plows adjacent opposite ends of the rows of spaced containers for engaging the containers and camming them into sticks of less than a predetermined length before gravitationally discharging the abutting containers into carrier bars of a hydrostatic cooker.

3,434,583
ARTICLE ALIGNING DEVICE AND METHOD

Wilber C. Belk, Lakeland, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 25, 1966, Ser. No. 589,277
Int. Cl. B65g *47/24, 47/80*
U.S. Cl. 198—33 **13 Claims**

Apparatus for aligning citrus fruit so that its stem-blossom axis is vertically disposed, comprising an upper cluster of vertically disposed pins and a lower cluster of vertcially disposed pins, a laterally and angularly freely movable fruit holder disposed between said vertical pins and having a hole aligned therewith, an actuator for vertically reciprocating the clusters of pins to move them toward one another and penetrate the upper and lower ends of a citrus fruit resting in said fruit holder, and further actuators for closing the clusters of pins after they have penetrated the fruit into more tightly grouped clusters such that the pins move against the tough center core of the fruit and align it along the axis between the centers of the two clusters of pins. A method of aligning

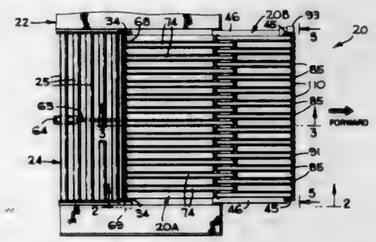


citrus fruit by supporting the fruit for free angular lateral movement, penetrating the soft flesh of the fruit and pressing against the tough center core at opposite ends thereof to urge each end of the citrus fruit in a direction toward a common axis.

3,434,584
EXTENDIBLE CONVEYOR

Edwin Winkler, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Apr. 26, 1967, Ser. No. 633,894
Int. Cl. B65g *37/00, 15/12*
U.S. Cl. 198—89 **13 Claims**

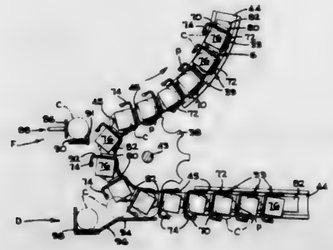


The conveyor is made up of two parts; a fixed section that has a plurality of spaced forwardly-extending arms, and a movable section that has spaced, rearwardly-extending arms that interdigitate with the arms of the fixed section. Each of the arms carries a power-driven endless chain conveyor member and, when the two sections are in interdigitated or closed relation, a substantially continuous conveyor surface is provided. When the movable section moves away from the interdigitated position, the openings that would normally be formed between the arms of the fixed conveyor section, are closed by flat, load supporting chain-like members that are drawn into the gaps behind the arms of the fixed section and between the arms of the receding section by the receding section itself to provide a substantially continuous surface having no openings therein large enough to be a hazard to a workman or to an article passing over the surface.

3,434,585
HYDROSTATIC COOKER CONVEYOR

Harold B. Lee, West Heidelberg, Victoria, Australia, assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 668,110
Int. Cl. B65g *17/16, 47/40, 47/04*
U.S. Cl. 198—131 **8 Claims**

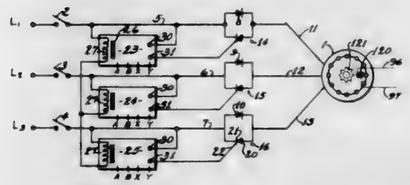


A hydrostatic cooker conveyor having spaced chains with C-shaped carriers mounted therebetween. Each carrier having a base wall with a short side wall and a long side wall formed integrally on opposite edges thereof and projecting rearwardly relative to the direction of movement of the conveyor. The base wall being mounted on the chain links with the short wall a greater distance from the pitch plane of the chains than the long wall, and with the base wall angled relative to the pitch plane so that the short wall leads the long wall whereby containers fed onto the forward face of the base wall will gravitate against the long wall of the next preceding carrier when moving upwardly in the cooker.

3,434,586
VIBRATION GENERATOR CONTROLS

John M. Morris, Louisville, Ky., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 17, 1966, Ser. No. 587,294
Int. Cl. B65g *27/20, 27/32*
U.S. Cl. 198—220 **6 Claims**



A controlled rate vibratory feeder is provided in which the speed of an induction motor driving eccentric weights of the feeder is controlled by varying the voltage or current supplied to the motor according to the difference between a fixed or a process signal and a signal dependent on the speed of the motor.

3,434,587
PACKAGE FOR SYRINGE

Lincoln L. Ciampa, Rutherford, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey

Filed June 21, 1966, Ser. No. 559,179
Int. Cl. B65d *85/54*
U.S. Cl. 206—17.5 **5 Claims**

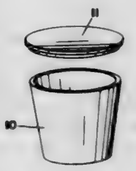
A container for a syringe which will allow the syringe to be sterilized after packaging, will maintain the sterilized condition of an enclosed syringe for a prolonged period of time and which has a curved or domed head to facilitate grasping and removing the syringe without danger of contamination of the liquid passages and injectable parts thereof. The size and structure of the container is such that it reduces the amount of cubage required for syringe storage.



3,434,588
PLASTIC CONTAINERS FOR PAINT

Wylie C. Kirkpatrick, Moreland Hills, Ohio, assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

Filed Sept. 1, 1965, Ser. No. 484,405
Int. Cl. B65d *85/00*
U.S. Cl. 206—46 **1 Claim**

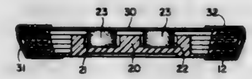


Improved paint (including enamel, varnish, and lacquer) container bodies and/or lids therefor made of polymers such as polyolefins or polystyrene are presented. Formation of undesirable flakes in the liquid paint has been traced to the normally weak adhesion of adventitious dried paint deposits to the polymer surface. This flaking is reduced by making the interior surface of said container body and/or lid more strongly adherent to such dried paint deposits.

3,434,589
EXPANDABLE CONTAINER

Frank J. Valtri, 542 13th Ave., Prospect Park, Pa. 19076, and James M. Still, Jr., 227 Temple Blvd., Palmyra, N.J. 08065

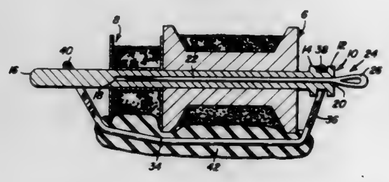
Filed May 2, 1967, Ser. No. 635,440
Int. Cl. B65d *85/00;* **A45c** *7/00, 11/00*
U.S. Cl. 206—46 **3 Claims**



A capped resilient plastic cup containing medical tablets, powder, or other water-soluble ingredients is packaged in cup-compressed form for convenient carry, as in a woman's handbag. When the package is opened, the resilient compressed cup is released and expands to a use-

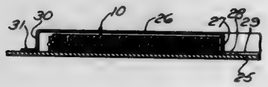
ful height, ready to receive the water (or other fluid) into which the tablets or powder contained therein are to be dissolved. In the preferred form, the tablets are contained in the bottom of the cap or cover, preferably in individual wells or compartments. In another form, the tablets are contained in wells in the bottom of the cup.

3,434,590
SPOOL AND BOBBIN HOLDER
Evan D. Laughlin and Edith M. Laughlin, both of 1112 Schweitzer Road, McKeesport, Pa. 15135
Filed Feb. 15, 1967, Ser. No. 616,340
Int. Cl. B65d *79/00*
U.S. Cl. 206—47 **6 Claims**



A multipurpose holder for user of sewing machine comprises: A spindle with axial storing socket for insertable needle and functioning primarily to store (1) a spool of thread of one color and (2) a sewing machine bobbin with thread of corresponding color and (3) an elastic strand or band with looped ends detachably connected to spindle and spanning and yieldingly retaining the spool and bobbin against accidental displacement from spindle.

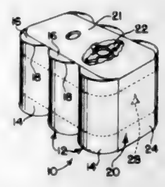
3,434,591
PANCAKE TYPE PACKAGE HAVING CONTROLLED UNWINDING
Harris F. Hanscom, Barrington, R.I., assignor to H. F. Hanscom & Company, Inc., a corporation of Rhode Island
Filed Jan. 26, 1967, Ser. No. 611,986
Int. Cl. B65h *55/00, 75/02;* **B65d** *73/00*
U.S. Cl. 206—52 **3 Claims**



A spirally wound tape having no core with one convolution breakably adhered to the next convolution at least at a plurality of locations on each convolution with the tenacity of adherence of the adjacent convolutions being such that the package may be unwound by pulling upon the free end of the outer convolution.

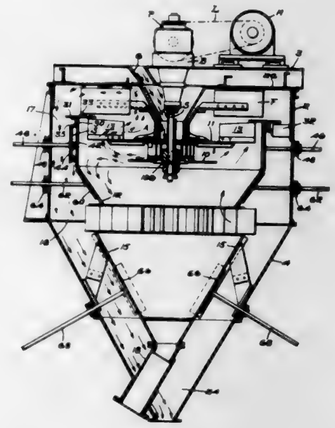
3,434,592
CONTAINER PACKAGE
Norman H. Moore, Palo Alto, Calif., and Ougljesa Jules Poupitch, Itasca, Ill.; said Moore assignor to Fibreboard Corporation, a corporation of Delaware, and said Poupitch assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Aug. 29, 1967, Ser. No. 664,119
Int. Cl. B65d *71/00*
U.S. Cl. 206—65 **7 Claims**

A container package for holding a plurality of containers together as a group including a wrap around band and clip means operating in conjunction with one another



to retain the containers together as a unit for carrying purposes.

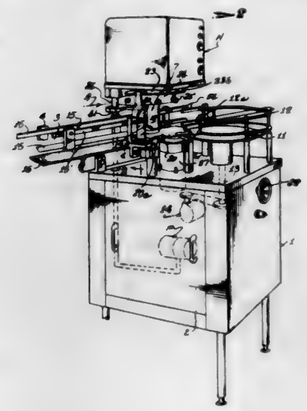
3,434,593
METHODS AND APPARATUS FOR AIR CLASSIFYING AND SCREENING OF FINELY DIVIDED MATERIAL
Daniel J. Sullivan, Milton, Mass., assignor to Sturtevant Mill Company, Boston, Mass., a corporation of Massachusetts
Filed July 6, 1966, Ser. No. 565,648
Int. Cl. B07b *9/02*
U.S. Cl. 209—31 **14 Claims**



An air classifier for classifying finely divided materials comprises inner and outer casing members and a fan member for inducing a flow of air upwardly through cascading particles introduced at the top of the casing members. Adjustable screen means of the invention are located adjacent to the fan member and function to selectively provide for a separation of coarse particles not removed by conventional air classifying apparatus.

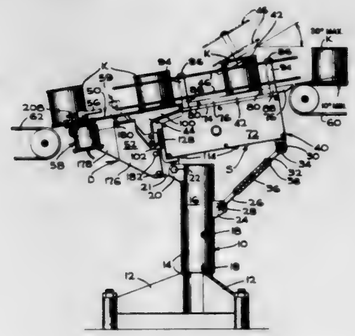
3,434,594
EMPTY BOTTLE INSPECTION MACHINE
Robert G. Husome, El Segundo, Calif., assignor to San Marino Electronic Corporation, El Segundo, Calif., a corporation of California
Filed May 16, 1967, Ser. No. 638,969
Int. Cl. B07c *5/34;* **B65g** *47/42*
U.S. Cl. 209—74 **10 Claims**

An improved mechanical handling system for an empty bottle inspection machine which diverts a line of bottles advancing on a conveyor means through an inspection path and at the terminus of that path returns only accepted bottles to the conveyor means; said machine including provision for rapid accommodation of various bottle sizes and heights though the use of a quickly re-



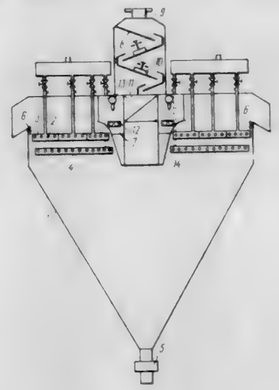
placeable lower star wheel and a vertically adjustable inspection head and upper star wheel and further including devices operative to remove rejected bottles from the inspection path.

3,434,595
ASSEMBLY FOR SORTING ARTICLES BY WEIGHT
Paul E. Seaborn, Los Gatos, and Wendell S. Thompson, Saratoga, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,097
Int. Cl. B07c *5/16;* **B07b** *13/08*
U.S. Cl. 209—121 **12 Claims**



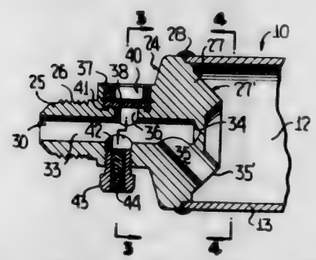
1. An article sorting assembly comprising a base, a scale housing, an approach platform on the upper portion of said scale housing, a scale platform, a generally triangular preload spring, means mounting the base of said preload spring in said scale housing, means for supporting said scale platform on the apex of said preload spring, scale platform locating means comprising upper and lower cantilever springs being rigidly mounted in said scale housing and with the scale platform being rigidly connected to the outer ends of said cantilever springs, said scale platform comprising a runner plate disposed in the midplane of said approach platform and with the upper edge of said runner plate substantially forming a continuation of said approach platform, guide rails at each side of said platforms, a slide plate rigidly mounted on scale housing and lying substantially in the plane of said platforms, said slide plate being notched to receive said scale platform runner plate, article deflecting means on said slide plate, and means for pivotally mounting said scale housing on said base.

3,434,596
PREAERATION AND FLOTATION OF MINERAL PARTICLES
Oleg Mikchailovich Knaus, Oktyabrsky pr. 263, kv. 23, Moskovskaya Oblast, Ljubertsy, U.S.S.R.
Filed Aug. 29, 1966, Ser. No. 594,953
Int. Cl. B03d *1/14*
U.S. Cl. 209—164 **12 Claims**



Flotation separator including tank with overflow weir has decks arranged in cascade for discharging a thin wide layer of aerated pulp to a splitter which distributes the thin layer into launders provided with compressed air inlet pipes and liquid inlet nozzles. The pulp undergoes frothing in the launder and flows over a curved wall of the launder onto the surface of separating liquid in the tank. Perforate pipes are disposed in the tank and controlled to provide maximum aeration of the liquid in the tank adjacent the launder and minimum aeration of the liquid adjacent the overflow weir.

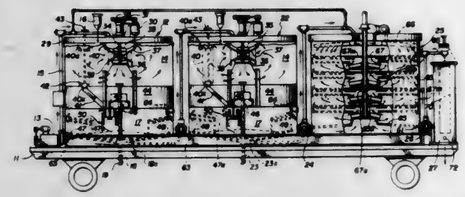
3,434,597
RECEIVER-DEHYDRATOR
Stephen Balogh, Solon, and Cecil L. Adams, Burton, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 16, 1967, Ser. No. 675,662
Int. Cl. B01d *35/00, 27/02*
U.S. Cl. 210—95 **14 Claims**



This invention is directed to a receiver-dehydrator or dryer of the type particularly adapted for use in refrigerating systems, and is particularly directed to a horizontal

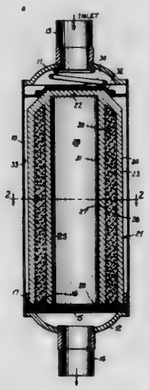
flow dryer having a closure provided with a radially offset interior fluid port and a viewing port disposed with the axes thereof in a common plane and opening through the closure at diametrically opposite sides thereof. This construction assures that the pick-up port is at all times disposed at a bottommost portion of the dryer housing when the viewing port is upwardly disposed.

3,434,598
APPARATUS FOR TREATING SEWAGE OR INDUSTRIAL WASTE LIQUIDS
Arthur C. Daman, Denver, Colo., assignor to Dejo, Inc., Denver, Colo., a corporation of Colorado
Filed Apr. 16, 1968, Ser. No. 721,795
Int. Cl. B01d *25/02, 25/00;* **C02b** *1/00*
U.S. Cl. 210—199 **11 Claims**



Apparatus for treating sewage or industrial waste liquids for clarification or product recovery. Equipment components mounted on rigid framework transportable as unit to operating site and functioning as base structure during operation. Equipment includes novel combined clarifier or agitator-thickener units with final overflow of thickener directed as feed to novel final clarification stage with discharge therefrom in condition for return to natural or domestic water supply. When separated solids comprise valuable material they are recovered as product of treatment.

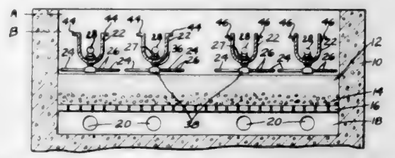
3,434,599
FILTER-DRIER UNIT
William F. Wischmeyer, Ladue, and John E. Hoffman, Webster Groves, Mo. (both % Sporlan Valve Company, 7525 Sussex Ave., St. Louis, Mo. 63143)
Continuation-in-part of application Ser. No. 426,091, Jan. 18, 1965. This application Apr. 28, 1967, Ser. No. 634,738
Int. Cl. B01d *35/00, 25/08, 25/00*
U.S. Cl. 210—266 **4 Claims**



A tubular metal casing having a replaceable interior filter-drier element which includes a pair of similar coaxial, cylindrical tubes of porous, self-supporting material, the tubes being spaced apart to provide an annular chamber containing a layer of molecular sieve, adsorbent desiccant material. The outer face of the external cylinder tube provides filtration for the refrigerant and the outer face of the internal cylinder tube provides a fine-grained retention surface preventing the passage of desiccant fines from the chamber into the refrigerant stream when the refrigerant flow is inward.

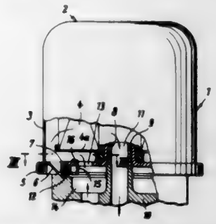
An alternative construction is provided by a plurality of wraps of resin-impregnated fibrous material sandwiching thin layers of desiccant material. The outer face of the external wrap provides a filter surface, and the outer face of each internal wrap provides a desiccant retention surface when the flow is in a like direction.

3,434,600
AGITATOR STRUCTURE FOR FILTER BED
Fred E. Stuart, Sr., Baltimore, Md. (523 N. Grandview Ave., Daytona Beach, Fla. 32018)
Filed Jan. 24, 1966, Ser. No. 522,545
Int. Cl. C02b *3/02;* **B01d** *23/24, 23/16*
U.S. Cl. 210—272 **1 Claim**



Filter arrangement having a tank with a filter bed, overflow troughs above the filter bed and rotary agitators suspended just above the top of the filter bed wherein the agitators are located beneath the troughs and are supported thereon and the supply pipes for the agitators extend along the troughs near the bottom thereof.

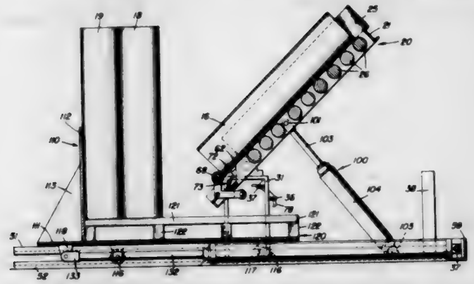
3,434,601
FILTER FOR FLUIDS
Alfred Barth and Karl Beck, Ludwigsburg, Wurttemberg, and Walter Wiedmann, Neckarweihingen, Wurttemberg, Germany, assignors to Messrs. Filterwerk Mann & Hummel G.m.b.H., Ludwigsburg, Wurttemberg, Germany
Filed Sept. 27, 1966, Ser. No. 582,272
Claims priority, application Germany, Sept. 28, 1965, F 47,290
Int. Cl. B01d *27/08, 35/00*
U.S. Cl. 210—440 **2 Claims**



1. A disposable filter for fluids comprising:
(a) a relatively thin-walled cup-shaped sheet metal housing having an annular rim,
(b) a relatively thin cover ring having outer and inner borders,
(c) a folded seam connecting said outer border of said cover ring to said rim of said housing in a fluid-tight manner,
(d) a relatively thick cover plate having a central screw-threaded outflow bore and a plurality of inflow apertures arranged about said outflow bore, said cover plate being disposed against the inside surface of said cover ring,

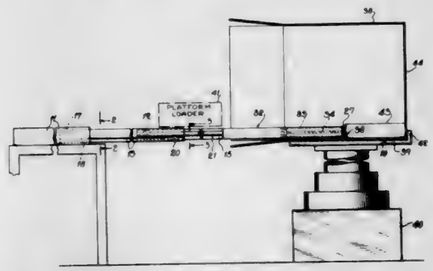
(e) tongues on said inner border of said cover ring, said tongues extending through said inflow apertures in said cover plate and being bent back against the inside surface of said cover plate to rigidly secure said cover plate to said cover ring, and
(f) a filter element inside said housing and dividing the interior thereof into an inlet chamber communicating with said inflow apertures and an outlet chamber communicating with said outflow bore.

3,434,602
PALLET LOADING MACHINE FOR SEQUENTIALLY DELIVERED ARTICLES
Clifton B. Vann III, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,923
Int. Cl. B65g *57/08*
U.S. Cl. 214—1 **3 Claims**



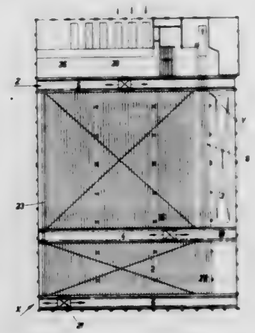
An article transfer machine which accumulates sequentially delivered articles in a row on a tiltable horizontal platform, tilts the platform transversely to the row of articles so that they are lined up against a dump side barrier which becomes a bottom support when the platform is almost fully tilted, and removes the dump side barrier by interaction with a cam when tilting is substantially complete, so that the articles drop in a row upon an article-receiving means which may be a pallet on a selectively shiftable dolly whereby the pallet may be sequentially loaded, row by row.

3,434,603
LOADING MACHINE
Alfred E. Horman, New York, N.Y., assignor to Palletizer Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,586
Int. Cl. B65g *57/10, 57/20*
U.S. Cl. 214—6 **7 Claims**



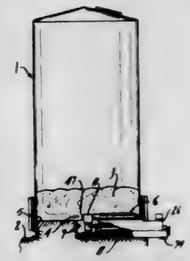
In a loading machine of the type which assembles a plurality of identical units and stacks them in rows within a carton or container, a loading platform of thin silhouette is cantilevered at the outer ends of extensible and retractable arms so that the platform can be thrust into and withdrawn from the open mouth of the carton; a stripper bar is mounted for reciprocal movement across the upper face of the loading platform so that a block of identical units is unloaded along a line inside the carton; and units are stacked inside the carton by automatically regulating the positions at which the platform enters the carton and is unloaded so that a plurality of blocks of units is deposited on a series of contiguous load-receiving stations.

3,434,604
MATERIAL HANDLING SYSTEM
Hans Rudolph Haldimann, Zurich, Switzerland, and Helmut Bartels, Hannover, Germany, assignors to Werner Bahlsen
Filed May 12, 1966, Ser. No. 550,886
Claims priority, application Germany, May 13, 1965, B 81,916/65
Int. Cl. E04h *5/00;* **B65g** *67/02*
U.S. Cl. 214—16.4 **10 Claims**



At least two storage racks are arranged to receive loads from a first traversing platform or crane means. A second crane means is adapted to move loads from one of the racks directly to a shipping area, and a third crane means is provided for moving loads from the other rack to a conveyor means cooperating with the second crane means for delivery of the latter loads to the shipping area. The system is controlled with the aid of a model thereof.

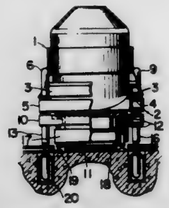
3,434,605
UNLOADING MECHANISM FOR A STORAGE STRUCTURE
William H. Yung, Riverdale, Ill., assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 670,936
Int. Cl. B65g *65/30, 33/00;* **A01f** *25/00*
U.S. Cl. 214—17 **19 Claims**



This invention relates to an unloading mechanism for a storage structure. A cutter arm is mounted for rotation about the center of the structure and includes an outer cylinder having a series of cutting elements which partially shroud openings in the cylinder. As the cutter

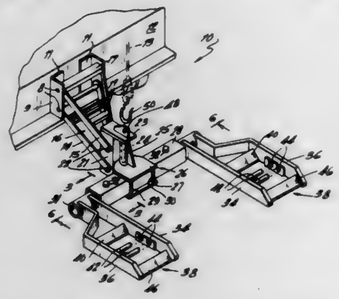
arm rotates about the center of the structure, the cylinder is rotated about its axis, and the cutting elements dislodge the stored material and force the material through the openings to the interior of the cylinder. An auger operating within the cylinder conveys the dislodged material to the inner end of the cylinder where the material is discharged through openings in the cylinder wall to a conveyor unit located within a radially extending trough in the foundation of the storage structure.

3,434,606
APPARATUS FOR CARRYING A CONVERTER OR A CONTAINER SIMILAR THERETO
Shunzo Asamura, Kitakyushu, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 29, 1966, Ser. No. 605,702
Int. Cl. B66f 9/04; B61d 15/50
U.S. Cl. 214—38 **5 Claims**



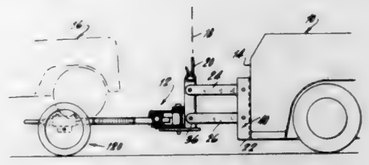
This invention relates to apparatus including means for pivotally carrying steel-making vessels, sometimes called converters, which require periodic servicing. The invention includes a converter mounted on a plurality of frames and a mobile truck or running mechanism which are relatively movable in a vertical plane relative to each other, with part of the frame, vessel and running mechanism being rotatable about a vertical axis for effecting change of direction so as to side-track the converter vessel for periodic service. The present device enables not only the truck's running gear to be rotated to become reoriented with sidetracks headed in different directions than normally used when in normal steel-making operation, but also enables the complete converter frame with converter vessel to be rotated likewise. The apparatus embodies hydraulic lifting jacks interposed between its plural frames as well as at predetermined transfer stations in the factory layout.

3,434,607
AUTOMOBILE TOWING DEVICE
Arthur W. Nelson, 276 Long Island Ave., Wyandanch, N.Y. 11798
Filed Jan. 24, 1967, Ser. No. 611,386
Int. Cl. B66c 1/22; B62d 53/04; B60d 1/14
U.S. Cl. 214—86 **4 Claims**



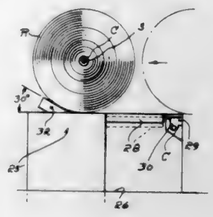
This invention and this disclosure are directed to an improved automobile towing device in which the means for receiving the part of the automobile to be towed e.g. the tires and wheels is attached to the support on the towing vehicle by a novel coupling means which allows the receiving means to be raised in a position and rotated forwardly so as not to constitute a safety hazard or make maneuvering of the towing vehicle difficult due to the rearward projection of the receiving means. This coupling means is provided with a rotatable member receiving means e.g. a hollow tube which receives telescopically a rotating member of the device or part employed to receive the part of the towed vehicle.

3,434,608
AUTOMOBILE TOWING DEVICE
Arthur W. Nelson, 276 Long Island Ave., Wyandanch, N.Y. 11798
Continuation-in-part of application Ser. No. 611,386, Jan. 24, 1967. This application Aug. 7, 1967, Ser. No. 658,739
Int. Cl. B66c; B62d 21/14; B62b 1/04
U.S. Cl. 214—86 **7 Claims**



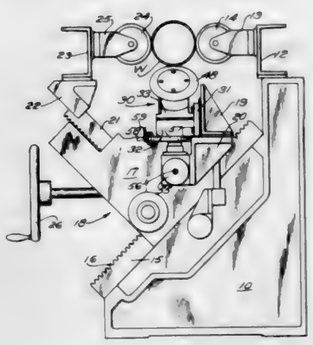
This invention is concerned with providing an improved towing device for an auto wrecker in which the towing receiving means of said device are adapted to be provided with additional support means when the towing receiving means are engaged in raising and towing a disabled vehicle. The additional support means comprise carriage means in which a pair of tires are individually and separately mounted to suitable channel members therefor, said channel members being adapted to overlie a portion of the towing receiving means.

3,434,609
APPARATUS FOR TRANSFERRING HEAVY OBJECTS BETWEEN VERTICALLY SPACED LEVELS
Delbert B. Bosworth, Arthur S. Christy, Jr., and Fernand L. La Rochelle, Portland, Maine, assignors to United Industrial Syndicate, Inc., Portland, Maine, a corporation of New York
Filed Sept. 26, 1966, Ser. No. 581,838
Int. Cl. B66f 11/00
U.S. Cl. 214—95 **15 Claims**



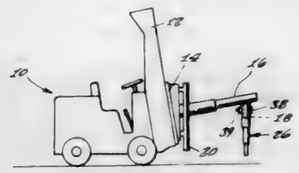
Apparatus for transferring heavy objects between vertically spaced levels, the apparatus including a table centrally supported by means to raise and lower it, the upper level having a shoulder and the table having a slide movable into shoulder-engaging position so that the shoulder becomes a table support in loading operations at the upper level, the slide being desirably part of a hinged plate, and the table having load centering means.

3,434,610
FEEDING APPARATUS FOR TUBES, RODS AND THE LIKE
Ronald Wilson, East Providence, R.I., assignor to Wanskuck Company, a corporation of Rhode Island
Filed Aug. 3, 1967, Ser. No. 658,281
Int. Cl. B65h 51/26; B24b 5/18
U.S. Cl. 214—339 **7 Claims**



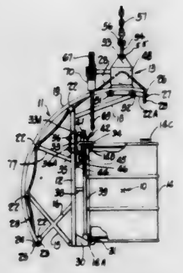
A feeding apparatus for tubes, rods and the like in which the work is longitudinally advanced by its frictional contact with a rotating wheel which may permit the work to be neutral to advancement by contacting the work in a plane of rotation which is at right angles to the axis of the length of the work whereby the work is rotated but is not fed in either direction or which may be angled to either side of such plane so as to feed the work in either direction either with or without rotation.

3,434,611
SLEEVE EXTENSION ADAPTER
Hugo V. Ferrari, 1414 Balcom Ave., Bronx, N.Y. 10461
Filed Apr. 1, 1966, Ser. No. 539,470
Int. Cl. B66f 9/18, 9/06
U.S. Cl. 214—653 **1 Claim**



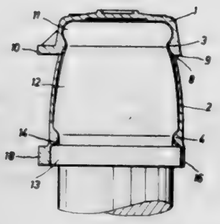
A sleeve extension adapter for use with a Bartell equipped lift truck having a horizontal extensible boom and a depending pin or article engaging member at its outer terminal end, in which the sleeve extension adapter is a tapered bar formed of at least three cylindrical integral sections of different diameter with the larger diameter section at the top. Formed in the larger diameter section is an axial closed bore of a diameter and length such as to snugly receive the depending pin therein, there being aligned openings in the pin and the walls of the larger diameter bar section to receive a fastener bolt therethrough. The adapter when mounted on the pin will permit the Bartell lift truck to lift roll loads of a width less than the conventional standard width of roll loads normally handled by the lift truck.

3,434,612
TILTING ARC DEVICE HAVING IMPROVED TROLLEY CARRIER
Edward C. Schmidt, Avon, Ohio, assignor to Edward L. Pucel
Filed Mar. 23, 1966, Ser. No. 541,911
Int. Cl. B66f 11/00
U.S. Cl. 214—658 **10 Claims**



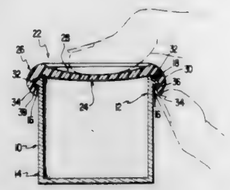
A tilting arc device adapted to hold and tilt a container in a vertical plane generally coinciding with the plane of the arc device, an actuator engaging the arc device for tilting the same and container held thereby, a driving mechanism for driving the actuator, the driving mechanism having a wheel rotatable on an axis generally disposed on said plane, a chain engaging the wheel for rotating the same, the chain having portions falling from the wheel on opposite sides of said plane to embrace a container held by the arc device, and guiding means carried by the arc device and slidably engaging said chain portions, respectively, for providing a bearing for the chain in side movements of the chain.

3,434,613
PLASTIC TEAR-OFF CLOSURE CAPS FOR BOTTLES AND BOTTLE NECK ADAPTED TO RECEIVE THE SAME
Erhard Langecker, Hohbuschener Weg, Meinerzhagen, Germany
Filed Jan. 26, 1967, Ser. No. 611,987
Claims priority, application Germany, Feb. 9, 1966, L 52,830; Jan. 9, 1967, L 55,463
Int. Cl. B65d 5/54
U.S. Cl. 215—41 **8 Claims**



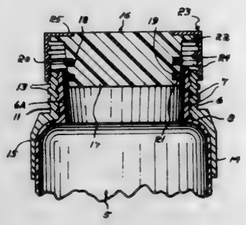
A plastic tear-off bottle closure or cap, comprising an upper and a lower portion, wherein the lower portion is equipped with a tear-off tongue and may be separated from the upper part by a weakening groove which may be torn open by means of pulling the tear-off tongue, whereby the said lower and upper portions may be separated for first opening the bottle and the upper part may be subsequently reused for closing the same; the invention also comprises a bottle neck adapted to receive such bottle closing cap.

3,434,614
CLOSURES FOR CONTAINERS
Bynum W. Moller, Victoria, Tex., assignor to Moller Enterprises, Inc., Victoria, Tex., a corporation of Texas
Filed Oct. 6, 1967, Ser. No. 674,071
Int. Cl. B65d *41/22, 55/02;* A61j *1/00*
U.S. Cl. 215—41 10 Claims



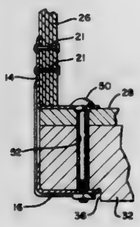
This disclosure pertains to closures for containers of the type used in the home to store medicines or poisons in a liquid, tablet or powder form. The closures are especially adapted to preclude children from removing the same from a container to obviate the possibility of a child taking the medicine or poison without the aid of an adult.

3,434,615
CENTRIFUGE BOTTLE AND CLOSURE THEREFOR
Anthony J. Barletta, Brighton, Mass., assignor to International Equipment Company, Needham Heights, Mass., a corporation of Massachusetts
Filed Sept. 11, 1967, Ser. No. 666,710
Int. Cl. B65d *39/04, 39/08, 45/30*
U.S. Cl. 215—47 6 Claims



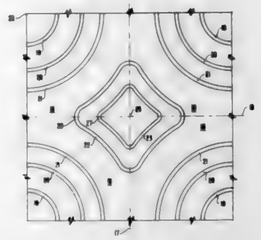
Plastic centrifuge bottle having a portion of its wall tapering outwardly to the mouth, a closure tapering inwardly towards its mouth-entering end and carrying a plurality of sealing rings, and means to attach the closure to the bottle and to render the seals effective.

3,434,616
PALLET BIN HARDWARE
Alex E. Reikes, 212 Hillview Ave., Los Altos, Calif. 94022
Filed Feb. 17, 1967, Ser. No. 616,821
Int. Cl. B65d *9/38, 61/00, 63/06*
U.S. Cl. 217—69 2 Claims



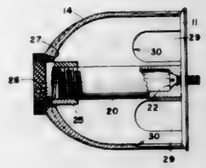
Hardware for use in the construction of pallet bins, which hardware is formed with combination abutment and reinforcing members in the form of raised beads or ribs.

3,434,617
LIQUID STORAGE TANK
Christiaan H. Sieders and Henri P. J. Verbeek, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 4, 1966, Ser. No. 592,088
Claims priority, application Netherlands, Dec. 31, 1965, 6517251
Int. Cl. B65d *25/18*
U.S. Cl. 220—9 1 Claim



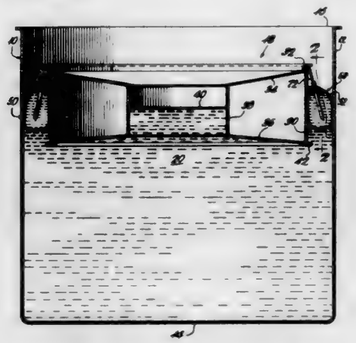
1. A tank for holding fluids comprising:
a rigid outer container;
an inner container supported within said outer container and spaced therefrom;
at least one of the walls of said inner container being comprised of a plurality of substantially rectangular plates secured together in bi-directionally coursed edge to edge relationship;
each of said plates being formed with a plurality of curved corrugations concentric about and concave toward a central portion of the plate, said corrugations having a geometric pattern in the plane of the plate wherein at least some of said curved concentric corrugations are closed on themselves and at least the outermost one of said corrugations intersects the edge of said plate; and
each of said corrugations which intersects the edge of the plate is reversely curved at a point adjacent its intersection with said plate edge so that said corrugation meets said edge normally and meets a corresponding corrugation of an adjacent plate so that it forms a smooth continuous curve with said corresponding corrugation.

3,434,618
ELECTRICAL RECEPTACLE COVER
Douglas Blake MacDonald, 15 Helga Court, Hamilton, Ontario, Canada
Filed Mar. 15, 1967, Ser. No. 623,395
Claims priority, application Canada, Mar. 18, 1966, 955,121
Int. Cl. B65d *51/00,* H05k *5/03*
U.S. Cl. 220—24.2 3 Claims



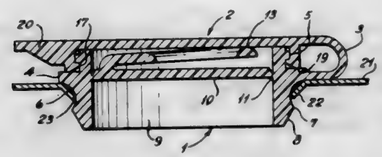
This invention discloses apparatus intended for use by householders for covering electrical receptacles while appliances may be plugged in and thus guard against children receiving shocks by playing with the cords. The device generally comprises a hollow cup-like cover member having a rim defining a rectangular opening for fitting about a receptacle cover plate; means for removably fastening said cover member to the receptacle by means of a single screw; and at least one knock-out portion in said cover member adjacent said rim, whereby removal of such portion will provide clearance for an electrical cord therethrough.

3,434,619
FLOATING ROOF SEAL
Ardell H. Nelson, Cornopolis, Pa., assignor to Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 20, 1967, Ser. No. 617,335
Int. Cl. B65d *87/18*
U.S. Cl. 220—26 19 Claims



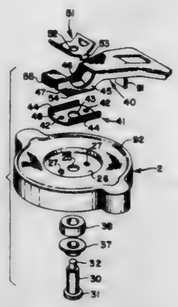
A tank having a bottom and a side shell has a floating roof therewithin floating on fluid supported within the tank, and sealing means is provided between the roof and the side shell of the tank. The sealing means includes a plurality of abutting units disposed peripherally about the roof and sealing the annular space between the roof and the shell of the tank. Each of the individual units includes an outer flexible wall portion having opposite ends which are clamped between a pair of longitudinally extending plates to provide a closed space within the wall portion. This space is filled with a suitable material, and equalizing means is incorporated in each individual unit to provide communication between the interior of the unit and the exterior thereof.

3,434,620
FRANGIBLE PLASTIC CLOSURE
Jeremiah Laurizio, New Providence, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 533,301
Int. Cl. B65d *17/00, 47/10*
U.S. Cl. 220—27 10 Claims



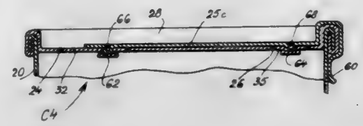
A closure member found of synthetic plastic material for insertion in an opening in a container wall. The closure member defines a dispensing passage which is initially sealed off by a hand removable tear out diaphragm.

3,434,621
SAFETY PRESSURE CAP
Dominick L. Previte, Willowick, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 23, 1966, Ser. No. 574,457
Int. Cl. B65d *51/16*
U.S. Cl. 220—44 15 Claims



Safety pressure cap for automobile radiators including a pressure release lift handle of limited upward movement to prevent hood damage, and incorporating unique lift handle retention and alignment structure which maintains the handle locking means firmly in position, free of undesirable rattles and vibrations.

3,434,622
EASY OPENER FOR CAN TOPS
Geza Czegledy, 1785 1st Ave., New York, N.Y. 10028
Filed Apr. 27, 1967, Ser. No. 634,376
Int. Cl. B65d *17/20, 51/16*
U.S. Cl. 220—54 5 Claims

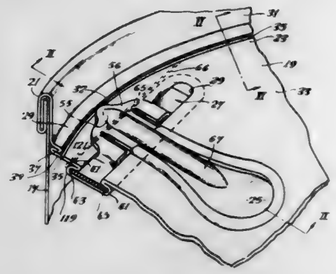


The disclosure describes a container construction having a can end provided with a pull tab which first opens a vent and then opens a large hole in the top of the can.

3,434,623
CONTAINER WITH PULL-TAB OPENER
William Cookson, Fareham, England, assignor to Cookson Sheet Metal Developments Limited, Southampton, England, a company of Great Britain and Northern Ireland
Filed Sept. 6, 1967, Ser. No. 665,919
Claims priority, application Great Britain, Dec. 1, 1966, 53,907/66; Jan. 23, 1967, 3,298/67; June 6, 1967, 26,067/67; Aug. 9, 1967, 36,612/67
Int. Cl. B65d *17/20*
U.S. Cl. 220—54 16 Claims

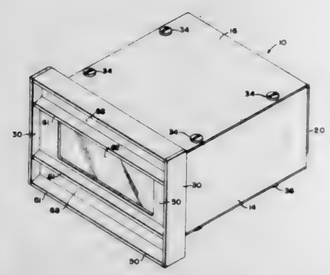
There is disclosed hand operable opening means for containers especially adaptable for use in a lid of a tinplate container. Substantially the whole, or a portion, of a lid may be removed by an upward pull on a handle. First, a portion of the handle hinges downwardly to start the opening along a weakened line and then continued upward force on the handle tears out a portion along the

remainder of the weakened line. The problem of the handle separating from the lid is overcome by forming a



channel with reverse folds, the folds overlying tabs on the handle. A method of forming such folds without tearing the metal is described.

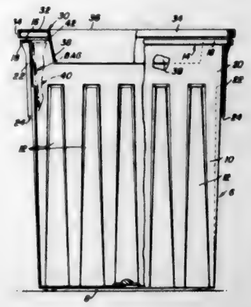
3,434,624
INSTRUMENT DISPLAY CASE
William F. Baker, Beverly, Mass., assignor to Instruments Displays, Inc., Danvers, Mass., a corporation of Massachusetts
Filed May 9, 1968, Ser. No. 727,897
Int. Cl. B65d *45/16, 43/02;* **A47f** *7/00*
U.S. Cl. 220—59 **6 Claims**



My disclosure is concerned with a packaging system suitable for instrument display having an open front and a detachable cover for the opening. The underside of the cover is formed with a number of channels to receive retaining members that are secured to or formed integrally with the forward end of the container. One of the retaining members is resiliently biased to be normally urged into firm engagement with its associated channel but may be sprung out of the channel to permit removal of the cover from the container. A window is incorporated into the cover to permit visual inspection of the interior of the container without removing the cover and slots are formed in the front surface of the cover to receive nameplates or legend cards.

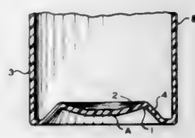
3,434,625
WASTE CONTAINER WITH DETACHABLE FUNNELING COLLAR
Raymond S. Embry, Jr., Albuquerque, N. Mex., assignor, by mesne assignments, to Elisama Embry
Filed Nov. 15, 1966, Ser. No. 594,574
Int. Cl. B65d *25/14, 25/34, 7/42, 21/00*
U.S. Cl. 220—65 **4 Claims**

The receptable portion of the container is of a shape and size to adaptably receive any one of the four more or less standard grocery bags presently on the market. The bag serves as a liner for the encompassing walls of the container. The upper edge portions of the body walls are provided with an integral rim. The rim is endless and has a generally flat amply wide horizontal flange providing a ledge for the rectangular frame portion of a readily attachable and detachable collar. The outer marginal edge of the collar has a depending retaining flange frictionally



engaging a depending marginal flange on the rim. The inner marginal edge of the collar is provided with a flange defining a funnel for capably guiding trash into the bag. Circumferentially spaced reinforcing ribs have upper ends joined to the flanges of the rim. These ribs assist in nesting or stacking containers for compact storage.

3,434,626
PLASTIC CONTAINER BOTTOM OF INCREASED STRENGTH
William G. Kinslow, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,321
Int. Cl. B65d *23/00, 25/00*
U.S. Cl. 220—66 **4 Claims**



Plastic containers having the bottom portions of improved structural stability are constructed such that the bottom wall projects upwardly and inwardly from the side wall toward the axis of the container to an annular shoulder substantially surrounding an axially downwardly-projecting portion of the bottom. The downwardly projecting portion is preferably the central portion of the container bottom and is preferably substantially symmetrically disposed about the central vertical axis.

3,434,627
CONTAINER END CLOSURE STRUCTURE
Charles Norman Tebbutt, Southall, Middlesex, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed May 24, 1966, Ser. No. 552,619
Claims priority, application Great Britain, May 28, 1965, 22,765/65
Int. Cl. B65d *7/42*
U.S. Cl. 220—67 **10 Claims**

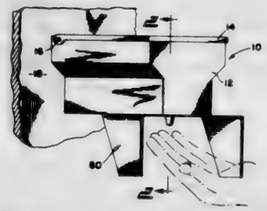
There is disclosed an end component for a container and a container and end component combination, the end component being moulded from plastic material and comprising an end portion provided with an annular flange which extends upwards from the end portion to terminate in

a free upper end extremity disposed for gripping by an overturned end portion of a container to which the component is fitted and which is dimensioned to present an outer surface arranged to fit in sealing contact inside the container in a position for gripping by an end portion of



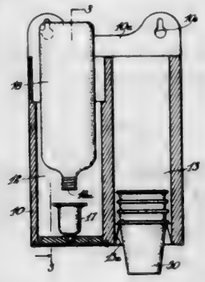
the container overturning the component free end extremity, the flange and its free end extremity being deformed and held in sealing contact compression with the receiving portion of the container when assembly is effected.

3,434,628
AUTOMATIC SOAP DISPENSER
Bernard A. Ceraldi, 3886 Rocky River Drive, Cleveland, Ohio 44111
Filed Jan. 23, 1967, Ser. No. 610,862
Int. Cl. B67d *5/08;* **H01h** *47/12*
U.S. Cl. 222—52 **2 Claims**



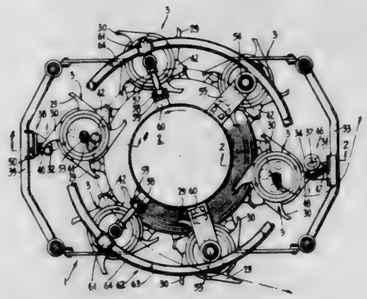
A dispenser which is automatically actuated when a grounded object, for example a person's hand, is placed within an area defined by an electrode. The electrode and grounded object are operative to change the current flow in the electrical circuit of the dispenser thereby to move a valve and initiate the dispensing operation.

3,434,629
MOUTH WASH DISPENSER
Alvin W. Hooge and Yvonne L. Hooge, both of 4835 East View Drive, New Orleans, La. 70126
Filed Dec. 13, 1966, Ser. No. 601,390
Int. Cl. B67b *7/28, 7/24*
U.S. Cl. 222—88 **4 Claims**



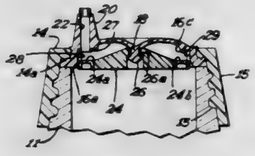
The disclosure is a dispensing unit featuring an open topped casing **10** providing adjacent bottle and stacked cup-containing compartments **12, 13**. The inverted bottle **18** which has a wax paper closure **18***a* which is punctured by **23***c* of **23***b* when the bottle neck is introduced into receptacle **17** of the removable dispensing unit **20, 22***a*, **22, 27**. Outflow of fluid through **22** is controlled by the conventional valve **27**.

3,434,630
CAN FILLING APPARATUS
Harold Barry Lee, West Heidelberg, Victoria, Australia, assignor to F.M.C. (Australia) Limited, Clayton, Victoria, Australia
Filed Feb. 1, 1967, Ser. No. 613,250
Int. Cl. B65b *3/02, 3/04*
U.S. Cl. 222—168.5 **5 Claims**



A can filling machine having at least one piston and cylinder and cylinder type filling heads where the lower end of the cylinder is closed and forms a valve member which cooperates with the lower end of a housing in which the cylinder is located and where a device cooperates to cause movement of the cylinder to provide inlet and delivery positions in synchronism with the movement of the piston.

3,434,631
LIQUID DISPENSING CONTAINER AND CAP THEREFOR
Anthony W. Merchlewitz, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed May 3, 1967, Ser. No. 635,908
Int. Cl. B65d *25/52*
U.S. Cl. 222—213 **7 Claims**

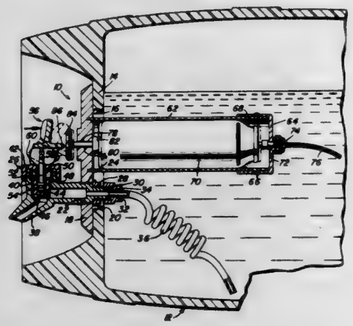


A liquid dispensing container and cap for such containers composed of a flexible resilient diaphragm sealed along its edge to the top of the container body. A dispensing duct is provided on one side of the diaphragm. A valve sealing arm is connected to the center of the diaphragm and is positioned immediately below it. One end of the arm overlaps the inward end of the duct until the center of the diaphragm is depressed with the finger.

3,434,632
LIQUID DISPENSING APPARATUS

John A. Batrow, 1111 Main St., Branford, Conn. 06405

Continuation-in-part of application Ser. No. 634,147, Apr. 27, 1967, now Patent No. 3,373,907. This application Aug. 24, 1967, Ser. No. 663,011
Int. Cl. B65d *83/14*
U.S. Cl. 222—400.5 5 Claims

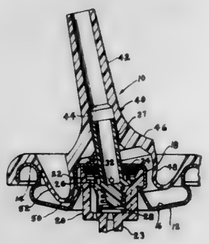


Apparatus for pressurizing and discharging liquid from a sealed container wherein pressurized gas is, through a common control handle, introduced into the liquid container from a pressurized gas container simultaneously with a selected dispensing of the liquid so as to maintain a substantially constant pressurization of the liquid remaining. The gas container will be a self-contained unit incorporating a pressure responsive valve with the discharge therefrom being effected through a physical movement of the container in response to a movement of the spigot control handle with the gas discharging either directly into a common chamber with the liquid or into an expansible flexible bag by which the liquid can be pressurized without an actual commingling of the gas and the liquid. In one form the gas container and discharge spigot are mounted on a common base which is in turn fastened within an opening in one end of the liquid container. The gas used will be an appropriate low pressure Freon while the liquid container will be constructed of an appropriate plastic.

3,434,633
DISPENSING ACTUATOR FOR AEROSOL CONTAINERS

Derek Bernard Green, Manchester, N.H., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Oct. 23, 1967, Ser. No. 677,117
Int. Cl. B65d *83/14, 83/06*
U.S. Cl. 222—402.13 3 Claims

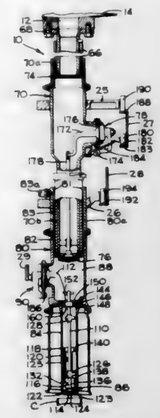


One-piece molded actuator fits over the top of aerosol container and provides tiltable spout to actuate tilt-type aerosol valve.

3,434,634
LIQUID DISPENSING APPARATUS

Robert K. Gellatly, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Jan. 25, 1967, Ser. No. 611,629
Int. Cl. G01f *11/32*; B65b *37/00*
U.S. Cl. 222—450 6 Claims

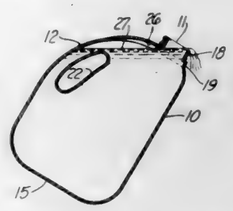


A liquid dispensing apparatus having a double-opening foot valve which when closed includes a sealing ring seated against an inturned lip of a tubular valve body, and a plug seated against the passage within the ring; and which double-opening valve is opened by first lifting the plug from the ring and then lifting the ring from the inturned lips of the tubular valve body. A variable orifice valve is connected to the double-opening valve to prevent chattering thereof during high speed filling.

3,434,635
CONTAINER HAVING A SPOUT AND A HOLLOW HANDLE

Stanley I. Mason, Jr., Fullerton, Calif., assignor to Hunt-Wesson Foods, Inc., Fullerton, Calif., a corporation of Delaware

Filed Mar. 21, 1967, Ser. No. 624,940
Int. Cl. B65d *25/40, 25/28*
U.S. Cl. 222—468 2 Claims



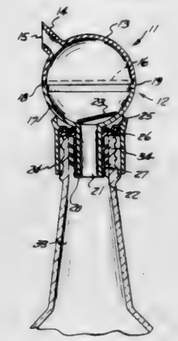
A jug-type container of square cross section having the spout in the top at one corner and having a hollow handle integrally formed with the body at the opposite corner.

3,434,636
POURER FOR LIQUOR BOTTLES

Robert D. Kachman, 1526 Beverly, Madison Heights, Mich. 48071

Filed May 16, 1967, Ser. No. 638,794
Int. Cl. B65d *25/52*
U.S. Cl. 222—567 1 Claim

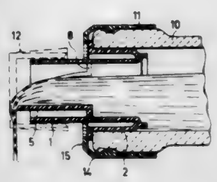
A pourer having a hollow body which may be of spherical form, including a laterally directed spout, and opposed therefrom a tubular shank and including a cylindrical collar with an apertured web snugly positioned over said shank adjacent the body, the collar adapted to loosely enclose the outlet of a liquor bottle, and a centrally apertured plastic cork body assembled over said shank and having a flange to seal over the outer edge of the bottle outlet and a series of flexible deformable ribs adapted to sealingly engage the interior of the bottle outlet.



3,434,637
FITTING FOR CONTAINERS

Henri Marcel, Les Cheres, France

Filed June 28, 1967, Ser. No. 649,559
Claims priority, application France, July 11, 1966, 47,526; Dec. 23, 1966, 48,097
Int. Cl. B65d *5/72, 35/38*
U.S. Cl. 222—570 19 Claims



The present invention relates to a container provided with a pouring spout made in one piece of synthetic plastic material and a sealing and capping closure. The pouring spout comprises two concentric sleeves connected by a wall, the latter being provided with an air inlet. The inner sleeve, preferably bias cut to form a lip, projects beyond the outer one. The closure comprises a skirt attached to the container and a cap for closing the spout, connected together by a tearable band. The latter is limited by lines of perforations formed by grooves extending from the edges of this band. Ribs prevent relative motion of the closure when snapped over the container neck.

3,434,638
AUTOMATIC SELF-LOCKING SWIVEL ARROW QUIVER

Thomas J. Beynon, 1727 Harrison St., Philadelphia, Pa. 19124

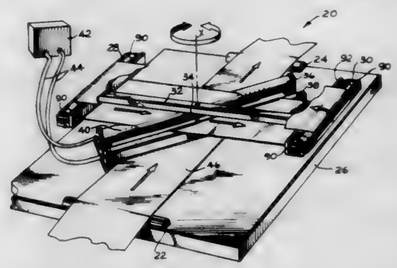
Filed Sept. 5, 1967, Ser. No. 665,328
Int. Cl. A45f *5/14, 3/00*
U.S. Cl. 224—1 2 Claims

A quiver for hunting arrows comprises a curved hip plate having a vertical depending portion on which is pivoted an arrow holder with a protective shield. The rear wall of the shield is provided with a dimple which engages a selected one of a plurality of dimples provided on the vertical portion depending from the hip plate so that arrows held in the quiver can be positioned in one of a number of selectable directions. A spring holds the dimples in engagement, and foamed plastic is provided for protection of the arrowheads and for silencing.

3,434,639
TRANSPORTS FOR ELONGATED MATERIAL

Charles Donald Cowles, West Redding, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Jan. 7, 1966, Ser. No. 519,374
Int. Cl. B65h *25/26, 25/32*; G03b *1/02*
U.S. Cl. 226—21 11 Claims



A self-aligning skew bar for a strip, aligned by the tension and reaction forces in the strip. The strip enters and exits from the generally convex cylindrically shaped skew bar in parallel planes. Guide means are provided for guiding the material to and from the skew bar. The guide means and the skew bar are pivotal about axes which are substantially coincident.

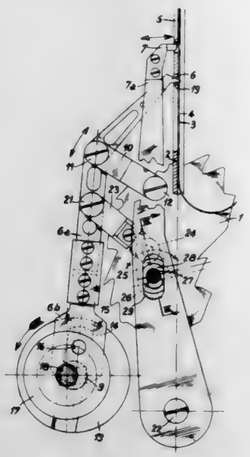
3,434,640
FILM MOVING MECHANISM OF MOTION-PICTURE APPARATUS

André Coutant and Jacques Mathot, Neuilly-sur-Seine, France, assignors to Eclair International, Societe Anonyme, Paris, France, a corporation of France

Filed Jan. 19, 1967, Ser. No. 610,295
Claims priority, application France, Jan. 21, 1966, 46,750
Int. Cl. G03b *1/28, 1/22*
U.S. Cl. 226—57 6 Claims

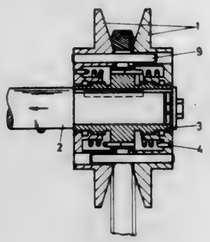
A film moving mechanism in a motion-picture apparatus, comprising a feed claw and a pilot claw operating in synchronism, each claw being disposed at the end of

a relatively long arm, said arms being adapted to pivot about axes disposed as near as possible to the plane in which the film is caused to slide, notably the axis of the pilot claw arm, characterized in that the drive is completely positive, the longitudinal movement of the feed claw resulting from the fact that the lower end of its



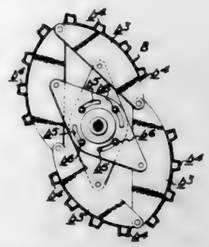
arm is mounted on a crankpin adapted to revolve about its shaft, and the transverse movement of said feed claw is produced by the fact that said arm is connected in the vicinity of its upper portion to one end of a pivoting link having its other end pivoted about a point of the mounting plate structure which is as near as possible to the plane of movement of the film.

3,434,641
PULLEY TRANSMISSIONS AND INSTALLATIONS WHICH INCLUDE PULLEY TRANSMISSIONS
Richard Ambros, 46 Grunbergerstr., 85 Nuremberg, Germany
Filed Aug. 5, 1966, Ser. No. 570,449
Claims priority, application Germany, Aug. 10, 1965, A 49,958
Int. Cl. B65h *17/20, 77/00;* **F16h** *55/52*
U.S. Cl. 226—188 **19 Claims**



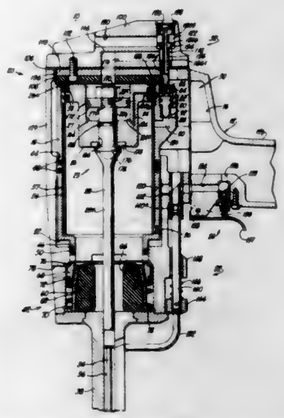
A pulley transmission capable of automatically regulating the turning moment provided by the transmission. A pair of pulley flanges surround a shaft of the transmission with respect to which they are freely turnable. These flanges have inner belt-engaging faces which define a circumferential tapered gap between themselves. A connecting means connects one of the flanges to the other for rotation therewith but for axial movement with respect thereto for changing the width of the gap, and a yieldable means is connected between at least one of the flanges and the shaft for yieldably resisting a change in the angular position of the shaft and flanges with respect to each other. An adjusting means is connected to that flange which is axially movable to adjust it with respect to the other flange, and this adjusting means takes the form of a threaded connection between this latter flange and the shaft. Thus, in response to a change in a force acting on the yieldable means, the axially moveable flange will be displaced at its threaded connection with the shaft axially with respect to the other flange in response to relative turning of the flanges and shaft.

3,434,642
WINCH DYEING MACHINE HAVING A VARIABLE CONTOURED WINCH DRUM
Edward Stanway, Macclesfield, England, assignor to Leemetals Limited, Macclesfield, England, a company of Great Britain
Filed July 5, 1966, Ser. No. 562,862
Claims priority, application Great Britain, Oct. 2, 1965, 41,909/65
Int. Cl. B65h *17/20*
U.S. Cl. 226—191 **6 Claims**



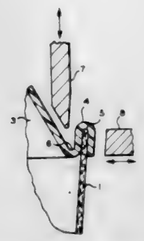
A winch dyeing machine having a variable contoured winch drum including a shaft having two substantially diamond-shaped discs mounted thereon and link arms pivoted together at their ends and pivoted intermediate their ends at the corners of the diamond-shaped discs to provide a winch in which the peripheral contour is variable from a circle to an ellipse in cross section having a ratio between the major and minor axes up to 2:1.

3,434,643
FASTENER DRIVING APPARATUS
Oscar A. Wandel, Mundelein, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed May 2, 1966, Ser. No. 546,623
Int. Cl. B25c *1/04;* **F01b** *7/20*
U.S. Cl. 227—130 **10 Claims**



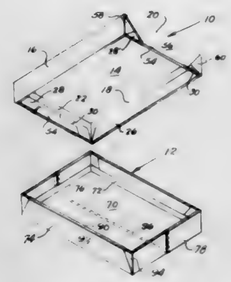
There is provided a pneumatically operated tool for driving and setting fasteners including a driver blade. The driver blade is engageable by a main piston movable in a cylinder in response to the introduction of pressurized fluid into one end thereof. Moreover the driver blade is secured to an inner or second piston also movable in response to the introduction of pressurized fluid into the one end of the cylinder. A lost motion connection between the main piston and the driver blade permits a followthrough movement of the driver blade at the end of the driving stroke of the main piston. An air chamber is provided for instantly retracting the driver blade upon completion of its followthrough projection.

3,434,644
CONTAINER
Stafford D. Collie, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,755
Int. Cl. B65d *3/10, 5/00, 13/00*
U.S. Cl. 229—5.6 **2 Claims**



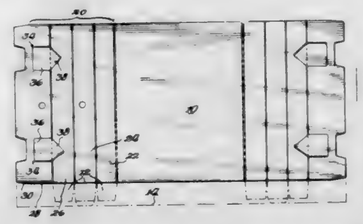
A container comprises in combination top and bottom sections of heat sealable material, each section being actually tapered to allow nesting when separate, one of said sections having an outwardly extending wall terminating in an S-shaped portion to provide a circumferential groove for receiving the upper edge of the second section so that the groove can be crimped over the upper edge of the second section and the two sections thereby heat sealed together to form a container.

3,434,645
INSTANT GIFT PACKAGE
Biagio Prisco, 811 NE. 70th St., Miami, Fla. 33138
Filed July 27, 1967, Ser. No. 656,590
Int. Cl. B65d *5/32, 65/12*
U.S. Cl. 229—8 **1 Claim**



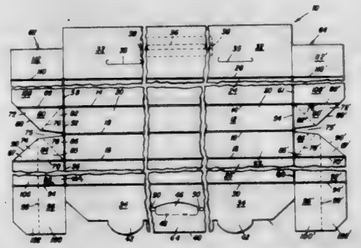
A predecorated package including a box top and bottom each of which are separately covered with a decorative overlay to permit separation thereof without disturbance of the overlay, said overlay including specially folded and overlying portions to give the appearance of a unitarily wrapped package, and a box specially folded to give the appearance of a unitarily wrapped package are disclosed.

3,434,646
SHADOW BOX
Leonard G. Schmidt, Oak Forest, Ill., assignor to Crane Carton Corporation, a corporation of Illinois
Filed Apr. 19, 1967, Ser. No. 632,042
Int. Cl. B65d *5/00, 5/48*
U.S. Cl. 229—16 **6 Claims**



A knock-down shadow box in which frames constructed at opposite ends may be readily set up by the user of the box. When set up in their raised position, the frames assume a convenient shape, such as a closed tube. Each frame is maintained in its raised position by internal locking tabs formed in and hinged to at least two adjoining walls of the tube. The tabs are pushed into the set-up tube and lock in place to support the tube in its extended position. The tabs are locked in place with a support segment of each tab positioned normal to the walls of the tube and a locking flange, hinged to the support segment, lying against the inner surface of one wall after swinging through approximately an 180° arc.

3,434,647
COLLAPSIBLE CARTON AND BLANK
William H. Perkins, Oxford, Ohio, assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 667,315
Int. Cl. B65d *5/00, 5/36, 5/46*
U.S. Cl. 229—16 **11 Claims**

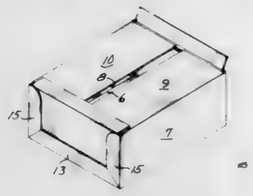


A foldable-flat carton produced from a cut-and-scored blank assembled into a folded-flat condition prior to erection in which a foldable, staying and reinforcing structure is provided at the carton end walls, and the carton is maintained in its erected transport condition by such end walls and an improved carton cover-and-handle assembly.

3,434,648
REINFORCED CONTAINER STRUCTURE
Adrian P. Du Barry, Jr., Covington, La., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Apr. 24, 1967, Ser. No. 633,185
Int. Cl. B65d *13/00*
U.S. Cl. 229—23 **2 Claims**

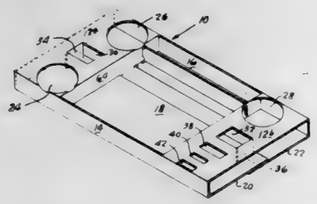
A container for shipping commodities having a bottom panel and side panels integrally connected to the bottom

panel and extending at right angles thereto. Top panels are integrally connected to the side panels and extending at right angles thereto. Each of the bottom and side panels has glue flaps for adhering a double thickness end wall



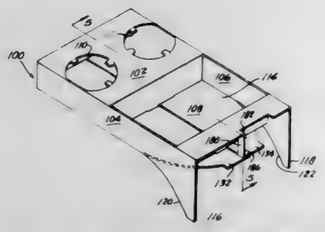
panel which end panel is the exact width of the bottom panel and exact height of the side panels, the end panel being provided with a sealing flap which folds over the top of said top panels to seal the same in position.

3,434,649
DISPOSABLE TRAY
Harford E. Goings, 5428 Center Drive, Washington, D.C. 20031
Filed May 2, 1967, Ser. No. 635,433
Int. Cl. B65d *5/48, 1/34*
U.S. Cl. 229—28 **11 Claims**



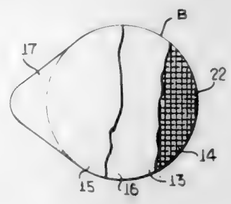
A tray and a tray square for forming a tray comprised of a unitary rigid sheet material having a top portion which includes plural article receiving openings, side walls, an underlying bottom portion, a plurality of wall tabs interconnecting the top portion and the bottom portion and support tabs interconnecting said top and bottom portions is disclosed.

3,434,650
FOLDABLE TRAY
Harford E. Goings, 5428 Center Drive, Washington, D.C. 20031
Filed May 2, 1967, Ser. No. 635,432
Int. Cl. B65d *5/48, 1/34*
U.S. Cl. 229—28 **9 Claims**



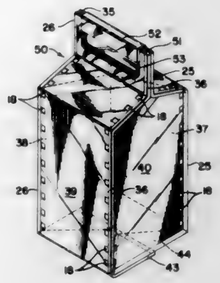
A tray, and a tray blank having top, bottom and sidewall portions, article receiving openings in the top portion, wall tabs foldably secured to the top portion and engaging the bottom portion and the sidewalls, support tabs foldably secured to the top portion parallel to the sidewalls engaging the bottom portion and sidewall extension portions formed from the bottom portion extending downwardlp below the bottom of the tray for complementarily engaging a curved supporting surface such as a car seat is disclosed.

3,434,651
MESH REINFORCED CLOSURE FOR FULL OPENING CAN
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 12, 1967, Ser. No. 638,136
Int. Cl. B65d *5/64, 43/00, 17/00, 5/54, 5/70, 3/10*
U.S. Cl. 229—43 **7 Claims**



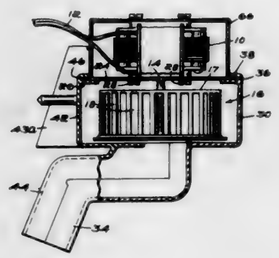
This disclosure has to do with a container wherein the end closure is bonded to the container body and the container is opened by the progressive rupture of the bond. The end closure is reinforced along the bond in a manner to assure separation of the end closure from the container body along the general plane of the bond.

3,434,652
SELF-SUPPORTING PLASTIC CONTAINER AND METHOD OF MAKING SAME
William S. Shore, Mayfield Heights, Ohio, assignor to Diamond Shamrock Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 567,935, July 26, 1966. This application July 18, 1967, Ser. No. 654,241
Int. Cl. B65d *5/46, 5/74, 5/02*
U.S. Cl. 229—52 **13 Claims**



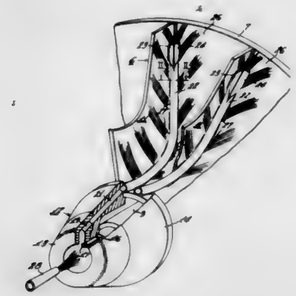
The disclosure is directed to a thin-walled, self-supporting container of polyhedron shape formed of flexible plastic sheet, as well as a method of fabricating the container. The body of the container is of generally tubular form and is generally polygonal in cross-section. The intersections of the generally polygonal side walls are provided with external ribs to provide rigidity for the upright body portion.

3,434,653
COMBINATION MOTOR AND BLOWER
Jack Burnbaum, 451 D St., Newton, Mass. 02110
Filed Sept. 19, 1967, Ser. No. 668,820
Int. Cl. F04d *25/06, 25/08, 17/08*
U.S. Cl. 230—117 **9 Claims**



A combination motor and blower having a deflector between them to prevent blown particles reaching the motor. A housing for the blower is in two sections each having a recess formed therein bordered by a flange and adapted to receive said deflector to thereby retain the latter interiorly of blower.

3,434,654
DEVICE FOR WASHING CENTRIFUGAL COMPRESSOR
Thomas R. Feller, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 19, 1967, Ser. No. 639,679
Int. Cl. F04d *29/26, 17/08*
U.S. Cl. 230—134 **5 Claims**



A compressor washing device having tubes at the base of the low pressure side of the compressor impeller blades with nozzles to direct high pressure liquid directly onto the portions of the compressor which require cleaning.

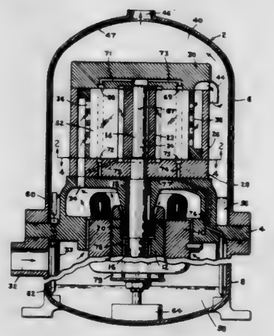
3,434,655
ROTARY COMPRESSOR
Friedrich O. Bellmer, East Orange, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,181
Int. Cl. F04c *17/18;* **F02b** *53/00*
U.S. Cl. 230—152 **9 Claims**

A rotary, sliding vane compressor having an annular channel in each end wall connected to the compressor suction and located at a radial position intermediate the fully retracted and fully extended position of the inside end of the vanes so that the chambers behind the vanes are cut off from the annular channel at a predetermined point in the inward travel of the vanes to form gas pockets behind the vanes. The gas pockets act as springs to keep the vanes in contact with the cylinder wall during their outward acceleration. Small pressure relief chambers



are located in the end walls and register with the chambers behind the vanes as the vanes approach their fully retracted position to limit the maximum pressure developed behind the vanes.

3,434,656
LUBRICATION SYSTEM FOR ROTARY VANE COMPRESSORS
Friedrich O. Bellmer, East Orange, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,841
Int. Cl. F04c *29/02, 23/02;* **F04d** *29/06*
U.S. Cl. 230—207 **2 Claims**

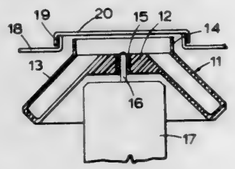


A lubrication system for a sliding vane rotary compressor in which lubricating oil under pressure is supplied to a longitudinal groove in the trailing side of each vane slot as the vane passes the suction port so that oil will be distributed along the trailing side of the vane as the rotor turns. The oil is supplied to the grooves from an arcuate port in an end wall adjacent to the compressor suction inlet and at the same radial position as the longitudinal grooves. A corresponding drain port in the other end wall allows the grooves to be "flushed" before being refilled with oil.

3,434,657
PORTABLE CENTRIFUGE
Denis C. Luckham, Outwood, and Gordon F. Green, Reigate, England, assignors to Luckham Limited, Burgess Hill, Sussex, England, a British company
Filed Apr. 26, 1967, Ser. No. 633,811
Claims priority, application Great Britain, Mar. 10, 1967, 11,341/67
Int. Cl. B04b *5/02, 1/02*
U.S. Cl. 233—26 **5 Claims**

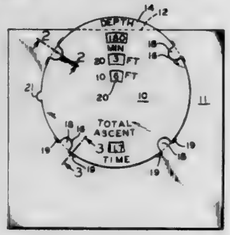
A small portable centrifuge driven by a six or twelve volt or spring motor for cross-matching blood samples,

haematocrit estimations and the like having a rotor of hollow frusto-conical form which fits over the driving motor, sample tubes being carried in bores in the rotor



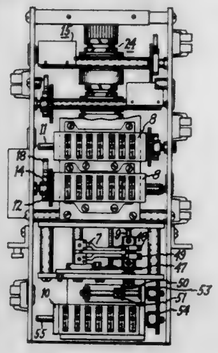
wall, the rotor having a resilient bush at its centre so that it may, when running, find its own centre of gravity even if this is not coincident with the motor spindle axis.

3,434,658
ROTARY INDICATOR
Sol Goldstein, 18 Falcon Road, East Hills, N.Y.
Filed June 14, 1967, Ser. No. 646,028
Int. Cl. G06g *1/08*
U.S. Cl. 235—84 **3 Claims**



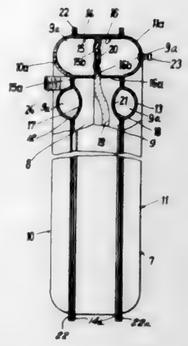
A rotary calculator or indicator, including a disc and a supporting element, the disc being supported for rotation by cut lines forming tabs which extend radially inwardly over the edges of the disc.

3,434,659
TAKE-UP TOTALIZING RELAY
Donald M. Ham, Rochester, N.H., and William E. Taft, Milwaukee, Wis., assignors to General Electric Company, a corporation of New York
Filed Jan. 30, 1967, Ser. No. 612,593
Int. Cl. G06m *1/24;* **B67d** *5/22*
U.S. Cl. 235—91 **10 Claims**



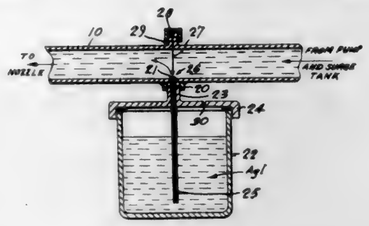
A totalizing relay for obtaining the totalized output from several metered systems. Electrical impulses from the meters are transformed into mechanical movement imparted to couplings in a coupling stack forming a totalizing shaft. This movement produces an increment of allowable escapement in the totalizing shaft which is taken up by a stalled-torque drive motor. A contact device responsive to motor rotation transmits impulses to another device which records the totalized output.

3,434,660
EXPANSION TANK FOR HOT-WATER HEATING SYSTEMS
Fritz Brumme, Raunheim, Hesse, and Horst Boehme, Ruesselsheim (Main), Germany, assignors to Effbe-Werke Fritz Brumme KG, Raunheim, Hesse, Germany
Filed May 19, 1966, Ser. No. 551,435
Claims priority, application Germany, Feb. 19, 1966, E 31,076
Int. Cl. F24d *3/10*
U.S. Cl. 237—66 **15 Claims**



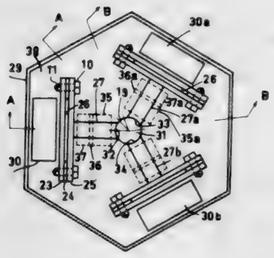
An expansion tank for a hot-water system and including chamber means divided by a flexible diaphragm in a first gas chamber and an expansion chamber communicating with the water-containing unit of the heating system, and a second gas chamber in communication with the first gas chamber and forming with the latter a plenum chamber, whereby the volume of the expansion chamber may increase at the expense of the first gas chamber in response, to expansion of the water of the heating system.

3,434,661
SNOW MAKING
Willard Sterling Boyle, 1 Magnolia Place, Summit, N.J., 07901, and David Cyril Creaghan, 237 Hampshire Road, Beaconsfield, Quebec, Canada
Filed Feb. 1, 1966, Ser. No. 524,313
Claims priority, application Great Britain, Feb. 2, 1965, 4,406/65
Int. Cl. A01g *15/00;* **B05b** *7/30*
U.S. Cl. 239—2 **10 Claims**



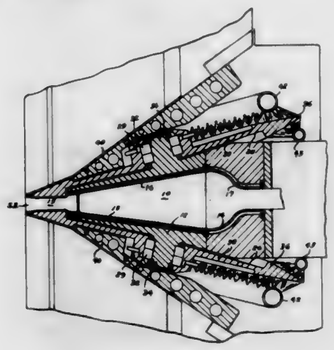
A method for making snow which comprises dispersing solid seeding particles in water and then spraying the water into the atmosphere at temperatures below freezing.

3,434,662
WATER FOUNTAINS FOR PLANE AND CONCAVE SHEETS
Ihsan Shakeeb Daghistani, Ringvagen 37, Lidingo, Sweden
Filed May 20, 1966, Ser. No. 554,934
Int. Cl. B05b *17/08, 1/04*
U.S. Cl. 239—17 **5 Claims**



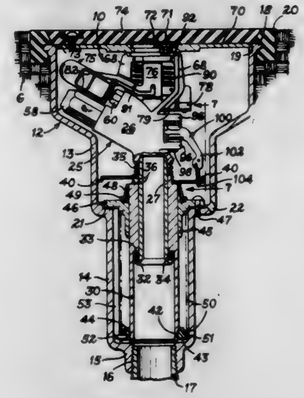
This invention relates to new types of water fountains. Water herein is shaped into plane and concave sheets having homogeneous, transparent and even surfaces with straight and vertical edges. By the use of underwater illumination, or by the transmission of coloured lighting through special arrangements within the fountain's structure, more impressive aesthetic effects than known before are produced on these sheets of water.

3,434,663
ROTATING LIP HOT GAS COLLECTOR NOZZLE
James E. Carpenter, Williamsville, and Richard L. Pleuthner, East Aurora, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 28, 1965, Ser. No. 491,859
Int. Cl. F02k *1/24, 11/02*
U.S. Cl. 239—132.3 **2 Claims**



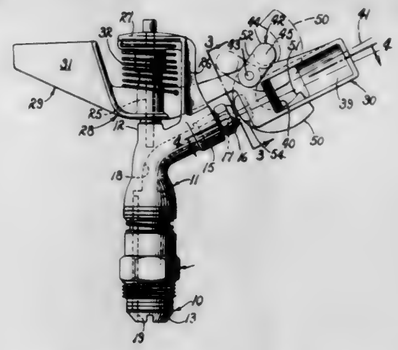
1. In a gas collector nozzle having a divergent wall member, means for cooling the said divergent wall member, a convergent wall member adjacent said divergent wall member, means for cooling said convergent wall member; an apparatus for providing a leading wall section for said nozzle comprising a pair of spaced fixed wall members attached to said divergent wall member; means for providing a pair of movable wall members having a portion thereof perpendicular and adjacent to said fixed wall members; means for continuously changing the portions of said movable wall members adjacent to said fixed wall members and means for continuously cooling the portion of said movable wall members nonadjacent to said fixed wall members.

3,434,664
ROTARY IMPULSE SPRINKLER
Anton R. J. Friedmann and Ralph H. Eby, Troy, Ohio, assignors to Ashley F. Ward, Inc., doing business as The Skinner Irrigation Company, Troy, Ohio, a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 679,100
Int. Cl. B05b *3/02*
U.S. Cl. 239—206 **7 Claims**



A part-circle sprinkler of the rotary impulse type has dual nozzles producing generally parallel streams, one of which is intermittently intercepted by a deflector on an impact arm to produce driving impulses, and the nozzles and deflector are arranged in closely spaced offset relation on the same side of the sprinkler head as to produce non-interfering streams and provide a compact assembly for mounting within a housing of conventional size to form a pop-up part-circle sprinkler.

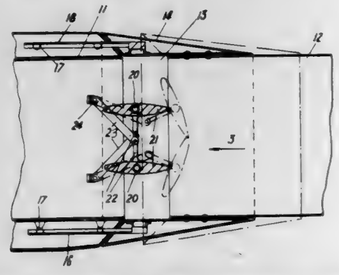
3,434,665
ROTARY IMPACT SPRINKLER HAVING CONTROL MEANS FOR INCREASING THE FORCE OF IMPACT
John A. Royer, Fresno, Calif., assignor to Buckner Industries, Inc., a corporation of California
Filed Jan. 16, 1967, Ser. No. 609,599
Int. Cl. B05b *3/08, 15/04*
U.S. Cl. 239—230 **10 Claims**



A sprinkler with an impacting drive lever having a drive vane engaged by nozzle spray for moving the lever away from impact and an augmentation vane engaged by the nozzle spray for augmenting movement of the drive lever to increase its momentum toward impact. A rocker member is pivotally mounted on the drive lever

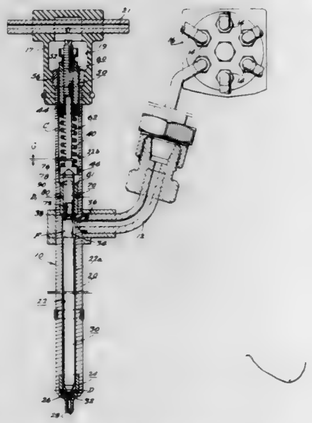
and has a closure member so related to the vanes that during movement of the drive lever toward impact, the nozzle spray is permitted to engage the augmentation vane but is prevented from engaging the drive vane until after impact.

3,434,666
THRUST REVERSER FOR A JET PROPULSION ENGINE
William Shaw, Alvaston, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Feb. 24, 1966, Ser. No. 529,848
Claims priority, application Great Britain, Mar. 17, 1965, 11,427/65
Int. Cl. A01g *25/02;* **B05b** *1/20*
U.S. Cl. 239—265.19 **10 Claims**



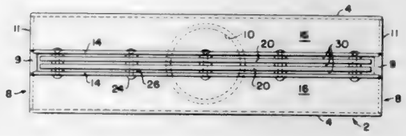
A thrust reverser for a jet propulsion engine comprises an exhaust duct, two members of aerofoil-section, movably mounted completely within the exhaust duct. Means are provided for moving the aerofoil-section members between an inoperative position in which they are disposed completely within and streamline to the flow path of jet gases but are out of contact with each other and, thus, do not substantially impede the flow of jet gases passing downstream through the exhaust duct, and an operative position in which they contact each other and deflect at least part of the jet gases forwardly.

3,434,667
FUEL INJECTION NOZZLE
Theodore S. Chmura, Chicopee, Mass., assignor to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed June 5, 1967, Ser. No. 643,697
Int. Cl. B05b *1/32;* **F02m** *41/00*
U.S. Cl. 239—533 **11 Claims**



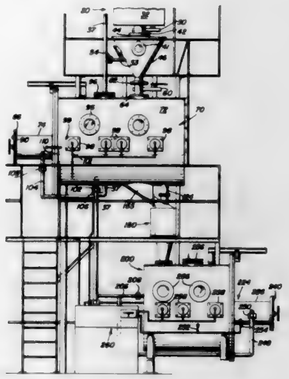
A fuel injection nozzle with an elongated valve body with an orificed tip at one end, an elongated, spring biased needle valve in the body, a valve guide above the needle valve engaging the upper end of the valve and having a leak off bore leading to a leak off chamber.

3,434,668
GAS BURNER FOR ATOMIC ABSORPTION SPECTROSCOPY
Eldon A. Boling, 222 Warren St., Brookline, Mass. 02146
Filed May 31, 1966, Ser. No. 553,883
Int. Cl. B05b *1/14*
U.S. Cl. 239—552 **4 Claims**



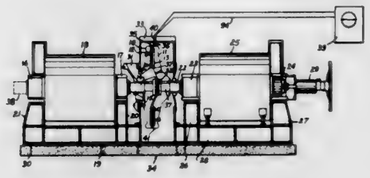
This invention is a burner for atomic absorption spectroscopy having a plural number of slots for the passageway of combustion gasses, the slots being elongated and of a critical width for the gasses used in order to prevent blowback of the burner, the burner providing an extremely stable and optically homogeneous (and therefore transparent) flame for absorption studies.

3,434,669
APPARATUS AND PROCESS FOR PRODUCING POWDERED METAL FROM DUCTILE ELEMENTAL METAL OR ALLOYS THEREOF
Vincent N. Di Giambattista, Trafford, Pa., assignor to Penn Nuclear Corporation, a corporation of Pennsylvania
Filed Dec. 29, 1965, Ser. No. 517,296
Int. Cl. B02c *21/00, 19/00;* **B07b** *13/04*
U.S. Cl. 241—16 **7 Claims**



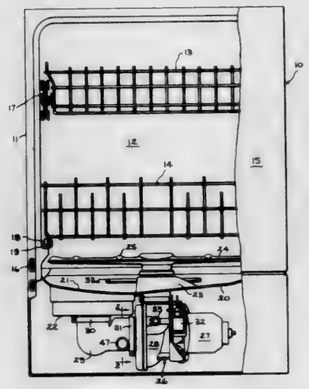
An apparatus and process for the attrition of ductible metals such as to produce finely divided metal powder which conforms to the rigid chemical and physical parameters required for the production of metallic components by powder metallurgy techniques. The apparatus provides a means of cleansing chips of the material to be reduced to powder, and attrition means for impacting the chips against one another to reduce them to the desired particle size, which apparatus includes means for maintaining a force flow of inert gas through the attriton zone, which gas is preferably refrigerated. The attrited metal is then hermetically packaged while still in an inert atmosphere so as to substantially preclude contamination of the metal powder by interstitial contaminants.

3,434,670
APPARATUS FOR MEASURING OUT OF TRAM AND PLATE SEPARATION OF DISC REFINERS
William Donald May, Montreal, Quebec, Canada, assignor to Pulp and Paper Research Institute of Canada, Pointe Claire, Quebec, Canada
Filed July 7, 1966, Ser. No. 563,408
Int. Cl. B02c *7/06, 7/14*
U.S. Cl. 241—37 **9 Claims**



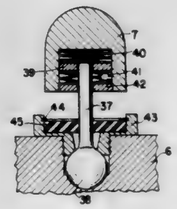
An apparatus for measuring the distance between and misalignment of plates in a disc refiner. A plurality of sensing coils are spaced around the periphery of one of the discs and at least one magnet is mounted adjacent the periphery of the other disc. Upon rotation of the discs relative to each other, current pulses are produced in the coils which have a value dependent upon the spacing between the sensing coil and the magnet. A means for determining the value of this signal, such as an oscilloscope, is provided in order to accurately measure both out of tram and plate separation.

3,434,671
PUMP FOR DISHWASHER
Donald S. Cushing and Thomas E. Jenkins, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Jan. 13, 1966, Ser. No. 520,388
Int. Cl. F04d *29/70;* **B02c** *13/10, 19/00*
U.S. Cl. 241—46 **3 Claims**



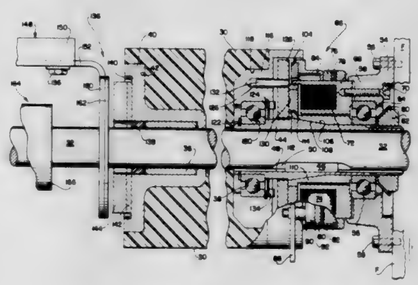
A rotary pump for circulating wash fluid through a dishwasher, wherein the pump is provided with macerating means which allow the pump to handle food soil and other foreign articles entrained in the wash fluid. The macerating means comprise a single blade pivotally secured on a short transverse projection provided on the pump's rotatable shaft closely upstream of a grid-like article grading element located across the pump inlet. Entrained articles larger than the element openings are stopped by the element. If macerable, they are macerated by the blade until small enough to pass through the openings. If unmacerable, they are batted from the element by the blades. Furthermore, should an unmacerable article become lodged in an element opening, the pivotal relationship between the blade and the shaft projection allows shaft rotation and pumping action to continue without damaging the pump.

3,434,672
HIGH SPEED CRUSHERS
Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed Mar. 18, 1965, Ser. No. 440,894
Int. Cl. B02c *13/286, 7/08, 1/10*
U.S. Cl. 241—194 **2 Claims**



This disclosure illustrates crushing maximum amounts of rock, ore, coal, etc. by means of a combination of one or more inner drums rotating at optimum speed, mounted on a central shaft and supporting a plurality of novel ball crushing devices flexibly mounted on upright shafts pivotally attached at intervals to the drum periphery, and a rigidly mounted outer crushing casing surrounding each inner drum at a distance that becomes smaller toward the bottom of each drum, thus reducing material to ever smaller pieces at it sinks in the crusher. Also described are various other components, such as plates covering portions of the crushing surface and vibrating at selective speeds up to ultra-sonic, that may be incorporated into the invention.

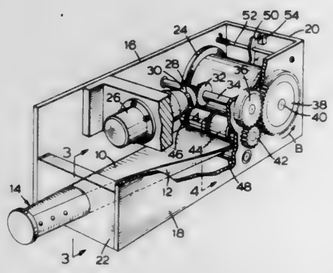
3,434,673
DRIVE MECHANISM
Charles W. Brouwer, East Greenwich, R.I., and Alan H. Norris, Somers, Conn., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Mar. 3, 1967, Ser. No. 620,531
Int. Cl. B65n *54/00*
U.S. Cl. 242—18.1 **21 Claims**



Method and apparatus for operating a drive roll which is freely rotatable on a drive shaft by operating an

electromagnetic clutch to periodically connect and disconnect the drive roll to the drive shaft. Where a winding machine employs a plurality of drive rolls, the clutch is periodically operated to disconnect at least one of the drive rolls from the drive shaft while maintaining the remainder of the drive rolls so connected.

3,434,674
STORABLE TUBULAR EXTENSIBLE MEMBER DEVICE
Ernest Groskopfs, Toronto, Ontario, Canada, assignor to The De Havilland Aircraft of Canada, Limited, Downsview, Ontario, Canada
Filed May 1, 1967, Ser. No. 635,247
Int. Cl. B65h *75/00;* **E04h** *12/18*
U.S. Cl. 242—54 **14 Claims**



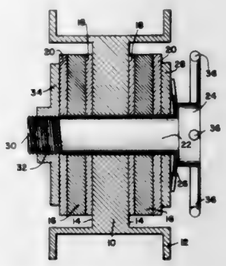
This invention provides a storable tubular extensible member device which is characterized by a member formed of at least two partially tubular strips arranged with their concave surfaces facing one another as contrasted with members known heretofore and formed of one or more fully tubular elements, each of which is overlapped upon itself. With the improved extensible member of the invention it is possible to achieve greater compactness of the device as a whole. The member of the invention also has advantageous strength, straightness, thermal deflection resistance and other qualities. The invention also provides an improved storage and extending mechanism characterized by a particular geared connection between a drive roller and the storage spool or spools.

3,434,675
ADJUSTABLE ROLL-SUPPORTING SPINDLE
Ira Zuckerman, Far Rockaway, N.Y., assignor to Panther Machine Corp., New York, N.Y., a corporation of New York
Filed July 18, 1967, Ser. No. 654,188
Int. Cl. B65h *75/18*
U.S. Cl. 242—72 **4 Claims**



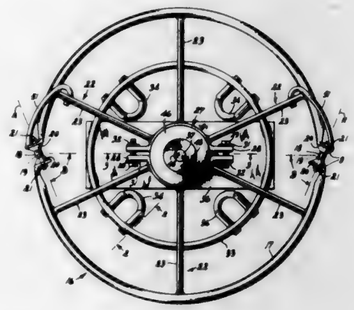
An adjustable spindle having a plurality of adjustable units each including a pair of slidable rings coaxially surrounding and slidably mounted on an elongated tube with leaf springs therebetween. An adjusting means axially displaces the rings simultaneously toward or away from each other along the tube thereby controlling the bowing of the leaf springs whereby the springs can be caused to press against the inner surface of a roll of sheet material so as to support the latter on the spindle.

3,434,676
FISHING REEL BRAKE
David Bogue, c/o Speedway Manufacturing and Equipment Co., R.R. 1, Box 112, Jupiter, Fla. 33458
Filed Feb. 17, 1967, Ser. No. 616,833
Int. Cl. A01k *89/02;* **F16d** *69/00, 11/00*
U.S. Cl. 242—84.5 **3 Claims**



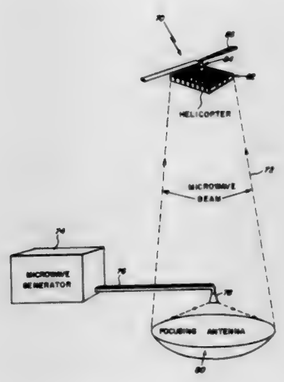
A brake having relatively rotatably movable members having radial surfaces movable into and out of abutment, one of the surfaces being silicone rubber. Since silicone rubber has a dynamic coefficient of friction greater than its static coefficient of friction, the brake is eminently suited for use where the loading is comparable with those to which fishing reels are subjected.

3,434,677
REVERSIBLE FLYER FOR PAYING OFF WIRE FROM A SUPPLY SPOOL
Eugene S. Hannis, Fords, and Paul J. Reale, Montvale, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 7, 1967, Ser. No. 651,872
Int. Cl. B65h *49/00*
U.S. Cl. 242—128 **9 Claims**



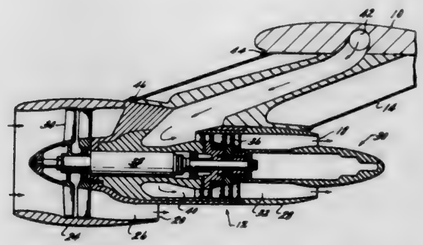
A reversible flyer for paying off wire from a stationary supply spool includes a ring freely revolvable about the axis of a supply spool and a pair of freely rotatable sheaves angularly disposed on the ring at diametrically opposite positions. A deflector is provided adjacent each sheave such that the wire being payed off may move around the ring and automatically engage one or the other of the sheaves dependent on the direction of rotation of the wire.

3,434,678
MICROWAVE TO DC CONVERTER
William C. Brown, Weston, Mass., Roscoe H. George, West Lafayette, Ind., and Neil I. Heenan, Needham, and Roger C. Wonson, Beverly, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed May 5, 1965, Ser. No. 453,415
Int. Cl. B64g *1/00*
U.S. Cl. 244—1 **3 Claims**



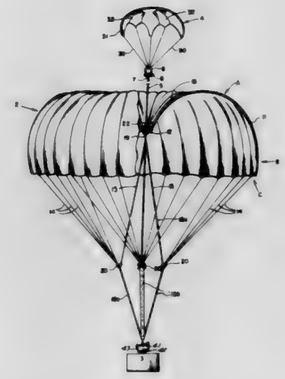
A combined antenna and conversion mechanism for reception of beamed high frequency electromagnetic energy in space including a large array of unidirectional current semiconductor rectifier devices. A self-supporting space vehicle utilizing the rectified DC electrical energy for propulsion is disclosed in an illustrative embodiment.

3,434,679
SIMULATED REACTION ENGINE MODEL
John T. Kutney, Wyoming, and John R. Erwin, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed May 9, 1966, Ser. No. 548,629
Int. Cl. G01m *9/00;* **B64d** *33/00*
U.S. Cl. 244—53 **3 Claims**



A simulation model for simulating the in-flight aerodynamic characteristics of a ducted fan type turbojet engine and having an external configuration similar to the engine simulated and including a fan disposed within an annular casing and turbine means for driving the fan. The external configuration of the model is sized in predetermined reduced lineal scale to the engine simulated and the fan and turbine means are sized to develop a pressure ratio across the fan substantially similar to the pressure ratio across the simulated engine fan and a mass flow rate reduced in relation to the mass flow rate of the simulated engine by substantially the square of the predetermined reduced lineal scale.

3,434,680
REREEFING PARACHUTE ASSEMBLY AND SYSTEM
Otis B. Ferguson, Alamogordo, N. Mex., assignor to Recovery Systems Research, Inc., Alamogordo, N. Mex., a corporation of New Mexico
Filed May 29, 1967, Ser. No. 642,103
Int. Cl. B64d *17/26, 1/00, 17/68*
U.S. Cl. 244—142 **14 Claims**



A parachute having a novel suspension and rigging assembly carried by the canopy making it suitable for gravitational payload drops, payload towing by aircraft and reopening for airborne support of the payload upon release and mid-air recovery of the payload preceding such towing in a mid-air recovery system and the parachute having a canopy with a central portion pulled down from its topmost portion while airborne in a payload bearing condition.

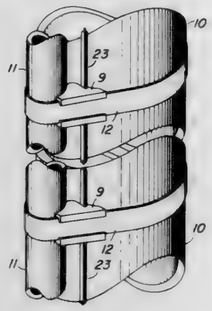
3,434,681
PARACHUTE CANOPY DEFLATION APPARATUS
Victor G. Bockelmann, El Centro, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 12, 1968, Ser. No. 697,455
Int. Cl. B64d *17/02;* **B63b** *21/48*
U.S. Cl. 244—145 **3 Claims**



The deflation apparatus is formed of a number of pockets disposed on the external surface of the parachute canopy and preferably located on alternate gores at the skirt portion of the canopy with the opening of each pocket facing upwardly away from the skirt toward the apex of the canopy. If the parachute lands on a body of water, the pockets scoop the water to anchor the chute, deflate it and prevent its being blown along the water surface. Such pockets are known in the art although previous pockets, due to the unrestricted length of their pocket openings, presented serious problems. The present pockets instead of having a completely open and unrestricted mouth portion along the entire open edge of the pocket,

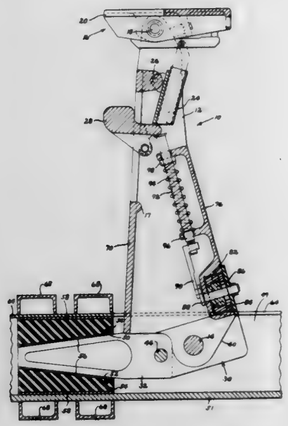
utilize straps securing the central portion of each pocket to the canopy. The straps, which are specially formed and specially secured, provide sufficient strength and rigidity to the pockets to avoid ripping of their seams and, particularly to prevent them from being inverted or pulled inside out so as to spill the trapped water.

3,434,682
WIRE POSITIONING AND PROTECTIVE DEVICE
William A. Nestlerode, Sr., Littleton, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Dec. 29, 1966, Ser. No. 605,667
Int. Cl. F16l *3/22*
U.S. Cl. 248—68 **4 Claims**



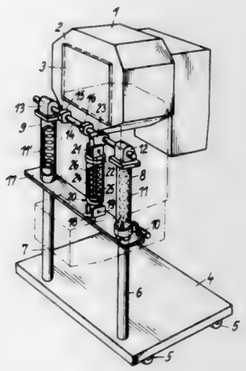
A wire positioning and protective device made of resilient material and having a generally triangular prism configuration with one lateral face having a wire-receiving notch and another lateral face having a band-receiving undercut channel, said band positioning the device relative to contiguous tubing and cable to thus protect a wire extending downhole in an oil well against damage.

3,434,683
SINGLE STRUT TRAILER HITCHES WITH CUSHIONING MEANS
Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 17, 1967, Ser. No. 631,497
Int. Cl. B60p *7/06;* **B61d** *3/16*
U.S. Cl. 248—119 **9 Claims**



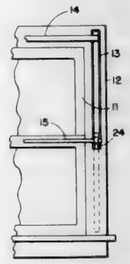
A tractor operated collapsible trailer hitch includes a single strut, instead of the usual two struts. The strut is pivotally mounted on a fulcrum which is supported on a railroad car by a lever in one embodiment, and by two pivoted legs or links in another embodiment. When the hitch is erect, locking means lock the lever to the strut in the first embodiment, or lock the pivoted links to the car in the second embodiment, so that the strut can pivot only on one axis. A rubber shock absorber at the lower end of the strut cushions its pivoting movement.

3,434,684
STAND FOR AN X-RAY DEVICE
Hans E. Warden, Stockholm-Solna, Sweden, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 19, 1966, Ser. No. 573,567
Claims priority, application Sweden, Aug. 20, 1965, 10,925/65
Int. Cl. A47g *29/00;* **F16m** *11/06*
U.S. Cl. 248—162 **1 Claim**



A stand for an X-ray image intensifier has a base plate provided with casters and carrying two telescopic extensible columns with bearing blocks for a horizontal swivel arm. Means connecting the swivel arm with the casing of the X-ray image intensifier engage the casing close to the lower edge of its front surface. A device is provided for compensating the weight of the casing projecting to one side.

3,434,685
SLIDABLE SUPPORT FOR WINDOW COVERINGS
Saverino S. Gorgone, 7—07 122nd St., College Point, N.Y. 11356
Filed Feb. 20, 1967, Ser. No. 617,359
Int. Cl. A47h *1/10, 5/14*
U.S. Cl. 248—263 **2 Claims**



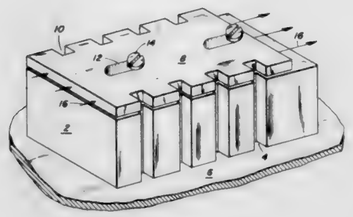
A slidable support for window coverings such as curtains, drapes, Venetian blinds and the like, having relatively vertical sliding tracks adapted to be attached to window frames and to support the window covering, whereby the window covering may be lowered into easy reach or locked into proper position.

3,434,686
SUSPENDER FOR THIN OBJECTS
Yoshizaburo Aoi, 509—3 Hata-machi, Ikeda, Osaka, Japan
Filed Apr. 25, 1967, Ser. No. 633,626
Claims priority, application Japan, July 19, 1966, 41/68,465
Int. Cl. A47f *5/00*
U.S. Cl. 248—316 **1 Claim**



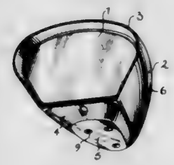
A device for suspending thin objects including first and second plates with the second plate being so formed as to provide a triangular space which tapers gradually downward between the plates. A substantially U-shaped frame is mounted for free upward and downward sliding movement on the second plate and a roller is rotatably supported axiswise in the leg portions of the frame for clamping engagement with the object to be suspended. At least one of the leg portions is extended downwardly to form an extension for releasing the roller by sidewise pull on the suspended object.

3,434,687
CIRCUIT MODULE GUIDE AND RETAINING DEVICE
Ralph E. Boyer, Pittsfield, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 22, 1967, Ser. No. 669,959
Int. Cl. F16b *2/00;* **A47g** *19/08;* **H05k** *1/00*
U.S. Cl. 248—361 **5 Claims**



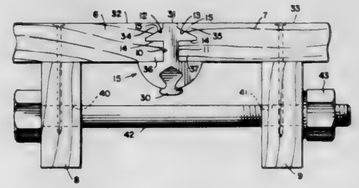
A guide and retaining device for a circuit module wherein a guide block is fixedly secured wherever the module is desired. Two similarly shaped plates are slidably mounted above the guide block but are capable of being fixedly secured thereto. Each of the plates has a plurality of vertical ribs forming a vice-like mechanism which opens and closes around portions of the module as the plates are moved relative to each other. Flanges at the top of each vertical rib prevent vertical movement of the module.

3,434,688
ADJUSTABLE SIDE VIEW MIRROR
Joachim Engelmann, 3002 Wennebostel 57, Hannover, Germany
Filed Oct. 18, 1966, Ser. No. 587,468
Claims priority, application Germany, Oct. 25, 1965, E 30,357
Int. Cl. B60r *1/06*
U.S. Cl. 248—483 **6 Claims**



A side rear view mirror for motor vehicles, in which the housing encasing the mirror structure is composed of a bottom member detachably connected to the motor vehicle and carrying said mirror structure and of a shell member open at its front and at its bottom and detachably connected to said bottom member for closing the open bottom portion of said shell member.

3,434,689
PANEL-TYPE FORM SYSTEM WITH GASKET STRIPS
Owren J. Aftreth, Chappaqua, N.Y., assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio
Filed Mar. 13, 1968, Ser. No. 712,792
Int. Cl. E04g *9/10;* **B29c** *1/02*
U.S. Cl. 249—193 **4 Claims**



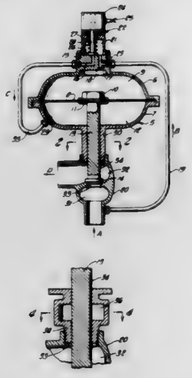
Concrete forms system with aligned panels and elastomer filler strip gasket between opposing edges of panels providing substantially water-tight seal.

3,434,690
ELECTRICALLY OPERATED FLUID CONTROL VALVE
Joseph D. Troncale, Sr., Arcadia, Calif. (1518 N. Spring St., Los Angeles, Calif. 90012)
Filed July 20, 1965, Ser. No. 473,361
Int. Cl. F16k *31/365, 31/42*
U.S. Cl. 251—30 **17 Claims**

1. In a fluid control valve the combination comprising:
a body, said body having an internal hollow cavity;
a flexible impervious diaphragm positioned within said body so as to separate said hollow cavity into an upper and lower chamber;
inlet and exhaust ports provided by said body interconnecting with said upper chamber;
control means seated over said exhaust port so as to close the same;
activating means for removing and returning said control means from its seated position over said exhaust port;
exhaust means interconnecting said exhaust port and said lower chamber;

coupler means capable of conducting fluid secured to said lower chamber for interconnecting said body with a main fluid line;

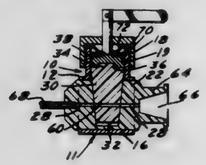
means carried by said body for obstructing fluid flow through said coupler means, said obstructing means being comprised of a valve stem slideably engaged with said body, said valve stem having an annular flange on one end thereof positioned so as to interrupt the flow of the line fluid through said coupler means, said obstructing means being secured to said flexible diaphragm so as to be displaced simultaneously with the flexing of said diaphragm;



relief drain means interconnecting said lower chamber and said main fluid line at a point in said line subsequent to said obstructing means, said relief drain means comprised of a shallow groove carried by said valve stem, said groove extending from a point on a portion of said stem position in said lower chamber to a point on a portion of said stem positioned in said coupler means, and an annular cavity carried by said body surrounding at least a portion of said stem, said cavity being positioned between said lower body cavity and said coupler means; and

by-pass means interconnecting said upper chamber and said main fluid line at a point in said line preceding said obstructing means for diverting a portion of the line fluid into said upper chamber.

3,434,691
VALVE
Clark H. Hamilton, 707 Whitley St., Whittier, Calif. 90601
Filed Oct. 12, 1964, Ser. No. 403,223
Int. Cl. F16k *5/02, 27/06*
U.S. Cl. 251—184 **14 Claims**



1. In a plug valve mechanism for controlling the flow of fluid:

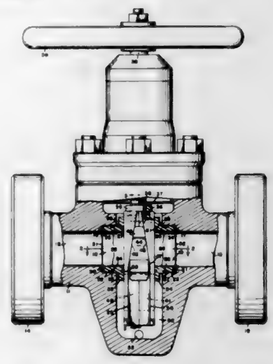
(A) a body of plastic material, said body having an inwardly tapered recess and fluid flow passages connected therewith;

(B) a rigid housing on at least a portion of said body compressively restraining said body;

(C) a plastic tapered plug valve member operably disposed in said recess for rotation therein, said plug valve member having passage means movable into and out of communication with the body passages;

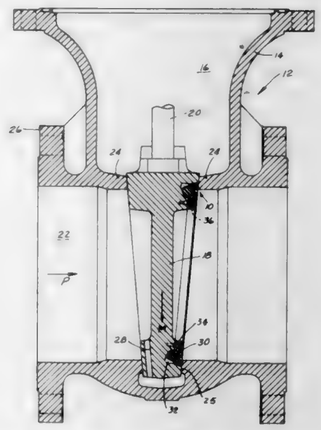
(D) and resilient means for urging said valve member inward in said recess.

3,434,692
BIFACED WEDGED GATE VALVE
Cassius L. Tillman III, % Precision Rebuilders, Inc., P.O. Box 343, Peters Road, Harvey, La. 70058
Filed Feb. 23, 1967, Ser. No. 618,202
Int. Cl. F16k *3/02, 3/12, 3/316*
U.S. Cl. 251—202 **1 Claim**



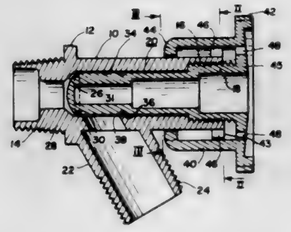
A gate type valve in which a two part sliding gate is disposed between two ports in a valve body. Shiftable seal members are disposed between the gate and ports to maintain a correct attitude between the seals and gate. Marginal wedges are provided in the gate ports in cooperation with a camming member to function when the gate is in its closed position for the purpose of maintaining a tight closure.

3,434,693
TORSIONAL ROTATIONAL VALVE SEAL CONSTRUCTION
Harrison J. Britton, Fairhaven, N.J., assignor to Alloy Steel Products Co., Linden, N.J., a corporation of New Jersey
Filed May 4, 1967, Ser. No. 636,130
Int. Cl. F16k *3/18*
U.S. Cl. 251—203 **10 Claims**



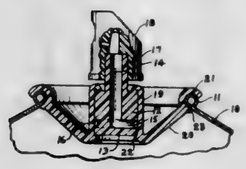
A valve seal ring has an outer, large diameter sealing surface that is forced against an opposing working surface and a smaller diameter inner sealing surface on the opposite side of the cross section center of rotation so that the sealing forces generate a couple. Because of the geometry of the seal ring, this sealing couple is greater than any opposing frictional couple forcing the cross section of the seal ring to rotate in torsion. The inner sealing surface is carried on an inclined surface of the valve member to provide line contact at its inner edge. That sealing edge slides up the incline during rotation to compensate for reduction of axial dimension.

3,434,694
VALVE MECHANISMS
Harvey G. Skinner, Ligonier, Pa., assignor, by mesne assignments, to Westmoreland Plastics Company, Latrobe, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1966, Ser. No. 538,745
Int. Cl. F16k *1/04, 1/32*
U.S. Cl. 251—215 **12 Claims**



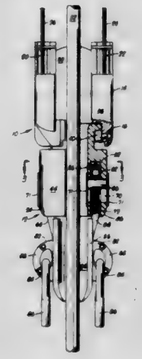
I disclose, in a valve, the combination comprising a generally tubular body member having a valve seating surface therein and a cylindrical portion adjacent to and communicating with said surface, a handle and stem component having its stem portion relatively closely fitted within said cylindrical portion, and threadedly engaged therewith, said handle and stem component having valve seat engaging and sealing means on the inward end thereof and a skirt portion disposable coaxially of and loosely surrounding the outward end portion of said cylindrical portion and said body member, said body member having a retaining flange mounted on said outer cylindrical end portion and enclosable within said skirt portion, and releasable detent means cooperatively formed on said skirt and on said retaining flange for releasably retaining said valve stem within said cylindrical portion.

3,434,695
VALVE STRUCTURE FOR AEROSOL CONTAINER
Derek B. Green, Manchester, N.H., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed May 3, 1967, Ser. No. 635,772
Int. Cl. F16k *13/00;* **B65d** *83/16*
U.S. Cl. 251—349 **4 Claims**



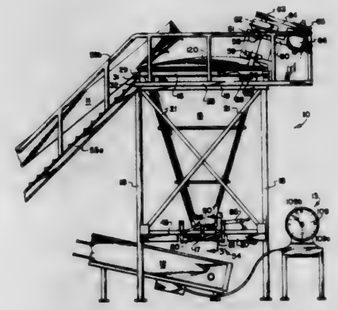
An exceptionally cheap aerosol valve structure is provided which can be molded as one piece of plastic material. A valve plug carries a hollow stem adapted to receive common forms of actuator buttons. A flexible wall or skirt is initially molded in an upwardly extending position and rolled around the plug to seal the valve which can be opened by moving the stem with a tilt action or vertically. An annular wall extends from the skirt and carries a rim adapted for attachment to the rolled bead of an aerosol can.

3,434,696
HOOK ASSEMBLY
Wayne L. Brackin, Warren, Tex., assignor to Dresser Industries Inc., Dallas, Tex., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,929
Int. Cl. B66c *1/36;* **E21c** *9/00*
U.S. Cl. 254—192 **5 Claims**



A hook assembly for use with a split-type traveling block to raise and lower a string of pipe during the drilling, completion and workover of oil and gas wells and the like wherein said hook assembly includes an adapter and a hook, each being provided with an opening sized and arranged to receive the string of pipe. The upper end of the adapter is connected with the traveling block and the hook is supported resiliently by the adapter for limited pivotal and longitudinal movement relative thereto.

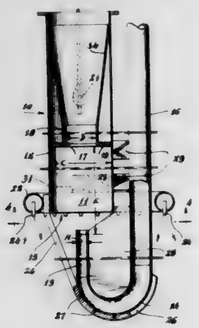
3,434,697
MIXING MACHINE
Arthur W. Carlson and Ralph J. Carlson, Salt Lake City, Utah, assignors to A & R Meats, Inc., Murray, Utah, a corporation of Utah
Filed July 12, 1967, Ser. No. 652,908
Int. Cl. B01f *15/04, 15/02, 9/08*
U.S. Cl. 259—3 **16 Claims**



A machine for mixing meat and the like, having an inverted, truncated cone shaped, mixing vessel, open at

its large top to receive material to be mixed, and a valve at the small bottom controlling discharge of the mixed material from the vessel. The mixing vessel is slowly turned around its center axis and an auger extending substantially the length of the inner wall and positioned close to the wall is journaled in a bearing that is mounted for universal rotation in a spider housing at the bottom of the vessel and is driven to revolve about its longitudinal axis. When the vessel and the auger are respectively rotated in one direction about their central axes the auger forces material in the vessel upwardly and away from the side of the vessel with the product being mixed thereafter tumbling to the center to continue its mixing action as it moves downwardly. The rotations of the vessel and of the auger are reversed upon opening of the valve and will force a pre-set amount of the mixed material downwardly through the valve before the valve is automatically closed and the rotations of the vessel and the auger are again reversed.

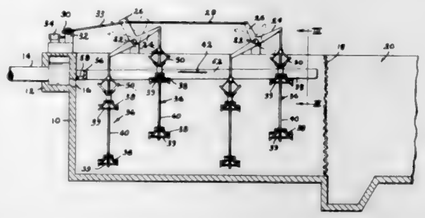
3,434,698
FLUID MIXING, MOVING AND ATOMIZING METHODS AND APPARATUS
Millard F. Smith, Westport, Conn. (P.O. Box 295, Saugatuck, Conn. 06880), and Anthony V. Anusauckas, Bridgeport, Conn.; said Anusauckas assignor to said Smith
Continuation-in-part of application Ser. No. 319,418, Oct. 28, 1963. This application Sept. 19, 1966, Ser. No. 580,394
The portion of the term of patent subsequent to Aug. 8, 1984, has been disclaimed
Int. Cl. B01f *15/02, 5/02*
U.S. Cl. 259—4 **18 Claims**



Methods and apparatus for mixing, aspirating and atomizing fluids or immersed granular materials for use in dredging and grain-moving operations, atomizing of molten metals or like operations, employing a stream of supply fluid projected into an enlarged mixing chamber having an intake portal exposed to an intake fluid, with an outlet portal of relatively small cross-sectional area joined to the mixing chamber at a point of abrupt reduction in diameter of the fluid stream passing therethrough.

3,434,699
METHOD AND APPARATUS FOR WATER TREATMENT
Fred E. Stuart, 1157 Bel Air Drive, Daytona Beach, Fla. 32018
Filed June 26, 1967, Ser. No. 648,754
Int. Cl. B01f *15/02, 13/00*
U.S. Cl. 259—4 **17 Claims**

Liquid treatment method and apparatus in which walking beam type agitators in a flocculating tank carry upwardly opening troughs which are inclined downwardly toward at least one end and lift water out of the tank



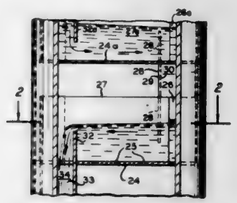
when the pertaining end of the beam moves upwardly, whereupon the liquid flows out the low end of the trough thereby inducing circulation of the liquid in the tank.

3,434,700
GAS-LIQUID CONTACT APPARATUS FOR GAS CLEANERS
Robert W. Sexton, Louisville, and George J. Akers, Pleasure Ridge Park, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky.
Filed Apr. 24, 1967, Ser. No. 633,000
Int. Cl. B01d *47/02*
U.S. Cl. 261—109 **6 Claims**



An improved gas-liquid contact arrangement for a gas cleaning apparatus including a gas-liquid contacting tray having a plurality of spaced openings therein and a grid arrangement for supporting a plurality of valves in spaced, cooperative relation with the openings.

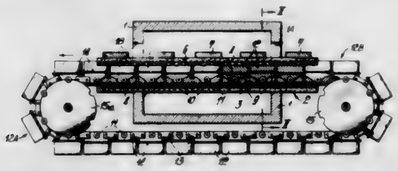
3,434,701
VAPOR-LIQUID CONTACTING APPARATUS
Robert D. Bauer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,317
Int. Cl. B01d *3/22*
U.S. Cl. 261—114 **6 Claims**



This invention is a vapor-liquid contacting apparatus in which a plurality of vertically-spaced horizontal trays having perforations permitting vapor flow upward therethrough are provided with downcomers at opposite sides, one from the tray above, the other to the tray below, and liquid flow over the tray from one downcomer to the other is directed in a serpentine path by a plurality of

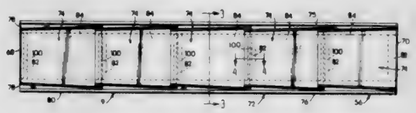
baffles extending in opposite directions so that the direction of flow in turning around the ends of the baffles alternates in opposite directions. In FIGURES 2 and 3 there is one tray at each level and only two baffles **26** and **27**. In FIGURE 4 there are a plurality of trays (specifically two trays **38** and **38'**) at each level. The flow may go from the outer to the inner part of the column on one level and from the inner to the outer part on the next level. In FIGURE 5 there are at least three baffles **52**, **53** and **54**.

3,434,702
CONVEYOR FURNACE
Wilhelm Krause, Essen, Germany, assignor to Koppers-Wistra Ofenbau GmbH, Dusseldorf-Heerdt, Germany
Filed July 3, 1967, Ser. No. 651,051
Claims priority, application Germany, July 6, 1966, K 59,668; Oct. 12, 1966, K 60,442; Oct. 24, 1966, K 60,541
Int. Cl. F27b *9/24;* **F27d** *3/12*
U.S. Cl. 263—8 **33 Claims**



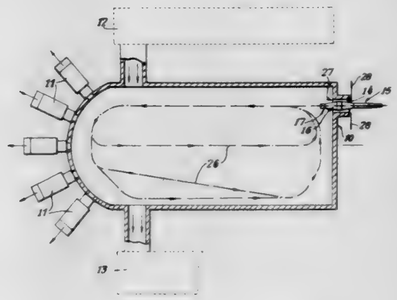
A metallurgical conveyor furnace wherein the upper stringers of several endless conveyors travel through a heating chamber and convey metallic workpieces in stepwise fashion. The conveyors comprise articulately connected links which move lengthwise as well as up and down while travelling along the upper stringers. Such links are movable into and extendable upwardly from cooling jackets mounted in the heating chamber so that the workpieces are lifted and advance with the links when the links along the upper stringers are raised and that the workpieces rest on the jackets when the links are retracted.

3,434,703
HEARTH
Wilfred G. Shedd, 8401 Westridge Road 46805, and Beresford N. Clarke, 4625 Crestwood Drive 46807, both of Fort Wayne, Ind.
Filed Dec. 9, 1966, Ser. No. 600,447
Int. Cl. F27b *9/20;* **B65g** *27/12*
U.S. Cl. 263—21 **8 Claims**



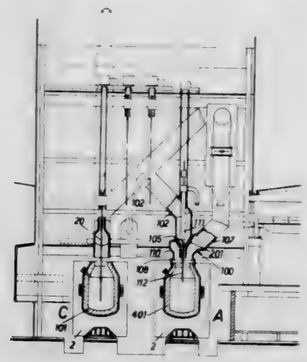
A hearth for use in a shaker-hearth-type heat treating furnace which has an elongated rigid lattice type frame on which a plurality of pans are arranged successively between the opposite ends of the frame. Each of the pans is secured to the frame adjacent one pan end and all pans except a single pan adjacent to one frame end receives into the other pan end the secured end of the next adjacent pan. Otherwise, the pans are unsecured to the frame. Openings in the frame communicate with the bottom of each of the pans.

3,434,704
HEATING UP FURNACES
Trevor Ward, London, England, assignor to Hotwork Limited, London, England
Continuation-in-part of application Ser. No. 416,718, Dec. 8, 1964. This application Dec. 11, 1967, Ser. No. 689,672
Int. Cl. F27d *7/02*
U.S. Cl. 263—43 **5 Claims**



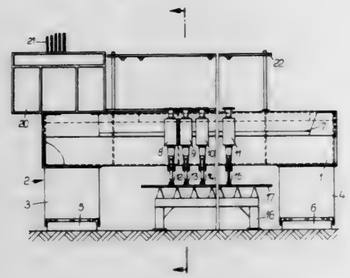
Heating up furnaces from cold is performed by a burner delivering a high speed flow of combustion products into the furnace through an opening in the wall thereof so as to entrain and circulate with the furnace atmosphere. The high speed flow is produced by directing the combustion products through a convergent nozzle the opening of which into the furnace is free and unobstructed.

3,434,705
PNEUMATIC STEELMAKING PLANT
Carlo Pere, Genoa, Italy, assignors to Società Italiana Impianti—Società per Azioni
Filed Jan. 24, 1966, Ser. No. 522,491
Claims priority, application Italy, June 15, 1965, 13,641/65; Sept. 6, 1965, 19,922/65
Int. Cl. C21c *5/28, 5/44, 7/00*
U.S. Cl. 266—13 **3 Claims**



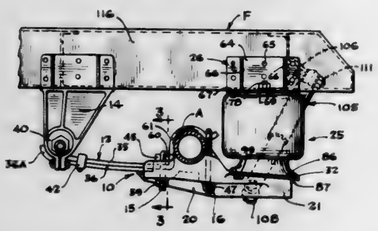
A plurality of converters arranged for movement in a continuous path along which various steelmaking stations are positioned. One station involves burning off excess carbon and the evolved hot carbon monoxide is passed to another station at which charging of cold scrap is effected, for preheating purposes.

3,434,706
TRAVERSING CARRIAGE FOR METAL-BURNING CUTTING MACHINES
Georg Roder, Fechenheim, Frankfurt am Main, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 22, 1966, Ser. No. 581,269
Claims priority, application Germany, Sept. 24, 1965, M 66,761
Int. Cl. B23k *37/02*
U.S. Cl. 266—23 5 Claims



A traversing carriage for a metal-burning cutting machine, which is mounted on the carriage, includes a liquid-sealed rail structure upon which the carriage is traversed for trapping any material against reaching the traversed mounting.

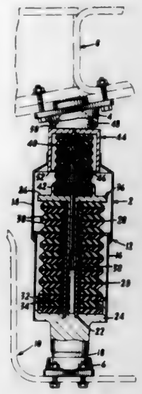
3,434,707
SUSPENSIONS
John E. Raidel, 2306 Sunset Drive, Springfield, Mo. 65804
Filed June 2, 1966, Ser. No. 554,762
Int. Cl. B60g *11/46, 11/02;* F16f *1/18*
U.S. Cl. 267—31 5 Claims



A vehicle suspension of combined leaf and air springs adjustable for axle alignment. Special clamps for permitting relative sliding movement of leaf springs.

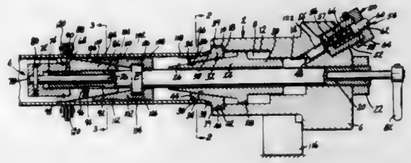
3,434,708
TWO-STAGE RUBBER VEHICLE SUSPENSION
Raymond A. Hawk, Jr., Hokendauqua, Pa., assignor to Mack Truck, Inc., Allentown, Pa., a corporation of New York
Filed Feb. 10, 1967, Ser. No. 615,213
Int. Cl. B60g *11/22;* B61g *11/00;* F16f *1/36*
U.S. Cl. 267—63 4 Claims

In the particular embodiments of the invention described herein, a two-stage spring apparatus is provided for resiliently supporting a vehicle under variable load conditions including two spring members, one more readily compressible than the other, and a mechanism responsive to the varying loads for limiting the compression of the more readily compressible spring member and



transferring the load to the less compressible spring member.

3,434,709
PIPE GRIPPING AND FLARING APPARATUS
Marcus Ramsay, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application Oct. 22, 1965, Ser. No. 501,645. Divided and this application Jan. 4, 1968, Ser. No. 713,553
Int. Cl. B23b *31/40;* B23q *3/14*
U.S. Cl. 269—48.1 5 Claims

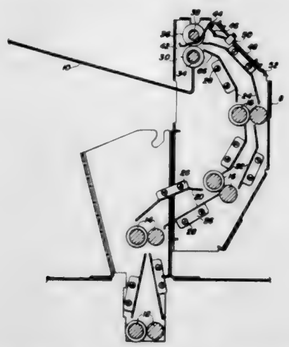


A device for gripping the internal surface of a pipe comprising a segmented gripping member which includes an outer surface with projections for gripping the pipe and an internal tapered surface which is in mating engagement with an expanding member having a complementary outer tapered surface. A rod and driver member cooperate with the expanding member to move the segmented gripping member into gripping relationship with the pipe.

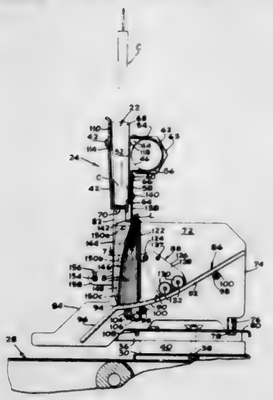
3,434,710
SHEET HANDLING APPARATUS
Norman L. Yarger, Ontario, and Robert H. Liva, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 13, 1966, Ser. No. 586,474
Int. Cl. B65h *5/06*
U.S. Cl. 271—51 11 Claims

Anti-buckling apparatus within a sheet transport system for moving flexible sheets. the sheets are prevented from buckling by inserting in the path of movement of the sheets a member that extends into the path of travel

of the sheets and causes sheets passing the point where the member protrudes into the path of travel to bow adding beam strength to the sheet thus providing them with subsantial rigidity.



3,434,711
BAGGING APPARATUS
Robert J. Betschart, Sacramento, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Jan. 28, 1966, Ser. No. 523,598. Divided and this application Feb. 8, 1968, Ser. No. 718,287
Int. Cl. B65h *1/10*
U.S. Cl. 271—62 4 Claims



A presser plate is pivotally attached to a presser assembly mounted on wheels. The assembly is freely movable on a curvilinear guideway whereby the plate applies pressure to a stack of bags. The latter are removed for packaging confections.

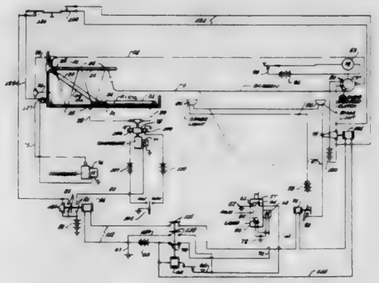
3,434,712
APPARATUS FOR DETERMINING TIME AND ORDER OF ARRIVAL
Yoichi Matsumura, Kawasaki-shi, Mitsuo Ogawa, and Mitsuhiro Toda, Yokohama, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Oct. 7, 1964, Ser. No. 402,191
Claims priority, application Japan, Oct. 9, 1963, 38/52,651
Int. Cl. A63k *3/00*
U.S. Cl. 272—4 3 Claims

A device for automatically determining with a high precision the times of arrival and the lap times, at measured intervals, for each of a plurality of contestants swimming or running an assigned separate prescribed course, and for



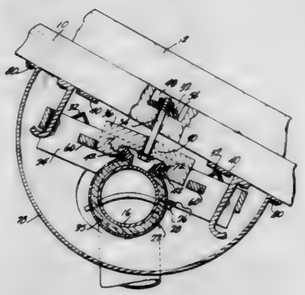
automatically judging the order of finish of each contestant, and further for indicating and recording the results.

3,434,713
METHOD OF AND SYSTEM FOR STAGING PRODUCTIONS
James J. Kent, Jr., Glendora, Calif., assignor to 4-D Productions, Pasadena, Calif., a partnership
Filed Dec. 14, 1964, Ser. No. 418,025
Int. Cl. A63g *5/00, 3/00*
U.S. Cl. 272—10 11 Claims



A system for presenting alternately viewed live and filmed scenes including a projection system having a projection screen with opaque and see-through sections, and means for rapidly moving the screen edgewise to selectively locate the sections in viewing position, in such manner as to permit alternate projection of a filmed scene onto the opaque screen section and exposure of a live scene through the see-through screen section.

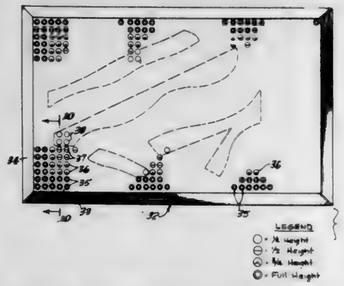
3,434,714
TEETER-TOTTER WITH ADJUSTABLE BRAKE MEANS
Guy Riley Lanman, P.O. Box 97, El Reno, Okla. 73036
Filed Apr. 21, 1965, Ser. No. 449,725
Int. Cl. A63g *11/00*
U.S. Cl. 272—54 4 Claims



Adjustable brake mechanism for a teeter-totter. The teeter-totter board is mounted on a bearing board which is in turn mounted for rotation about a fixed axis. At each end of the bearing board is a fulcrum bar which is axially adjustable along the bearing. Surrounding the axis is a brake band with sockets in its ends. Depending from the

center of the teeter-totter board is a bolt supporting a pair of interconnected lift blocks, each pivotable about a point on either side of the axis and projections engaging the brake band sockets. When the teeter-totter board pivots about either of the adjustable fulcrum bars it pulls up on the bolt which causes the lift blocks to pivot and in turn tighten the brake band about the axis, thereby causing the teeter-totter board to slow its motion.

3,434,715
STRESS REDUCING FLOOR SURFACE
Charles R. Brantingham, 110 Pine Ave. 90802, and Bruce E. Beekman, 154 Roycroft Ave. 90803, both of Long Beach, Calif., and Loren W. Eames, 4233 N. Peck Road, El Monte, Calif. 91732
Filed Oct. 6, 1966, Ser. No. 584,871
Int. Cl. A63g; A61h *7/00*
U.S. Cl. 272—57 **10 Claims**

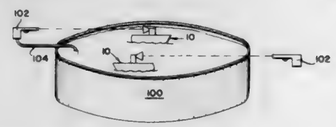


1. A resilient floor including a surface component of elastomeric material capable of inducing substantially continuous balanced myotonic effort in the leg muscles of a person whose work requires standing for prolonged periods of time at a work station or the like; said component being characterized by having a series of areas of lesser resilient resistance to the weight of a foot of a person imposed thereon separated by elongated areas of greater resilient resistance to such weight, the width of said areas of lesser resilient response being not greater than half the width of the forefoot portion of a person standing thereon and the difference in resiliency between said areas of lesser and greater resilient resistance being such that when subjected to the weight of a person standing thereon and engaging portions of one each of both of said areas, the resulting angularity of the foot will not exceed about 5° from the horizontal.

ERRATUM

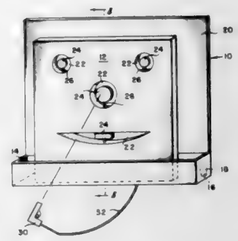
For Class 273—54 see:
Patent No. 3,435,120

3,434,716
SINKABLE TOY TARGET
Arthur Schwartz, 660 Americana Drive, Annapolis, Md. 21403
Filed Aug. 26, 1966, Ser. No. 575,299
Int. Cl. A63f *9/14;* **A63h** *23/00, 23/14*
U.S. Cl. 273—86 **9 Claims**



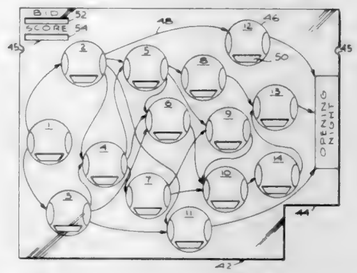
A buoyant toy having a hollow body, means to project water into the body to sink the toy and means to keep water out and propel the toy with a water gun.

3,434,717
WATER GUN TARGET
Arthur Schwartz, 660 Americana Drive, Annapolis, Md. 21403
Filed Aug. 26, 1966, Ser. No. 575,305
Int. Cl. A63b *71/04, 65/12;* **A63h** *5/04*
U.S. Cl. 273—101 **10 Claims**



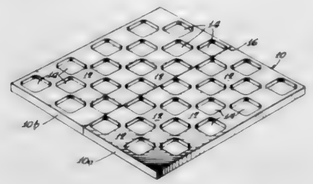
A water gun target including a water receiving and collecting means, a target of foamed plastic material having at least one planar face having apertures therein, the panel being of such construction so as to emit a distinct sound when struck by a stream of water. There is target means disposed in at least some of the apertures and a water deflecting means behind the target and extending beyond the edges of the target to deflect the water into the water receiving and collecting means.

3,434,718
PLAYING BOARD WITH REMOVABLE APERTURED OVERLAY DISPOSED ABOVE A SHIFTABLE WRITING MEDIUM
Gerald Estrin, Thelma A. Estrin, Margo Ilene Estrin, and Judith Lenore Estrin, all of 500 Warner Ave., Los Angeles, Calif. 90024
Filed May 24, 1965, Ser. No. 458,006
Int. Cl. A63f *3/00*
U.S. Cl. 273—130 **2 Claims**



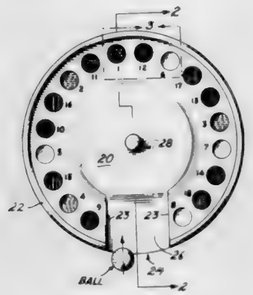
A playing board structure useful with a plurality of different overlays, each overlay having indicia thereon defining a different game environment. Each overlay has formed therein openings which provide access to writing paper beneath the overlay, thereby allowing a count to be recorded on the paper and accumulated as the game progresses. The cumulative score of each game participant is thus exposed to all other participants. After a game is completed, the writing paper can be moved beneath the overlay to provide a clean writing surface available through the openings. Associated with each of the openings in the overlay are indicia relating to one of a series of activities which together constitute a complete process, e.g., the production of a theatrical show. The indicia associated with each activity include a list of the resources needed to carry out the activity and indications of various time intervals in which the activity may be completed. Mounted on the playing board is a spinner-type chance device for selecting one of the indicated time intervals.

3,434,719
CHECKER-TYPE BOARD GAME APPARATUS
Robert V. Fyanes, Box 237, Fox Lake, Ill. 60020
Filed Apr. 8, 1966, Ser. No. 541,249
Int. Cl. A63f *3/00*
U.S. Cl. 273—131 **5 Claims**



A checker-type playing board having alternating playing squares and nonplaying squares, a factor card in each of the nonplaying squares, each factor card having at least one factor and each factor on each card having a predetermined correlation with one or more factors on other of said cards, said factor cards being separate from said board and adapted to be shuffled and dealt at random into said nonplaying squares at the start of the game, playing pieces for movement on said playing squares and from at least some of said playing squares onto a factor in a nonplaying square adjacent each such playing square to capture such factor, transparent markers adapted to overlie captured factors, and opaque markers for eliminating from play duplicates of captured factors.

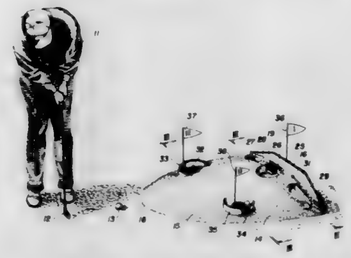
3,434,720
GOLF PUTTING DEVICE
James D. Hall, 52 Richfield Road, Upper Darby, Pa. 19082
Filed Nov. 3, 1966, Ser. No. 591,764
Int. Cl. A63b *57/00*
U.S. Cl. 273—180 **1 Claim**



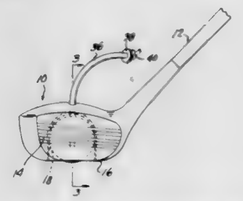
A walled base member includes a ramp leading to a plurality of differently colored depressions simulating putting cups. An upwardly extending obstacle is arranged between the ramp and one depression which has a shallower depth than the other depressions.

3,434,721
GOLF PUTTING TARGET
Alphonso M. Travers, 350 Burncoat St., Worcester, Mass. 01606
Filed Feb. 13, 1967, Ser. No. 615,823
Int. Cl. A63b *57/00, 67/02, 71/00*
U.S. Cl. 273—180 **4 Claims**

A putting target having a vertically extending rear wall and a generally dome-shaped upper surface extending forwardly therefrom. A backboard, in the general plane of the rear surface, extends above the upper surface. The upper surface includes a putting hole, ball storage pockets communicating with the putting hole, and scoring depressions having walls adjacent thereto. Flags including scoring indicia are positioned adjacent the putting hole and depressions.

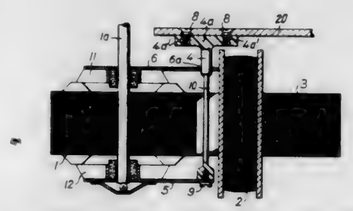


3,434,722
GOLF SWING TRAINING DEVICE
Joseph J. Esposito, % Frame Service Co., Hazleton Rte. 309, Drums, Pa. 18222
Filed Apr. 7, 1967, Ser. No. 629,170
Int. Cl. A63b *69/36, 53/04*
U.S. Cl. 273—186 **3 Claims**



A golf swing training club having the appearance of a conventional golf club and a ball tethered thereto. The ball is lightly held in a cavity extending upwardly into the club head from the sole surface. An aperture extends from the top surface of the club head into communication with the cavity. A tethering cord has one end secured to the ball and extends upward through the aperture to a free cord end which is knotted. When the club is swung, centrifugal force causes the ball to drop from the cavity, although the ball remains tethered to the club head.

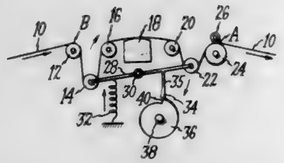
3,434,723
ELECTRIC MOTOR MOUNTING ARRANGEMENT
Hans-Joachim Janssen, Hundsmuhlen, and Reinhold Schütte, Oldenburg, Germany, assignors to Licentia Patentverwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Mar. 14, 1966, Ser. No. 533,982
Int. Cl. G11b *17/00*
U.S. Cl. 274—1 **10 Claims**



An arrangement for mounting a structurally unsymmetrical driving motor in the housing of a piece of sound reproducing equipment. The arrangement includes a rigid

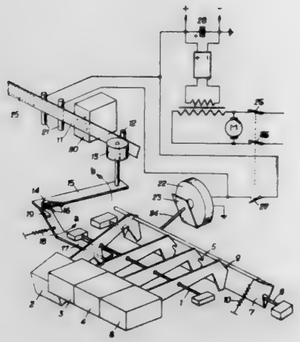
mounting arm secured to and projecting radially from at least one of the two bearing plates of the motor, and a torsion bar, arranged in the centroidal axis of the motor, interconnecting at least one of the arms and the housing.

3,434,724
MECHANISM TO OBTAIN GAP BETWEEN RECORDINGS ON A TAPE RECORDER
Ansell W. Palmer, Hampton, N.H., assignor to General Electric Company, a corporation of New York
Filed Apr. 17, 1967, Ser. No. 631,244
Int. Cl. G11b *5/10*
U.S. Cl. 274—4 **5 Claims**



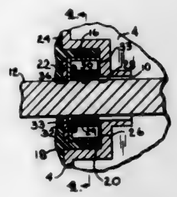
A mechanism of obtaining a gap between adjacent recordings on a tape recorder while maintaining constant velocity of the tape drive. A pair of tape guides on opposite sides of the write head are mounted on a rocker member which carries a cam follower, the rocker member being spring mounted to press the cam follower against a rotating cam. The rotating cam has a drop point timed for the end of each recording, which causes the rocker member to rock abruptly about a pivot point causing the guides to pull the tape across the write head providing the desired gap. The cam slowly returns the rocker member to its first position during the following recording section from which it is again ready to rock to provide a further gap at the end of the next recording.

3,434,725
AUTOMATIC STOP APPARATUS FOR A RECORDER/REPRODUCER
Walter Elbensteiner, Vienna, Austria, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,818
Claims priority, application Austria, Jan. 20, 1965, A 422/65
Int. Cl. G11b *5/00*
U.S. Cl. 274—4 **9 Claims**



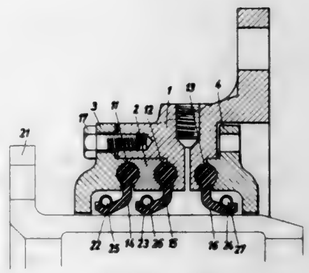
1. Apparatus for switching off at least one of the operating conditions of a recording and/or reproducing device, comprising: at least one key for actuating an operating condition of the device, said key actuating selected components of the device, locking means for locking said key, an electromagnet adapted to release said locking means, a line switch adapted to connect an external energization source to said apparatus, an auxiliary energization source, and an auxiliary switch mechanically coupled to said line switch, said auxiliary switch being included in the energizing circuit of the electromagnet, said auxiliary switch acting to close said energizing circuit and connect said auxiliary energization source to said electromagnet when said line switch disconnects said external energization source, whereby said electromagnet is energized and said locking means is released when said external energization source is disconnected.

3,434,726
SHAFT SEALING MEANS FOR UNDERWATER MOTORS
Robert E. Gayle, Shawnee Mission, Kans., assignor to Phantom Products, a Division of Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed July 25, 1966, Ser. No. 567,756
Int. Cl. F16j *15/02*
U.S. Cl. 277—36 **2 Claims**



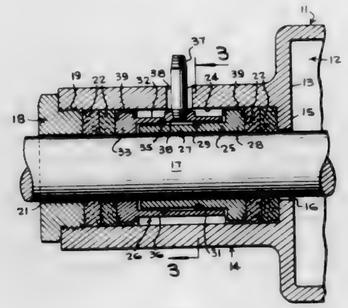
Apparatus for providing a watertight housing for underwater motors wherein a shaft for the propeller extends through an opening in one end of the housing and said end is recessed to receive a sealing element on the shaft within the recess, and said sealing element is spaced from the walls of the recess so that the recess may receive a settable sealing element and automatically align with the shaft and be closely associated therewith to prevent debris from winding around said shaft and getting into the motor, the sealing element preventing water from entering the motor housing.

3,434,727
FLUID-TIGHT SEALS FOR ROTATABLE SHAFTS AND THE LIKE
Walter Kollenberger, Hamburg, Germany, assignor to Howaldtswerke-Deutsche Werft Aktiengesellschaft, Hamburg, Germany
Filed Feb. 23, 1965, Ser. No. 434,186
Claims priority, application Germany, Jan. 30, 1965, D 46,402
Int. Cl. F16j *15/00, 9/00;* **F16k** *41/00*
U.S. Cl. 277—58 **9 Claims**



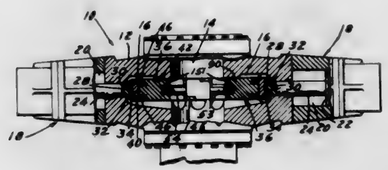
A fluid tight seal for use around a rotatable machine part and having an annular non-rotatable housing surrounding said rotatable part and having an annular groove disposed in at least one face thereof, and at least one clamping ring member surrounding the rotatable part and having an annular groove facing the first-named groove and cooperating therewith to define an annular cavity. An annular sealing ring is also provided which has an outer portion of a substantially circular cross section disposed in the cavity, and an inner portion extending freely outward from the outer portion out of contact with the housing, this ring member engaging the rotatable part in a line contact to seal same.

3,434,728
MEANS OF AUTOMATICALLY ADJUSTING HYDRAULIC PNEUMATIC PACKINGS
Paul C. Soldato, Pittsfield, Mass.
(North Main St., Lanesboro, Mass. 01237)
Filed Sept. 26, 1966, Ser. No. 581,962
Int. Cl. F16j *15/40, 15/44;* **B65d** *53/00*
U.S. Cl. 277—59 **3 Claims**



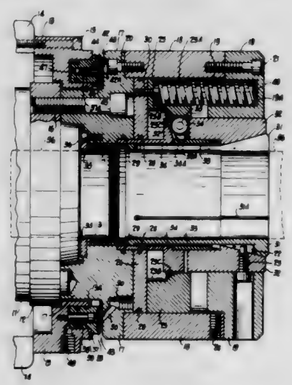
A rotary shaft seal having mating concentric sleeves surrounding the shaft and defining a sealed chamber so that pressurized fluid introduced into the chamber moves the sleeves axially apart to apply pressure to sealing elements mounted adjacent the ends of the sleeves.

3,434,729
RAM ASSEMBLY
Donald U. Shaffer and John A. Vertson, Brea, Calif, assignors to Shaffer Tool Works, Brea, Calif., a corporation of California
Continuation of application Ser. No. 243,706, Dec. 6, 1962. This application Oct. 21, 1965, Ser. No. 508,630
Int. Cl. F16l *15/02;* **E21b** *33/06*
U.S. Cl. 277—181 **20 Claims**



A ram assembly for control gates and the like, in which a laterally movable ram block holder mounts an axially reversible ram block, the ram block having an axially reversible rubber assembly comprising a pair of axially aligned spaced apart semicircular parts each provided with an inwardly extending flange for interlocking engagement with the ram block, the semicircular parts having their opposite ends integrally connected with a diametrical part of reduced height fitted with upper and lower extrusion plates bonded thereto and arranged to extend together with the diametrical part into a groove in the ram block with the rubber of the diametrical part forming flanges which extend along the rear edges of the extrusion plates. At the ends of the semicircular parts, where connected with the ends of the diametrical part, insert plates are provided which cooperate with the extrusion plates to control rubber flow when the rubber assembly is subjected to sealing compressive forces. The rubber assembly is anchored to the ram block by means of embedded inserts having right angled connecting portions engageable with the ram block.

3,434,730
COLLET MECHANISM
Larry F. Smrekar, 6604 Solon Road, Solon, Ohio 44139
Filed Sept. 8, 1966, Ser. No. 578,016
Int. Cl. B23b *31/30, 31/10, 5/22*
U.S. Cl. 279—4 **14 Claims**

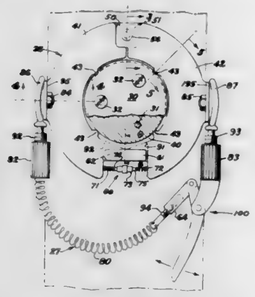


A collet mechanism in which the collet-actuating sleeve is axially moved by springs in a direction to actuate the collet to holding position, in which fluid pressure means is provided to oppose the force of the springs to permit the sleeve to move in an opposite direction to permit the collet to move to releasing position, and in which there are rollers movable radially inward between camming surfaces to add to the force of the springs the mechanical advantage of the rollers moving between the camming surfaces, the operation of said fluid pressure means to oppose the force of said springs also permitting the rollers to move radially outward between said camming surfaces to subtract said mechanical advantage.

3,434,731
SAFETY SKI BINDING
Edward J. Keeling, 1310 Montgomery St., San Francisco, Calif. 94133
Filed Oct. 15, 1964, Ser. No. 404,064
Int. Cl. A63c *9/082*
U.S. Cl. 280—11.35 **7 Claims**

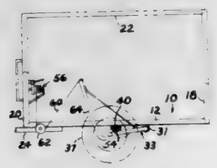
A ski binding for use in connecting the heel portion of a ski boot to a ski and including a first member having engageable means thereon and a pair of connected second members having engaging means for engaging and disen-

gaging the engageable means of the first member to disconnectably connect the members and to permit angu-



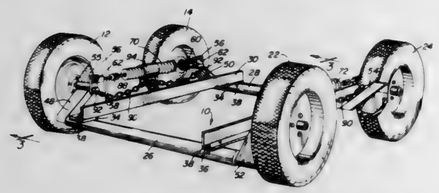
lar movement between the pair of second members and the first member when the members are disconnectably connected.

3,434,732
VERTICALLY ADJUSTABLE CATTLE CHUTE
Laurance E. Heldenbrand, 1012–14 S. Agnew, Oklahoma City, Okla. 73108
Filed Aug. 16, 1967, Ser. No. 660,981
Int. Cl. B62d *21/14*
U.S. Cl. 280—43.17 **3 Claims**



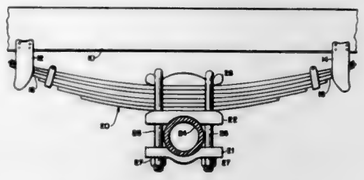
Wheel equipped crank arm axles are pivotally supported for vertical movement about a horizontal axis extending transversely of a cattle chute frame. A tube extending transversely of the frame, forwardly of the transverse axles axis, telescopingly receives frame supporting stub shafts. Spring actuated levers, connected with the stub axles, normally urge the latter outwardly of the respective sides of the frame in releasable overlying frame supporting relation with respect to the crank arm axles. Winch means, connected with the crank arm axles, selectively raise and lower the wheels.

3,434,733
RESILIENT TRAILER MOUNT
Horace D. Hume, Mendota, Ill., assignor to Hart-Carter Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,628
Int. Cl. B62d *61/10;* **B60d** *5/04;* **B60g** *25/00*
U.S. Cl. 280—104.5 **8 Claims**



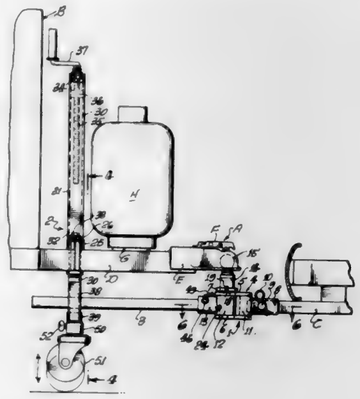
A load carrying trailer-vehicle having pairs of wheels on the same side of the vehicle frame turning on respective longitudinally spaced spindles, each of which is mounted on a rigid arm, swingable in a vertical plane, about a respective fixed transverse axis, the said spindles being tied together by tension or compression springs to provide a resilient support for the frame and the corresponding arms on opposite sides of the frame being fixedly mounted on a common rotatably mounted axle.

3,434,734
AUXILIARY SPRING
Gus L. Poulos, Rochester, Mich., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Original application July 6, 1965, Ser. No. 469,419, now Patent No. 3,379,429, dated Apr. 23, 1968. Divided and this application Dec. 15, 1967, Ser. No. 690,914
Int. Cl. B62d; B60g; B60p
U.S. Cl. 280—124 **4 Claims**



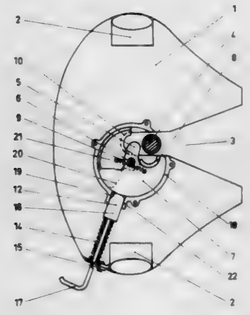
A vehicle spring suspension comprises a main leaf spring attached intermediate its ends to an axle assembly with at least one free end received within a frame mounted hanger, there being an auxiliary spring leaf rigidly mounted on the hanger at one end and slidingly bearing on the upper surface of the adjacent end of the main spring leaf, and the hanger having a fixed control surface for variable engagement with the upper surface of the auxiliary spring.

3,434,735
TRAILER HITCH
Herbert J. Bernard, 8924 Lankershim Blvd., Sun Valley, Calif. 91352
Filed Mar. 20, 1967, Ser. No. 624,357
Int. Cl. B60d *1/12;* **B62d** *53/00*
U.S. Cl. 280—406 **7 Claims**



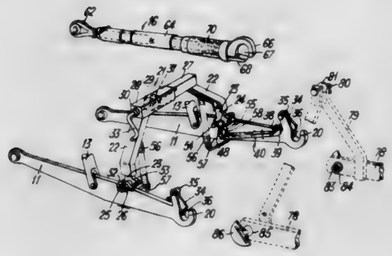
A trailer hitch means attachable to the tongue of a trailer for connection to a towing vehicle characterized by the inclusion therein of a friction means for resisting side sway, by vertically adjustable means employable optionally as a supporting jack for the front end of an uncoupled trailer or raising and lowering the trailer tongue incident to effecting connection to the towing vehicle, and by utilization of a portion of the side sway resisting means as a portion of a means for determining the proportion of the trailer weight to be imposed on the front end of the frame suspension means of the towing vehicle.

3,434,736
COUPLER FOR TRACTOR TRAILER
Heinz Lindner, Sprendlingen, Germany, assignor to Firma Jost-Werke G.m.b.H., Neu-Isenburg, Germany, a company
Filed June 22, 1967, Ser. No. 672,944
Claims priority, application Germany, June 25, 1966, St 25,584
Int. Cl. B62d *53/06;* **B60d** *1/00*
U.S. Cl. 280—435 **12 Claims**



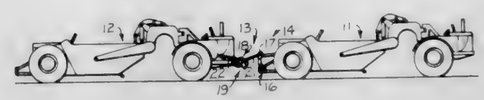
A coupling arrangement for connecting a tractor to a trailer. The tractor has a lower fifth wheel plate with an outwardly flared slot for receiving the kingpin of the semi-trailer upper fifth wheel plate. Two concentrically located claws, one of which is pivotably disposed, are positioned underneath the rear end of the slot and adapted to receive the kingpin. A self-adjusting wedge and locking arrangement is interposed between the claws for locking the claws and the kingpin into engagement position.

3,434,737
TRACTOR HITCH
Alfred J. Bailey, Berkswell Village, near Coventry, and James D. Greig, Warwick, England, assignors to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles
Filed Feb. 23, 1967, Ser. No. 617,976
Claims priority, application Great Britain, Mar. 2, 1966, 9,088/66
Int. Cl. B60d *1/04*
U.S. Cl. 280—461 **11 Claims**



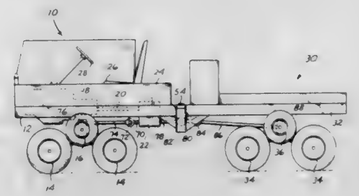
A power-operated hitch for attaching implements to tractors, of the type including a pair of lower draft links and a top link all universally pivoted to the tractor body at their forward ends and having connectors at their trailing ends engageable with complementry connectors carried by an implement, and means for selectively adjusting the spacing between the lower links.

3,434,738
PUSH-PULL COUPLING FOR TRACTOR-SCRAPER UNITS
Trevor G. Campbell, Peoria, Lawrence P. Coogan, Chillicothe, and Yoshimi Hosoda, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 1, 1967, Ser. No. 642,754
Int. Cl. B60d *3/00, 1/00, 7/00*
U.S. Cl. 280—477 **5 Claims**



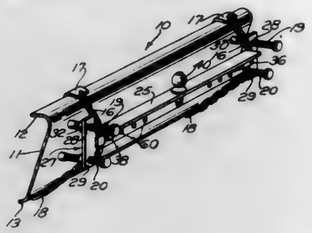
Push-pull coupling for tandem earthmoving scrapers where the coupling may be rapidly connected or disconnected permitting the scrapers to operate either in unison or separately. A push block and pull hook are mounted on the rear of the forward scraper. A push block and means for engaging the hook are mounted on the front of a rearward scraper. The means for engaging the hook are raised and lowered by a scraper operator through a hydraulic jack for rapid engagement or disengagement with the hook of the forward scraper.

3,434,739
TANDEM TYPE VEHICLE AND STEERING DRIVE AND TORQUE LIMIT CONTROLS THEREFOR
Richard H. A. Schoonover, Albany, Oreg., assignor to Katrak Vehicle Company, Albany, Oreg., a corporation of Oregon
Filed Aug. 15, 1967, Ser. No. 665,663
Int. Cl. B62d *53/00;* **B60d** *7/00*
U.S. Cl. 280—492 **3 Claims**



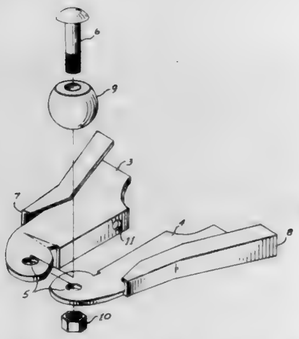
A pair of vehicles arranged in tandem having driving wheels connected to the same power source on one of the vehicles through universally connected drive shaft sections extending through a hollow coupling which pivotally interconnects the vehicles. A fluid pressure piston-cylinder unit interconnects the vehicles laterally from the hollow coupling for steering the assembly. A pneumatic tired wheel is confined between a pair of laterally spaced arcuate housings secured one to each vehicle laterally from the hollow coupling, for limiting the degree of rotational displacement of one vehicle relative to the other in their longitudinal direction.

3,434,740
BUMPER HITCH
Theodore W. Leavitt, 146 Omaha Blvd., Warwick, R.I. 02889
Filed Oct. 17, 1967, Ser. No. 675,913
Int. Cl. B60d *1/06*
U.S. Cl. 280—502 **6 Claims**



A hitch for attachment to a bumper by a pair of chains each with hooks at its opposite ends to engage the upper and lower edges of a bumper with a bar from one chain to the other which is located between the chains and the bumper, the bar having vertically spaced screws to engage the bumper for the accommodation of different shape bumpers to urge the bar away from the bumper against the chains with a sufficient pressure to hold the bar in an adjusted position.

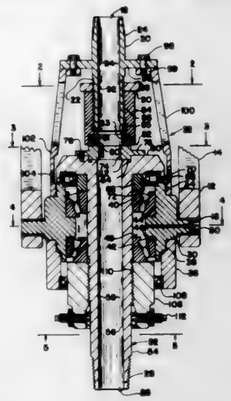
3,434,741
TRAILER HITCH LOCK
William Henry Grant, Jr., 2202 Grove St., Boulder, Colo. 80302
Filed Jan. 24, 1967, Ser. No. 611,376
Int. Cl. B60d *1/06, 1/16*
U.S. Cl. 280—507 **1 Claim**



1. A ball and socket hitch having trailer anti-theft means comprising; a socket member, side flanges on said socket member, a ball member, a pair of plates, each plate having a channel shaped portion to receive one of said side flanges, means mounting each of said plates for movement relative to said ball member, and locking means to prevent said relative movement when said plates are in flange receiving position.

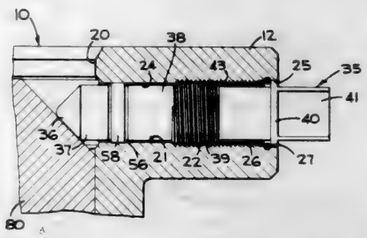
3,434,742
TAPERED BEARING SWIVEL
Alvis C. Swinney, Rte. 1, Box 204D, Odessa, Tex. 79760
Filed Sept. 29, 1967, Ser. No. 671,627
Int. Cl. F16l *55/00, 55/18;* **F16j** *15/00*
U.S. Cl. 285—16 **7 Claims**

A tapered roller bearing swivel for conducting fluid flow from a fixed source to a rotating drill stem. Spaced apart roller bearings are housed within a supporting cross and a spider is secured to the top of the cross. A tapered hollow spindle is rotatably received within the bearings for providing fluid flow into the drill stem. A gooseneck is attached to the upper extremity of the spider



for providing fluid flow into the swivel. A reversible wear bushing, packing ring, and a packing nut are interposed between the gooseneck and the upper extremity of the spindle to provide an adjustable seal between the fixed and rotating parts of the swivel.

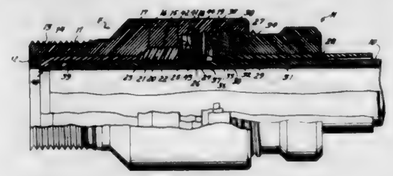
3,434,743
WELL APPARATUS
Roy A. Boeker, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 7, 1966, Ser. No. 563,536
Int. Cl. F16l *35/00;* **F16b** *29/00*
U.S. Cl. 285—39 **2 Claims**



A captive-type screw primarily for holding or locking tubing and casing hangers in place of wellheads including a floating ring surrounding and carried by the screw that cooperates with a locking ring held by the wellhead and a pair of spaced annular shoulders on the screw shank to prevent the screw from being inadvertently withdrawn from the wellhead and to limit inward travel of the screw in the wellhead, and a system for providing and maintaining a fluid seal between the screw and the wellhead including a facility for pressurizing and adding additional material to the system for maintaining the seal intact.

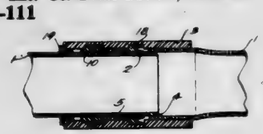
3,434,744
TUBE FITTING WITH LOCKING MEANS
Michael P. Yoke, Robert P. Montesi, and Robert N. Paterson, Bradford, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed July 19, 1966, Ser. No. 566,408
Int. Cl. F16l *35/00*
U.S. Cl. 285—52 **9 Claims**

A compression type tube coupler for thin wall piping. The coupler includes an internally threaded body in which to receive a screwed follower. Acted upon independently



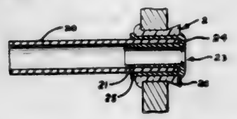
of each other within the body by advancement of the follower is a separated gasket and conduit lock member.

3,434,745
PIPE COUPLING HAVING A SPLIT RING LOCKING MEANS
Robert M. Jackman, Little Rock, Ark., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Apr. 13, 1967, Ser. No. 630,631
Int. Cl. F16l *21/04, 21/06*
U.S. Cl. 285—111 **7 Claims**



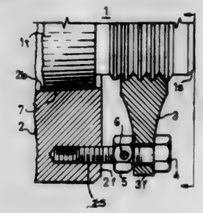
A coupling for pipe sections, and particularly, bell and spigot type pipe sections. The outer surface of the spigot end of the pipe section is provided with a circumferential ridge or land, and the leading end of the land, facing the end of the pipe section, is tapered inwardly. The bell end of the other pipe section is provided with an internal groove which receives an expandable split ring. The outer surface of the ring is provided with a series of longitudinally extending slots dividing the outer surface into a series of segments having tapered or wedge shaped leading ends. When the spigot end of one pipe section is inserted within the bell end of the other pipe section, the land serves to expand the split ring and passes beyond the trailing end of the ring to provide a firm connection between the two pipe sections.

3,434,746
FLEXIBLE TUBE COUPLING
William Sewell Watts, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 10, 1966, Ser. No. 571,546
Int. Cl. F16l *35/00, 37/00*
U.S. Cl. 285—162 **1 Claim**



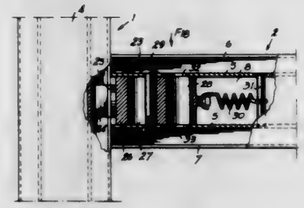
A coupling member for sealingly connecting an end of a tubular member within an opening of a mounting member comprises a body member having the physical properties of organic plastic and including an exterior surface engageable with the hole and an interior surface provided with a first section of substantially constant diameter axially therealong and a second section of conical configuration with the smallest diameter thereof located at an inner end of the body member, the interior surface of the body member has the end of the tubular member forcefully driven therein with the first section of the interior surface frictionally and sealingly engaging the tubular member and the second section of the interior surface being wedgingly and sealingly disposed between the surface of the hole and the tubular member to secure the tubular member within the hole.

3,434,747
QUICKLY OPERABLE KEYLESS COUPLINGS
Harry J. Nichols, 356 Briar Road, Point Pleasant, N.J. 08742
Filed May 31, 1966, Ser. No. 554,113
Int. Cl. F16d *1/06;* **F16c** *3/10*
U.S. Cl. 287—53 **6 Claims**



This disclosure is of a hub-on-shaft coupling means for quickly and forcibly uncoupling a hub having a tapered bore, particularly a large hub such as that of a ship propeller, on a mating tapered shaft part and recoupling the mated parts by frictional means. The coupling means includes reversible push-pull screw-jack mechanism operable by an ordinary wrench, the main element of this mechanism being a resilient flexible disc, termed a "flexonut," adapted for fastening coaxially on the shaft adjacent an end of the hub and having a transversely flexible flange confronting the adjacent end of the hub. Multiple double-acting jack-screws mounted in holes in the flange and hub parallel to the hub axis, each screw having a wrench rotatable head, provide connecting links between the flange and hub which exert determinate thrust or tension forces therebetween according to the direction and degree of wrenching operation.

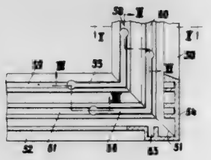
3,434,748
DEVICE FOR ASSEMBLY OF METALLIC SECTIONAL STRUCTURES
Ghislain Leurent, Mouscron, Belgium, assignor to Societe Industrielle de Transformation des Plastiques, Societe Anonyme, Tourcoing, Nord, France
Filed Oct. 11, 1966, Ser. No. 585,861
Claims priority, application France, July 20, 1966, 70,092, 70,093
Int. Cl. F16b *9/02;* **E04g** *7/00*
U.S. Cl. 287—54 **4 Claims**



A device for the assembly of a crossmember and an upright member. The crossmember has a hollow core and an elongated transverse first passage and the upright member has a slot delimited by flanges. The device also includes a locking member having a body portion displaceably mounted in the core of the crossmember and having a transverse second passage and a head portion protruding from said crossmember, spring means continuously urging the locking member into said core, and means to limit this inward movement so that the first and second

passages overlap one another, and a wedge-shaped tool adapted to be temporarily engaged in the partially overlapping passages so as to displace the locking member against the action of the spring means until the head protrudes a sufficient distance from the crossmember that it may be engaged in the upright through the slot thereof, after which the wedge-shaped tool may be rotated over 90° and then removed out of said passages so that said head is then firmly applied against said flanges by the spring means.

3,434,749
CORNER CONNECTION ESPECIALLY FOR PRODUCING FRAMES FOR WINDOWS AND AQUARIUMS
Willy Meyer, 3091 Brammer 17, Germany
Filed June 23, 1966, Ser. No. 559,977
Int. Cl. F16b *5/00, 13/00*
U.S. Cl. 287—189.36 **2 Claims**



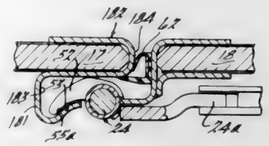
A corner connection, especially for producing frames for windows and aquariums, which includes abutting strip sections forming a corner with each other and respectively being provided with groove means having bores therein of a diameter in excess of the width of the respective groove means, said pores being perpendicular to the bottom of the groove means and being arranged in spaced relationship to the area of mutual abutment while being engaged by approximately cylindrical end parts of anchor means, said bores being spaced from said area of abutment by such a distance that said anchor means with said cylindrical end parts in said bores will be under a pretension whereby said abutting strip sections are firmly clamped against each other.

3,434,750
HOOK SNELLER
Glenn C. Hetrick, 2045 E. Parkway Drive, Altoona, Pa. 16602
Filed Mar. 3, 1967, Ser. No. 620,331
Int. Cl. D03j *3/00*
U.S. Cl. 289—17 **8 Claims**



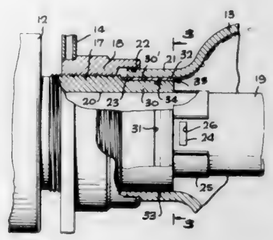
A simple finger-held hook snelling device having no moving parts is provided. The device comprises a circular base portion with a center tab for gripping the device. The circular portion is formed with a reentrant opening in the edge thereof with a keeper provided on the device for temporarily restraining the free-end of the leader. The hook is threaded onto the leader, the free-end of the leader is snagged onto the keeper and looped through the reentrant opening. The loop is then twisted and passed over the device to form the snell. The hook is then caught in an opening formed in the body of the device and the leader pulled tight to form a snug, neat snell. A trimming device is provided to cut off free-hanging ends of the leader.

3,434,751
DOOR LOCK
Keith W. Tantlinger, Grosse Pointe Shores, George Chieger, Birmingham, and Adrian F. Hulverson, Grosse Pointe Woods, Mich., assignors to Fruehauf Corporation, Detroit, Mich.
Filed Nov. 7, 1966, Ser. No. 592,350
Int. Cl. E05c *3/04, 3/14*
U.S. Cl. 292—218 **3 Claims**



An anti-rack door locking construction suitable for use on a truck, trailer, or large container having two doors pivotally supported within a complementary door frame, said anti-rack construction comprising: (a) an anti-rack lock rod mounted in upright position on the edge of one of said doors adjacent to the edge of the second door when in the closed position, (b) locking tongues on the upper and lower ends of the lock rod, (c) tongue keepers mounted on the door frame to provide for locking connection with the tongues at the end of the lock rod, (d) at least two or more intermediate locking tongues mounted on the lock rod, (e) at least two or more corresponding intermediate tongue keepers mounted on the second door generally adjacent the intermediate locking tongues for connection therewith when the doors are in closed position, (f) an upright lock connecting bar mounted on the second door in approximately parallel relationship to the lock rod of the first door but spaced therefrom, (g) locking means at each end of the lock connecting bar for holding the second door in fixed securement to the door frame, and (h) at least one of said locking means being comprised of an anti-rack lock means for holding the second door in fixed vertical position relative to the door frame.

3,434,752
HANDHOLD SHANK BEARING
Fred J. Russell, South Gate, Richard L. Armstrong, Santa Fe Springs, and Sam J. Spinuzzi, Gardena, Calif., assignors to Norris Industries, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 23, 1967, Ser. No. 677,368
Int. Cl. E05c *19/18;* **E05b** *3/00*
U.S. Cl. 292—356 **4 Claims**



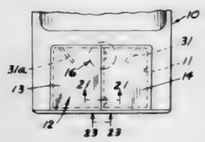
This disclosure makes use of a door lock wherein a spindle is rotatably mounted in a stationary portion of the lock exemplified by a journal sleeve and wherein a handhold is releasably secured to the spindle, so that the spindle and handhold rotate together. On the handhold is a neck surrounding and spaced from the exterior of the sleeve. Filling the space is a tubular section, of low-friction material consisting of one of the commercially available synthetic plastics, so that the neck of the knob, as it is rotated when rotating the spindle, rotates with a snug, though friction-free movement with respect to the stationary portion of the lock.

3,434,753
GOLF BALL PICKUP DEVICE
Leon C. De Croes, 209 E. Carter St., Kokomo, Ind. 46901
Filed July 12, 1967, Ser. No. 652,791
Int. Cl. A47f *13/06*
U.S. Cl. 294—19 **8 Claims**



An article of manufacture for manual use by an individual in picking up golf balls without having to bend down. The article forms a two-tined fork having an elongated handle disposed at an angle with the tines, and having one tine longer than the other.

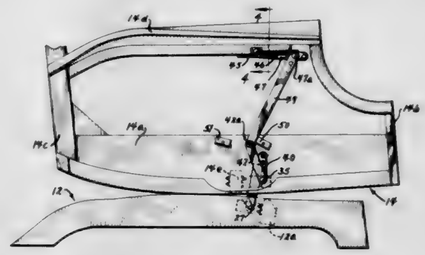
3,434,754
TWO-PIECE CAR TRUNK COVER
Paul J. Scaglione, 30180 Richmond Hill Drive, Farmington, Mich. 48024
Filed Dec. 1, 1967, Ser. No. 687,171
Int. Cl. B62d *25/10, 25/12*
U.S. Cl. 296—76 **7 Claims**



A car trunk cover which can be opened and moved upwardly and downwardly as a single unit, or which can be opened into two half-cover parts which are each adapted to be swung to a vertical position along one of the sides of a trunk opening so as to expose the top and rear side of the trunk opening for access thereto. The two trunk half-cover parts are adapted to be locked in the vertical position and serve as side protection panels for goods being carried in an upright position in the trunk.

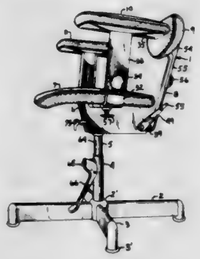
3,434,755
COMBINATION RECLINING AND ROCKING CHAIR
Daniel F. Caldemeyer, 4300 Jennings Road, Evansville, Ind. 47712, Lloyd O. Caldemeyer, 3815 E. Mulberry St., Evansville, Ind. 47715, and John T. Gates, Evansville, Ind.; said Gates assignor to said D. F. Caldemeyer and said L. O. Caldemeyer
Filed Mar. 10, 1967, Ser. No. 622,272
Int. Cl. A47c *1/02, 3/02*
U.S. Cl. 297—269 **3 Claims**

A combination reclining and rocking chair having a locking arrangement characterized by a control handle



virtually concealed in one position beneath an arm of the chair and providing fingertip operation by the user.

3,434,756
CHAIR WITH ADJUSTABLE BACK AND ARM RESTS
Thomas G. Walkinshaw, Shawnee Mission, Kans., assignor to Cramer Industries, Inc., Kansas City, Kans., a corporation of Missouri
Filed Apr. 17, 1967, Ser. No. 631,496
Int. Cl. A47c *3/20, 3/22, 3/28*
U.S. Cl. 297—300 **14 Claims**



This invention discloses a chair particularly for use in an office and similar places wherein the chair seat frame is nontiltable on the pedestal. The back is adjustable and includes means to urge the cushion on the upper portion of the back against the body of the user, and may be adjusted to accommodate persons of different size, so as to exert pressure at the proper place on the back. It also contemplates a seat frame mounted on a pedestal having means to prevent accidental displacement of the frame from the pedestal, and means to lock the chair seat and frame from rotating with respect to the pedestal.

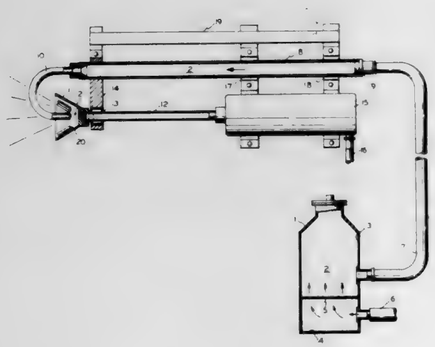
3,434,757
SHALE OIL-PRODUCING PROCESS
Michael Prats, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,600
Int. Cl. E21c *47/08, 41/02*
U.S. Cl. 299—2 **5 Claims**



Shale oil is recovered by forming tunnels by mining oil shale from a subterranean oil shale formation, exploding the previously formed tunnels in order to

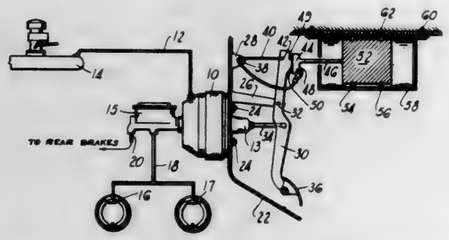
create a permeable zone including the rubble from the exploded tunnels, and circulating hot fluid within the permeable zone, thereby recovering shale oil from both the mined oil shale and the permeable zone.

3,434,758
APPLICATOR FOR PARTICULATE MATERIAL
Ralph Fry, Warren, Pa., assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 4, 1966, Ser. No. 547,618
Int. Cl. B65g 53/42; B05b 3/08
U.S. Cl. 302—61 4 Claims



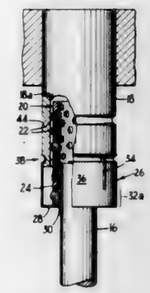
A manually directional apparatus, for dusting or fogging dry process enamel powder onto a hot casting, said apparatus consisting of a fluidized bed of enamel powder, a duct member for transporting said powder, under the influence of said air fluidization, directly from said fluidized bed to a spinning distributor cup which throws the powdered material therefrom in a directed fog or spray onto said casting.

3,434,759
DECELERATION SENSITIVE REACTION FOR A FLUID PRESSURE SERVOMOTOR CONTROL MEANS
Thomas M. Julow, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 6, 1967, Ser. No. 643,960
Int. Cl. B60t 8/00, 17/00, 13/00
U.S. Cl. 303—24 3 Claims



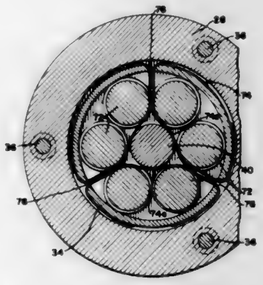
A fluid pressure servomotor control means having a deceleration sensitive mass operably connected therewith to create a reactive force on an operator-operated control for the fluid pressure servomotor regardless of whether the vehicle is being braked while traveling in a forward direction or a rearward direction.

3,434,760
HOLDER FOR POSITIONING DIE-SET BEARING PARTS
John C. Wendler, Mineola, N.Y., assignor to Acme-Danneman Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 27, 1966, Ser. No. 590,010
Int. Cl. F16c 1/26, 17/00, 21/00
U.S. Cl. 308—4 5 Claims



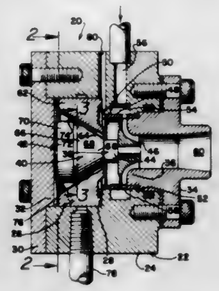
The retainer of a die-set bearing is located and held in a predetermined position relative to the bushing by a cap-like holder having a base portion supporting the lower end of the retainer and a plurality of resilient fingers projecting up from the base and received in coacting detent formations on the holder and bushing. The holder is shiftable between, first, a position in which the retainer is supported in proper relation on the bushing for initial assembly of the bearing and, second, an operating position in which the holder prevents the retainer from sliding down and out of the bushing during operation of the die-set.

3,434,761
HYDRODYNAMIC SHAFT BEARING
David J. Marley, Buena Park, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed July 11, 1963, Ser. No. 294,386
Int. Cl. F16c 7/04, 35/00, 17/06
U.S. Cl. 308—9 25 Claims



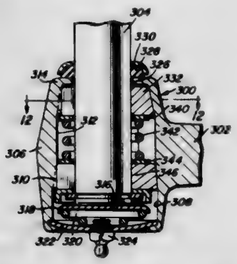
1. A film lubricated shaft bearing comprising:
a bearing unit having a shaft receiving opening and including a plurality of relatively thin, flexible, compliant bearing foils spaced around said opening and each extending generally circumferentially about a portion only of said opening;
said bearing foils being supported by said unit at at least two positions along each foil and being spaced from said unit intermediate said positions to provide a plurality of concave bearing surfaces resiliently rotatively supporting a shaft in said opening.

3,434,762
HYDRODYNAMIC SHAFT BEARING
David J. Marley, Buena Park, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed July 11, 1963, Ser. No. 294,387
Int. Cl. F16c 7/04, 35/00, 17/06
U.S. Cl. 308—9 20 Claims



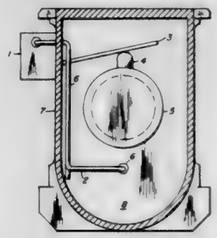
1. A film lubricated cone bearing comprising:
a bearing unit having a conical, bearing cone receiving opening and including bearing means providing separate inwardly presented conically tapered bearing surfaces spaced around said opening and each of said surfaces extending generally circumferentially about a portion only of said opening;
a bearing cone rotatably supported within said opening by said bearing means;
said bearing surfaces being adapted to be supplied with a lubricating fluid and to support the bearing cone in said opening for relative rotation to a speed at least sufficient to generate a hydrodynamic lubricating film between the cone and each bearing surface; and
said bearing means including at least one relatively thin, flexible, compliant conically tapered bearing element which furnishes one of said bearing surfaces, whereby said bearing means is adapted to be radially movable relative to the bearing cone by hydrodynamic film pressure and to accommodate and dampen orbital motion of the cone.

3,434,763
PIVOTAL CONNECTION FOR IDLER ARMS
Theodore C. Gerner, 1800 S. Broadway, Oklahoma City, Okla. 73109
Filed Mar. 9, 1967, Ser. No. 621,821
Int. Cl. F16c 25/00, 11/00; F16d 27/00
U.S. Cl. 308—70 3 Claims



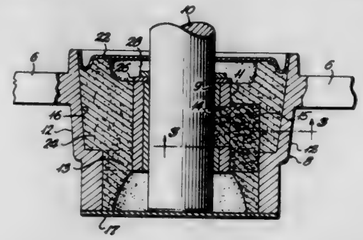
A pivotal connection for either the anchor end sometimes referred to as the frame bracket end or the relay end of an idler arm employed in the steering linkage of an automotive vehicle which enables relative movement between the idler arm and either the anchor bracket or connecting pin at the relay end of the idler arm which includes structure for automatically compensating for wear and enabling the components to shift or move slightly under impact forces or shock forces and immediately return to their original position thereby maintaining zero clearance especially on the frame bracket end or anchor end of the idler arm to prevent any possibility of up and down play occurring at this point. Structurally, the pivotal connection includes a spindle or pin received in a bore extending in perpendicular relation to the longitudinal axis of the idler arm with the slack and wear take-up bearing assembly interposed between the spindle or pin and the bore in the idler arm with there being several embodiments of the structure disclosed in which the spindle or pin may be of constant cross-sectional cylindrical configuration or provided with a partial constant cross-sectional configuration and a partial tapering surface in which the tapering surface may either diminish towards the end of the spindle received in the bore or enlarged towards the end of the spindle received in the bore.

3,434,764
RAILWAY BOXCAR JOURNAL LUBRICATOR
Joseph B. Lombardy, 234 State St., Hudson, N.Y. 12534
Filed May 2, 1966, Ser. No. 547,141
Int. Cl. F16c 33/06
U.S. Cl. 308—85 1 Claim



A journal lubricating apparatus featuring a pump mounted on an exterior wall of the journal box, an oil suction tube extended into said box from the pump into an oil well disposed at the lower portion of the box, a pump rod extended into the box from the pump adapted to engage a projection on the journal, an elongated, perforated spray tube extended into the box from the pump disposed parallel to the journal to spray a fine mist of oil evenly over the journal surface and a journal within the box having an offset projection extended from its surface, said projection being adapted to engage a pump rod to actuate the pump upon revolution of the journal.

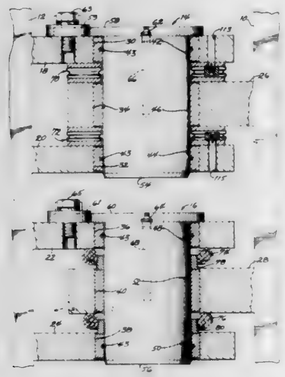
3,434,765
LUBRICATED BEARING ASSEMBLY AND METHOD OF MAKING SAME
Martin L. Abel, Oak Park, Mich., assignor to Permawick Company, Inc., Detroit, Mich., a corporation of Michigan
Filed Feb. 28, 1967, Ser. No. 619,313
Int. Cl. F16c 1/24, 33/66, 13/02
U.S. Cl. 308—132 4 Claims



A self-lubricating sleeve bearing assembly having a lubricant reservoir surrounding the sleeve bearing with a

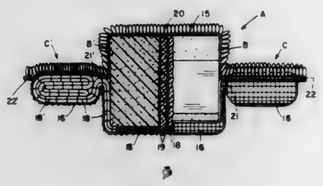
window in the sleeve bearing for communicating the lubricant reservoir with the bearing surface. A felt contactor plug is positioned in the reservoir with a portion thereof extending into the window. An oil-impregnated wicking material fills the remainder of the reservoir and is molded about the contactor plug.

3,434,766
SELF-ALIGNING THRUST BUSHING ASSEMBLY
Keith W. Kampert, Libertyville, and Kenneth E. Houtz, Streamwood, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 1, 1966, Ser. No. 562,266
Int. Cl. F16c *23/00, 23/04, 25/04*
U.S. Cl. 308—135 **5 Claims**



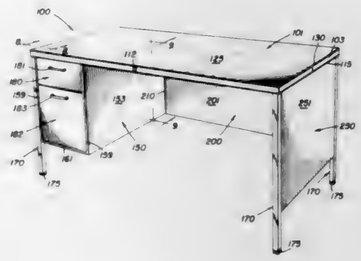
A self-aligning bushing assembly for carrying axial loads between two relatively rotating plane surfaces secured for rotation by a pin extending through openings in the surfaces. An annular bearing member positioned adjacent one surface, a flexible annular member positioned between the bearing member and the other surface, and means for moving the surfaces toward each other to facilitate adjustment upon assembly and thereafter to compensate for wear.

3,434,767
JOURNAL LUBRICATOR FOR RAILWAY CARS
George B. Tracey, Baltimore, Md., assignor, by mesne assignments, to The Journapak Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 14, 1967, Ser. No. 660,472
Int. Cl. F16c *1/24*
U.S. Cl. 308—243 **3 Claims**



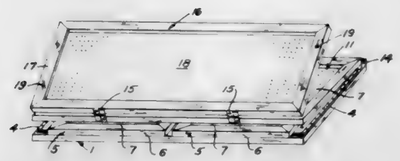
A railway car journal lubricator having a central section and two wing sections located at each side of the central section; a flexible upper outer cover of cloth material having a lock stitch looped-pile, or nap outer surface for contacting the journal; an open mesh flexible cloth material covering the bottom portion of the lubricator; a wicking cloth element positioned adjacent the inner surface of the open mesh bottom cover wherein the wicking cloth has each of its outer ends in multi-ply relationship and secured within pockets formed in the two wing elements between the upper and bottom cover elements; the upper and lower cover elements in the central section of the lubricator being held in space relationship by resilient core elements.

3,434,768
DESK CONSTRUCTION
Kenneth D. Schreyer, 463 Ferry Road, R.D. 1, Doylestown, Pa. 18901
Filed July 14, 1966, Ser. No. 585,704
Int. Cl. A47b *17/00;* **F16b** *12/02*
U.S. Cl. 312—194 **44 Claims**



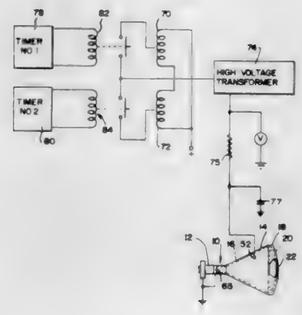
There is disclosed a desk comprising a top including a substantially flat top plate and a pair of spaced apart mounting channels secured to the top plate. An edging extends around the periphery of the top plate and includes a dependent side flange that extends down below the mounting channels. A rear panel is secured to the rear mounting channel and an end support or panel is secured to one end of each of the mounting channels. A pedestal is positioned adjacent one end of the top plate, detachably secured to the mounting channels and detachably secured to one end of the rear panel. Legs are detachably secured to the rear end of the end panel to the adjacent end of the rear panel and to the front end of the end panel. Legs are also detachably secured to the outer wall of the pedestal and a finishing panel extends between the legs secured to the pedestal and lies in the plane of said legs. Each of the panels is of a double side wall construction, closed at its top, bottom and ends and has a rigid cellular filler disposed between the side walls and adhesively bound to those walls. Each of the legs is rectangular in cross section and provided with one or more notches at its upper end slidably to receive a leg mounting fastener secured to the vertical surface of the adjacent part of the desk and each of the legs is provided with one or more slots near the lower end of the leg for receiving a leg clip detachably secured to the adjacent part of the dark. The end and top of the back panel adjacent the pedestal are provided with notches to receive a fastener secured to the pedestal for detachably securing these parts together and a tie clip is detachably secured to the bottom wall of the rear panel and the bottom of the pedestal to detachably secure those parts together. A resilient spacer is secured to certain of the leg surfaces to close the space between the legs and the adjacent panels and the pedestal. The dependent side flange of the edging is provided with inner and outer attachment members receiving a decorative trim extending peripherally of the desk top and closing the space between the edging and the several panels.

3,434,769
COLLAPSIBLE DISPLAY CASES
Thomas E. Salet, San Francisco, Calif., assignor to Stow-Easy Display & Mfg., Co., a corporation of California
Filed June 12, 1967, Ser. No. 645,216
Int. Cl. A47b *43/00, 47/00*
U.S. Cl. 312—258 **1 Claim**



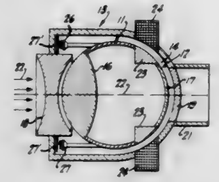
A collapsible display case in which the opposite vertical sides are foldable about hinges toward one another and over the bottom or base of the display case; the rear or back wall of the collapsible case is hinged so that its hinge is above the thickness of the folded sides on the base so that the back wall is folded directly over the folded sides; on the top of the back wall is hinged the top panel which can be folded back upon the back wall so that the unit is compact and solid; the display case is unfolded by raising the back wall and the sides to vertical position and turning the top into engagement with the upper edges of the sides into engagement with suitable locating dowels; suitable grooves are provided on the vertical front edges of the sides for receiving transparent front panel when desired.

3,434,770
REDUCTION OF ARCING BETWEEN THE PARTS OF A CATHODE RAY TUBE
George V. Angelucci, River Grove, Richard J. Kurtz, Mount Prospect, and Richard G. O'Fallon, Westchester, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 19, 1967, Ser. No. 639,712
Int. Cl. H01j *9/10, 9/06*
U.S. Cl. 316—1 **9 Claims**



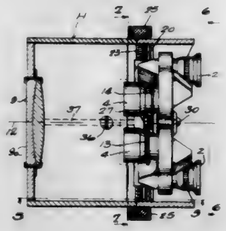
High voltage aging of a cathode ray tube to neutralize arcing is accomplished by placing a grounded metal band about the neck of the tube. The band establishes a ground plane about the neck in which electrical fields are developed which simulate the fields developed during normal tube operation in a television receiver. A high aging potential is applied between the final anode and the grids of the electron gun assembly, which are grounded, in stages from between 15,000 volts to 40,000 volts. During each stage the voltage is periodically boosted from 5,000 to 10,000 volts over the stage voltage, for a predetermined time, to foster arcing between the tube parts.

3,434,771
GYROSCOPIC LENS
Luis W. Alvarez, Berkeley, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 11, 1966, Ser. No. 549,360
Int. Cl. G02b *23/02*
U.S. Cl. 350—16 **17 Claims**



This invention comprises at least one pair of mating spherical lenses, with one lens being buoyantly supported out of contact with the other and free to pivot about a common center of curvature of adjacent lens surfaces. Means are provided for rotating one lens relative to the other about the optic axis of the pair at a substantially constant rate to establish a gyroscopic action. Provision is made for precessing one lens in the same direction of motion as the other lens for traverse of the latter beyond a predetermined minimum. Physical properties of the buoyantly supported lens are particularly limited, as defined below, to preclude nutation.

3,434,772
STEREOSCOPIC AND MICROSCOPIC BINOCULAR
Richard J. Fogle, 123 Steeplechase Drive, Racine, Wis. 53402
Filed Oct. 10, 1966, Ser. No. 585,400
Int. Cl. G02b *21/22*
U.S. Cl. 350—35 **16 Claims**

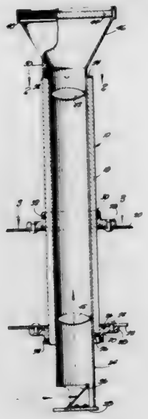


A stereoscopic viewer having a pair of erecting prismatic assemblies wherein the intermediate objectives move laterally in a straight line simultaneously with the adjustment of the eyepieces to maintain the line of sight and to accommodate the interpupillary distance of the observer's eyes, respectively.

3,434,773
AIRCRAFT LANDING GEAR VIEWER
Lorena Jean Pitchford, 612 Truman SE., Albuquerque, N. Mex. 87108
Filed July 17, 1964, Ser. No. 383,407
Int. Cl. G02b *23/08;* **B64c** *25/28*
U.S. Cl. 350—9 **1 Claim**

An aircraft landing gear viewer having a stationary guided tube fixedly mounted in the wall of the aircraft and communicating with the exterior thereof, a viewing

tube rotatably and longitudinally mounted in the guide tube and projecting axially from each end thereof, means for viewing the exterior thereof, and means interconnecting the viewing tube and the guide tube for positioning the viewing tube in a predetermined angular position about its longitudinal axis.



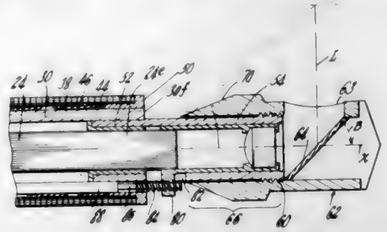
3,434,774
WAVEGUIDE FOR MILLIMETER AND OPTICAL WAVES
Stewart E. Miller, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 347,211, Feb. 25, 1964. This application Feb. 2, 1965, Ser. No. 429,843
Int. Cl. G02b *5/14*; H01p *3/20*; H01q *13/00*
U.S. Cl. 350—96 **11 Claims**



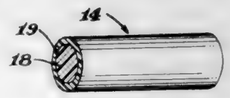
Efficient transmission of optical wave energy is achieved by controlling the dielectric constant of the wavepath. Specifically, the wave energy is guided by transversely tapering, or grading the dielectric constant of the wavepath from a maximum value at its center to a minimum value at the outer region of the wavepath. Two classes of waveguides are described. In the first class, the dielectric constant is tapered either continuously, or in discrete steps. In the second class of waveguides the dielectric constant at any particular longitudinal location along the guide does not have the desired tapered distribution. However, the effect of such a distribution is nevertheless realized over an extended longitudinal interval by continuously changing the symmetry of the wavepath. To avoid mode conversion effects, the wavepath is advantageously surrounded by a lossy jacket.

3,434,775
FLEXIBLE FIBER OPTIC BORESCOPE
Norman R. Gosselin, Marblehead, Mass., assignor to Iota-Cam Corporation, Wakefield, Mass., a corporation of Massachusetts
Filed Apr. 23, 1965, Ser. No. 450,417
Int. Cl. G02b *5/14*; G01n *21/00*; A61b *1/06*
U.S. Cl. 350—96 **15 Claims**

Flexible fiber optic borescopes suitable for industrial inspection. A head member mirror for undistorted side viewing transmits the image to a fiber bundle core and an annularly arranged reflector spaced proximally of the mirror guides light from a hollow fiber bundle to directly and indirectly illuminate the viewed side object. Detachment of the head member permits axial viewing. Support of the head member on a cantilever secured between the bundles permits a small size head and unobstructed illumination. Mounting of an objective lens in the support enables focusing for axial as well as side viewing. A rugged cable assembly is provided by a braided cover tightly compressed upon a helical spring. A helical spring having convexly curved inner surfaces directly engages the fibers. Special spacers position the control cable within the spring. A preformed segmented hollow outer fiber section defines a slot for the control cable.

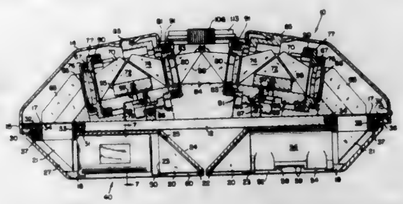


3,434,776
LASER COMMUNICATION SYSTEM USING FLEXIBLE SILICONE TRANSMISSION LINE
Edward L. Kern, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed July 29, 1965, Ser. No. 475,724
Int. Cl. G02b *5/14*; H01s *3/00*
U.S. Cl. 350—96 **2 Claims**



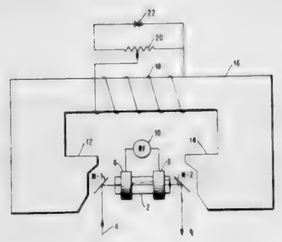
There is described herein a laser beam transmission system in which there is used a transmission line consisting of a flexible polymeric silicone material. The transmission line may have a coating thereon of material having a refractive index lower than that of the silicone material, in order to limit losses.

3,434,777
ATTACHMENT FOR STEREOMICROSCOPES
Louis J. Santirocco, Greece, and Joachim A. Ritter, Irondequoit, N.Y., assignors to Elgeet Optical Company, Inc., Rochester, N.Y., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,987
Int. Cl. G02b *27/22*
U.S. Cl. 350—136 **12 Claims**



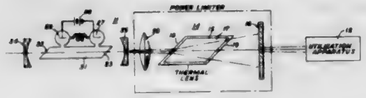
A stereoscopic attachment for a stereomicroscope is disclosed having two lens holders rotatably mounted in it, and two objective carrying arms swingably mounted on it. Each lens holder has a prism at each end and an intermediate reflecting member which may also be a prism. Each arm has an opening at its free end, and a right angular prism registering with the opening. A second right angular prism at the pivotable end of each arm registers with an opening through the bearing on which the arm swivels. An objective is removably mounted in each arm between and in registry with its prisms. A roof prism reflects the light traveling through each arm into the associated lens holder, and from the lens holders the light is reflected by prisms into the eyepieces of the stereomicroscope.

3,434,778
RADIATION BEAM DEFLECTION SYSTEM
Thomas J. Harris, Harold Fleisher, and Eugene Shapiro, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 7, 1965, Ser. No. 461,757
Int. Cl. G02f *1/28*; G02b *17/00*; H01j *15/00*
U.S. Cl. 350—160 **3 Claims**



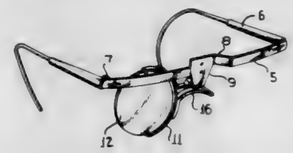
Apparatus for deflecting an intense electromagnetic radiation beam is provided. A dense magnetoplasma is provided through which the beam is passed as a magnetic field is applied to the plasma. The angular position of the beam is altered by varying the strength of the magnetic field. An adjustable electromagnet establishes the magnetic field of desired intensity between its pole faces. An ionizable gas is located in a container between the pole faces of the magnet and the gas is excited while the radiation beam is passed through the container.

3,434,779
OPTICAL POWER LIMITER
Theodoor C. Damen, East Brunswick, Rogerio C. C. Leite, Fanwood, and Sergio P. S. Porto, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 4, 1966, Ser. No. 525,216
Int. Cl. G02f *1/34*
U.S. Cl. 350—160 **3 Claims**



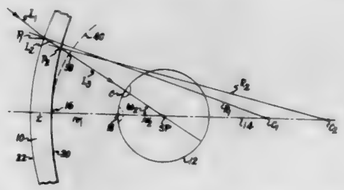
1. In combination, means for supplying electromagnetic radiation in the form of a beam, means for utilizing said radiation, and means intermediate the supplying and utilizing means for limiting the portion of said radiation made available to said utilizing means, said limiting means comprising means for absorbing a portion of said radiation to produce a refractive gradient transverse to said beam to defocus said beam, the amount of defocusing being related to the power level of said beam, and apertured means for passing to said utilizing means a central portion of said beam, which central portion maintains a substantially constant power density as the power level of the radiation fluctuates.

3,434,780
EYEGLASS FRAME WITH PIVOTALLY MOUNTED LENS
Harold E. Bolden, 2906 Maple Road, Rome, Ga. 30161
Filed Sept. 13, 1967, Ser. No. 667,449
Int. Cl. G02c *1/04*
U.S. Cl. 351—41 **6 Claims**



An eyeglass frame having a single lens frame removably supporting a lens, the lens frame being pivotally mounted in the center of the eyeglass frame so it may swing to cover either eye of the user.

3,434,781
OPHTHALMIC LENS SERIES
John K. Davis, East Woodstock, Conn., and Henry G. Fernald, Winchester, and Arline W. Rayner, Auburn, Mass., assignors to American Optical Company, Southbridge, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 145,851, Oct. 18, 1961. This application Mar. 15, 1965, Ser. No. 444,901
Int. Cl. G02c *7/06*
U.S. Cl. 351—159 **15 Claims**

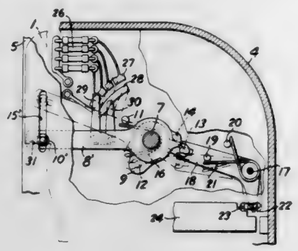


Negative toric ophthalmic lens series and semi-finished lens blanks therefor, of such controlled and related design as to care for a wide range of positive and negative prescriptive corrective requirements of both spherical and toric types in uniformly graduated dioptric steps and which corrective requirements take into consideration the various different physiological conditions of different eyes and provide the user a wide field of view having the errors of oblique fields reduced to minimum.

3,434,782
FILM MAGAZINE FOR MOTION PICTURE CAMERAS
Keezi Kaneko, Minamiashigara-machi, Ashigarakami-gun, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Minamiashigara-machi, Ashigarakami-gun, Japan, a corporation of Japan
Filed Jan. 25, 1965, Ser. No. 427,733
Int. Cl. G03b *23/02*; G01j *1/00*, *1/52*
U.S. Cl. 352—72 **3 Claims**

An automatic exposure control motion picture camera wherein grooves on the film magazine cooperate with

mechanism in the camera when the cover of the camera is locked, in order to develop an electric circuit for the



exposure control system specifically adapted to the sensitivity of the film within the magazine.

3,434,783

CARTRIDGE-TYPE MOTION PICTURE CAMERA HAVING AUTOMATICALLY ADJUSTABLE FILM GATE

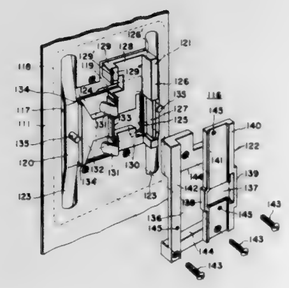
Fumio Sakaki, Nagoya, and Toshimitsu Nakamura, Inabe-gun, Japan, assignors to Elmo Company Limited, Mizuho-ku, Nagoya, Aichi Prefecture, Japan

Filed Mar. 1, 1966, Ser. No. 530,814

Claims priority, application Japan, Jan. 31, 1966, 41/5,516

Int. Cl. G03b *19/18*

U.S. Cl. 352—72 **2 Claims**



An aperture plate assembly for a small-sized magazine-type cinematographic camera device comprises a stationary aperture plate and a movable aperture plate mounted on a leaf spring having pins projecting from the camera body to move the movable plate along the optical axis of an objective. Upon connecting to the main camera body a particular magazine having loaded therein a wider film, the magazine pushes the pins disposed on the leaf spring to automatically move the movable plate away from the stationary plate, whereby two ridges on both sides of the stationary plate cooperate with one of the ridges on the movable plate to define a film track with side guides for the wider film. Upon connecting to the main camera body another magazine having loaded therein a narrower film, the magazine accepts within it the pins for automatically moving the movable aperture plate whereby the ridges on both sides of the movable plate cooperate with the intermediate ridge on the stationary plate to define a film track for the narrower film.

3,434,784

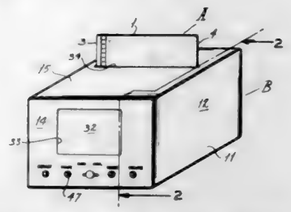
FILM STRIP AND SOUND TRACK CARRIER

Louis J. Stoyanoff, Woodland Hills, Calif., assignor to Hoffman Information Systems, Inc., a corporation of California

Filed Dec. 16, 1965, Ser. No. 514,342

Int. Cl. G03b *31/06*

U.S. Cl. 353—19 **3 Claims**



A film strip and sound track carrier having a plurality of frames mounted vertically along one side which can be projected by a suitable audio-visual device. The carrier is further provided with a magnetic sound track associated with each frame and positioned horizontally adjacent to it. Equipment is disclosed for sequentially projecting the frames and reproducing the sound track associated with each frame while the latter is being projected.

3,434,785

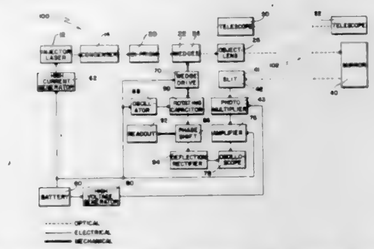
BEAM SWEEPING OPTICAL DISTANCE METER

Paul E. Weber, Ypsilanti, Mich., assignor to Lear Siegler, Inc.

Filed May 18, 1964, Ser. No. 368,204

Int. Cl. C01c *3/08*; **H01j** *39/12, 3/14*

U.S. Cl. 356—4 **7 Claims**



A distance measuring apparatus in which means are provided for forming a constant width optical beam which is oscillated at a controlled angular speed, through a predetermined angle. The beam is oscillated from a first point so as to sweep across a second point, the distance of which from said first point is unknown. The time interval required for the constant width beam to cross the second point is proportional to the distance between said first and second points. Accordingly, measurement of such time interval will determine the unknown distance.

3,434,786

DUAL-BEAM POLARISCOPE

Paul D. Flynn, Arthur A. Roll and Joseph T. Gilbert, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

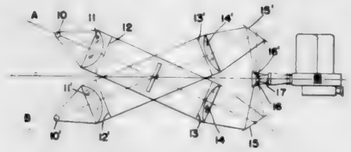
Continuation-in-part of application Ser. No. 277,426, Apr. 30, 1963. This application Feb. 3, 1967, Ser. No. 638,161

Int. Cl. G01b *11/18*

U.S. Cl. 356—33 **2 Claims**

Dual-beam polariscope arrangements are provided for purposes of obtaining photoelastic stress analyses of transparent models under dynamic and static loading conditions. The polariscope arrangements embody separate light beam transmitting means through corresponding condenser lenses and polarizers, a transparent model where

the light beams intersect in a predetermined manner, and corresponding analyzers. The respective light beams are



collected via a plurality of mirrors in such a manner that specimen stress viewing is obtained by a camera and its lens whose single adjustment focuses both images.

3,434,787

DOUBLE AXES INTERFEROMETER

Anwar K. Chitayat, Plainview, N.Y., assignor to OPTOmechanisms, Inc., Plainview, N.Y.

Filed Nov. 15, 1965, Ser. No. 507,919

Int. Cl. G01b *9/02*

U.S. Cl. 356—106 **4 Claims**



An improved double axes interferometer means comprising a base member, a source of radiant energy connected to said base member having a first polarization, a first beam splitter in the path of said beam at an angle of approximately 45° to said path, said first beam splitter being adapted to provide two beams on first and second axes at approximately 90° to each other, means to polarize one of said beams in a second polarization, a first reflector movably mounted on the first axis of said axes, a second reflector movably mounted on the second axis of said axes, first and second reference beam means, one for each of said axes, first fringe measuring means responsive to said first polarization and second fringe measuring means responsive to said second polarization.

3,434,788

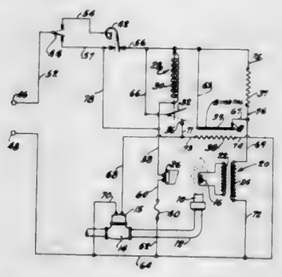
BURNER CONTROL SYSTEM

James A. Wright, Webster Groves, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

Filed Oct. 13, 1967, Ser. No. 675,200

Int. Cl. F23n *1/00, 5/02*

U.S. Cl. 431—66 **4 Claims**



A gas burner control system having an electrically energized glow coil igniter positioned so as to be impinged by burner flame and a photoconductive sensor which is insensitive to gas flame but is responsive to radiant energy of the glow coil when it is at ignition temperature to effect the flow of gas to the burner and to reduce the electrical energization level of the coil, and in which a sufficient glow coil temperature is maintained at the reduced electrical energization level due to its being positioned in the burner flame to effect a continued response of the sensor which will maintain the flow of gas to the burner.

3,434,789

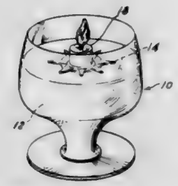
AESTHETIC ILLUMINATING DEVICE

James Gilbert Haller, 20 W. Andrews St., Lancaster, Pa. 17603

Filed June 8, 1967, Ser. No. 644,707

Int. Cl. F23d *21/00*

U.S. Cl. 431—126 **5 Claims**



A buoyant member to support a short candle when floating upon the surface of a body of liquid and formed from cellular waterproof sheet material of limited compressibility, said member having a hole coaxial with the center of gravity of said member and of a diameter slightly less than that of said candle to frictionally engage and support the candle substantially vertically, said candle having a coating of slower burning material than that from which the inner body of the candle is formed so as to retain a pool of melted body material around the wick and prevent escape thereof onto said member.

3,434,790

PIEZOELECTRIC IGNITION DEVICE

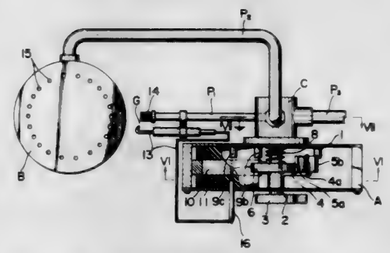
Isao Kanda, Nagoya, Japan, assignor to NGK Spark Plug Co., Ltd., Mizuho-ku, Nagoya, Japan

Filed Aug. 8, 1967, Ser. No. 659,173

Claims priority, application Japan, June 29, 1967, 42/40,134

Int. Cl. F23q *3/00, 13/00*

U.S. Cl. 431—255 **3 Claims**



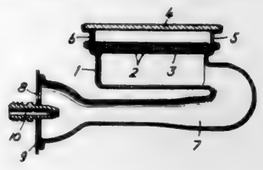
A piezoelectric ignition device comprising a main shaft extending through a casing and provided outside the casing with a knob, a V-shaped pawl having two legs and rotatable around a pin provided at the free end of a lever turning around with the main shaft and adapted to be engaged with and disengaged from a notch formed on the periphery of a rotary disc with the aid of first, second and third stops arranged along the path of the pawl, and a hammer shaped impact member formed integral with the rotary disc and capable of striking against a piezoelec-

tric voltage source by the action of a spring to be stressed when the main shaft is rotated in one direction to produce a spark discharge across a gap formed between two electrodes connected to the piezoelectric voltage source, and the device being particularly adapted for use in igniting a gas burner.

3,434,791
BURNER

Kanekichi Hayashi and Susumu Naito, Nagoya, Japan, assignors to Kabushiki Kaisha Rinnai Seisakusho, Nakagawa-ku, Nagoya-shi, Japan, a corporation of Japan

Filed Sept. 13, 1965, Ser. No. 486,872
Claims priority, application Japan, Feb. 15, 1965, 40/8,557
Int. Cl. F23d *13/12;* **C04b** *35/18*
U.S. Cl. 431—328 **7 Claims**



The burner comprises a burner frame having one side closed by an imperforate glass ceramic heating plate of low heat-expansibility, which has a very high heat resistance, a flat body in said frame confronting said plate with a space between said plate and the body and having a multiplicity of passages of small diameter extending between its opposite surfaces, and a chamber for a combustible mixture in communication with said passages for the flow of said mixture into said space where it burns and heats said heating plate.

CHEMICAL

3,434,792
1-AMINO- (AND METHYLAMINO) 2-BROMO-4-[p-(β - HYDROXYETHYL) - ANILINO] - ANTHRAQUINONE DISPERSE DYES FOR NYLON AND POLYPROPYLENE

Charles Edward Lewis, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

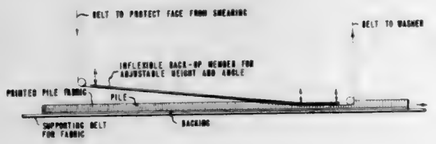
No Drawing. Filed May 4, 1965, Ser. No. 453,203
Int. Cl. D06p *1/20, 3/00*
U.S. Cl. 8—39 **5 Claims**

Two new anthraquinones, 1-amino-2-bromo-4-(p-hydroxyethylanilino) anthraquinone and 1-methyl-amino-2-bromo-4-(p-hydroxyethylanilino) anthraquinone, are outstanding disperse blue dyes for nylon and polypropylene fibers.

3,434,793
METHOD FOR SCREEN PRINTING PILE STRUCTURES

Herbert Thomas Pratt, New Castle, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del.

Filed Nov. 2, 1964, Ser. No. 408,094
Int. Cl. D06p *5/00, 7/00*
U.S. Cl. 8—62 **3 Claims**



In screen printing pile structures having fiber ends in the pile surface improved print definition and ink penetration are obtained by compressing the pile, after printing but while the dye composition is still liquid, to reduce its thickness to between 1 and 40% of its uncompressed thickness.

3,434,794
DELAYED CURE OF CELLULOSIC ARTICLES

Henry Tovey, Silver Spring, Md., assignor to Cotton Producers Institute, Memphis, Tenn., a non-profit corporation of Tennessee

No Drawing. Filed Nov. 18, 1965, Ser. No. 508,574
Int. Cl. D06m *13/12, 13/34, 15/12*
U.S. Cl. 8—116.3 **11 Claims**

In manufacturing durable press garments or other articles from cellulosic textiles, the fabric is first impregnated with a resin finishing agent or crosslinking agent, a catalyst and a water miscible, non-reactive, high boiling swelling agent; the fabric is then cured in the presence of the high boiling swelling agent whereby the crosslinking agent is made insoluble by being chemically fixed in the fabric without however imparting any high degree of dry wrinkle recovery to the fabric and without interfering with subsequent manufacturing or shaping operations; the high boiling swelling agent is then removed from the fabric by washing or evaporation at an elevated temperature and the fabric is then manufactured into the desired shape and recured, whereby an article possessing excellent dry and wet wrinkle recovery is obtained.

3,434,795
METHODS OF PROCESSING WOOL AND OTHER HAIR FIBERS

Alton A. Cook, Bloomfield, and Ira Sapers, Newark, N.J., assignors to Arkansas Company, Inc., Newark, N.J., a corporation of New York

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,138
Int. Cl. D06m *3/02*
U.S. Cl. 8—127.6 **6 Claims**

The present invention relates to the wet processing of wool and other hair fibers in the presence of an hydroxylamine salt of a strong mineral acid, for the purpose of eliminating the natural yellowish cast characteristic of such fibers which often become more pronounced in high temperature dyeing procedures and in processing such fibers under alkaline conditions.

3,434,796
SILVER NITRATE STAIN REMOVAL COMPOSITION AND METHOD FOR USING SAME

Francesco Colombo, Anaheim, and Edward V. Babcock, Fullerton, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Feb. 11, 1966, Ser. No. 526,697
Int. Cl. D06l *3/02, 1/00*
U.S. Cl. 8—137 **12 Claims**

Compositions and process comprising a combination of a persulfate salt and a thiourea compound which is dissolved in water to provide a solution for removing silver nitrate stains from fabrics.

3,434,797
PROCESS FOR TREATMENT OF HYDROCHLORIC ACID WASTE PICKLE LIQUOR

Robert A. Taylor, Wilmington, Del., and Frederick G. Krikau, Dolton, Ill.; said Taylor assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware, said Krikau assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York

No Drawing. Filed July 27, 1967, Ser. No. 656,364
Int. Cl. C01f *11/24*
U.S. Cl. 23—90 **2 Claims**

A process for removal of iron solids from hydrochloric acid waste pickle liquor by maintaining the system pH between 8–10 while the waste pickle liquor and a lime slurry, each at a temperature of from 180°–210° F., are simultaneously introduced into a reaction vessel. The pH and the temperature are maintained for at least 5 hours. The iron is precipitated out as iron oxide crystals (Fe_3O_4) and is separated from the system by suitable means. The clear liquor contains dissolved calcium chloride.

3,434,798
PROCESS FOR RECOVERING ZINC FROM FERRITES

Francisco Javier Sitges Menendez and Vicente Arregui Fernandez, Castrillon, Oviedo, Spain, assignors to Compagnie Royale Asturienne des Mines, Brussels, Belgium, a Spanish company

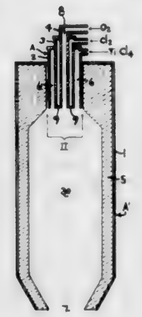
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,786
Claims priority, application Spain, Oct. 2, 1964, 304,601
Int. Cl. C01g *9/06*
U.S. Cl. 23—125 **4 Claims**

Zinc values are obtained from zinc plant residue by dissolving the zinc ferrites contained therein with sulfuric acid having an initial concentration of at least about 300 g./l. and a concentration after dissolution of about 180 to 200 g./l. The resulting solution is diluted and neutralized so as to precipitate basic iron sulphate and recover a zinc sulphate solution. The zinc sulphate solution is electrolyzed in order to obtain the desired zinc values.

3,434,799
PROCESS FOR PREPARING PIGMENTARY TITANIUM DIOXIDE

William L. Wilson, Barberton, Ohio, assignor to PPG Industries, Inc., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 190,140, Apr. 25, 1962. This application Apr. 14, 1965, Ser. No. 448,121
Int. Cl. C01g *23/04*
U.S. Cl. 23—202 **11 Claims**



The preparation of pigmentary titanium dioxide by vapor phase oxidation of titanium tetrahalide is described. A process for improving the pigmentary properties of the pigment by conducting the oxidation reaction in the presence of additives, particularly silicon and potassium is discussed.

3,434,800
PROCESS FOR DETERMINING MERCURY IN GEOLOGIC MATERIALS

Frederick N. Ward, Denver Colo., assignor to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed May 16, 1966, Ser. No. 551,496
Int. Cl. G01n *31/22*
U.S. Cl. 23—230 **5 Claims**

A measured sample of soil or rock is heated to 650–750° C. to drive off any mercury present, and the mercury vapor is absorbed in bromine water. The resultant solution is then employed to catalytically react nitrosobenzene with ferrocyanide to form a purple colored test solution, the color intensity of which is proportional to the amount of mercury present. Standard mercury solutions or a spectrophotometer are then used to determine the amount of mercury in the test solution.

3,434,801
DIAGNOSTIC TEST MATERIAL FOR DETERMINATION OF OVULATORY FUNCTION AND METHOD FOR PRODUCTION OF SAID TEST MATERIAL

George H. Scherr, Park Forest, Ill., assignor to Colab Laboratories, Inc., Chicago Heights, Ill., a corporation of Illinois

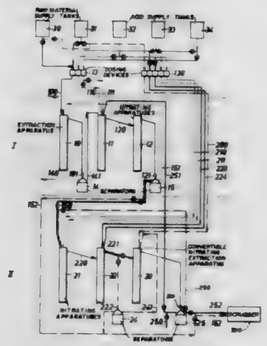
No Drawing. Filed Feb. 21, 1964, Ser. No. 346,404
Int. Cl. G01n *31/22;* **C01g** *37/14*
U.S. Cl. 23—253 **13 Claims**

Diagnostic test material for diagnosing ovulatory function by determining chloride ion concentration of female body liquid indicative of ovulatory function and selected from cervical, nasal, and salivary mucus, comprising bibulous sheet-form base and ionic chloride ion concentration-indicating compound of metal chromate or dichromate type dispersed therein together with excess cations corresponding to those of which the indicating compound is composed. Allows female body liquids having sodium chloride concentrations between about 0.1 and 0.5% to be readily distinguished from those having sodium chloride concentration between about 0.8 and 0.9%.

3,434,802
APPARATUS FOR THE STAGED NITRATION OF AROMATIC HYDROCARBONS

Karl Engelbert Ludwig Toischer and Horst Sigurd Max Bergmann, Cologne-Marienburg, Germany, assignors to Josef Meissner GmbH & Co. KG, Cologne-Bayenthal, Germany

Filed Oct. 22, 1965, Ser. No. 502,194
Claims priority, application Germany, Oct. 23, 1964, M 62,855
Int. Cl. C07b *11/00;* **C07c** *79/10*
U.S. Cl. 23—260 **5 Claims**



A two stage system for the selective production of either a mono- or dinitro-product, including a first stage

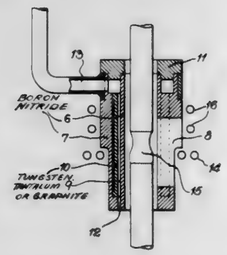
for converting raw material into a mono nitro product and a second stage having a convertible nitrating-extraction unit, and valved conduit means for connecting the second stage in cascade with the first stage and connecting the convertible unit as a nitrating unit to produce a dinitro product at the output of the second stage or for connecting both stages in parallel and connecting the convertible unit as an extraction unit for causing both stages to produce a mononitro-product.

3,434,803

APPARATUS FOR MANUFACTURING FLAWLESS, STRESS-FREE BORON RODS

Heinz Wirth, Uberlingen, Baden-Wurttemberg, and Hermann Helmberger and Hans Herrmann, Munich, Bavaria, Germany, assignors to Consortium fur Elektrochemische Industrie G.m.b.H., Munich, Germany, a corporation of Germany

Filed June 2, 1965, Ser. No. 460,692
Claims priority, application Germany, June 4, 1964, C 33,044
Int. Cl. C01b *35/00*
U.S. Cl. 23—273 **2 Claims**



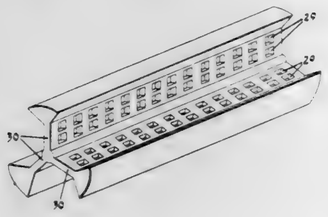
The apparatus of the invention comprises a pair of spaced concentric boron nitride cylinders the inner one of which is a housing for the rod to be drawn, a heating cylinder mounted in the annular space between said boron nitride cylinders, means for heating said heating cylinder, and means for circulating an inert rinsing gas in the space between said boron nitride cylinders and said heating cylinder.

3,434,804

APPARATUS UTILIZING A WEBBED STIRRER FOR CONTINUOUS MIXING

Richard Babington Winn, Knebworth, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Aug. 6, 1965, Ser. No. 477,916
Claims priority, application Great Britain, Aug. 6, 1964, 32,017/64
Int. Cl. B01f *11/00, 13/00*
U.S. Cl. 23—285 **20 Claims**



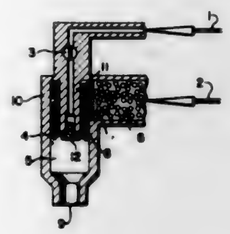
Apparatus for conducting continuous processes including a special type of webbed stirrer which minimizes end-to-end mixing.

3,434,805

APPARATUS FOR CONTINUOUSLY PRODUCING A PLASTIC FOAM

Karl Bar, Buchen, Odenwald, Germany, assignor to Schaum Chemie, Wilhelm Bauer K.-G., Essen, Germany

Filed Aug. 22, 1966, Ser. No. 574, 126
Int. Cl. B01j
U.S. Cl. 23—285 **5 Claims**



1. An apparatus for continuously producing a plastic foam from a curable liquid synthetic resin and a foaming agent foam containing a curing accelerator for the synthetic resin, comprising:

(1) a housing defining an elongated chamber having a longitudinal axis,

(a) the housing having an outlet at one end thereof in communication with the elongated chamber;

(2) a conduit for delivering the curable liquid synthetic resin to the elongated chamber, the conduit passing through the housing into the chamber and terminating in the chamber in an inner end substantially opposite the outlet;

(3) a nozzle at the inner end of the conduit and positioned along the axis of the elongated chamber,

(b) the nozzle defining an annular outlet slot radially extending from said axis and inclined toward the outlet of the chamber,

(c) the housing defining a mixing compartment in said chamber between the nozzle and the outlet; and

(4) an inlet conduit for delivering the foaming agent foam containing the accelerator, the inlet conduit passing through the housing into the portion of the elongated chamber above said nozzle.

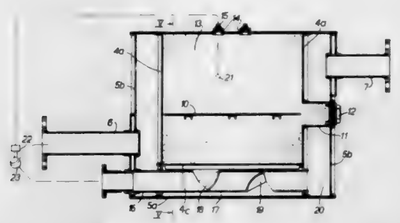
3,434,806

CATALYTIC MUFFLER

Douglas August Charles De Rycke, Woolton, Liverpool, and Owen Gordon Parker, Stoke Golding, Nuneaton, England, assignors to Peter Spence & Sons Limited, Widnes, Lancashire, England, and Burgess Products Company Limited, Hinckley, Leicester, England

Filed Mar. 8, 1965, Ser. No. 438,016
Claims priority, application Great Britain, Mar. 11, 1964, 10,172/64
Int. Cl. B01j *9/04*
U.S. Cl. 23—288 **2 Claims**

A catalyst converter for an exhaust system includes a catalyst chamber located within a container having inlet and outlet chambers at its opposite ends. An internal brace separates the catalyst chamber into two compartments which are arranged to be filled simultaneously. A modification includes a separate inlet pipe which extends through a silencing chamber in the container to the outlet chamber. The separate inlet pipe is blocked and ported at two locations within the silencing chamber so that exhaust gases bypassing the catalyst chamber will circulate through the silencing chamber.

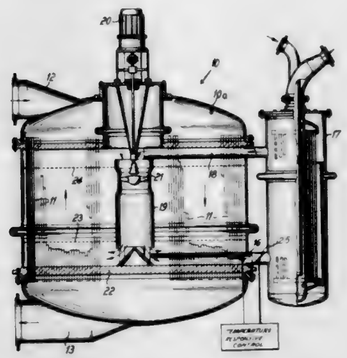


3,434,807

REACTOR WITH HEAT EXCHANGER

Guenther Ibing, Gildenstr. 57, Gladbeck, Germany; Hermann Schirrmacher, Horster Str. 522; Herbert Vollmer, Horster Str. 524; and Josef Boemelburg, Horster Str. 526, all of Bottrop, Germany; and Fritz Schwall, Heierbusch 20, Essen-Bredeney, Germany

Filed July 20, 1967, Ser. No. 655,726
Claims priority, application Germany, July 21, 1966, St 25,670
Int. Cl. B01j *9/04;* **F28f** *13/06;* **F28d** *15/00*
U.S. Cl. 23—288 **9 Claims**



A housing defines an inner chamber having an inlet and outlet for a first heat exchange medium. A circulating tube with a fan is arranged centrally of the chamber for circulating the first medium therein. A plurality of pipes are disposed in the chamber and carry a second heat exchange medium. The pipes are arranged in a plurality of groups adjacent ones of which define with one another unobstructed passages for the first medium. Conduit means is arranged in one of the passages and connects the circulating tube with the inlet and the outlet, respectively.

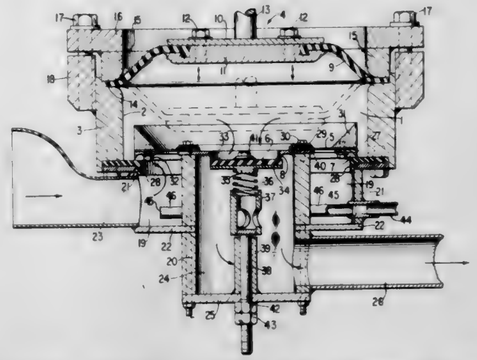
3,434,808

METHOD AND MEANS FOR PUMPING POWDERED SOLIDS

David F. Pobst, Jr., Pampa, Tex., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 562,758, July 5, 1966. This application Dec. 21, 1967, Ser. No. 692,612
Int. Cl. C01b *31/14;* **C09c** *1/58*
U.S. Cl. 23—314 **21 Claims**

Dry powder, such as carbon black, is aspirated into a closed chamber. The inlet opening is then sealed off, and the powder is positively discharged in the opposite direction through a coaxial outlet opening by mechanical displacement. Successive repetition of the aspiration and discharge steps results in the pumping of the powder from the chamber as a pulsating stream under pressure.

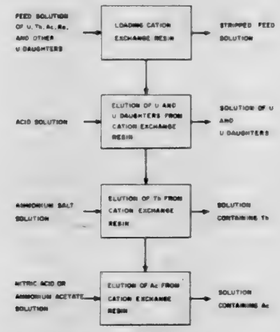


3,434,809

SEPARATION OF ACTINIUM AND THORIUM FROM URANIUM AND ITS DAUGHTERS

Donald H. Swanson, Miamisburg, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 15, 1968, Ser. No. 713,410
Int. Cl. C01f *13/00, 17/00;* **C01g** *43/00*
U.S. Cl. 23—338 **3 Claims**



An ion exchange process comprising loading a cation exchange resin with a solution including uranium, actinium, thorium and other uranium decay product cations, eluting cations other than thorium and actinium with a dilute acid solution, separately eluting thorium with an ammonium salt solution, and eluting actinium with a solution of strong acid or ammonium salt.

3,434,810

NICKEL-BASE DISPERSION HARDENED ALLOY

William J. Barnett, Brandywine Hundred, Del., assignor by mesne assignments, to Fansteel Inc., a corporation of New York

No Drawing. Filed June 30, 1965, Ser. No. 468,592
Int. Cl. B22f *1/00, 9/00*
U.S. Cl. 29—182.5 **6 Claims**

Nickel-molybdenum alloys, which are modified with certain dispersed, particulate refractory oxides and contain from 0.002 to 0.5 percent total carbon, are given improved ductility and high temperature strength properties by incorporating therein from 0.1 to 1.0 percent of zirconium or hafnium, of which greater than 0.02% is soluble in bromine-methanol solution.

3,434,811
TUNGSTEN-HAFNIUM-OXYGEN ALLOYS
Stephen Foldes, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,725
Int. Cl. B22f 3/10; C22c 27/00
U.S. Cl. 29—182.5 5 Claims

Tungsten-base alloys containing, by weight, 1–7% hafnium and 0.03–0.12% oxygen, along with optional elements, have been found to have useful strength properties. This unusual high oxygen content can be obtained by powder metallurgical processes not using carbon which would otherwise volatilize the oxygen content. Hafnium oxide dispersions strengthen these alloys.

3,434,812
THERMIONIC CATHODE
Ralph J. Bondley, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 360,439, Apr. 16, 1964. This application Sept. 8, 1966, Ser. No. 578,060
Int. Cl. B22f 5/00
U.S. Cl. 29—182.5 5 Claims

An improved dispenser cathode having an emission density of the order of 10 a./cm.^{2} at 1000° C. consisting essentially of a refractory metal matrix including 5–11% by weight barium-strontium-tungstate $Ba_5Sr(WO_6)_2$.

3,434,813
COMPOSITE TITANIUM-ALLOY ARTICLE RESISTANT TO HOT SALT CORROSION
Howard B. Bomberger, Jr., East Liverpool, Ohio, assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
No Drawing. Filed Dec. 7, 1964, Ser. No. 416,649
Int. Cl. C01g 23/00
U.S. Cl. 29—194 2 Claims

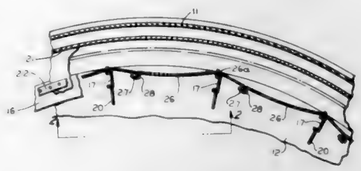
The invention relates to a metal article exhibiting good strength and ductility after prolonged exposure at moderately elevated temperature to the embrittling influence of sodium chloride; the article comprises a body consisting essentially of a titanium-base alloy provided with a surface layer of metal consisting predominantly of zinc. The surface layer need not be continuous to provide the desired property of resistance to attack by hot-salt environments.

3,434,814
EMISSION CONTROL ADDITIVE
Michael Dubeck, Birmingham, and Joseph P. Kleiman, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 29, 1966, Ser. No. 561,415
Int. Cl. C10m 10/02, 1/22
U.S. Cl. 44—69 5 Claims

Increase of combustion chamber deposits and exhaust hydrocarbon emission of internal combustion engines is reduced by operating the engine on gasoline containing ortho-substituted aromatic nitro compounds.

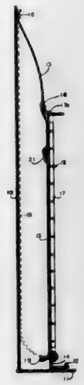
3,434,815
DRY-SEAL PRESSURE-TYPE GASHOLDERS PROVIDED WITH STRETCH RESISTANT SEAL STRUCTURES AND TENSIONED FENDER STRUCTURES
John H. Wiggins, P.O. Box 418, Menlo Park, Calif. 94025
Filed Feb. 15, 1965, Ser. No. 432,582
Int. Cl. F17b 1/18
U.S. Cl. 48—178 7 Claims

Gasholder of the type having an annular side wall and a piston disposed therein with a curtain seal connected between the side wall and a smooth and tensioned and sinuous backstop surface mounted on the piston, the sinuous backstop surface having an effective circumference less than that of the inner surface of the side wall



and the curtain seal having an initial effective circumference intermediate that of the side wall and the sinuous backstop surface.

3,434,816
GASHOLDER PROVIDED WITH MECHANISM FOR PREVENTING WRINKLING OF THE FLEXIBLE CURTAIN SEAL INCORPORATED THEREIN
John H. Wiggins, P.O. Box 418, Menlo Park, Calif. 94025
Filed Mar. 29, 1965, Ser. No. 443,266
Int. Cl. F17b 1/26
U.S. Cl. 48—179 6 Claims

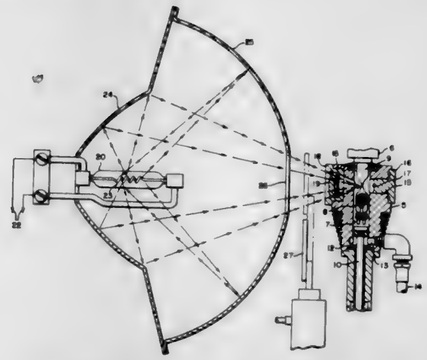


There is disclosed in a gasholder of the low pressure type including an outer cylindrical wall structure and a cylindrical fender structure disposed therein and a flexible curtain seal secured to the structures and forming a seal therebetween, a series of seal lifting elements attached in a circular array to the curtain seal and to one of the structures to eliminate sag in the curtain seal and subsequent wrinkling of the curtain seal when the fender structure is in the lowermost portion thereof.

3,434,817
INCREASING THE STRENGTH OF GLASS BY OVERGLAZING
James J. Hazdra, Joliet, Ill., David Sonnleitner, Menasha, Wis., and Wayne E. Wesolowski, Lombard, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 3, 1965, Ser. No. 485,114
Int. Cl. C03c 17/06, 17/20
U.S. Cl. 65—60 4 Claims

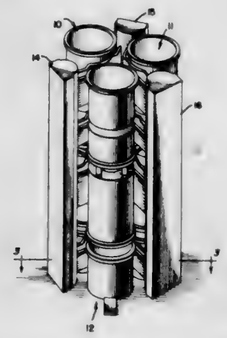
A method for increasing the strength of glass wherein a glazing composition is applied to a glass object, the glazing composition having a lower coefficient of expansion than the glass, and composed of the oxides of lead, zinc and boron. The glazing composition is applied to the glass at a temperature lower than the deformation temperature of the glass, thereby avoiding any possibility of deformation of the glass.

3,434,818
APPARATUS FOR SEALING OFF GLASS VESSELS
Bernard Chauvin, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 3, 1965, Ser. No. 461,053
Int. Cl. C03b 9/42, 23/14, 9/46
U.S. Cl. 65—152 9 Claims



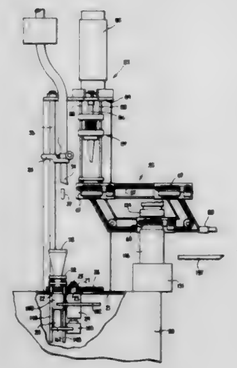
An apparatus for sealing off vessels such as photoflash lamps wherein the vessel is supported by its exhaust tubulation depending from the head of the exhaust machine. At the tipping off station, the lamp is sealed in a pressure chamber provided with a fluid pressure slightly higher than the several atmospheres of oxygen within the lamp envelope and radiant energy at high temperature from a quartz iodine lamp or the like is concentrated on a small area of the exhaust tubulation to heat the exhaust tubulation to the softening temperature whereby the weight of the lamp collapses the tubulation to form a seal.

3,434,819
COLOR GUN BEADING APPARATUS
Chester O. Merchant and Jay H. Johnson, Owensboro, Ky., assignors to Kentucky Electronics, Inc., Owensboro, Ky., a corporation of Kentucky
Filed June 10, 1966, Ser. No. 556,654
Int. Cl. C03c 27/02
U.S. Cl. 65—155 4 Claims



Apparatus for manufacturing electron gun assemblies for color picture tubes is disclosed wherein a replaceable jig holds a plurality of electrodes with extending brackets in final position in a beading machine for receiving three molten glass rods impaled simultaneously on the brackets to permanently hold the parts in place. The rods are moved along a straight line after being heated on their face by a heater interposed in the movement path of the rods as the heater is pivoted out of the pathway.

3,434,820
HOLLOW GLASSWARE FORMING MACHINE
Anthony T. Zappia, 6230 E. 56th St. 46226, and Maynard O. Bough, Jr., 8042 Campbell Ave. 46250, both of Indianapolis, Ind.
Filed Feb. 3, 1965, Ser. No. 430,105
Int. Cl. C03b 9/26
U.S. Cl. 65—223 11 Claims

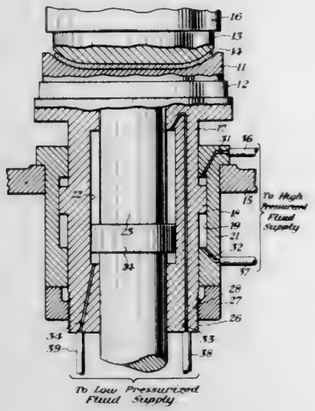


A machine for forming hollow glassware in which a parison mold travels in an oscillatory path between a charging station and pressing station, and in which one or more segmental neck rings travel in a closed path from said pressing station to a blowing station, thence to a delivery station and thence back to said pressing station, with a dwell period at each of said stations although said neck rings are transported on an endless, flexible strand which travels continuously at uniform velocity, the neck rings, parison mold and press plunger sealing head being cooperatively formed to afford sealing closure of each neck ring during the pressing operation and automatic means being provided to establish affirmative support for the parison mold during the pressing operation.

3,434,821
APPARATUS FOR PRESSING ARTICLES OF THERMOPLASTIC MATERIAL
Robert F. Wiley, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,546
Int. Cl. C03b 11/12, 11/06
U.S. Cl. 65—320 9 Claims

Apparatus for and method of free pressing articles of molten thermoplastic materials such as molten glass, such apparatus comprising a press including cooperative male and female mating mold members whose degree of mating relationship may be varied by manually adjustable means and further including means for maintaining the forming surfaces of said members in contact with the

formed surfaces of a pressed article, following the forming thereof, to aid in cooling of such article and, during

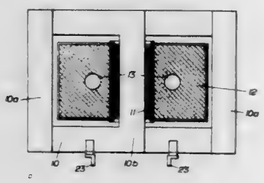


such cooling, maintaining the contour imparted to the article during the press forming thereof.

3,434,822
m-UREIDOPHENYL CARBAMATES AS HERBICIDES
Kenneth R. Wilson, Tonawanda, and Kenneth L. Hill, Middleport, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 354,153, Mar. 23, 1964. This application Feb. 16, 1965, Ser. No. 433,157
Int. Cl. A01n *9/20;* **C07c** *125/06, 127/18*
U.S. Cl. 71—106 **12 Claims**

Meta-ureidophenyl carbamates, in which both the urea and carbamate groups are substituted, are effective as both pre-emergence and post-emergence herbicides. The synthesis and properties of these new compounds are given, and herbicidal activity against a variety of plants is illustrated.

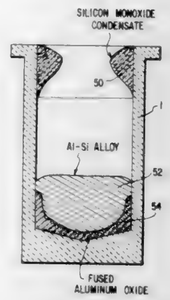
3,434,823
METHOD FOR DEGASSING METALLIC MELTS BY SONIC VIBRATIONS
Alfred Adamec, Vienna, Austria, assignor to Wiener Schwachstromwerke Gesellschaft m.b.H., Vienna, Austria
Filed Dec. 11, 1964, Ser. No. 417,667
Claims priority, application Austria, Dec. 16, 1963, A 10,069/63
Int. Cl. C22d *7/00;* **H05b** *5/00*
U.S. Cl. 75—10 **8 Claims**



Method for degassing metallic melts by vibrations uses the ponderomotive effect provided by an alternating current. The current is supplied from a source at commercial frequencies, and the alternating currents are distorted to increase their harmonics. The distortion of the alternating current can be effected by abrupt limitations of amplitude to produce a pulse type current.

The method may comprise a supply transformer which can be loaded beyond the saturation range, as by providing special laminations or by magnetically preloading the transformer. Alternatively, the distortion of the alternating current can be effected electronically.

3,434,824
REDUCTION OF ALUMINUM OXIDE BY ELEMENTAL SILICON
Thomas Joseph Johnston, Muscle Shoals, Ala., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 579,871
Int. Cl. C22b *21/02*
U.S. Cl. 75—68 **8 Claims**



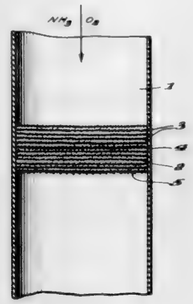
1. Method for the reduction of an oxide of aluminum to metallic aluminum which comprises providing a reaction mixture consisting essentially of elemental silicon and aluminous ore providing said oxide, heating said reaction mixture at a temperature above about 1850° C. to form aluminum and silicon monoxide, and recovering the aluminum.

3,434,825
PROCESS FOR PURIFYING COPPER BASE ALLOYS
James E. Dore, Milford, and Richard R. Carey, Orange, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Continuation-in-part of application Ser. No. 312,898, Oct. 1, 1963. This application June 3, 1966, Ser. No. 554,988
Int. Cl. C22c *1/02, 1/06, 9/00*
U.S. Cl. 75—76 **8 Claims**

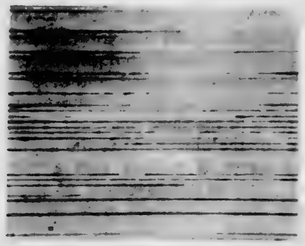
A process for removing both metallic impurities and gaseous impurities from copper base alloys characterized by bubbling a gaseous monomeric, halogen-containing, lower aliphatic hydrocarbon containing at least one fluorine atom through a molten copper base alloy.

3,434,826
RECOVERY OF NOBLE METALS WHICH ARE VOLATILIZED DURING CATALYTIC REACTIONS
Hermann Holzmann, Hanau am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed Oct. 4, 1965, Ser. No. 492,545
Claims priority, application Germany, Oct. 3, 1964, D 45,559
Int. Cl. C22b *11/02*
U.S. Cl. 75—83 **5 Claims**

Platinum which is volatilized during high temperature catalytic reactions is recovered by contacting the highly heated gas stream leaving the catalyst while the volatilized platinum contained therein is still essentially in the gaseous phase with a foraminate element of a metallic material selected from the group consisting of palladium and palladium-gold alloys at a temperature of at least 850° C.



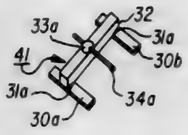
3,434,827
ANISOTROPIC MONOTECTIC ALLOYS AND PROCESS FOR MAKING THE SAME
Franklin D. Lemkey, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,491
Int. Cl. C22f *3/00;* **C22c** *1/08, 3/00*
U.S. Cl. 75—134 **14 Claims**



Monotectic compositions are solidified to form a body wherein one of the porducts of solidification forms as filaments embedded in a matrix of a second product of solidification, the filaments being arranged in parallel, spaced relationship and having a melting point lower than that of the matrix material. Because of the difference in melting points of the two products of solidification, the body may be reheated to a temperature at which the filaments melt while the matrix remains solid. The molten material may then be selectively removed to form a body with uniaxial porosity or other useful properties.

3,434,828
GOLD ALLOY FOR ATTACHING A LEAD TO A SEMICONDUCTOR BODY
Boyd Cornelison, Morton E. Jones, James T. Lineback, Elmer A. Wolff, Jr., Samuel W. Barcus, Jr., Frank A. Horak, and Norman S. Ince, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 261,245, Feb. 1, 1963, which is a division of application Ser. No. 493,478, Mar. 10, 1955. This application Oct. 18, 1967, Ser. No. 676,361
Int. Cl. C22c *5/00;* **H01l** *7/46*
U.S. Cl. 75—165 **9 Claims**

A gold alloy for soldering a lead to a semi-conductor body comprising a small percentage of the same semiconductor material as the body and a small percentage of a desired impurity element.



3,434,829
TUNGSTEN-BASE ALLOYS
Winston H. Chang, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 359,079, Apr. 13, 1964. This application Dec. 21, 1966, Ser. No. 609,702
Int. Cl. C22f *1/18;* **C22c** *27/00*
U.S. Cl. 75—176 **3 Claims**

1. A tungsten-base alloy consisting essentially of, by weight, from about 20% to about 30% rhenium, about 0.5–2.0% columbium, and about 0.01–0.2% carbon, balance tungsten.

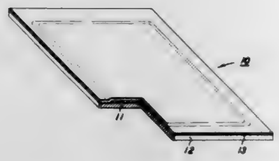
3,434,830
DISPERSION STRENGTHENING OF METALS AND ALLOYS
Nicholas J. Grant, 10 Leslie Road, Winchester, Mass. 01890
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,469
Int. Cl. B22f *1/00*
U.S. Cl. 75—206 **1 Claim**

The invention relates to the production of dispersion strengthened metals from finely divided matrix-forming material while inhibiting the pyrophoric and presintering tendencies of the finely divided material during the initial stages of thermal processing. The method employed comprises starting with finely divided reducible metal oxide whose negative free energy of formation of the oxide is less than 80,000 calories per gram atom of oxygen at about 25° C. and mixing with it a solution having dissolved therein a refractory oxide-forming salt which decomposes to a refractory oxide coating whose negative free energy of formation is at least 100,000 calories per gram atom of oxygen at about 25° C. The metal oxide powder with the refractory oxide coating is then reduced at an elevated temperature to form very fine metal power having the refractory oxide on the surface thereof while inhibiting the pyrophoricity and the presintering tendency of the powder.

3,434,831
FABRICATION OF SPHERICAL POWDERS
Walter V. Knopp, Wyckoff, N.J., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Sept. 8, 1966, Ser. No. 577,840
Int. Cl. B22f *1/00, 9/00*
U.S. Cl. 75—212 **8 Claims**

The instant disclosure teaches a process for obtaining spherical metal powders of a predetermined size range by admixing metal particles with a particular binder in the presence of moisture to form agglomerated masses of metal particles and binder, coating the masses with a weld preventing material and heating the resultant material.

3,434,832
XEROGRAPHIC PLATE COMPRISING A PROTECTIVE COATING OF A RESIN MIXED WITH A METALLIC STEARATE
Robert J. Joseph, Penfield, and William J. Murphy, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,677
Int. Cl. G03g 7/00, 5/04
U.S. Cl. 96—1.5 22 Claims



A photoconductive member and process of making and using same wherein said member comprises a photoconductive layer overlying an electrically conductive support member and overlying the photoconductive layer a protective overcoating comprising a mixture of film-forming material and metallic stearate.

3,434,833
STABLE FREE RADICALS AS ACTIVATORS FOR PHOTOCONDUCTIVE AND PHOTOHARDENABLE POLYMER LIGHT-SENSITIVE SYSTEMS
Charles J. Fox, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed July 26, 1965, Ser. No. 474,963
Int. Cl. G03g 5/06
U.S. Cl. 96—1.5 17 Claims

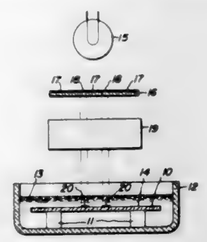
Stable free radicals are used as sensitizers to increase the photoresponsive characteristics of photoconductive insulating compositions and photohardenable polymer compositions.

3,434,834
ELECTROPHOTOGRAPHIC MATERIALS AND PROCESS OF PRODUCING SAME
Frederick W. Sanders, Chillicothe, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 459,923, May 28, 1965. This application Oct. 22, 1965, Ser. No. 502,500
Int. Cl. G03g 7/00
U.S. Cl. 96—1.8 6 Claims

The present invention relates to compositions for obtaining image reversal in electrophotographic printing processes by incorporating resin acids in wood rosin in conventional electrophotographic coating compositions comprising a photoconductive pigment and an electrically insulating binder.

3,434,835
IMAGE DEPOSITION BY MEANS OF A LIGHT SENSITIVE SOLUTION CONTAINING ORGANIC HALOFORM COMPOUNDS AND A DYE
Joseph Gaynor, Schenectady, Gordon J. Sewell, Albany, and Max Metlay, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,915
Int. Cl. G03c 5/40, 5/04
U.S. Cl. 96—35 21 Claims

A method of forming a photographic type image on a substrate is described in which the substrate is covered with a liquid solution containing photic reactants, including a photosensitive organic compound such as iodoform, for example, and a dye capable of reacting with the photosensitive organic compound to deposit on the substrate an optically detectable reaction product when



the liquid medium is subjected to a pattern of activating radiation. When the deposition has proceeded to the desired extent, the substrate with the deposited layer is separated from the liquid to produce a stable image.

3,434,836
PROCESS FOR SCREENING A COLOR CATHODE-RAY TUBE
Sam H. Kaplan, Chicago, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed May 10, 1965, Ser. No. 454,649
Int. Cl. G03c 5/00
U.S. Cl. 96—36.1 4 Claims

The phosphor screen of a color cathode-ray tube is applied by slurry screening techniques. After a particular color phosphor has been applied, and before the application of a second phosphor, the first phosphor deposits are given an overcoat of the same phosphor, a resinous binder and a solvent for the binder. After the application of the overcoat, the screen is washed with a solvent for the binder which removes the overcoat of the first applied phosphor and binder from all areas of the tube other than those elemental areas that are desired to retain the deposits of the first applied phosphor.

3,434,837
PHOTOGRAPHIC ELEMENT
Edward B. Knott, Miroslav V. Mijovic, and David George Saunders, Harrow, Middlesex, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 275,370, Apr. 24, 1963. This application June 5, 1964, Ser. No. 373,020
Int. Cl. G03c 1/84, 7/26, 1/92
U.S. Cl. 96—74 10 Claims

1. Photographic print material comprising a support having a white surface, a plurality of coatings over said white surface which coatings includes light sensitive coatings individually sensitive to blue, green and red regions of the spectrum, the red sensitive coating being the outermost light sensitive coating, said red sensitive coating containing a fluorescent agent which has strong absorption of radiation in the ultraviolet region of the spectrum, high fluorescent emission in the blue region of the spectrum and which is substantially insoluble in water and, a photographic coupler in said outermost coating which forms a dye which extinguishes the fluorescence of the fluorescent agent in those areas in which the dye is produced.

3,434,838
HEAT-DEVELOPABLE REPRODUCTION MATERIAL
Johannes Munder and Günther Hertzberg, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.
No Drawing. Filed Feb. 24, 1965, Ser. No. 435,027
Claims priority, application Germany, Feb. 29, 1964, K 52,254
Int. Cl. G03c 1/58
U.S. Cl. 96—75 8 Claims

A heat-developable diazotype reproduction material is prepared by impregnating, during the paper-making process, a paper carrier sheet with a heat-active source of alkaline material, such as urea. Upon completion of the paper-making process, the impregnated paper sheet is coated with a composition including a light-sensitive diazonium compound and a coupler compound capable of forming an azo dye with such diazonium compound in an alkaline medium. Heating of the resulting sheet material creates an alkaline medium conducive to the coupling reaction between the diazonium and the azo coupler compounds and effects development of an azo dye.

3,434,839
PHOTOGRAPHIC ANTIHALATION LAYERS
Hugh G. McGuckin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 1, 1965, Ser. No. 460,244
Int. Cl. G03c 1/84, 7/20
U.S. Cl. 96—84 27 Claims

Toned Carey Lea silver and antihalation layers comprsing toned Carey Lea silver are provided by reacting Carey Lea silver with sufficient thiol compound to tone the Carey Lea silver gray. The antihalation Carey Lea silver can be used in photographic elements particularly in multilayer photographic color films and can be conveniently removed in customary processing of the element.

3,434,840
PHOTOGRAPHIC ELEMENT COMPRISING SUBBED POLYESTER FILM SUPPORT
Lodewijk Felix De Keyser, Mortsel-Antwerp, Andre Jan Conix, Antwerp, and Lodewijk August Van Deusel, Edegem, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Continuation-in-part of application Ser. No. 242,620, Dec. 6, 1962. This application Aug. 15, 1966, Ser. No. 572,245
Claims priority, application Belgium, Dec. 7, 1961, 41,190
Int. Cl. G03c 1/80
U.S. Cl. 96—87 12 Claims

A multilayer photographic film including a biaxially stretched polyester film support, a light-sensitive silver halide emulsion layer undersubbed by a gelatin layer, said gelatin undersubbing being attached to the film support by way of a first subbing layer comprising a copolymer of styrene and at least one carboxy-substituted unsaturated compound copolymerizable therewith, and a second subbing layer contacting the film support and comprising a polyester soluble in chlorinated aliphatic hydrocarbons and obtained by the condensation of at least one aliphatic diol with a diacid component essentially consisting of at least about 55 mol percent isophthalic acid, up to about 25 mol percent phthalic acid and up to about 20 mole percent of an aliphatic saturated dicarboxylic acid. The carboxy substituent may be replaced by a substituent adapted for ready conversion into a carboxy group, and the constituents of the two subbing layers may be mixed together to form a single composite subbing layer.

3,434,841
PROCESS FOR PREPARING SILVER HALIDE PHOTOGRAPHIC EMULSIONS UTILIZING BETAINES
Noel Hawkins Kuhrt, Jr., Rochester, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 8, 1965, Ser. No. 470,590
Int. Cl. G03c 1/02
U.S. Cl. 96—94 10 Claims

Preparation of light-sensitive silver halide by precipitating silver halide in an aqueous solution free from water-permeable colloid containing a cation-active pentavalent nitrogen chloride or bromide containing an aliphatic hydrocarbon radical of 12–18 carbon atoms, e.g., a C-hydrocarbon or N-hydrocarbon substituted betaine. The precipitated silver halides can then be used to make colloid-silver halide emulsions.

3,434,842
PHOTOGRAPHIC SILVER HALIDE EMULSIONS STABILIZED WITH 2-IMINO-THIAZOLONES
Harald Hückstädt, Cologne-Stammheim, Wilhelm Saleck, Schildgen, Bergstrasse, Gladbach, Hans Ulrich and August Randolph, Leverkusen, and Herbert Grabhöfer, Cologne-Flittard, Germany, assignors to Agfa Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 19, 1965, Ser. No. 473,216
Claims priority, application Germany, Aug. 8, 1964, A 46,797
Int. Cl. G03c 1/34
U.S. Cl. 96—109 5 Claims

The invention relates to photographic silver halide emulsions which are sensitized by means of a chemical sensitizing agent having at least one polyoxyalkylene group and which are stabilized by means of 2-imino-thiazolone or -tetrahydrothiazinone compounds.

3,434,843
STABLE FOOD PIECES
Jack R. Durst, Osseo, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 478,407, Aug. 9, 1965, which is a continuation-in-part of application Ser. No. 262,327, Mar. 4, 1963. This application Mar. 8, 1967, Ser. No. 621,473
Int. Cl. A23l 1/34
U.S. Cl. 99—1 20 Claims

Compact food units designed to provide a completely balanced diet provided by incorporating essential nutrients into a unitary, flexible food piece containing a continuous external phase of a hydrophilic film former, water and an edible humectant. The external phase encapsulates an internal phase of minute fat globules. The food pieces are resistant to physical, chemical, and bacteriological degradation.

3,434,844
STABILIZATION OF ANIMAL AND POULTRY FEEDS CONTAINING A TETRACYCLINE ANTIBIOTIC
Irving Klothen, Princeton, Robert Berendt Fortenbaugh, Gladstone, and Anthony Abbey, Jamesburg, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Jan. 21, 1964, Ser. No. 339,094
Int. Cl. A23k 1/17; A61k 21/02
U.S. Cl. 99—2 8 Claims

Preparation of an animal feed composition comprising an animal feed stuff containing a tetracycline-type antibiotic in which the antibiotic potency is maintained for extended periods of time by heating the fermentation mash liquor containing the antibiotic and prior to harvest

thereof at a temperature between about 75°–120° C. for a period of time of at least about three minutes so as to stabilize the fermentation mash.

3,434,845

METHOD OF TREATING SOYBEANS

Albert C. Groschke, Longmeadow, Mass., assignor to Agway Inc., Syracuse, N.Y., a corporation of Delaware

No Drawing. Filed July 6, 1966, Ser. No. 563,027

Int. Cl. A23l *1/20;* **A23k** *1/14*

U.S. Cl. 99—2 **4 Claims**

1. A method for treating ray soybeans comprising the steps of:

(a) comminuting ray soybeans to an average particle size of below 10 mesh,

(b) blending with said comminuted ray soybeans from ½% to 5% based on the weight of said raw soybeans of an alkylene glycol containing from 3 to 6 carbon atoms; and

(c) compressing said ground ray soybeans in the presence of said alkylene glycol under a pressure and for a time sufficient to improve the digestibility of the soybeans.

3,434,846

EDIBLE PROPYLENE GLYCOL SOLID

Charles R. Scott, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,323

Int. Cl. A23c *9/10*

U.S. Cl. 99—56 **1 Claim**

Propylene glycol and a water-dispersible, dry, proteinaceous solid are mixed together; the glycol is from 40 to 80 weight percent by weight of total product; the edible product is "solid" in the sense of difficulty deformable plastic materials.

3,434,847

METHOD OF MAKING BUTTERCREAM CANDY

Claude D. Barnett, Cedarhurst, N.Y., assignor to Calico Cottage Candies, Inc., Hewlett, N.Y., a corporation of New York

No Drawing. Filed July 21, 1965, Ser. No. 473,844

Int. Cl. A23g *3/00*

U.S. Cl. 99—134 **1 Claim**

Method of making buttercream candy from a dehydrated dry mix of confectionery ingredients by adding to the dry mix water to provide a moisture content of between 8 and 30 percent water by weight. The water and dry mix are mixed at a temperature of less than 180° F., and the mixture is then permitted to harden.

3,434,848

EDIBLE DRY MIX COMPOSITION FOR PRODUCING AN AERATED FOOD PRODUCT

Morris H. Katz, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,600

Int. Cl. A23l *1/14;* **A23g** *5/00*

U.S. Cl. 99—139 **23 Claims**

1. An edible dry mix composition containing less than 8 percent by weight fat and proteinaceous material and which is adapted upon hydration and mixing to provide an aerated food product of a fine, smooth, creamy consistency, said mix composition comprising a gelatinized starch and a surfactant composition, said surfactant composition being present in the mix composition in an amount ranging from at least 2.0 to about 50 weight percent of the gelatinized starch dryweight, said surfactant composition comprising at least 1 glyceryl fatty acid monoester and at least 1 propylene glycol fatty acid monoester, said mix containing a weight ratio of the glyceryl monoester to the propylene glycol monoester ranging from about 1:10 to about 10:1, said mix being further characterized by providing a short gel reading at 24° C. at 15 minutes of less than 35.

3,434,849

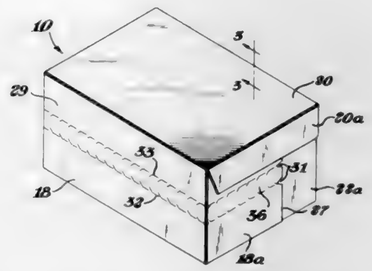
INSULATED FROZEN DESSERT PACKAGES

Anthony J. Carbone, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 4, 1966, Ser. No. 592,129

Int. Cl. A23g *5/00;* **B65d** *3/00, 17/00*

U.S. Cl. 99—192 **9 Claims**



An insulated frozen dessert package wherein plastic foam material is provided in laminated combinations with such other materials as plastic film, papersheet and metal foil to form a container especially effective in protecting dessert products like ice milk, ice cream, ice sherbet, etc, Optimum protection is obtained by balancing the insulating qualities of the container such that the degree of insulation provided is effective in preventing the occurrence of a detrimental melt-freeze cycle, but yet it is not so great as to interfere substantially with the length of time required to harden or freeze the dessert following fill operations.

3,434,850

PROCESS FOR PRESERVING FISH BY IRRADIATION

John B. Huff, Rockport, Mass., assignor to the United States of America as represented by the Secretary of the Interior

Filed July 29, 1966, Ser. No. 568,980

Int. Cl. A23l *3/26;* **G01n** *21/26*

U.S. Cl. 99—217 **5 Claims**

This invention relates to an apparatus and method for irradiating solids, fluids, or solids suspended in fluids by passing the material in a helical path around a cylindrical source.

The system finds particular utility in the irradiation pasteurization of bulk foods. An example of the invention is illustrated by the passage of a gel-like semisolid mixture of filleted fish suspended in agar through a helical path around a cylindrical source. The use of multistage and multipass irradiators is suggested to assure uniform dosages of such semisolid materials.

3,434,851

RUSTPROOFING COMPOSITIONS

Charles R. Miller, Ashland, Ky., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

No Drawing. Filed July 7, 1965, Ser. No. 470,241

Int. Cl. C09d *5/08;* **C08h** *17/06, 13/00*

U.S. Cl. 106—14 **23 Claims**

Coating compositions for protecting metal surfaces against corrosion comprising a water-insoluble metal soap of a waxy hydrocarbon oxidate, an asphaltic bitumen, a water-insoluble hydrocarbon-based corrosion inhibitor, an organophilic modified clay and a solvent.

3,434,852

PLASTICIZED SULFUR COMPOSITIONS

Rector P. Louthan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,723

Int. Cl. C09k *1/00;* **C09d** *5/00*

U.S. Cl. 106—19 **9 Claims**

Plasticizer sulfur compositions possessing desirable properties are produced by the reaction of 3 to 30 parts by weight of a polythiol per 100 parts by weight of sulfur. In addition sulfur based marking compositions possessing a high degree of whiteness and having good impact strength are prepared by the use of a white extender pigment and a halogenated polyphenyl in conjunction with the plasticized sulfur.

3,434,853

TITANIUM DIOXIDE GRANULES AND THEIR USE IN A MOLTEN GLASS BATCH

Kenneth W. Heywood, Overland, and Charles Raymond Trampier, Jr., Webster Groves, Mo., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Original application June 25, 1964, Ser. No. 378,044. Divided and this application Oct. 7, 1965, Ser. No. 493,912

Int. Cl. C03c *3/02*

U.S. Cl. 106—52 **2 Claims**

1. A molten glass batch composition containing titanium dioxide as one of its ingredients, said titanium dioxide comprising a non-pigmentary titanium granular material capable of melting rapidly in a molten glass batch without dusting nor settling, said granular material having a Tyler screen size range from −10 mesh to +400 mesh, with at least 75% +325 mesh, said granular material consisting essentially of aggregated titanium dioxide particles, said particles having an individual size range from 0.05 to 0.15 micron, said material having a bulk density which falls within the range of 0.8 to 1.7 grams per cubic centimeter, said material being free-flowing and capable of being handled without dusting.

3,434,854

METHOD AND MATERIAL FOR MAKING JOINTS BETWEEN REFRACTORY PANELS

Wendell G. Voss, Middletown, Ohio, assignor to Aeronca Inc., Middletown, Ohio, a corporation of Ohio

Filed Mar. 12, 1965, Ser. No. 439,154

Int. Cl. C04b *35/66, 35/48*

U.S. Cl. 106—57 **6 Claims**

A method for the production of a high temperature insulative, mechanically strong joint between adjacent refractory panels, such as heat shield panels in aerospace vehicles, which includes placing in the joint area a joint fill material containing a mixture of refractory fibers and a binder sol of an organic acid salt of zirconium and permitting the joint to fill to harden at room temperature. A self-hardenable insulating material including refractory fibers mixed with a zirconium salt sol of zirconium acetate, butyrate and propionate which develops increasing compressibility when subjected to temperatures on the order of 800° F. and higher.

3,434,855

INORGANIC THERMAL CONTROL PIGMENT

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of George Richard Blair, Culver City, Calif.

No Drawing. Filed Feb. 5, 1965, Ser. No. 430,777

Int. Cl. C09d *1/02, 5/32*

U.S. Cl. 106—84 **12 Claims**

A novel heat-treated clay composition produced by heating an impurity-containing aluminum silicate clay having the following general compositions:

	Wt. percent
SiO_2	42–46
Al_2O_3	36–40
Fe_2O_3	1.0–0.1
MgO	<2.0
TiO_2	0.2–0.8
CaO, Na_2O, K_2O (combined)	<1.0

in the form of a thin layer at a temperature of from about 1175° C. to about 1375° C.; and the ultraviolet light stable paint composition containing said heat-treated clay together with an alkali metal silicate.

3,434,856

SINGLE-STAGE PROCESS FOR MAKING PAVING MIXES

Alan A. Goldstein, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed May 25, 1964, Ser. No. 370,083

Int. Cl. C08h *13/00;* **C09d** *3/24*

U.S. Cl. 106—277 **4 Claims**

1. An asphalt composition suitable for the preparation of paving mixes of emulsified asphalt and mineral aggregate, consisting essentially of (1) a paving emulsion of asphalt-in-water, characterized by an asphalt content from about 50 to about 70% by weight, from about 0.15 to about 3% by weight emulsifier and a minor proportion of water; (2) from about 5 to about 15% by weight of asphaltenes, and (3) from about 10 to about 30% by weight of a mixture of a light solvent for said asphaltenes selected from the group consisting of aromatic hydrocarbon solvents and carbon tetrachloride and a heavier hydrocarbon solvent selected from the group consisting of cutter stock naphtha and light cycle oil, the weight ratio of said light solvent to said heavier hydrocarbon solvent being in the range from 40:60 to 60:40.

3,434,857

METHOD OF PRODUCING LEAD CHROMATES

Fritz Seelig, Cologne-Holweide, Germany, assignor to Farbwerke Franz Rasquin GmbH, Cologne-Mulheim, Germany

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,275

Int. Cl. C09c *1/62, 1/20*

U.S. Cl. 106—298 **3 Claims**

A method of producing lead chromate pigments of excellent color fastness and weather stability by means of the synergistic effect associated with the addition of an alkali water glass and antimony and fluorine ions to a suspension of lead chromate which has been washed so as to be free of salt, the total amount of additives comprising approximately 4 to 8% based on the dry lead chromate pigment.

3,434,858
HEAT-SEALABLE READILY DRAPING FABRIC AND METHOD OF MAKING IT

Sanford C. Dickinson, North White Plains, N.Y., assignor to Joseph A. Kaplan & Sons, Inc., a corporation of New York

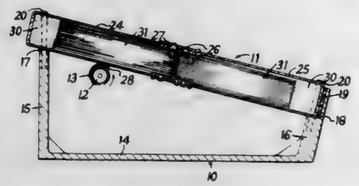
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,938
Int. Cl. B44c 1/08
U.S. Cl. 117—9 9 Claims

Vinyl sheet provided with a multiplicity of minute holes carries on at least one surface a flocking composed entirely of short fibres of pure vinyl. Fibres secured to sheet by a vinyl adhesive.

3,434,859
METHOD FOR DEPOSITING A COATING ON THE INTERNAL WALLS OF CAPILLARY OR SMALL-BORE TUBES

Harry Benjamin, Daventry, England, assignor to Harshaw Chemicals Limited, Daventry, England

Filed Dec. 29, 1964, Ser. No. 421,986
Claims priority, application Great Britain, Jan. 7, 1964, 716/64
Int. Cl. B44d 1/094
U.S. Cl. 117—17 10 Claims

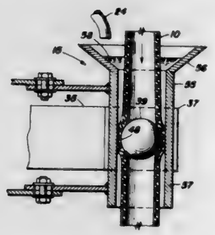


This invention relates to a method of and apparatus for internally coating a capillary tube with powdered material, said tube having poor electrical conductivity, comprising the steps of supplying a charge of the powdered material to one end of tube, positioning the tube at an angle relative to the horizontal with said one end uppermost so that particles of the powdered material flow into the tube, and subjecting the tube to rapid vibrational movement so as to cause rubbing contact between said particles and the internal wall of the tube, whereby said rubbing contact induces an electrostatic charge in the tube and the particles adhere to the internal wall of the tube by electrostatic attraction.

3,434,860
METHOD AND APPARATUS FOR COATING TUBULAR FABRIC

Leslie A. Ferguson, Osceola, and George M. Williams, South Bend, Ind., assignors to Uniroyal, Inc., a corporation of New Jersey

Filed Oct. 21, 1965, Ser. No. 499,589
Int. Cl. B29d 7/24; G03g 19/00
U.S. Cl. 117—7 11 Claims

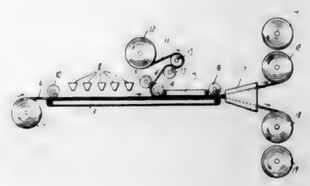


A method of and apparatus for coating stretchable tubular fabrics having a predetermined wall thickness and diameter, wherein the fabric wall is radially compressed in a coating zone, between a non-magnetic, outer, cylindrical member and a magnetically supported, inner, mandrel, to squeeze entrapped air therefrom and to facilitate entry of coating material thereinto; or wherein the tubular fabric is radially expanded to a greater diameter in the coating zone, by the mandrel, to enlarge the interstices of the fabric and to facilitate entry of coating material thereinto; or wherein both of the foregoing are performed concurrently to improve penetration of the coating material into the tubular fabric, the coated tubular fabric returning to substantially its predetermined wall thickness and/or diameter prior to being cured.

3,434,861
PROCESS FOR FORMING DECORATIVE PATTERNS

Jane Luc, 17 Boulevard Clemenceau, Strasbourg, Bas-Rhin, France

Continuation-in-part of abandoned application Ser. No. 343,069, Feb. 6, 1964. This application Feb. 11, 1966, Ser. No. 526,708
Claims priority, application France, June 16, 1960, 830,231
Int. Cl. B44c 1/20; B44d 5/00
U.S. Cl. 117—10 13 Claims



The method for forming a decorative pattern on a surface by bringing together a pair of members having at least one layer of a viscous material between the opposed surfaces thereof, wherein at least one of the members is a flexible sheet, the viscous material is substantially non-leveling in its unset condition and capable of subsequent setting and substantially non-penetrating into the members, and comprises a polymer of ethylenically unsaturated compounds in a liquid phase, which material is inert with respect to the members, then applying pressure to the members, and then separating the members before the viscous material begins to set, the separation of the members causing the viscous material to be partitioned between the members and to be drawn into a pattern which is reproduced on the surfaces of each of the members as the members are separated.

3,434,862
DECORATIVE PROCESS

Jane Luc, 17 Boulevard Clemenceau, Strasbourg, Bas-Rhin, France

Continuation-in-part of application Ser. No. 343,069, Feb. 6, 1964, which is a continuation-in-part, of application Ser. No. 115,791, June 8, 1961. This application Feb. 11, 1966, Ser. No. 526,853
Int. Cl. B44d 5/10; B44c 1/20
U.S. Cl. 117—10 20 Claims

A method for forming a decorative pattern on sheet members which comprises bringing together a pair of sheet members having viscous material therebetween and the viscous material being capable of setting, the surface of at least one of the sheet members having differences in level forming a pattern thereon, the sheet members being brought together under conditions which preserve the differences in level, and separating the pair of sheet members.

3,434,863
LUMINESCENT FILMS CONTAINING RARE EARTH OXIDES

Wilbur W. Hansen and Robert E. Myers, Menlo Park, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,077
Int. Cl. C09k 1/00; C23c 13/00
U.S. Cl. 117—33.5 4 Claims

A method of forming efficient photon producing films on a substrate is disclosed. A phosphor powder material selected from a rare earth oxide such as yttrium oxide or a host rare earth oxide doped with an activator rare earth oxide such as yttrium oxide doped with europium oxide is placed adjacent to said substrate and vaporized. The vapors are condensed as a thin film on the substrate and the substrate is heated to the temperature of at least 800° C. The substrate can be heated while the vapors are condensing or after the vapors have condensed the substrate can be heated to a temperature of at least 800° C. in an oxygen containing atmosphere.

3,434,864
SENSITIZED SHEET MATERIAL CONTAINING DE-AMMONIATED, AMMONIUM-EXCHANGED MOLECULAR SIEVE

Walter L. Haden, Jr., and Edgar W. Sawyer, Jr., Metuchen, N.J., assignors, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Edison, N.J., a corporation of Delaware

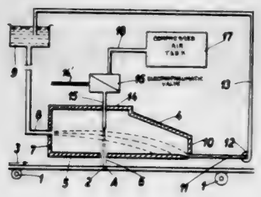
No Drawing. Filed June 17, 1965, Ser. No. 464,871
Int. Cl. B41m 5/12
U.S. Cl. 117—36.2 8 Claims

A crystalline zeolitic molecular sieve having uniform pore openings within the range of 3 to 15 angstrom units is ion-exchanged with ammonium ions and is then thermally treated at elevated temperature until ammonia is removed. The resulting zeolite is empoyed as a reactive pigment in receiving sheets for printing with color-reactant leuco dye material.

3,434,865
PROCESS AND APPARATUS FOR CONTROLLING A CONTINUOUS SPRAY TO PRODUCE INTERMITTENT MARKS

Gilbert Doquire, Spy, and Michel Tasset, Beuzet, Belgium, assignors to Glaverbel S.A., Brussels, Belgium

Filed Oct. 7, 1965, Ser. No. 493,687
Claims priority, application Luxembourg, Oct. 10, 1964, 47,118
Int. Cl. C23d 5/08; B05b 13/02
U.S. Cl. 117—37 15 Claims



A process and apparatus for controlling a continuous jet of marking fluid so as to intermittently mark the surface of a material by causing the jet to normally travel transverse to an opening disposed close to the material surface, by providing a gas jet which travels transversely to the liquid jet in a direction toward the opening and which impinges on the liquid jet, and by activating the gas jet intermittently so as to deflect portions of the liquid jet through the opening and onto the surface to be marked each time a mark is to be provided.

3,434,866
METHOD OF ETCHING AND PLATING UREA FORMALDEHYDE

William M. Boggs, Lexington, Ky., and Georges E. Rousselot, Saint-Maurice, Val-de-Marne, France, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed June 28, 1965, Ser. No. 467,748
Int. Cl. C23c 3/00; B44d 5/02
U.S. Cl. 117—47 4 Claims

The surface of a urea-formaldehyde article is minutely roughened by immersion in an aqueous solution containing a major portion of formic acid and a minor portion of hydrochloric acid. The roughened surface is then plated to form a strongly adherent metal coating.

3,434,867
METHOD OF ETCHING UREA-FORMALDEHYDE FOR MAKING PRINTING ELEMENTS

Georges E. Rousselot, Saint-Maurice, Val-de-Marne, France, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed June 28, 1965, Ser. No. 467,716
Int. Cl. C23c 3/00; B44d 5/02
U.S. Cl. 117—47 6 Claims

An aqueous solution of formic acid and hydrochloric acid is used to roughen the surface of a urea-formaldehyde resin article which is representative of a series of articles to be etched prior to plating them with a metal coating. The degree of roughness achieved by etching the sample for a given time with a standard solution is determined by the degree of curing of the resin. The roughness achieved is measured and the concentration of acids in the etching solution is adjusted based on this measurement to impart the correct degree of roughening to the remainder of the series of articles.

3,434,868
SILICON DIOXIDE COATINGS UTILIZING A PLASMA

Paul J. Jorgensen, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,182
Int. Cl. B44d 1/18; C09d 5/18; G03g 19/00
U.S. Cl. 117—93 3 Claims

Silicon dioxide films are formed by vaporizing silicon monoxide in the presence of a plasma and oxygen in an environment of a pressure of 20–200 microns of mercury.

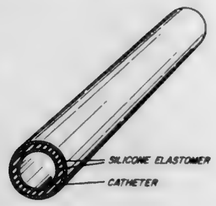
3,434,869
FOLEY CATHETER WITH SILICONE RUBBER COATING

James B. Davidson, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Nov. 2, 1964, Ser. No. 411,667
Int. Cl. C09d 3/48; A61m 25/00
U.S. Cl. 117—94 4 Claims

A Foley catheter of organic rubber is coated with a

surface layer of elastomeric silicone such as dimethylpolysiloxane containing a silica filler. The coated catheter



causes less tissue irritation and is less adhesive to organic residue than the uncoated organic rubber catheter.

3,434,870
TREATING CELLULOSIC TEXTILES

Henry Tovey, Silver Spring, Md., and Helmut F. Prahl, Middleton, and Frederick M. Hart, Madison, Wis., assignors, by direct and mesne assignments, to Cotton Producers Institute, Memphis, Tenn., a non-profit corporation of Tennessee

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,456
Int. Cl. D06m *15/38*
U.S. Cl. 117—106 **15 Claims**

Cellulosic material possessing improved shape holding properties as well as good abrasion resistance is obtained by first forming therein a graft polymer, such as by polymerization of a lower alkyl, hydroxyalkyl or aminoalkyl ester of acrylic or methacrylic acid, and thereafter treating the material with a thermosetting, creaseproofing resin.

3,434,871
METHOD FOR PREPARING CHROMIUM-CONTAINING FILMS

Anna P. Hauel, West Orange, and Robert C. Langley, Millington, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

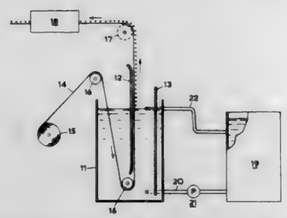
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,585
Int. Cl. C23c *13/00, 17/00*
U.S. Cl. 117—119 **6 Claims**

Chromium-containing films are prepared by thermal decomposition of a chromium halide-lower alkyl amine complex in a non-oxidizing atmosphere at temperatures between about 500° C. and 1000° C.

3,434,872
GLASS FABRIC REINFORCED MICA TAPE AND PROCESS FOR PRODUCTION THEREOF

Raymond Sidney Ashpole, and Thomas William Davidson, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Aug. 2, 1965, Ser. No. 476,539
Claims priority, application Great Britain, Aug. 17, 1964, 33,501/64
Int. Cl. C03c *25/02;* **B44d** *1/14*
U.S. Cl. 117—126 **6 Claims**



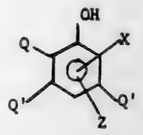
In a process for making reinforced mica tape, mica is deposited electrophoretically from a suspension of mica pulp in liquid onto a glass fibre fabric reinforcing tape.

3,434,873
POLYMERIZATION OF PHENOLS ON METALLIC COPPER

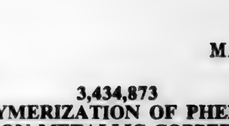
John F. Harrod, Saratoga, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,097
Int. Cl. B44d *1/34, 1/36*
U.S. Cl. 117—127 **9 Claims**

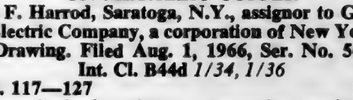
1. A method of applying a protective coating onto a copper-containing article comprising copper articles, articles made of a copper alloy containing at least 50% by weight copper, metallic articles coated with copper, or a copper alloy containing at least 50% by weight copper, non-metallic articles coated with copper or a copper alloy containing at least 50% by weight copper, which comprises (1) applying to said copper-containing article a coating of a phenol of the formula



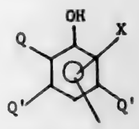
in the presence of a catalyst selected from the class consisting of pyridine and pyridine derivatives and (2) exposing the resulting coated copper-containing article to air or an oxygen-containing atmosphere and maintaining said coated copper-containing article at a temperature at which said phenol reacts with the oxygen of the air to produce an insulated coating on said copper-containing article, wherein X is a substituent selected from the group consisting of hydrogen, chlorine, bromine and iodine, Q is a monovalent substituent selected from the group consisting of hydrogen, hydrocarbon radicals, hydrocarbonoxy radicals, halohydrocarbon radicals having at least 2 carbon atoms between the halogen and the phenol nucleus and halohydrocarbonoxy radicals having at least 2 carbon atoms between the halogen atom and the phenol nucleus, Q' is the same as Q and in addition halogen, Z is the same as Q and in addition halogen or a silicon-containing moiety selected from the group consisting of



and



wherein R is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, cyanoalkyl radicals, hydrocarbonoxy radicals, halogenated hydrocarbonoxy radicals, and groups of the formula



where Q, Q' and X have the above-identified meanings, R' is a member of the group consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl groups, *a* is an integer having a value of from 1 to 3, *b* is an integer having a value of from 0 to 2, and *n* is an integer having a value of from 0 to 18, *x* and *y* are integers of at least 1.

3,434,874
ACRYLIC FIBERS

Thomas Jefferson Proffitt, Jr., Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

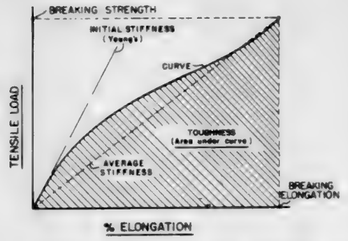
No Drawing. Filed Sept. 28, 1965, Ser. No. 491,046
Int. Cl. D06m *5/00;* **C08f** *47/00*
U.S. Cl. 117—138.8 **2 Claims**

Textile fibers of acrylic polymer having on the surfaces thereof a finish composition consisting essentially, by weight, of 1.25 to 1.75 parts of a salt of a partial ester of phosphoric acid per part of a paraffin wax. The fibers produce antistatic yarns having good knittability.

3,434,875
TEXTILE FABRIC COATED WITH A HIGH MOLECULAR WEIGHT METHYLPOLYSILOXANE ELASTOMER POLYMER

Vernon C. Smith and Everett H. Hinton, Jr., Greensboro, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,802
Int. Cl. D06m *15/66;* **B32b** *27/04*
U.S. Cl. 117—139.4 **2 Claims**



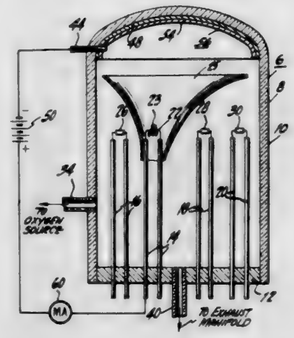
There is provided a process and a product wherein a textile is coated with a high molecular weight elastomeric polymer of methylpolysiloxane from an organic vehicle containing 5 to 15 percent of the said elastomer. The coated product is then dried and cured. The elastomer is characterized by its capability of forming a continuous tack-free film when dried and cured and has the following physical properties: 300 to 600 percent elongation, 5 to 150 grams per mil tensile strength, a Young's modulus of 5 to 50 grams per mil thickness per percent elongation, a tuftness index of 1,000 to 50,000 grams per mil×percent elongation/2 and resiliency such that the film recovers at least 70% after a 25 to 35 percent elongation. The coating is deposited essentially completely at or near the outer surface of the fibers constituting the textile and being interlocked to the textile in a noncrosslinking manner such that the coating is substantially completely dissolvable from the textile by cupric ethylene diamine. The resulting coated textile exhibits superior wrinkle resistance and wash and wear properties, good resiliency and resistance to laundering and wear along with breathability.

3,434,876
PHOTOSENSITIVE CATHODES

Richard G. Stoudenheimer, Lancaster, and Daniel L. Thoman, Rohrerstown, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Nov. 23, 1965, Ser. No. 509,374
Int. Cl. H05k *3/16;* **H05b** *33/28;* **B44d** *1/18*
U.S. Cl. 117—211 **7 Claims**

The sensitivity and red response of a bialkali photocathode for a photoemissive electron tube are enhanced by providing a film of antimony oxide between the photocathode and a substrate on which the photocathode is formed.



3,434,877
METALLIC CONNECTION AND THE METHOD OF MAKING SAME

Robert S. Degenkolb, Oaklandon, and William H. Liederbach, Carmel, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed July 16, 1965, Ser. No. 472,502
Int. Cl. B44d *1/18;* **C03c** *25/02*
U.S. Cl. 117—212 **12 Claims**

1. Electronic apparatus comprising a ceramic substrate member having deposited on a surface thereof electronic circuit components in thin film form, said components including at least one cermet resistor and connecting means therefor, said connecting means comprising an electrically conducting film comprising silver and palladium in the ratio between about 3:1 to 1:1 by weight.

3,434,878
METHOD OF FORMING A MULTICOLOR ELECTROSENSITIVE RECORDING MEDIUM AND ARTICLE

Charles S. Reis, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Oct. 26, 1964, Ser. No. 406,361
Int. Cl. B44d *1/18, 1/10;* **H01b** *1/00*
U.S. Cl. 117—217 **5 Claims**



The method and means for producing multicolor recordings on an electrosensitive recording medium includes a laminated recording medium of dissimilarly colored layers which are selectively removed to expose an underlying layer.

3,434,879
PREPARATION OF THIN FILMS OF THE INTERMETALLIC COMPOUND NiAl

Robert C. Langley, Millington, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Sept. 29, 1965, Ser. No. 491,415
Int. Cl. B32b *15/20;* **C23c** *3/04;* **C22c** *19/00*
U.S. Cl. 117—227 **3 Claims**

Thin films of the intermetallic compound NiAl are pre-

pared by coating a substrate with a solution of a hydrocarbon aluminum compound and an organo-nickel compound in amounts to provide an aluminum to nickel atomic ratio of about 1:1 and heating the coated substrate to decompose the organo-metallic compounds to deposit NiAl.

3,434,880
STARCH PASTES OF IMPROVED FLUIDITY

René Kircher, Argenteuil, Val-d'Oise, France, assignor to Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture, Paris, France

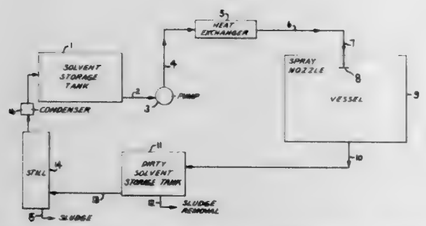
No Drawing. Filed May 27, 1966, Ser. No. 553,310
Claims priority, application France, May 31, 1965, 18,891
Int. Cl. C13l *1/08*
U.S. Cl. 127—70 4 Claims

1. A process for preparing starch pastes of improved fluidity, said process consisting essentially of admixing with an aqueous slurry of raw starch a viscosity lowering agent consisting essentially of bromite selected from the group consisting of an alkali metal bromite and an alkaline earth metal bromite in a quantity not exceeding 0.5% by weight of available bromine in the form of bromite relative to the weight of dry starch treated and agitating resultant alkaline aqueous slurry for a sufficient time to lower the pH of the slurry to about 6–7.5.

3,434,881
SOLVENT-CLEANING PROCESS

Clete M. Smith, Pittsburgh, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Filed Nov. 18, 1964, Ser. No. 412,131
Int. Cl. B08b *9/08, 3/08*
U.S. Cl. 134—22 3 Claims



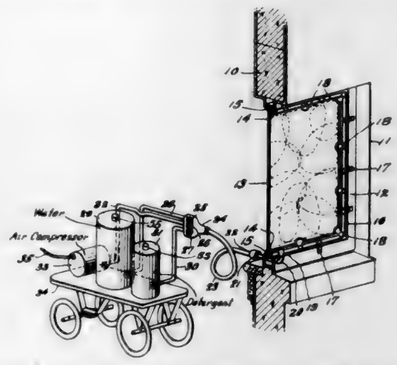
Inner surfaces of vessels are cleaned with organic solvent by superheating the organic solvent to a temperature at least 50° F. higher than its normal boiling point and at a pressure of at least 50 p.s.i.g. and introducing it into the vessel. Some of the liquid solvent is flashed on entering the vessel and some of the liquid solvent is impinged directly against the vessel surface and flashed at said surface.

3,434,882
APPARATUS AND METHOD FOR CLEANING FIXED WINDOWS

Lyn Carolin, 1303 Broadway, Lantana, Fla. 33460

Filed July 15, 1965, Ser. No. 472,246
Int. Cl. B08b *3/02*
U.S. Cl. 134—26 9 Claims

The invention comprises apparatus for cleaning fixed windows in multistoried buildings comprising a conduit, jets communicably connected with said conduit means directing the effluent from said jets over the surface to be cleaned, a source of cleaning solution, a source of water and a source of air under pressure, said source of air under pressure being connected with said sources of cleaning solution and water, a mixer valve, means selectively directing either air, cleaning solution or water or any combination thereof to said mixer valve and means

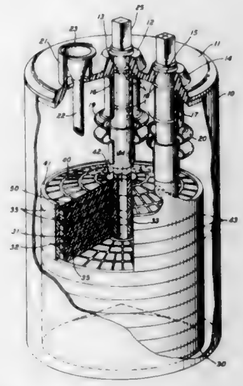


connecting the mixer valve with the conduit having the jets in communication therewith.

3,434,883
CYLINDRICAL LEAD ACID CELL

Louis D. Babusci, West Orange, Biagio A. Cretella, Edison, David O. Feder, Madison, and Donald E. Koontz, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 23, 1966, Ser. No. 552,081
Int. Cl. H01m *35/16*
U.S. Cl. 136—14 8 Claims



1. A lead-acid cell comprising a cell receptacle having a cylindrical shape and a cover lid for the said receptacle having at least three openings therein, a plurality of positive grids having essentially identical conical shapes and each having a grid structure which includes a peripheral retaining ring for retaining the grid structure against radial distension, the said ring coinciding with the periphery of the base of the cone, and each grid having a central, essentially circular opening at the apex of the cone which defines an internal concentric ring, said positive grids stacked in vertical alignment so that each is supported by, and joined so as to make electrical contact with, the adjacent underlying grid at the aforesaid peripheral ring, a plurality of negative grids having essentially identical conical shapes with the same approximate angle of inclination as those of the positive grids, and a hub located at the apex of each negative grid, said negative grids stacked in vertical alignment so that each is supported by, and joined so as to make electrical contact with, the hub of the underlying grid, the afore-

said stack formed with the peripheral portion of each negative grid alternating in an interleaving arrangement with the internal concentric ring portion of each positive grid so that the internal concentric ring surrounds, and is concentrically spaced from, the hub of the negative grid, insulating means for maintaining each positive grid electrically isolated from each negative grid, a positive post electrically connected to the assembly of positive grids and extending through the cover lid of the receptacle, a negative post electrically connected to the assembly of negative grids and extending through the cover lid of the receptacle and a vent extending through the cover lid of the receptacle for venting gases from the interior of the cell to the atmosphere.

3,434,884
DEFERRED ACTION, GAS-ACTIVATED CELLS OR BATTERIES

Bernard Paul Louis Amiet, Vaucresson, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine-Saint-Denis, France, a company of France

Filed Apr. 22, 1966, Ser. No. 544,489
Claims priority, application France, May 12, 1965, 16,754
Int. Cl. H01m *27/28*
U.S. Cl. 136—86 8 Claims

A deferred action electromotive power device comprising positive and negative electrodes carrying active material in solid state, an aqueous electrolyte selected from the group consisting of chromates and phosphates in which the electrodes are immersed, whose pH value initially is such that it has a passivating action on said electrodes and thus maintains the device in an inactive state, a source of compressed depassivating gas and means for introducing said gas into electrolyte for altering the pH value thereof and thereby depassivating the electrolyte and electrodes so that the device becomes active and operative by the altered electrolyte to conditions for use and remains in such active condition thereafter without requiring any further introduction of said gas. The introduced gas itself plays no part in the electrochemical reactions of the then-activated power device.

3,434,885
METHOD OF MAKING ELECTRICAL CONTACT ON SILICON SOLAR CELL AND RESULTANT PRODUCT

Joseph Mandelkorn and Jacob Broder, Cleveland Heights, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed May 17, 1966, Ser. No. 551,846
Int. Cl. H01m *13/10*
U.S. Cl. 136—89 7 Claims

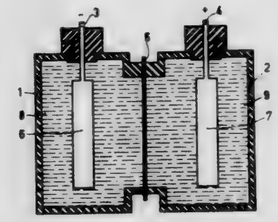
An electrode connection for a n on p silicon solar cell is made by depositing a layer of cerium on the surface of the cell and then depositing a layer of silver on the cerium. The solar cell with the two layers deposited thereon is then sintered at a temperature between 500° C. and 800° C.

3,434,886
PRIMARY CELL

Pieter Willem Haaijman, Marinus Dirk Wijnen, and Johannes Hubertus Theodorus Hengst, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 17, 1966, Ser. No. 550,708
Claims priority, application Netherlands, June 29, 1965, 6508307
Int. Cl. H01m *15/04, 19/00*
U.S. Cl. 136—93 6 Claims

A primary cell employing a liquid electrolyte and a soluble hypochlorite as a depolarizer. In a preferred embodiment a silver plated nickel electrode is employed and

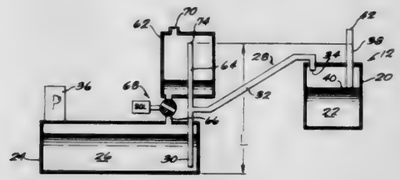


the electrolyte and depolarizer are separated by a porous ion-selective diaphragm.

3,434,887
BATTERY FILL APPARATUS

Albert E. Seckinger, Milwaukee, Wis., assignor to Harley-Davidson Motor Co., Milwaukee, Wis.

Filed Dec. 29, 1966, Ser. No. 605,708
Int. Cl. H01m *47/00, 7/00*
U.S. Cl. 136—162 19 Claims



19. Battery fill apparatus comprising, in combination,
a battery including a liquid container,
a liquid reservoir,
means defining a flow passage extending from said reservoir and opening into said battery container,
means for causing flow of liquid in said flow passage from said reservoir to said battery container,
vent means defining an exhaust passage from the interior of said battery container to a point exteriorly of said battery container, said vent means opening into the interior of said battery container at a point corresponding to a predetermined liquid level within said container so that said exhaust passage provides for exhaust from said container so long as said liquid is below said predetermined level,
said battery container being otherwise substantially sealed except for said vent means and flow passage,
and stand pipe means connected to said flow passage and extending to a predetermined vertical point above the liquid level in said reservoir.

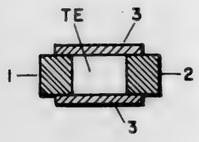
3,434,888
INCASED GRAPHITE SEGMENTED THERMOELEMENT

Emil R. Beaver, Jr., Tipp City, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 500,633
Int. Cl. H01v *1/28*
U.S. Cl. 136—203 4 Claims

1. A segmented thermoelement comprising a shaped body consisting essentially of a graphite cold end and a

graphite hot end, and interposed between and integral with said ends, two segments of different semi-conductor thermoelectric materials bonded together by a thin layer of graphite and having a graphite casing firmly bonded to and circumferentially extending over the exterior surface of the graphite layer and overlapping the junctions of said layer with the thermoelectric materials, said layer of



graphite providing a thermal shock resistant bond with said segments and a barrier which essentially prevents migration of themoelectric material from one segment to another of said segments and said graphite casing decreasing the electrical resistance and increasing the thermal stability of the segmented thermoelement.

3,434,889

COPPER FOIL SURFACE TREATMENT

Arthur H. Haroldson and Hubert L. Cox, Newark, Del., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 27, 1965, Ser. No. 516,487
Int. Cl. C23f *7/06;* **B23b** *15/20, 15/04*
U.S. Cl. 148—6.14 **3 Claims**



A process for treating copper foil to improve its bonding strength with a substrate material provided. The foil is wet in a solution of hydrogen peroxide and then exposed to air. One side of the foil becomes oxidized without substantially affecting the other side.

3,434,890

COMPOSITION AND PROCESS FOR FORMING PATINA

Lester Aronberg, Chicago, Ill., assignor to Lake Chemical Co., Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 364,266, May 1, 1964. This application Apr. 29, 1968, Ser. No. 725,204
Int. Cl. C23f *7/02*
U.S. Cl. 148—6.14 **16 Claims**

Formation of patina by wetting a copper-base alloy with a solution ocntaining a predominant proportion of a volatile water-soluble organic solvent and a minor proportion of an inorganic acid salt of a primary amine, for instance, monoethanolamine hydrochloride, and allowing the solution to stand in contact with said alloy until patina formation occurs.

3,434,891

METHOD FOR IMPROVEMENT OF NICKEL-CHROMIUM AND NICKEL-CHROMIUM-IRON ALLOYS

Berthold Wenderott, Altena, Westphalia, Germany, assignor to Vereinigte Deutsche Metallwerke AG, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 23, 1965, Ser. No. 489,735
Claims priority, application Germany, Sept. 26, 1964, V 26,864
Int. Cl. C21d *1/78;* **C23f** *1/00*
U.S. Cl. 148—13 **10 Claims**

Nickel-chromium and nickel-chromium-iron alloys for use in high temperature service, while in worked condition are annealed in air at 1000–1350° C., at least twice. After each anneal, the scale formed during annealing is removed. This treatment improves heat resistance and decreases spray effect.

3,434,892

DIRECTIONALLY SOLIDIFIED PERMANENT MAGNET ALLOYS WITH ALIGNED FERROMAGNETIC WHISKERS

Günther Heimke, Buschdorf, Germany, assignor to Magnetfabrik Bonn G.m.b.H. vorm. Gewerkschaft Windhorst, Bonn, Germany

Filed Oct. 21, 1965, Ser. No. 499,824
Claims priority, application Germany, Nov. 5, 1964, M 63,008
Int. Cl. H01f *1/04;* **C22c** *39/12*
U.S. Cl. 148—31.57 **5 Claims**

A permanent magnetic material having the overall composition of a substantially eutectic alloy of at least one ferromagnetic metal with at least one non-magnetic element of the group consisting of aluminum, antimony, beryllium, boron, silicon, sulfur, tantalum, tin, titanium, and zirconium, at least part of said ferro-magnetic element being present in the form of aligned whiskers having a width of at least 50 and not more than 800 Angstrom and a length at least 1.2 times said width. The magnet material is produced by directional solidification through a temperature gradient in the range of 0.5 to 20° C./cm., and preferably 2 to 15° C./cm. Iron, cobalt, nickel, and alloys thereof are the ferro-magnetic components of the alloy.

3,434,893

SEMICONDUCTOR DEVICE WITH A LATERAL RETROGRADED PN JUNCTION

Harold C. Josephs, Plymouth, and James David Zook, Burnsville, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,236
Int. Cl. H01l *7/34*
U.S. Cl. 148—33 **3 Claims**



A semiconductor device having a lateral retrograded PN junction at the surface thereof with a regular PN junction within the bulk portion of the body. The device in the preferred embodiment is formed by a combination of diffusion and alloying.

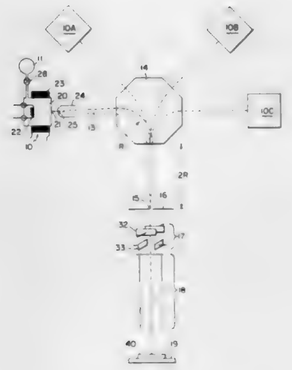
3,434,894

FABRICATING SOLID STATE DEVICES BY ION IMPLANTATION

Alfred J. Gale, Lexington, Mass., assignor to Ion Physics Corporation, Burlington, Mass., a corporation of Delaware

Filed Oct. 6, 1965, Ser. No. 493,484
Int. Cl. H01l *7/54*
U.S. Cl. 148—187 **6 Claims**

A method of performing ion beam implantation in an economical fashion to produce a complete electrical circuit in a semiconductor substrate comprising generating a charged particle beam, focusing and analyzing the beam, passing the beam through a mask, passing the analyzed and focused beam through a deflection system and an electrostatic lens system to attain at the surface of the material being worked a spatial resolution determined by



the size of the mask and the reduction provided in the lens system and the control applied to the deflection thereby avoiding the problems associated with mechanical registration and transcending the limits imposed by either mechanical or optical resolution and the apparatus for performing this.

3,434,895

PROCESS OF PREPARING A PARTICULATE NITROCELLULOSE-CONTAINING EXPLOSIVE

Jean P. Picard, Morristown, and H. William Voigt, Jr., Stanhope, N.J., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed May 12, 1967, Ser. No. 638,711
Int. Cl. C06c *1/00, 5/00;* **C06b** *19/02*
U.S. Cl. 149—27 **5 Claims**

The invention relates to a process for preparing a particulate explosive comprising lead oxide and silicon encapsulated with nitrocellulose which comprises dispersing nitrocellulose, red lead oxide and silicon in N-methyl-2-pyrrolidone and precipitating said explosive composition with water. Said explosive composition may be admixed with lead styphnate and used in fuzes.

3,434,896

PROCESS FOR ETCHING SILICON MONOXIDE AND ETCHANT SOLUTIONS THEREFOR

Dudley A. Chance, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed July 30, 1965, Ser. No. 476,165
Int. Cl. H01l *7/50;* **B32b** *31/24*
U.S. Cl. 156—17 **10 Claims**

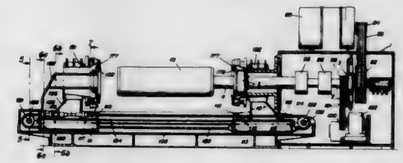
Silicon monoxide is etched with an etchant comprising an aqueous alkaline solution of ammonium fluoride. The etching is conducted at a temperature of 50° to 100° C. The alkaline component is preferably ammonium hydroxide.

3,434,897

METHOD FOR MANUFACTURING PNEUMATIC TIRES

Renato Caretta, Gallarate, Varese, and Antonio Pacciarini and Dario Giletta, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy

Filed July 23, 1965, Ser. No. 474,400
Claims priority, application Italy, July 24, 1964, 16,209/64
Int. Cl. B60c *9/10, 13/00*
U.S. Cl. 156—132 **17 Claims**



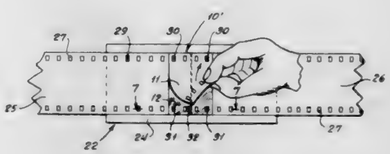
A method for manufacturing pneumatic tires including the step of firmly anchoring the carcass plies to the bead wire rings before expansion of the plies into toroidal carcass form, whereby the formation of said toroidal carcass form and the application of the tread band thereto may proceed to completion without having to turn up the ply ends around the bead wires until after the formation of the toroidal carcass has been completed.

3,434,898

METHODS AND DEVICES FOR HANDLING AND APPLYING OF THIN FILM MATERIALS

Harold J. Freedman, Great Neck, N.Y., assignor to De Luxe Laboratories, Inc., New York, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 502,239
Int. Cl. B32b *3/02, 3/10*
U.S. Cl. 156—157 **8 Claims**

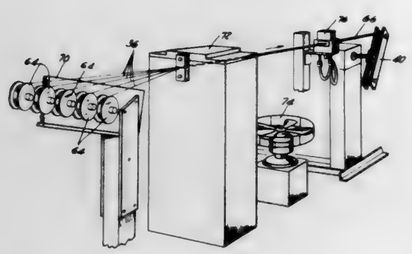


The device is a narrow strip of thin transparent material carrying pressure sensitive adhesive on its under surface to which surface is applied a covering strip. The pressure sensitive adhesive is less adherent to the covering strip than to the transparent strip. Provision for removing this covering strip is included. To the other side of the transparent strip there is applied a support strip carrying a pressure sensitive adhesive more adherent to it than to the transparent strip. Provision for starting the removal of this outer support strip is also included. The method is concerned among other things with the removal of the covering strip on the under surface of the transparent strip, the application of the transparent strip to elements to be joined and the eventual removal of the outer support strip.

3,434,899
LAMINATED COUPLING

James A. Tankersley, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Original application Nov. 6, 1961, Ser. No. 150,455. Divided and this application Oct. 15, 1965, Ser. No. 496,429
Int. Cl. B65h *81/00*; B31c *13/00*
U.S. Cl. 156—172 2 Claims

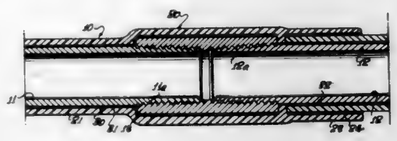


1. A method of manufacture of an endless coupling of tape of parallel arranged filaments comprisng the steps of:
placing a pair of flanged bushings on a plate;
placing an alignment key on the said plate between the bushings;
placing a collapsible bar over the alignment key between the bushings such that the sides of the bar have a width substantially equal to the diameter of the bushings and are faired into the walls of the bushings;
placing another alignment key on top of the last collapsible bar between the bushings;
assembling an upper plate to the lower plate by means of bolts through the bushings that are tightened to hold the collapsible bar in place between the two bushings;
connecting the assembled upper and lower plates to a revolvable means;
mounting a plurality of filament spools for free and uniform rotation;
drawing the filaments from each of the filament spools simultaneously in a parallel arrangement each to the other through a cleansing medium;
drawing the cleansed filaments while maintaining them in parallel relationship through a drying medium;
drawing said parallel arranged filaments through a resin tank to coat and maintain an elastomeric substance between the parallel arranged filaments and bond them therefore into a tape configuration;
attaching the end of the tape emerging from the elastomeric substance to one of the said bushings;
rotating said shaft to wrap the tape of parallel arranged filaments around each of said bushings to cause further drawing of the filaments from the spools in the manner aforesaid;
cutting of said tape adjacent one of said bushings;
clamping the cut end of said tape to the next underlying layer to bond it thereto;
removing the bolts and said upper plate to remove the bushings with the tapes wrapped therearound from the lower plate while at the same time removing the collapsible bar structure;
applying an elastomeric substance to the exterior surfaces of the assembly of tape and bushings; and
curing the elastomeric substance applied to the exterior surface of the bushings and enclosing tapes.

3,434,900
METHOD FOR MAKING BONDED PIPE JOINTS

Ilan Bender, 17220 Collins St., Encino, Calif. 91316

Filed Jan. 7, 1966, Ser. No. 519,273
Int. Cl. B32b *1/08*; F16l *9/14, 47/02*
U.S. Cl. 156—182 6 Claims

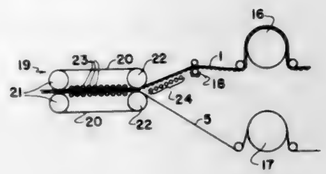


A method for producing assemblies of threaded pipe and coupling with the entire assembly enclosed in a continuous plastic jacket bonded to its exterior surface, which method consists of first forming subassemblies with plastic jacketing bonded by epoxy coating to the pipe and coupling surfaces, but with exposed exterior threaded connections, and empty plastic sleeve extensions at interior threaded connections; then assembling the subassemblies into the final assembly, with plastic sleeve extensions overlapping plastic coated pipe at each connection; and then solvent welding plastic to plastic at each of said sleeve-enclosed connections.

3,434,901
METHOD FOR MANUFACTURING CORRUGATED BOARD

Darrell J. L. Griffiths, Silver Spring, Md., Kenyon W. Miller, Bellmawr, N.J., and Willem A. Nikkel, Covington, Va., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,795
Int. Cl. B31f *1/22*; C09j *3/06*
U.S. Cl. 156—210 7 Claims



In lamination processes in which a raw starch is suspended in a suitable carrier and gelatinized to form an adhesive, the raw starch is gelatinized after it is applied to a substrate but before the lamina are brought together. Gelatinization may be accomplished by either heating the starch, applying a gel point depressing additive to lower the gel point below the starch temperature, or a combination of both methods.

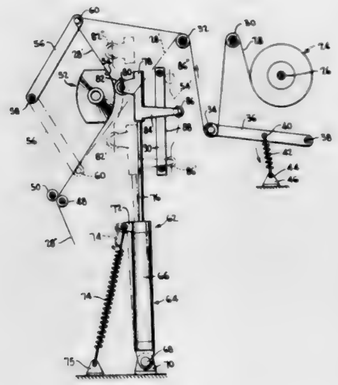
3,434,902
METHOD AND SYSTEM FOR TRANSFERRING HEAT-ACTIVATED LABELS

George N. Bliss, Franklin, Mich., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware

Filed July 20, 1965, Ser. No. 473,290
Int. Cl. B65c *3/12, 9/18, 9/30*
U.S. Cl. 156—230 16 Claims

Method and system for continuously applying heat-activated labels on articles in which pre-applied labels,

spaced along a continuous, flexible transfer-web move from a normal path of travel substantially spaced from oriented articles, out of the normal path of travel into tension-draped relation over an article label-receiving surface, and while both the web and article are in a fixed,

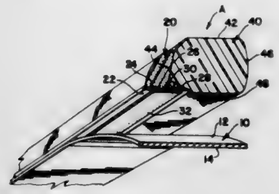


dwell position, a combination of heat-and-pressure is applied to the web causing label transfer and maximum adherence to the article, label-receiving surface without smearing when the web is snapped back to its normal path of travel.

3,434,903
METHOD OF PRODUCING A PRESSURE SENSITIVE SEALING STRIP

Gordon E. Hann, Novelty, Ohio, assignor to The Tremco Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 7, 1966, Ser. No. 525,674
Int. Cl. B32b *23/06, 7/06*; B29f *3/00*
U.S. Cl. 156—244 8 Claims

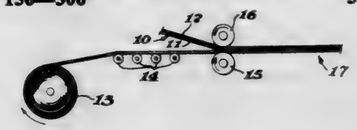


6. A method of producing a pressure sensitive, adhesive sealing strip, said method comprising the steps of:
(a) providing a length of release paper having a width B, an upper surface and a lower surface, said surfaces being adapted to adhere with a pressure sensitive adhesive;
(b) forming an elongated, resilient dam having a bottom, generally flat surface and an upstanding sealing lip;
(c) adhering said dam onto one side of said upper surface of said paper with said lip forming a retaining abutment;
(d) extruding a pressure sensitive, pliable cushion seal generally centrally along said upper surface of said paper and against said abutment; and,
(e) pressing said seal against said abutment immediately subsequent to extrusion onto said paper.

3,434,904
PROTECTION OF POLISHED METAL SURFACES

Glenn C. Wiggins, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 27, 1965, Ser. No. 505,438
Int. Cl. B32b *7/06, 15/08*
U.S. Cl. 156—306 3 Claims

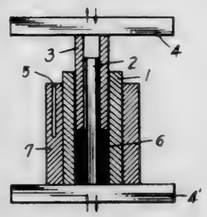


1. In the method of temporarily protecting a polished metallic surface with a synthetic, resinous, flexible sheet material, the improvement consisting of: contacting said polished metallic surface with a flexible laminate film structure composed of an inner layer of a chloroethylene polymer and an outer layer of a metallic foil, said laminate film structure being essentially free from electrostatic charge, wherein said chloroethylene polymer portion of said laminate film structure is applied to said polished metal surface under pressure sufficient to remove essentially all of the air from between said laminate film structure and said polished metal surface.

3,434,905
METHOD OF MANUFACTURING LEAD DIOXIDE ELECTRODE

Shinzo Kiyohara and Yasuichi Shibasaki, Yokohama, Japan, assignors to Isomura Sangyo Kaisha, Ltd., Tokyo, Japan, a corporation of Japan

Original application Jan. 28, 1963, Ser. No. 254,184, now Patent No. 3,318,794, dated May 9, 1967. Divided and this application Aug. 30, 1966, Ser. No. 590,450
Int. Cl. B01k *3/04, 3/06*
U.S. Cl. 156—327 2 Claims

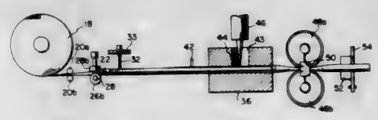


A process of manufacturing a unit electrode body by uniting two separate electrode bodies made of lead dioxide powder by employing converted lead dioxide as a binder at a temperature higher than 130° C. and at an elevated pressure to weld them together.

3,434,906
PLASTIC DISPENSING CONTAINER AND METHOD OF MAKING SAME

Harry V. de Greeve, San Anselmo, and James B. Ragan, San Rafael, Calif., assignors to Ways & Means, Inc., Sausalito, Calif., a corporation of California

Filed June 20, 1966, Ser. No. 558,964
Int. Cl. B29d *23/10*
U.S. Cl. 156—466 4 Claims



An apparatus for producing a tubular container of plastic sheet material which comprises a tubular folding

die with an opening in its wall, a mandrel having a free front end and extending with its rear end into said die coaxially therewith, an ultrasonic vibrator mounted with its sealing nose extending through the opening in said die into close proximity to the exposed surface of the mandrel portion within said die, and means for pulling a band of plastic material along and over said mandrel and through the space between the inner surface of said die and the rear end of said mandrel. Guide means are provided adjacent the free front end of said mandrel at either side thereof for initiating the folding movement of the edge areas of the band of plastic material as it is pulled along the front end of said mandrel. To control this initial phase of the folding operation as effected by said guide means, limit stop means for the longitudinal edges of the band are arranged above said guide means, and a centering pin is mounted upon the mandrel in front of the folding die.

3,434,907

SPLICING DEVICE AND RESULTING PRODUCT

George J. Philippi, Plainfield, and Albert L. Rosnick, Jamesburg, N.J., assignors to Johnson & Johnson, a corporation of New Jersey

Filed June 2, 1965, Ser. No. 460,646
Int. Cl. B31f *5/06;* **B26f** *1/24*
U.S. Cl. 156—505 **21 Claims**



1. A film splicer comprising left and right film holding fixtures for positioning the film ends to be spliced in end to end relation and in longitudinal alignment with one another; said fixture being spaced from one another longitudinally of the film to provide a splicing passage between them; a splicing carriage aligned with said passage transversely of the film and said fixtures being mounted for relative movement with respect to one another transversely of the film; said carriage having tape folding and wiping means associated therewith for said relative movement and said folding and wiping means having an initial position at one side of the film ends; tape feeding means aligned with said passage at the other side of the film ends and said tape feeding means being adapted to feed pressure sensitive splicing tape from a tape supply transversely over and beyond the surfaces of said film ends with the pressure sensitive side of the tape facing said surfaces; said folding and wiping means being adapted to fold the tape under and around the film ends and press the folded tape into sealing relation with the exposed surfaces of the film ends to form a splice, on relative motion of said carriage with respect to said fixtures; and means for severing the sealed portion of said tape from the tape supply.

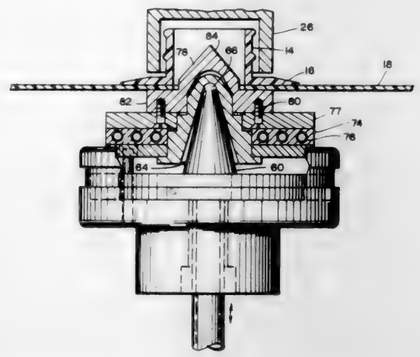
3,434,908

SEALING HEAD

Warren E. Macdonald, Seekonk, Mass., assignor, by mesne assignments, to Summerhayes Holdings Limited, a corporation of Canada

Filed Nov. 12, 1965, Ser. No. 507,331
Int. Cl. B32b *31/10, 31/18;* **B29c** *27/06*
U.S. Cl. 156—514 **7 Claims**

A device for heat sealing molded plastic spouts to a heat sealable web by means of a heated head having cutting edges for puncturing the web and having a portion pivotable about the remainder of the head to produce a center point suspension causing a uniform pressure distribution between web and spout around the periphery thereof.

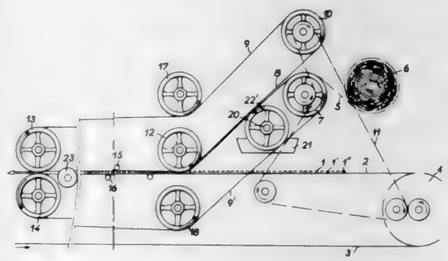


3,434,909

DEVICES FOR THE CONTINUOUS MANUFACTURE OF TILING SHEETS

Louis Constant Joseph Lescroart, 36 Rue du Cateau, Caudry, Nord, and Pierre Louis Michel Marlot, Banteux, Nord, France

Filed Apr. 5, 1966, Ser. No. 540,322
Int. Cl. B32b *31/26*
U.S. Cl. 156—552 **6 Claims**



Moving steel strips contact the lateral edges of mesh backing material moving the mesh to a transfer roller to apply adhesive, then into contact with tiles moving at the same speed, then through a curing oven. As the strips provide lateral constraint, the mesh backing will be undeformed when the adhesive dries. The backing can be woven or non-woven mesh.

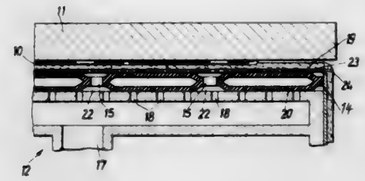
3,434,910

GLUING PRESS FOR TEXTILE PIECES

Herbert Kannegiesser, Hollwiesen, Vlotho (Weser), and Richard Juraschek, Kinderheim, Vlotho (Weser), Germany, assignors to Kannegiesser Maschinenfabrik Gesellschaft mit beschrankter Haftung

Filed Sept. 7, 1965, Ser. No. 485,195
Claims priority, application Germany, Sept. 18, 1964, K 54,030
Int. Cl. B30b *15/06*
U.S. Cl. 156—583 **14 Claims**

This provides a press for the gluing of textile pieces laminated with a thermoplastic adhesive. The press comprises a heatable pressing plate shaped in conformity with the configuration of the textile pieces to be glued together, a die means and an elastic pressure medium filled counterpressing member located between the pressing plate and the die means to insure the application of uniform heat and uniform surface pressure to the textile pieces placed



in the press. The counterpressing member includes two opposite walls, means connecting the walls at a plurality of individual connecting points distributed over the entire surface of the member and holes for supplying a treating media to the textile pieces.

3,434,911

DECORATIVE ARTICLE AND METHOD OF MAKING SAME

Beth E. Johnson, 4377 South 615 East, Salt Lake City, Utah 84107, and Bernice E. Stuart, 812 Brookshire Drive, Kaysville, Utah 84037

Filed May 13, 1965, Ser. No. 455,533
Int. Cl. B32b *27/36;* **B44f** *11/00*
U.S. Cl. 161—16 **5 Claims**



Placing a mixture of polymerizable and gelable thermosetting resin in a mold, allowing it to set up to a soft-gel stage wherein liquid and solid polymers simultaneously exist, and while it is in the soft-gel stage stirring the interior thereof without disturbing a layer adjacent to the mold. The articles produced has a smooth outer surface, but fracturing and filling of the fractures inside creates an optical diffraction that is pleasing to the eye.

3,434,912

SELF-SUSTAINING, THIN, CRACK-FREE SHEET OF INORGANIC AEROGEL

John B. Peri, Chesterton, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 208,618, July 9, 1962, which is a continuation-in-part of application Ser. No. 842,227, Sept. 25, 1959. This application Nov. 22, 1965, Ser. No. 509,226
Int. Cl. B29c *23/00;* **B32b** *9/00*
U.S. Cl. 161—46 **6 Claims**

Self-sustaining, thin, crack-free sheets of inorganic aerogel prepared by gelling a thin layer of an inorganic sol floating on the surface of an immiscible support liquid having a density greater than the density of the sol to form a gel sheet on said support liquid; displacing the sol liquid in the gel sheet with a second liquid; and removing the second liquid from the gel sheet without the formation of a two-phase liquid-vapor system therein by vaporization at a temperature which is at least its critical temperature and a pressure which is at least its critical pressure.

3,434,913

VISCOSE RAYON FIBER AND METHOD OF MAKING SAME

Gregory C. Bockno, Media, Anthony P. Da Vinci, Trainer, and Joseph W. Schappel, Morton, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,420
Int. Cl. D01f *3/10*
U.S. Cl. 161—70 **13 Claims**

High strength, high wet modulus, nonfibrillatable viscose rayon fibers and filaments having a very low alkali solubility are formed by spinning viscose having a limited composition into a low acid, low salt bath containing a small amount of formaldehyde, stretching the filaments in a second hot aqueous bath followed by completing the regeneration of the cellulose while the fibers or filaments are relaxed in a hot aqueous bath. Fabrics formed from these fibers exhibit about the same wet strengths as fabrics formed of cotton but exhibit substantially greater strengths in a conditioned state as compared to fabrics formed of cotton.

3,434,914

GLASS FIBER REINFORCED THERMOPLASTIC POLYARYLENE POLYETHER RESIN ARTICLE AND PROCESS FOR MAKING SAME

Samuel Sterman, Williamsville, and James G. Marsden, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,917
Int. Cl. B32b *17/04;* **B29d** *7/14*
U.S. Cl. 161—93 **6 Claims**

4. An article of manufacture which is a thermoplastic composite of fibrous glass, a polyarylene polyether resin, and an aminoalkyltrialkoxysilane selected from the group consisting of a N,N-bis-(hydroxyalkyl)aminoalkyltrialkoxysilane and glycerol-modified aminoalkyltrialkoxysilane, or a hydrolyzate thereof.

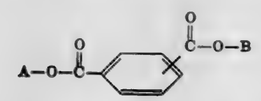
3,434,915

GLASS LAMINATE

William E. Garrison, Parkersburg, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,371
Int. Cl. C03c *27/10;* **B32b** *17/06*
U.S. Cl. 161—199 **12 Claims**

1. A composition consisting essentially of polyvinyl butyral resin having from 18 to 24 percent unreacted hydroxyl groups, calculated as weight percent of vinyl alcohol, and containing from 0.3 to 30 milliequivalents per kilogram of an agent having the structure



wherein A is selected from the class consisting of H, Li, Na, K and NR_4, wherein R is selected from the class consisting of H, and alkyl radicals containing from 1 to 22 carbon atoms and wherein B has the same meaning as A and alkyl radicals containing from 1 to 6 carbon atoms, wherein the aromatic ring may be substituted with a group selected from the class consisting of hydroxyl, halo-, lower alkoxy, lower alkyl, and a fused aromatic ring.

11. A safety-glass laminate formed of two layers of glass of from 60 to 150 mils in thickness and a polyvinyl butyral interlayer of from 10 to 60 mils in thickness consisting essentially of the composition of claim 1 and containing from 0.2 to 0.8 percent water.

3,434,916
MANUFACTURE OF POLYETHYLENE TEREPHTHALATE LAMINATES

Herbert Braunisch, Wiesbaden-Biebrich, Helga Lenhart, Wiesbaden, and Walter Seifried, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

Filed June 1, 1965, Ser. No. 460,131
Claims priority, application Germany, June 4, 1964, K 53,130
Int. Cl. B32b *27/36, 27/06*
U.S. Cl. 161—231 12 Claims

This invention relates to a process for the manufacture of polyethylene terephthalate laminates by superposing one surface provided with an adhesive substance upon another surface and bonding the surfaces together by the application of pressure and heat, wherein the adhesive substance is maleic anhydride, phthalic anhydride, tetrahydrophthalic anhydride, hexahydrophthalic anhydride, benzoic anhydride, a mixture of slower-reacting carboxylic anhydrides and maleic anhydride, a mixture of slower-reacting carboxylic anhydrides and phthalic anhydride, benzaldehyde, 1-naphthaldehyde, phthalaldehyde, or terephthalaldehyde or mixtures thereof.

3,434,917
PREPARATION OF VERMICULITE PAPER

John W. Kraus, Fairfax, Va., and Forrest R. Hurley, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Mar. 7, 1966, Ser. No. 532,363
Int. Cl. C03c *25/00;* C03b *37/00*
U.S. Cl. 162—3 9 Claims

A process for preparing vermiculite paper which comprises treating vermiculite ore by immersion in sodium chloride and lithium salt solutions followed by rinses, swelling the vermiculite, shearing the expanded vermiculite ore to form platelets, classifying the material, flocculating and recovering the vermiculite pulp.

3,434,918
PROCESS OF FORMING ABSORBENT PAPER FROM A MIXTURE OF CELLULOSIC FIBERS AND PARTIALLY CROSSLINKED CELLULOSIC FIBERS AND PAPER THEREOF

Leo J. Bernardin, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,349
Int. Cl. D21h *5/24, 5/00*
U.S. Cl. 162—111 10 Claims

Absorbent tissue paper sheets formed of a combination of cellulosic papermaking fibers and similar fibers stiffened by the inclusion of a crosslinking agent, the stiffened fibers being bonded to the papermaking fibers. The bonding action between the stiff fibers and the usual cellulosic papermaking fibers is achieved by a sequence of steps in which the crosslinking agent is water-insolubilized within the fibers in the wet fiber condition while retaining a crosslinking capacity; then these fibers are blended with the usual cellulosic papermaking fibers for sheet formation and are dried and cured in contact developing the bond. To provide a useful and improved product as to porosity and absorbency, full crosslinking agent cure is not necessary. Curing more fully sets the crepe in a crepe sheet so that the crepe is retained even when the sheet is well wetted, the extent of retention increasing with the extent of cure; also, bonding of the fibers increases sheet strength and wet stiffness.

3,434,919
DECORATIVE LAMINATED ARTICLE WITH TRANSPARENT OVERLAY SHEET AND METHOD OF MAKING IT

Robert M. Whitman, Newark, Del., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

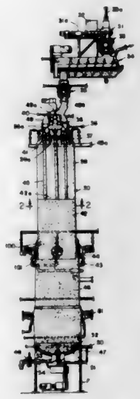
Continuation of application Ser. No. 364,472, May 4, 1964. This application Nov. 30, 1967, Ser. No. 687,072
Int. Cl. D21h *1/02*
U.S. Cl. 162—123 7 Claims

A high clarity resin saturable overlay paper for a decorative laminate includes a paper having permanently swollen alpha cellulose fibers blended in unswollen alpha cellulose fibers with the swelling causing central canals of the swollen fibers to close around their outer walls to prevent the entrapment of air therein.

3,434,920
APPARATUS FOR CONTINUOUS DIGESTING

Frank B. K. Green, 10835 SW. Muirwood Drive, Portland, Oreg. 97225

Filed Oct. 7, 1965, Ser. No. 493,800
Int. Cl. D21c *7/12, 7/08*
U.S. Cl. 162—237 8 Claims



A vertical digester having a presteamer and rotary feeder coupled to the top of the digester chamber. The top is equipped with a submergence screw which takes the chips through a high-pressure steam zone after which an adjustable level of liquor is encountered, defining the top of an impregnation zone of lower temperature through which the chips pass. Below the impregnation zone is a heating zone, the top of which is defined by a plurality of vertically extending pipes discharging heated liquor from strainers which are positioned at the lower edge of the heating zone. Below the heating zone is a retention zone and at the bottom of the chamber is a cooling and dilution zone, cooling liquid being introduced into this zone which additionally defines the top liquor level. The strainers employed are fluid purged and mechanically scraped.

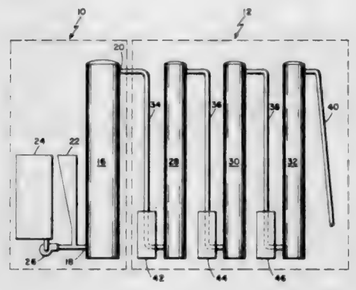
3,434,921
CONTINUOUS DIGESTER WITH MULTIPLE COLUMN DISCHARGER

John Parker Rich, Nashua, N.H., assignor to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware

Filed Apr. 18, 1966, Ser. No. 543,095
Int. Cl. D21c *7/08*
U.S. Cl. 162—237 4 Claims

1. In combination with a pressurized reaction vessel for producing pulp by chemically digesting particles of fibrous materials, means for gradually reducing the pressure of said digested pulp as said pulp is discharged from said vessel through a discharge mouth therein, said means comprising:

a plurality of substantially vertical standpipes, each of said standpipes including a pulp inlet adjacent the base thereof and a pulp outlet adjacent the top thereof; and,



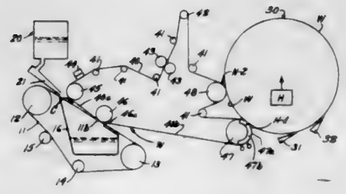
a plurality of downflow pipes interconnecting said standpipes in series with said reaction vessel,

said digested pulp being discharged from said reaction vessel into the first of said downflow pipes at high pressure, moving successively downwardly through said downflow pipes and upwardly through said standpipes, and being discharged at substantially decreased pressure from the last of said standpipes in said series.

3,434,922
PRESS ARRANGEMENT

Donald A. Ely, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Oct. 28, 1965, Ser. No. 505,543
Int. Cl. D21f *1/66, 5/02*
U.S. Cl. 162—303 5 Claims

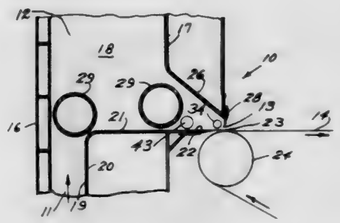


1. In a paper machine, in combination, a Yankee dryer, a stock inlet, a looped traveling forming wire having a downwardly inclined run receiving stock from the inlet and forming a wet web on such run, a looped traveling felt, a felt guide within the felt loop presenting a curved smooth surface for guiding the felt into closely spaced relation to said wire run adjacent the stock inlet for receiving a stock stream between the wire run and felt, roll means within the felt loop downstream of such felt guide for urging a run of felt downwardly from such guide into gradual convergence with said wire run during web formation thereon and then away from the wire run with the formed wet web adhering to such felt run, and pressure-dewatering and pasting rolls within the felt loop downstream of such roll means for pasting the wet web onto and pressure-dewatering the web against the Yankee dryer surface.

3,434,923
HEADBOX OF A PAPERMAKING MACHINE

Louis E. Dennis, Clinton, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Aug. 4, 1965, Ser. No. 477,116
Int. Cl. D21f *1/02*
U.S. Cl. 162—337 9 Claims



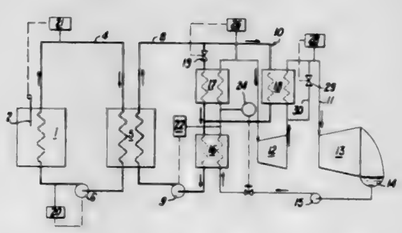
1. In a headbox having a pair of spaced side walls and a slice opening formed therein for delivering stock flowing through said headbox to a travelling forming wire,

a pair of bleed openings formed respectively in said side walls immediately upstream of and adjacent said slice opening to effect discharge of a portion of the stock therethrough to increase the flow of stock next to said side walls for improving the uniformity of the basis weight profile of stock across the width of the forming wire.

3,434,924
METHOD OF POWER GENERATION AND THERMAL POWER PLANT FOR THE APPLICATION OF SAID METHOD

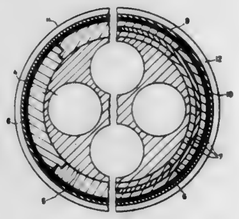
Pierre Pouderoux, Paris, France, assignor to Societe Stein et Roubaix, Paris, France

Filed Jan. 24, 1967, Ser. No. 611,343
Claims priority, application France, Feb. 3, 1966, 48,330
Int. Cl. G21d *7/00;* F01d *15/00*
U.S. Cl. 176—20 7 Claims



A method of power generation which comprises circulating a primary heat-transporting fluid within a loop comprising a heat source, circulating a secondary heat-transporting fluid within another loop, effecting heat transfer between said primary and secondary heat-transporting fluids, circulating a vaporizable fluid within a utilization circuit in which said fluid is successively vaporized and superheated by heat exchange with said secondary fluid in a single pass process, then expanded and condensed, wherein independent variations of the flow rates of said primary fluid and said secondary fluid are admitted and the steam temperature is maintained at a constant value after vaporization and prior to superheating.

3,434,925
HEAT INSULATION FOR NUCLEAR REACTOR PRESSURE TUBES
Mario Montagnani, Bologna, and Flaviano Farfaletti-Casali, Milan, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Mar. 16, 1967, Ser. No. 623,634
Claims priority, application Italy, Mar. 31, 1966, 7,444/66
Int. Cl. G21c *5/12*
U.S. Cl. 176—44 10 Claims



An insulated pressure tube for nuclear reactors and having two heat barriers, one inside and out outside of the pressure tube, serving to maintain the tube temperature within a permissible temperature range. The tube is formed of zirconium, beryllium, an alloy of one or both of these metals or other metals or alloys subject to creep at higher temperatures and ductile-to-brittle transition at lower temperatures both within the temperature gradient between the fuel within the tube and the temperature outside the tube during operation.

3,434,926
INDIRECT-CYCLE INTEGRAL STEAM COOLED NUCLEAR REACTOR
Tetsuichiro Nakanishi, Tokyo, Japan, assignor to Hitachi Zosen Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Aug. 11, 1965, Ser. No. 478,924
Int. Cl. G21b *19/28, 15/16, 15/02*
U.S. Cl. 176—54 5 Claims

A nuclear reactor comprises a reactor vessel containing water and composed of a vertical elongated pressure vessel which is composed of a cylindrical pressure shell having inlet nozzles. A reactor core is provided inside the vessel. This shell with enclosed tubes and pipes constitutes a shell and tube type heat exchanging means which is integrated with the reactor vessel. Steam generating is effected by directly contacting with water contained in the reactor vessel and thus the circulating steam always remains as steam until it reaches the water in the reactor vessel. Water heating and evaporating means is provided inside the reactor vessel. Means is provided inside the reactor vessel for superheating steam by passing it through passages in the reactor core. Secondary steam is generated from water derived from the shell side of the heat exchanging means. The steam is re-circulated. Thermal shields are provided inside the reactor vessel and a stream of water flows in contact with the thermal shields to moderate the nuclear fuel and may be circulated by a pump. The heat exchanging means may comprise two coils mounted inside the shell which are heated by superheated steam.

3,434,927
HIGHLY PURIFIED INTRINSIC FACTOR
Derek Rowland Highley, Upper Saddle River, N.J., and Leon Ellenbogen, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,402
Int. Cl. C12b *1/00*; A61k *17/00*
U.S. Cl. 195—2 5 Claims

A process of purification is described in which intrinsic factor or the complex of intrinsic factor and a physiologically active cobamide is subjected to hydrolysis with a proteolytic enzyme such as trypsin, chymotrypsin and papain and then subjected to the successive steps of exclusion chromatography and ion exchange chromatography.

3,434,928
PROCESS FOR PREPARING PEPTONE FOR BACTERIAL CULTURE
Ryoichi Naito, Ibaragi-shi, Yoshigoro Oguro, Osaka, and Yorihiko Murata, Amagasaki-shi, Japan, assignors to The Green Cross Corporation, Osaka, Japan, a corporation of Japan
No Drawing. Filed May 1, 1967, Ser. No. 634,843
Claims priority, application Japan, Nov. 16, 1966, 41/75,351
Int. Cl. C12b *3/12, 3/14*
U.S. Cl. 195—29 2 Claims

Peptone suitable for culturing bacteria, which is prepared as follows: The human placenta frozen immediately after the delivery is finely minced, treated with physiological saline solution and a wet residue mainly consisting of placental tissue cells and soluble in physiological saline solution is separated, this residue is treated with a proteolytic enzyme to digest cell components. After adequate progress of the digestion, the digest solution is heated under pressure and allowed to stand for cooling to obtain peptone from the supernatant and is dried.

3,434,929
PROCESS FOR PURIFYING PLASMIN
Francis Fremonte Buck, Suffern, N.Y., and Edward Clarence De Renzo, Hillsdale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed July 12, 1966, Ser. No. 564,690
Int. Cl. C12d *13/10*
U.S. Cl. 195—66 2 Claims

Improved purification and concentration of plasmin (fibrinolysin) is obtained by suspending precipitated sterile plasma in a solution containing both sodium chloride and lysine hydrochlorine at pH 2.5 to 4.2, followed by centrifuging, adjusting the pH to substantial neutrality and lyophilizing.

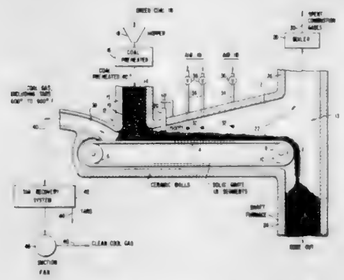
3,434,930
METHOD OF PRODUCING TETRACYCLINE
Frantisek Paleckova, Zdenek Hostalek, and Zdenek Rehacek, Prague, Czechoslovakia, assignors to Spofa Sdruzeni Podniku pro Zdravotnickou Vyrobu, Prague, Czechoslovakia
No Drawing. Filed June 22, 1965, Ser. No. 466,093
Claims priority, application Czechoslovakia, June 26, 1964, 3,688/64
Int. Cl. C12d *9/22, 9/00*; C12b *1/00*
U.S. Cl. 195—80 6 Claims

A method for producing tetracycline which comprises aerobically and under conditions of submerged growth at 25 to 35° C. and at a pH between 4.5 and 9.0 culturing Streptomyces NCIB 9692 in a liquid culturing medium containing assimilable carbon and nitrogen sources, whereby a substantial amount of tetracycline is accumulated; and recovering said tetracycline.

3,434,931
COKE, TAR, AND CLEAN COAL GAS PRODUCING METHOD AND APPARATUS
Vaughn Mansfield, Columbia, Tenn., assignor, by mesne assignments, to Peabody Coal Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,445
Int. Cl. C10b *49/00, 7/08*
U.S. Cl. 201—27 8 Claims

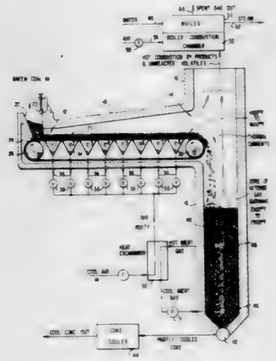
Preheated coal is gravity-fed via an upright input shaft onto an imperforate endless grate moving horizontally

through a hot carbonizing furnace, the coal in the shaft forming a stack on the grate. Overfire air is fed into the furnace above the coal on the grate so as to react above the coal with volatiles driven from the coal, thereby heating by radiation and conduction and extensively but not completely carbonizing the coal on the grate. At the end of the grate the nearly coke coal drops into a shaft furnace



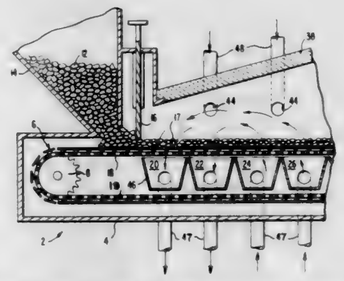
wherein carbonization to acceptably low volatile content is completed. At least some of the hot gaseous byproducts of combustion in the furnace are back-drafted through the coal at the bottom of the input shaft so as to gasify low temperature volatile content of the coal, including tars, the thusly enriched back-drafted gas then passing to a tar recovery system wherein the tars are extracted, leaving clean coal gas for utilization.

3,434,932
COKE AND HEAT PRODUCING METHOD
Vaughn Mansfield, Gallatin, Tenn., assignor, by mesne assignments, to Peabody Coal Company, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 408,833, Nov. 4, 1964. This application Mar. 30, 1967, Ser. No. 627,009
Int. Cl. C10b *47/20*
U.S. Cl. 201—27 3 Claims



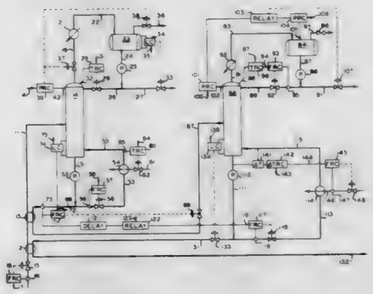
Coal is fed onto a chain grate moving horizontally through a hot carbonizing furnace, and limited quantities of air are fed upwardly through the coal on the grate as to combust with only part of the volatiles, leaving a comparatively large amount of volatiles in the partly carbonized coal. The partly carbonized coal, i.e., high-voltatile coke, drops off the end of the grate into a vertical shaft furnace, which extends downwardly from the rear of the carbonizing furnace, to form a column which progresses downwardly and is finally discharged from the bottom of the shaft furnace into a cooler. Thermal currents develop at the rear of the carbonizing furnace so that unreacted oxygen from the carbonizing furnace, plus unreacted oxygen entrained in the coke, burn violently with the volatiles in the coke as the latter drops onto the top of the column in the shaft furnace, creating a layer of intense burning over the top of the stack in the shaft furnace, thereby driving off and consuming most of the volatiles remaining in the coke.

3,434,933
METHOD FOR PRODUCING HIGH YIELD COKE BY DOWNDRAFTING OF HOT GASES
Vaughn Mansfield, St. Louis, Mo., assignor, by mesne assignments, to Peabody Coal Company, St. Louis, Mo., a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,466
Int. Cl. C10b *47/26*
U.S. Cl. 201—32 4 Claims



A bed of green coal is fed horizontally through a hot coking furnace from the front end to the rear end thereof. Air is fed upwardly through the bed towards the rear end of the furnace and hot gases are downdrafted through the bed towards the front end of the furnace to create a vertical temperature gradient which gasifies tarry constituents in the upper portion of the bed and deposits them on the coal in the lower portion of the bed.

3,434,934
CONTROL SYSTEM FOR FRACTIONAL DISTILLATION COLUMNS
Stone P. Washer, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,830
Int. Cl. B01d *3/42*
U.S. Cl. 202—154 8 Claims



The flow rate of the overhead stream from a first fractional distillation column and the flow rate of overhead vaporous product from the accumulator are controlled on a split range basis by a pressure controller responsive to column overhead pressure. The kettle product of the first column is utilized as the feed to a second column. The overhead stream from the second column is totally condensed, with the rate of withdrawal of overhead liquid product from the associated accumulator normally being

controlled by the overhead pressure of the second column but subject to manipulation by the pressure controller on the accumulator of the second column. A constant differential temperature between the bottom stream and the reboiler effluent for the second column is maintained, with the flow rate of bottom stream through the reboiler being controlled in a ratio relationship with a delayed function of the bottom product flow rate from the first column.

3,434,935

APPARATUS FOR VACUUM AND SHORT-PATH DISTILLATION

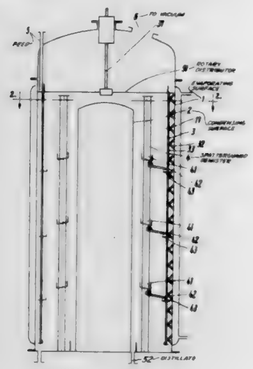
Richard Habendorff, Seelscheid-Linden, and Willi Fischer, Seelscheid, Germany, assignors to Leybold-Heraeus-Verwaltung G.m.b.H., Cologne-Bayental, Germany

Filed Mar. 29, 1968, Ser. No. 717,288

Claims priority, application Germany, Mar. 29, 1967, L 56,116

Int. Cl. B01d *3/28, 3/10*

U.S. Cl. 202—187 7 Claims



An improved arrangement for vacuum and short-path distillation apparatus wherein stationary, angled, spatterguard members are provided between a rotating means for spreading distilland on an evaporating surface, and a condensing surface whereon distilland vapors from the evaporating surface are condensed. The stationary spatterguard members are provided with a trough for collecting spattered distilland material. Means are also provided for delivering the spattered material back to the means for spreading, whereby the spattered material is spread onto the evaporating surface.

3,434,936

METHOD OF SEPARATING AROMATIC COMPOUNDS FROM HYDROCARBON MIXTURES CONTAINING THE SAME BY EXTRACTIVE DISTILLATION WITH AN N-SUBSTITUTED MORPHOLINE

Guenter Luther, Essen, Martin Schulze, Neviges, and Klaus Richter, Essen, Germany, assignors to Heinrich Koppers Gesellschaft mit beschrankter Haftung, Essen, Germany

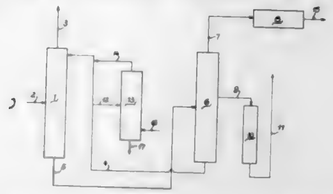
Filed Dec. 18, 1967, Ser. No. 691,363

Claims priority, application Germany, Dec. 19, 1966, K 60,953

Int. Cl. C07c *7/08;* B01d *3/40*

U.S. Cl. 203—32 11 Claims

Aromatic compounds present in either small or large proportions in a mixture of hydrocarbons are separated from such mixture by extractive distillation in the presence of an N-substituted morpholine having up to 7



carbon atoms in the substituent group and serving as a selective solvent for the aromatic compounds.

3,434,937

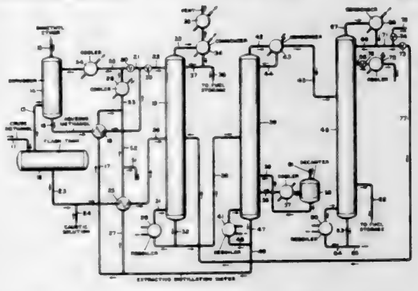
DISTILLATION PURIFICATION OF CRUDE SYNTHETIC METHANOL

George A. Elliott, Petersburg, Jerome E. Akin, Chester, and Rob R. MacGregor, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Oct. 6, 1966, Ser. No. 584,746

Int. Cl. B01d *3/38*

U.S. Cl. 203—79 11 Claims



Crude synthetic methanol is purified to at least 99.95% by flashing off volatile impurities and dissolved gases, extractively distilling by passing the crude methanol counter-current to water to produce aqueous methanol bottoms, distilling the aqueous methanol bottoms to produce methanol distillate containing higher alcohol impurities, and redistilling the distillate to produce 99.95% purer methanol.

3,434,938

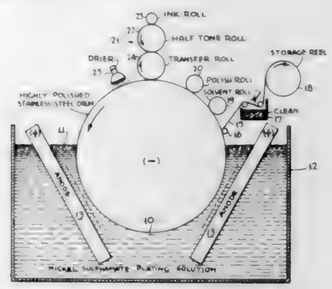
METHOD AND APPARATUS FOR PRODUCING METAL SCREEN SHEET

Herbert D. Van Sciver, Merion, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 29, 1965, Ser. No. 517,306

Int. Cl. C23b *7/08*

U.S. Cl. 204—11 7 Claims



Methods and apparatus for making a metal screen sheet include the use of a rotary drum. Patterns are

formed on the drum. Metal is electrodeposited on the drum as the drum is rotated. The formed sheet having perforations corresponding to the patterns is then peeled from the drum.

3,434,939

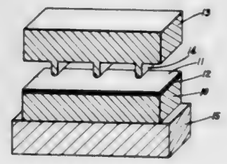
PROCESS FOR MAKING PRINTED CIRCUITS

Merlyn F. Mickelson, Minneapolis, and Thomas D. Brown, Hopkins, Minn., assignors to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin

Filed Oct. 7, 1965, Ser. No. 493,651

Int. Cl. C23b *5/48*

U.S. Cl. 204—15 5 Claims



A process for making printed circuit boards in which a thermoformable electrically insulating base which is clad with a thin electrically conductive metal layer, is subjected to heat and pressure in contact with a heated die having projections in the reverse pattern of the desired circuit configuration to form recesses in the metal clad face of the base conforming to the circuit configuration. The metal clad layer is drawn and formed by the die and deposited on the walls and bottom of the recesses. The metal cladding covering the top surface of the base in the areas between the recesses is then removed, as by abrading, to leave the circuit configuration as defined by the metal cladding in the recesses. Optionally, a further electrically conducting material is electroplated over the metal clad surfaces after the recesses are formed and before the excess clad metal is removed to deposit further electrically conducting material within the recesses.

3,434,940

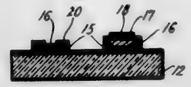
PROCESS FOR MAKING THIN-FILM TEMPERATURE SENSORS

Earl J. Brown, St. Louis County, James R. Crowder, St. Ann, and Raymond O. Karl, O'Fallon, Mo., assignors to McDonnell Douglas Corporation, St. Louis, Mo.

Filed July 21, 1966, Ser. No. 566,986

Int. Cl. H05k *3/28, 1/08;* C23b *5/50*

U.S. Cl. 204—15 8 Claims



1. A process for making a thin-film sensor element which comprises the following steps: depositing an etchable metallic layer onto an electrically and chemically inert substrate; removing an area of the metallic layer corresponding to the shape of the sensor element to be made; applying a layer of an adhesive material over the shaped area on the substrate; depositing a thin-film layer of a nickel-iron alloy into the shaped area and upon the layer of adhesive material; selectively plating a noble metal on the nickel-iron alloy layer to define conductors; and removing unwanted portions of the etchable metallic layer. adhesive material and nickel-iron alloy layer and passivating the complete assembly.

3,434,941

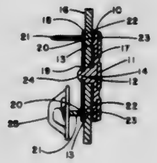
ANODIZED ALUMINUM CAP AND BRANCH OF SERVICE INSIGNIA

Patrick J. Connolly, Medfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed May 3, 1965, Ser. No. 452,946

Int. Cl. C23b *9/02;* B44c *1/04*

U.S. Cl. 204—35 4 Claims



In a method of making an ornamental insignia of anodized and dyed aluminum comprising a front piece bearing an indicia permanently mounted on a backplate, the improvement comprising providing means for maintaining a separation between the front piece and the backplate during anodizing, rinsing and dyeing of the permanently assembled insignia, whereby temporary entrapment of processing fluids and resultant streaking of the finish on the insignia are eliminated.

3,434,942

ELECTRODEPOSITION OF LEAD AND POLYTETRAFLUOROETHYLENE

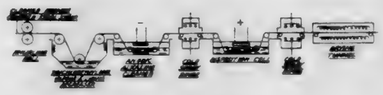
William John Waterman, Bourne End, England, assignor to Vandervell Products Limited, London, England, a British company

Filed Dec. 4, 1964, Ser. No. 415,871

Claims priority, application Great Britain, Dec. 4, 1963, 47,961/63

Int. Cl. C23f *17/00;* C23b *13/00*

U.S. Cl. 204—38 6 Claims



The invention provides a method of electrolytically coating a metallic substrate with lead and polytetrafluoroethylene in which the substrate is the cathode in an electrolytic bath which contains a lead salt in solution together with polytetrafluoroethylene particles in suspension, the cathode being connected to the negative side of a D.C. electric source, the bath having an anode connected to the positive side of said source.

3,434,943

ANODIZING PROCESS AND ADDITIVE FOR ANODIZING ALUMINUM AND ITS ALLOYS

Kenneth C. Working, 3750 Gundry Ave., Long Beach, Calif. 90807

No Drawing. Filed July 18, 1966, Ser. No. 565,700

Int. Cl. C23b *9/02*

U.S. Cl. 204—58 9 Claims

1. The process of anodizing aluminum and its alloys comprising subjecting said aluminum anode to electrolytic action in an electrolytic cell of which the electrolyte is a water solution comprising a mixture of anodizing acid and an aqueous extract of quebracho.

3,434,944

ELECTROLYTIC PROCESS FOR SPLITTING AROMATIC CARBOXYLIC ACID AMIDES AND SULFONIC ACID AMIDES

Leopold Horner, Mainz-Bretzenheim, and Heinz Neumann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 12, 1965, Ser. No. 471,467
Claims priority, application Germany, July 16, 1964, F 43,449, F 43,450
Int. Cl. B01k *1/00*
U.S. Cl. 204—59 2 Claims

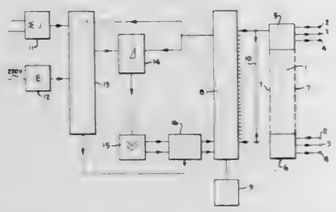
A process for reductively cleaving an aromatic carboxylic acid amide or an aromatic sulfonic acid amide into a corresponding amine and aromatic alcohol or aromatic sulfinic acid, respectively, by electrolyzing a solution of said amide in the presence of a tetraalkyl ammonium salt such as tetramethyl ammonium chloride.

3,434,945

TERMINAL VOLTAGE REGULATION IN ELECTROLYTIC ALUMINUM PRODUCTION

Johannes Schmitt and Hans Schaper, Rheinfelden, Baden, Germany, assignors to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland

Filed Aug. 27, 1964, Ser. No. 392,485
Claims priority, application Switzerland, Aug. 30, 1963, 10,777/63
Int. Cl. C22d *3/12*
U.S. Cl. 204—67 13 Claims



For regulating the terminal voltage in an installation for the electrolytic production of aluminum in a fused fluoride melt by adjusting the distances between the electrodes, a regulator is connected to an electrolytic cell during succeeding electrolysis periods. As long as a predetermined threshold voltage is not surpassed, the regulator during the time of its connection will transmit regulating pulses as required. After this threshold voltage is surpassed, however, the regulator will transmit only one regulating pulse; and, upon surpassing a still higher voltage level, will cease to transmit any regulating pulse until, after the addition of alumina into the melt, the voltage decreases and there commences a new regulating cycle.

3,434,946

POLYMERIZATION OF DIACETONE ACRYLAMIDE BY ELECTROLYSIS

Raymond J. Ehrig, Silver Spring, and Frederick A. Kundell, Laurel, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,259
Int. Cl. C08f *1/00*
U.S. Cl. 204—72 3 Claims

1. A process for forming a diacetone acrylamide polymer coating on the cathodic surface of an electrolytic cell which comprises maintaining an electric potential in the range 3–150 volts between electrodes immersed in an aqueous electrolytic solution of diacetone acrylamide monomer in an inert atmosphere and recovering diacetone acrylamide polymer as a coating on the cathodic electrode.

3,434,947

PROCESS FOR THE SEPARATION OF IRON FROM METAL SULPHATE SOLUTIONS AND A HYDROMETALLURGIC PROCESS FOR THE PRODUCTION OF ZINC

Georg Steintveit, Eitrheim, Odda, Norway, assignor to Det Norske Zinkkompani A/S, Eitrheim, Odda, Norway

No Drawing. Filed Dec. 29, 1965, Ser. No. 518,760
Claims priority, application Norway, Apr. 30, 1965, 157,894
Int. Cl. C22d *1/24, 1/22*
U.S. Cl. 204—119 7 Claims

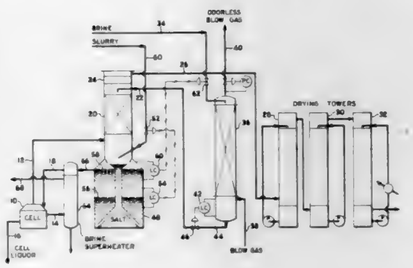
Complex basic iron sulphate having good decanting and filtering qualities is precipitated from a solution of iron and metal sulphate solutions, particularly zinc sulphate, by precipitating the complex basic iron sulphate in the presence of K, Na, or NH_4 ions at a temperature below the boiling point of the solution at atmospheric pressure.

3,434,948

METHOD FOR CHLORINE COOLING AND BRINE HEATING

Thomas Hooker, Youngstown, and John E. Currey, Niagara Falls, N.Y., assignors, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Nov. 25, 1964, Ser. No. 413,759
Int. Cl. C01b *7/06;* B01k *1/00*
U.S. Cl. 204—128 4 Claims



Hot, humid chlorine gas emanating from an electrolytic cell is cooled and dehumidified by directly contacting it with feed brine for the cell. The concomitant heat exchange from the chlorine gas mixture to the cell feed brine provides heat savings both in the chlorine liquefaction step and in any feed brine preheating step. Likewise, the water removed from wet chlorine gas by the feed brine is free from undesirable contaminants and is directly usable without further treatment in the electrolytic cell. Advantageously, a feed brine super heater may be formed as an indirect heat exchanger whereby heat from hydrogen emanating from the electrolytic cell is transferred to the cell feed brine.

3,434,949

HYDRAZINE PRODUCTION

Francis T. Jones, Sloatsburg, N.Y., and Thomas J. Sworski, Oak Ridge, Tenn., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 6, 1964, Ser. No. 380,682
Int. Cl. C01b *21/16;* B01j *1/10*
U.S. Cl. 204—157.1 6 Claims

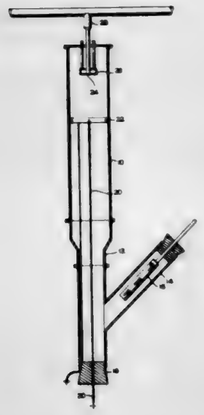
Hydrazine is produced by contacting gaseous ammonia with ionizing radiation at elevated temperatures and a specified residence time and immediately separating hydrazine from the product gas.

3,434,950

PROCESS FOR PRODUCING METAL OXIDE PARTICLES OF REDUCED PARTICLE SIZE

Felix Jiri Weinberg, London, Derek Howden, Nunthorpe, Middlesbrough, and Denis Cleaver, Saltburn, England, assignors to British Titan Products Company Limited, Billingham, Durham, England, a corporation of the United Kingdom

Filed Oct. 12, 1965, Ser. No. 495,325
Claims priority, application Great Britain, Oct. 22, 1964, 43,113/64
Int. Cl. B01k *1/00*
U.S. Cl. 204—164 12 Claims



Metal oxide particles suitable for use as nucleation particles in the production of pigments or as pigments themselves may be prepared by effecting reaction between the corresponding metal halide and an oxygenating gas in an electric field produced by electrodes maintained at different electrical potentials which electrodes are positioned to preclude substantial electrical discharge therebetween.

3,434,951

ELECTRODEPOSITION OF PAINT USING FORMALDEHYDE TO CONTROL pH

Norman Morin Ness, Taplow, Auguste Louis Lucien Palluel, Langley, and Clive Douglas Cook, Marlow, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 19, 1965, Ser. No. 448,915
Claims priority, application Great Britain, Apr. 23, 1964, 16,896/64
Int. Cl. B01k *5/02;* C23b *11/00, 13/00*
U.S. Cl. 204—181 4 Claims

An improved process of electrodepositing paint coatings from aqueous dispersions of film-forming material containing acidic groups neutralised by ammonia or a primary or secondary amine in which the pH value of the dispersion is controlled by the addition of formaldehyde. The addition of formaldehyde may be used to control the pH value of the aqueous dispersion within the range 7 to 9, which range is particularly suitable for the production of smooth continuous coatings. Preferably the addition of the formaldehyde is continuous or substantially continuous during the coating process so as to maintain substantially constant pH conditions.

3,434,952

ELECTROCOATING BATH CONTROL

Ivan H. Tsou, Pontiac, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 4, 1966, Ser. No. 518,670
Int. Cl. B01k *5/00;* C23b *13/00*
U.S. Cl. 204—181 8 Claims

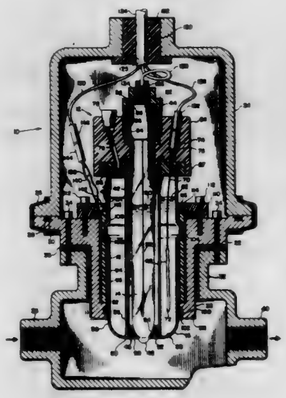
1. In a coating process which comprises immersing an electrically conductive object in an aqueous coating bath having a first electrode spaced apart from said object and in electrical contact with said bath and a film-forming polycarboxylic acid resin comprising coating material dispersed in said bath in a manner such that said bath comprises a continuous aqueous phase and a resin comprising disperse phase, providing said first electrode with a negative electrical potential relative to said object thereby providing a direct current flow of electrical energy through said bath and between said first electrode and said object which electrically induces deposition of said coating material upon said object and forms a film of said coating material on said object, and withdrawing the resultant coated object from said bath, the improvement which comprises maintaining in said bath the combination of a first solvent that is miscible with said resin and has a solubility in water at about 25° C. not substantially in excess of about 10 wt. percent and a second solvent that is miscible with said resin, essentially insoluble in water, and in which said first solvent is significantly soluble, and maintaining the concentration of said second solvent in said bath at a level sufficient to maintain the concentration of said first solvent in said aqueous continuous phase below a predetermined level.

3,434,953

ELECTROCHEMICAL ELECTRODE ASSEMBLY

Joe A. Porter, Whittier, and Ronald F. Waters, Riverside, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed June 28, 1966, Ser. No. 561,144
Int. Cl. B01k *3/12, 3/04, 3/06*
U.S. Cl. 204—195 7 Claims



1. An electrochemical electrode assembly comprising:
inner and outer tubular members spaced apart and sealed at one end thereof to define an annular reservoir for a salt bridge solution;
cap means closing said other end of said inner and outer tubular members;
an internal half cell positioned in said reservoir for contacting said salt bridge solution;
liquid junction means in said outer tubular member adjacent to said one end;

an ion sensing electrode including a tube closed at one end by an ion sensitive barrier, said tube having a cross-sectional area less than that of said inner tubular member;

means replaceably mounting said ion sensing electrode coaxially within said inner tubular member with said ion sensitive barrier adjacent to said one end of said tubular members; and

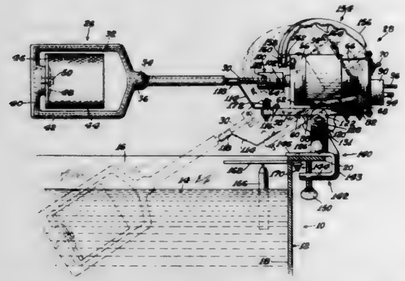
annular sealing means between said tube of said ion sensing electrode and said inner tubular member.

3,434,954

BARREL PLATING MACHINE

Julius Szeremany, Florham Park, N.J., assignor to Daniels Plating Barrel & Supply Company, Newark, N.J., a corporation of New Jersey

Filed May 26, 1965, Ser. No. 458,898
Int. Cl. C23b *5/78*
U.S. Cl. 204—214 **4 Claims**



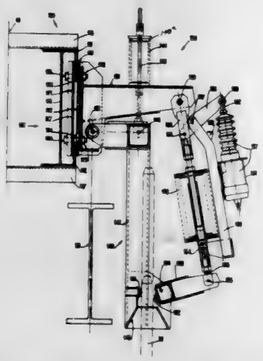
A rotatable, pivoted basket type electroplating apparatus having a mounting means similar to an oarlock, comprising a clevis supporting the drive means and basket, and attached to a stud which cooperatively mounts in a socket of a clamping means suitable to clamp on the edge of an electroplating tank.

3,434,955

LIFTING BEAM FOR ELECTROLYSIS CELLS

Daniel Duclaux, Lille, Nord, France, assignor to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed May 24, 1966, Ser. No. 554,280
Claims priority, application France, May 26, 1965, 18,483
Int. Cl. B01k *3/00*
U.S. Cl. 204—225 **15 Claims**



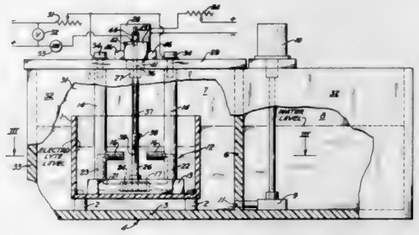
1. A lifting device for electrolysis cells having at least one vertically movable conductor member on which the electrode rods are removably fixed, which remains stationary relative to the cell during vertical adjustment of the conductor member and in which an electrically conductive relationship is maintained between the electrode rods and the conductor member comprising a support frame movable in position over the cell, a cover pivoted from the support frame for rocking movement in the direction toward and away from the movable conductor member, a clamp forming a part of the cover having a stationary member fixed to the cover and a member movable in the direction toward and away from the stationary member between clamping and unclamping position, resilient means operatively connected to said movable member constantly to urge said movable member in one direction, and jack means operatively connected to said movable member for actuation thereof in the opposite direction and means for displacement of the frame and cover to position an electrode rod between the clamping members.

3,434,956

APPARATUS FOR THE ELECTROLYTIC THINNING OF METALLIC SPECIMENS FOR TRANSMISSION ELECTRON MICROSCOPY

Richard C. Glenn, Trafford, Pa., assignor to Glenn Electronic and Mechanical Specialties, Inc., a corporation of Pennsylvania

Filed June 9, 1965, Ser. No. 462,603
Int. Cl. B23p *1/04;* **C23b** *3/06*
U.S. Cl. 204—237 **8 Claims**



This invention relates generally to the preparation of metallic specimens for use in transmission electron microscopy and, more particularly, to the final thinning of such specimens by electrolytic reduction to a thickness of less than 0.5 micron over an area of at least 750 square microns. The reduction is effected by supporting the specimen entirely immersed in an anolyte-forming electrolyte and circulating the electrolyte at a predetermined velocity through a pair of jet nozzles disposed on opposite sides of the specimen and by passing an electric current of a predetermined applied voltage through the electrolyte and specimen. At least one of said predetermined parameters is adjusted to form at the electrolyte-specimen interface an anolyte layer of controlled thickness characterized by the electrical resistance of said layer having a value at the lower end of the range over which the resistance increases substantially at the same rate as the applied voltage, while maintaining the applied voltage substantially above the level at which pitting of the specimen would normally occur in the absence of jet stream circulation of the electrolyte.

3,434,957

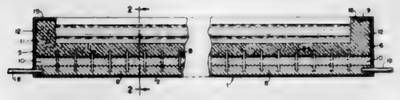
ALUMINUM REDUCTION CELL WITH ALUMINUM AND REFRACTORY LAYERED BOTTOM CONSTRUCTION

Arthur F. Johnson, Suite 22W, 5700 Arlington Ave., Riverdale, N.Y. 10471

Filed Feb. 18, 1966, Ser. No. 528,503
Int. Cl. C22d *1/08;* **B01k** *3/02*
U.S. Cl. 204—243 **15 Claims**

1. The electrolytic cell for the reduction of aluminum comprising a metal shell having relatively upright sides,

ends and a generally flat bottom, a slab of solid aluminum or copper at the bottom, a layer of refractory thermal insulation over the solid slab of such thickness that it is an effective heat barrier preventing the melting of the solid slab, a carbon cathode vessel in the cell having a



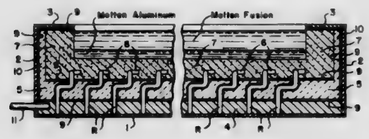
bottom over the refractory layer, a plurality of upright steel or iron collector bars having their lower ends in electrical connection with the solid slab, their upper ends in the carbon bottom and being in intimate contact with the layer of refractory insulation, and a cathode bus connected to the solid slab.

3,434,958

ELECTROLYTIC CELL BOTTOM CONSTRUCTION

Arthur F. Johnson, 203 Creole Lane, Franklin Lakes, N.J. 07417

Continuation-in-part of application Ser. No. 528,503, Feb. 18, 1966. This application Jan. 4, 1967, Ser. No. 607,330
Int. Cl. C22d *3/12*
U.S. Cl. 204—243 **12 Claims**



The electrolytic cell of the invention comprises a steel shell including a bottom and a cathodic slab of aluminum in juxtaposition with respect to the bottom which may be in intimate contact with the bottom or electrically insulated from the bottom with a refractory layer between and a multiplicity of iron current collector rods secured to the steel bottom which rods are in intimate electrical contact with the slab of aluminum and have flexible portions extending upward through a layer of non-rigid thermal insulation into the carbon lining providing means to connect electrically the carbon lining to the aluminum slab. More particularly the iron collector rods are so sized and shaped as by being angularly bent or branched that they provide greatly increased and permanent surface contact where embedded in the carbon lining thus lowering electrical contact resistance, and are sufficiently yielding where embedded in the thermal insulation that they permit heaving of the carbon lining without impairing the electrical circuit between the carbon lining and the aluminum slab.

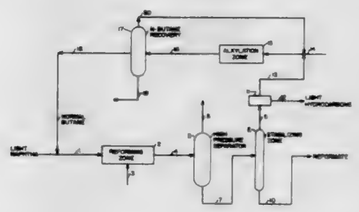
3,434,959

REFORMING PROCESS

Merritt C. Kirk, Jr., Claymont, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed June 7, 1967, Ser. No. 644,321
Int. Cl. C10g *39/00;* **C07c** *3/50*
U.S. Cl. 208—62 **7 Claims**

The specification discloses a process for producing high octane gasoline by catalytically reforming a naphtha feed containing normal butane. The normal butane is substantially converted to isobutane in the reforming zone and the isobutane is added to the feed to the alkylation zone. Normal butane is recovered from the alkylation product and is recycled to be added to the reformer feed.

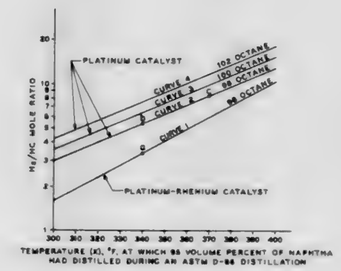


3,434,960

LOW-PRESSURE REFORMING PROCESS WITH A PLATINUM-RHENIUM CATALYST

Robert L. Jacobson, Pinole, Harris E. Kluksdahl, San Rafael, and Burwell Spurlock, Lafayette, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed June 30, 1967, Ser. No. 650,542
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 **13 Claims**



Reforming a naphtha in the presence of hydrogen at low pressures to produce at least 98 F–1 clear octane gasoline with a catalyst composition of a porous inorganic oxide carrier containing 0.01 to 1.0 weight percent platinum and 0.01 to 2.0 weight percent rhenium. The pressure is maintained below 250 p.s.i.g., and the feed rate is at least 2 LHSV. The hydrogen to hydrocarbon mole ratio is related to the distillation properties of the naphtha processed and to the octane number of the gasoline produced. The reforming process operates on stream for at least 2000 hours with no greater than a 2 volume percent decline in the gasoline yield in 2000 hours.

3,434,961

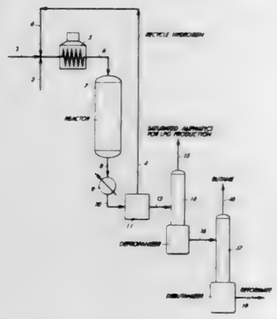
PRODUCTION OF LIQUEFIED PETROLEUM GAS FROM OLEFIN HYDROGENATION DURING CATALYTIC REFORMING

Jackson Eng and Janis Bumbulis, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 14, 1967, Ser. No. 653,454
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 **6 Claims**

Normally gaseous olefins can be saturated for liquefied

petroleum gas production by injecting them directly into



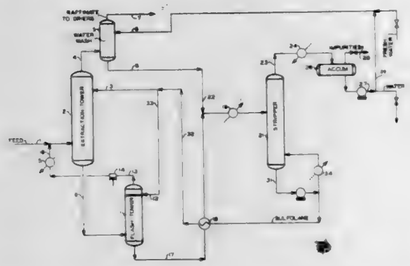
a catalytic reformer without decreasing the space velocity of the naphtha feed.

3,434,962

SULFOLANE EXTRACTION OF LIQUID HYDROCARBON STREAMS

Donald M. Little, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 536,066
Int. Cl. C10g *29/20, 21/28, 21/22*
U.S. Cl. 208—237 **7 Claims**



Impurities of higher volatility than the hydrocarbon stream in which they are contained are removed by extraction with sulfolane forming an impurity-free hydrocarbon raffinate containing some sulfolane which can be removed by water-washing and a sulfolane extract containing a minor proportion of hydrocarbon and said impurities, the sulfolane extract phase is flashed forming vapors containing hydrocarbon and impurities, the flashed vapors are washed with fresh sulfolane to remove said impurities, forming a vaporous hydrocarbon stream which can be compressed, condensed, and recycled to said sulfolane extraction and an extract sulfolane impurity-containing stream which can be combined with the water-sulfolane stream and stripped to form separate streams of water, impurities, and sulfolane. The thus recovered streams of water and sulfolane can be recycled for further use.

3,434,963

SOLVENT DEMETALATION OF A HYDROCARBON OIL

Jacob D. Kemp and Gordon E. Langlois, El Cerrito, and Lloyd J. Olson, Oakland, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,620
Int. Cl. C10g *17/04, 17/06*
U.S. Cl. 208—252 **5 Claims**

A process for removal of metal contaminants, such as nickel and vanadium, from hydrocarbon oils by contacting the oils simultaneously with a paraffinic solvent, an aromatic solvent and an acid. The preferred solvents are C_3–C_{10} paraffins and C_6–C_{10} aromatics. Preferred acids are sulfuric, hydrochloric and hydrofluoric. Operating conditions described are those required to keep the entire system in the liquid phase during contacting. Volumetric amounts of the various components are specified.

3,434,964

REMOVING NITROGEN FROM HYDROCARBON OILS

Julius Philip Bilisoly and James Bryan Zachry, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,890
Int. Cl. C10g *23/02;* **B01j** *11/74, 11/32*
U.S. Cl. 208—254 **11 Claims**

Nitrogen compounds are removed from hydrocarbon oils by contacting the hydrocarbon oil in the presence of feed hydrogen with a catalyst of cobalt or nickel molybdate, or sulfided cobalt or nickel molybdate, supported on alumina or an alumina-silica mixture which has been prepared by adding aqueous hydrogen fluoride to an alumina or alumina-silica hydrosol, causing the hydrosol to set to the corresponding hydrogel.

3,434,965

METHOD OF OPERATING A HYDROFINING PROCESS

Joseph Jaffe, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,126
Int. Cl. C10g *23/02*
U.S. Cl. 208—254 **2 Claims**

In a hydrofining process using a catalyst comprising molybdenum sulfide or tungsten sulfide, said catalyst is regenerated to produce a sulfate-containing catalyst, the regenerated catalyst is reduced in a gas stream containing 0.1 to 10 mol percent hydrogen until reduction reactions are essentially completed, and the catalyst is resulfided and again used for hydrofining.

3,434,966

PROCESS FOR SIMULTANEOUS SOLVENT RECOVERY FROM AND GRANULATION OF ASPHALTS

Charles C. Oldenburg, Mill Valley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,921
Int. Cl. C10g *21/14;* **C10c** *3/08*
U.S. Cl. 208—309 **3 Claims**

A process for simultaneously separating solvent and asphalt from a solvent deasphalting process and solidifying and comminuting this asphalt by spraying hot liquefied asphalt and solvent into a chamber wherein the temperature and pressure are maintained at a level at which the solvent substantially vaporizes, and the asphalt, thus freed of the solvent, solidifies as small granules. Preferred temperatures are 0°–225° F.; preferred pressures are 0–10 p.s.i.g. The products, asphalt and solvent, are removed from the spray chamber, the asphalt is burned, and the solvent is reused in the solvent deasphalting process.

3,434,967

PROCESS FOR SIMULTANEOUS SOLVENT RECOVERY FROM AND GRANULATION OF ASPHALTS

Charles C. Oldenburg, Mill Valley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,922
Int. Cl. C10g *21/14;* **C10c** *3/08*
U.S. Cl. 208—309 **4 Claims**

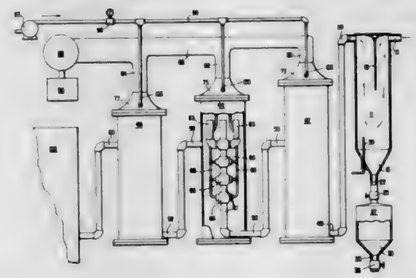
A process for simultaneously separating solvent and asphalt from a deasphalting process and dispersing comminuted asphalt in water which comprises injecting a heated, liquefied solution of solvent and asphalt into an agitated water bath maintained at a temperature and pressure at which the solvent will vaporize substantially completely and the asphalt, thus freed of the solvent, will solidify as small particles, while simultaneously withdrawing from said bath a slurry of comminuted asphalt dispersed in water. Temperatures of 32°–225° F. are preferred. Small amounts of surfactants may be added to the bath.

3,434,968

METHOD AND APPARATUS FOR CLARIFYING WATER

John C. Lowe, York, Pa., assignor to Broadway Research and Development Corporation, York, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 304,183, Aug. 23, 1963. This application May 12, 1966, Ser. No. 554,275
Int. Cl. C02b *1/10, 1/00*
U.S. Cl. 210—44 **25 Claims**



A method and apparatus for clarifying waste liquid having impurities therein capable of being converted into foam by passing feed water to be clarified along a confined path directed upwardly, injecting a plurality of streams of gas thereinto at longitudinally spaced locations at a pressure adequate to substantially saturate said water with gaseous bubbles, discharging said stream of water to atmosphere from the upper end of said confined path to permit the entrapped gas bubbles to expand and form a froth or foam on the top of a body of said liquid, applying a negative pressure above said froth or foam to withdraw the same from the top of said liquid, and collapsing said froth and bubbles after removal from said body of liquid to form a sludge thereof to facilitate removal and withdrawing the relatively clarified liquid from said body thereof.

3,434,969

SCALE INHIBITING

Paul H. Ralston, Bethel Park, Pa., assignor to Calgon Corporation

No Drawing. Filed Aug. 11, 1967, Ser. No. 659,850
Int. Cl. C02b *5/06;* **C07f** *9/38*
U.S. Cl. 210—58 **10 Claims**

Compounds containing a plurality of methylene phosphonated amine groups having at least three nitrogens connected by ethylene groups are disclosed to inhibit the formation of scale, such as calcium, barium and magnesium carbonate, silicate and sulphate scales, from aqueous solutions, even at relatively high temperatures, at threshold inhibitor concentrations.

3,434,970

SELECTIVE FLOCCULANT IN DRILLING MUDS

Frederick Herman Siegele, Westport, Conn., Emil Vincent Ondera, South Salem, N.Y., and Michael Angelo Liberatore, Bridgeport, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 11, 1965, Ser. No. 463,327
Int. Cl. C10m *7/34, 7/26, 7/02*
U.S. Cl. 252—8.5 **4 Claims**

Drilling rate is increased, bit life is increased, and costs decreased, in drilling oil wells, etc., by using a low solids aqueous drilling fluid of comparatively high viscosity, and from which drill cuttings separate rapidly. This fluid has about (1) 3% to 6% of a sodium bentonitic clay, and (2) from 0.01 to 0.08 pound per barrel of a sodium, potassium or ammonium salt of a copolymer of acrylic acid and acrylamide, in the ratio of 80 to 50 mol percent acrylic acid with a molecular weight of at least 200,000 (3) about 0.25 to 1.50 pounds per barrel of a carbonate of sodium, and (4) a pH of 7 to 9.5.

3,434,971

COMPOSITION AND METHOD FOR ACIDIZING WELLS

Bobby L. Atkins, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,621
Int. Cl. C09k *3/00;* **E21b** *43/27;* **C08f** *19/00*
U.S. Cl. 252—8.55 **8 Claims**

An aqueous well acidizing or combined acidizing fracturing composition and method of acidizing subterranean limestone formations employing said composition. The acidizing composition contains in addition to the aqueous acid a polymer prepared by copolymerizing acrylamide and N-vinyl pyrrolidone with a specified amount of a diolefinic crosslinking agent, said polymer being employed to reduce the fluid loss and friction loss of the composition.

3,434,972

LUBRICANT COMPOSITIONS CONTAINING RUST INHIBITORS

Warren Lowe, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,876
Int. Cl. C10m *1/32*
U.S. Cl. 252—51.5 **5 Claims**

Lubricant composition having improved rust inhibiting properties containing an alkenyl succinimide detergent additive and as a rust inhibiting additive a diurethane of a pentaerythritol monocarboxylate.

3,434,973

PYRYLIUM SALTS AS PICKLING INHIBITORS

James Daniel Bode, Berkeley Heights, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,758
Int. Cl. C23g *1/04*
U.S. Cl. 252—79.4 **3 Claims**

1. A pickling bath composition suitable for use with iron and steel consisting essentially of an aqueous solution of acid selected from the class consisting of sulfuric and hydrochloric and as a pickling inhibitor 2,4,6-triphenylpyrylium tetrachloroferrate in the concentration of 0.01% about 0.02% by weight.

3,434,974
CONTINUOUS MANUFACTURE OF DETERGENT LAUNDRY BARS

Amory Earl Austin, Colonia, and Preston Pope Lee, Madison, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 469,144, July 2, 1965. This application Feb. 21, 1966, Ser. No. 529,151

Int. Cl. C11d *3/065, 11/00;* **B29b** *3/00*

U.S. Cl. 252—138 **24 Claims**

Making detergent laundry bars by continuously mixing sodium alkylbenzenesulfonate or other anionic detergent with water and a large amount of solid builder salt such as pentasodium tripolyphosphate and intensively shearing the mix, then (a) extruding strands of the mix, cooling and plodding, or (b) directly extruding a bar. Reaction of the builder salt and the water to form hydrate aids hardening of bar. The sulfonate salt may be formed in situ by reaction of the sulfonic acid and (a) sodium carbonate (in the solid feed) or (b) a stream of NaOH solution.

3,434,975
MOLYBDENUM-CONTAINING CATALYST AND METHOD FOR THE PREPARATION THEREOF

Ming Nan Sheng, Cherry Hill, N.J., and John G. Zajacek, St. Davids, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,778

Int. Cl. B01j *11/32, 11/00;* **C07d** *1/08*

U.S. Cl. 252—431 **10 Claims**

Molybdenum-containing catalysts useful in the epoxidation of olefinic compounds with an organic hydroperoxide and soluble in the reaction medium of such epoxidation reactions produced by reacting molybdenum metal with an organic hydroperoxide, peracid or hydrogen peroxide in the presence of a saturated alcohol having from 1 to 4 carbon atoms.

3,434,976
PREPARATION OF SILICA-ALUMINA CATALYST

George J. Suriand and John S. Magee, Jr., Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 11, 1965, Ser. No. 454,982

Int. Cl. B01j *11/40*

U.S. Cl. 252—453 **3 Claims**

Silica-alumina catalysts containing low concentrations of sulfate ion are prepared by washing a precipitated silica-alumina gel first with an acid solution, and subsequently with an ammonium carbonate solution.

3,434,977
PROCESS FOR THE PRODUCTION OF EXTREMELY FINELY DIVIDED INORGANIC MIXTURES, PARTICULARLY THOSE CONTAINING SILICON DIOXIDE

Walter Neugebauer, Constance, Bodensee, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed July 16, 1965, Ser. No. 472,505

Claims priority, application Germany, July 18, 1964, D 44,974

Int. Cl. B01j *11/40*

U.S. Cl. 252—454 **8 Claims**

Method for the production of intimate mixtures containing extremely finely divided silicon dioxide, at least one other extremely finely divided inorganic substance having a primary particle size between about 2 and 1000 mμ, preferably, between 5 and 300 mμ, and a BET surface area between about 10 and 300 m.²/g., preferably, between 50 and 250 m.²/g., wherein a hot gas stream of volatilized oxidic silicon produced by reduction of silicon dioxide in an arc furnace is contacted at a temperature above 1000° C., preferably, above 1400° C., with a solution, preferably, aqueous, of a compound forming the other inorganic substance in said mixture to form said intimate finely divided mixture of silicon dioxide and the other inorganic substance.

3,434,978
SHIELDING COMPOSITION OF CEMENTITIOUS MATERIAL MIXED WITH A METALLIC SATURATED FATTY ACID COMPOUND

Reinhard Ernst Vogel, Munich-Harlaching, Germany, assignor of one-half to Friedrich Marxen, Vaduz, Liechtenstein

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,764

Int. Cl. G21f *1/04;* **C04b** *7/02, 7/34*

U.S. Cl. 252—478 **18 Claims**

A building material having a shielding effect against radioactive radiation and including as essential constituents thereof: (a) a cementitious material having distributed therethrough and intimately mixed therewith an effective amount of (b) at least one compound formed substantially of a saturated fatty acid being solid at room temperature and having at least nine carbon atoms and of at least one metal having a shielding effect against radioactive radiation.

3,434,979
OLEOPHILIC-HYDROPHILIC ION EXCHANGE RESINS

Harry P. Gregor, 150 Lakeview Ave., Leonia, N.J. 07605; Philippe Teyssié, 41 bis Ave. de Lorraine, Le Vesinet, France; and Guenther K. Hoeschele, 2007 Dogwood Lane, Wilmington, Del. 19803

No Drawing. Filed May 11, 1965, Ser. No. 455,005

Int. Cl. C08f *27/06*

U.S. Cl. 260—2.1 **4 Claims**

The invention is directed to a novel ion-exchange resin comprisng a polymeric matrix having a carbon-chain backbone and regularly-occurring polar ion exchange groups and regularly-occurring oleophilic groups as side groups on said backbone.

3,434,980
PRODUCTION OF INSULATING MATERIALS HAVING LOW SPECIFIC GRAVITY

Fritz Stastny, Ludwigshafen (Rhine), Rudolf Gaeth, Limburgerhof, Pfalz, Bernhard Schmitt, Heidelberg, and Udo Haardt, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 20, 1965, Ser. No. 457,508

Claims priority, application Germany, June 3, 1964, B 77,052; Mar. 5, 1965, B 80,831; Apr. 17, 1965; B 81,511

Int. Cl. C04b *43/00, 25/04*

U.S. Cl. 260—2.5 **8 Claims**

Heat-insulating materials are prepared by introducing porous plastic particles into inorganic binders which are suspensions of water-containing alkali metal silicate particles and inorganic fillers in aqueous solutions of alkali metal silicates and solidifying the mixture.

3,434,981
FIRE-RETARDANT POLYMERS CONTAINING HYDROXYPHOSPHORUS POLYMERS

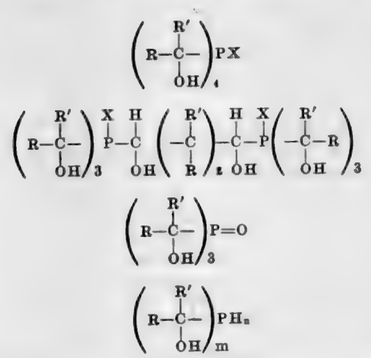
Charles F. Baranauckas, Memphis, Tenn., and Irving Gordon, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 241,563, Dec. 3, 1962. This application Aug. 4, 1965, Ser. No. 477,299

Int. Cl. C09k *3/28;* **C08g** *33/16*

U.S. Cl. 260—2.5 **14 Claims**

A polymeric composition such as a cellulosic material, a polyaddition resin or a polycondensation resin, is rendered fire retardant by the addition thereto of a poly-α-hydroxyorganophosphorus ether formed by reacting a polyol with an organic phosphorus compound selected from the group of phosphorus compounds of the formulae:



and spirotetrakis(α - hydroxyalkyl)phosphonium salts, wherein R and R′ are independently selected from the group consisting of hydrogen, alkyl having between about 1 and 6 carbon atoms, alkenyl having between about 1 and 6 carbon atoms, aryl having between about 5 and 12 carbon atoms, and cycloalkyl having between about 3 and 12 carbon atoms, X is selected from the group consisting of chlorine, bromine, fluorine, iodine, and an organic anion, m is 1 to 3, n is 0 to 2, and $m+n=3$, and z is from 0 to 6.

3,434,982
POLYURETHANES PREPARED FROM OXY-ALKLATED CYANOGUANIDINES

Donald W. Kaiser, Hamden, and John K. Zane, East Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Original application May 1, 1963, Ser. No. 277,124, now Patent No. 3,271,411, dated Sept. 6, 1966. Divided and this application Oct. 18, 1965, Ser. No. 510,120

Int. Cl. C08g *22/44, 22/14;* **C09k** *3/28*

U.S. Cl. 260—2.5 **4 Claims**

The specification discloses a process for producing polyurethanes which comprises reacting an organic polyisocyanate with a hydroxy containing material prepared by reacting (1) cyanoguanidine, (2) a composition having a functionality of at least two, such as a glycol, triol, or amino alcohol, and (3) an alkylene oxide. Foams may be produced by including a blowing agent in the process. The foams have improved flame retardance, humid-aging properties and hydrolytic stability.

3,434,983
STAIN-RESISTANT COMPOSITION COMPRISING 2,2′ - (1,2 - CYCLOBUTYLENE) BIS 4,6 - DIAMINE-5 - TRIAZINE - MELAMIN - ALDEHYDE REACTION PRODUCT AND A FILLER

Norman W. Standish and William C. Nixon, Jr., Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed June 20, 1966, Ser. No. 558,746

Int. Cl. C08g *9/30, 9/28, 37/32*

U.S. Cl. 260—17.3 **10 Claims**

This invention relates to a stain-resisting reaction product of 1,2-cyclobutane dicarboguanamine, melamine and an aldehyde and molding composition comprising a filler produced therefrom.

3,434,984
THERMOSETTING CATIONIC RESIN AND METHOD OF MAKING SAME

James W. Hyland, Jr., Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 298,464, July 29, 1963. This application Apr. 25, 1966, Ser. No. 544,717

Int. Cl. C08g *20/26*

U.S. Cl. 260—18 **5 Claims**

Thermosetting cationic resins which impart wet strength and water holdout properties to cellulosic materials are prepared by reacting epichlorohydrin and a polyamide, the polyamide being the reaction product of a polyalkylene polyamide, a polymeric fat acid, and a saturated aliphatic dibasic carboxylic acid.

3,434,985
BAKING VARNISH ON THE BASIS OF ALKYD RESINS AND ETHERIFIED AMINOTRIAZINE RESINS FREE OF FORMALDEHYDE

Wilhelm Becker, Hamburg-Billstedt, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Continuation-in-part of application Ser. No. 477,320, Aug. 4, 1965. This application Sept. 22, 1965, Ser. No. 489,407

Claims priority, application Germany, Feb. 12, 1965, R 39,888

Int. Cl. C08g *37/32*

U.S. Cl. 260—21 **18 Claims**

A baking varnish comprising a blend consisting essentially of (1) an alkyd resin and (2) an etherified aminotriazine resin substantially devoid of free formaldehyde, said varnish when baked having a substantially greater hardness than a comparable blend in which resin (2) has a normal quantity of free formaldehyde, and process of making the same.

3,434,986
COATING COMPOSITIONS COMPRISING THE REACTION PRODUCT OF A DRYING OR SEMI-DRYING OIL WITH VINYL BENZYL ALCOHOL

Earl C. Chapin, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 157,831, Dec. 7, 1961. This application June 2, 1966, Ser. No. 554,674

Int. Cl. C08f *19/00, 19/14*

U.S. Cl. 260—21 **12 Claims**

Disclosed herein is a process for preparing a reaction product of a drying oil or semidrying oil or mixture thereof with vinyl benzyl alcohol which comprises heating at from about 100 to 250° C. a mixture of 100 parts by weight of the oil and from about 5 to 300 parts by weight of the vinyl benzyl alcohol in the presence of up to 5% by weight, based upon the total weight of monomer and oil, of a base selected from the class consisting of alkali metal hydroxides and the oxides and hydroxides of alkaline earth metals and lead. The polymeric product obtained thereby and coating compositions containing such products are also claimed.

3,434,987

AQUEOUS STOVING VARNISH BASED ON AMINE SALTS OF SEMIESTERS OF HYDROXYL GROUP-CONTAINING, FATTY ACID-MODIFIED ALKYD RESINS

Rolf Dhein and Karl Raichle, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 691,978, Dec. 20, 1967, which is a continuation-in-part of application Ser. No. 553,036, May 26, 1966. This application Dec. 21, 1967, Ser. No. 692,287

Claims priority, application Germany, Dec. 22, 1966, F 51,040

Int. Cl. C09d *3/66, 3/52*

U.S. Cl. 260—21 6 Claims

High gloss aqueous stoving varnishes based on amine salts of semiesters of tetrahydrophthalic acid or its homologs and hydroxyl group-containing fatty acid-modified alkyd resins.

3,434,988

PREPARATION OF POLYCARBOXYLIC ACID RESINS USING AN ORGANIC SULFONIC ACID CATALYST

Richard B. Graver, Savage, and Grant O. Sedgwick, Minneapolis, Minn., assignors, by mesne assignments, to Ashland Oil and Refining Company, a corporation of Kentucky

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,034

Int. Cl. C08g *17/16, 17/10*

U.S. Cl. 260—23.7 4 Claims

Water-dilutable thermosetting resinous compositions particularly suited for use in electrocoating applications are obtained by heat-reacting a lower alkanol or diol with a preformed, lower alkyl sulfonic acid catalyzed adduction product of a drying oil and dicarboxylic acid or anhydride thereof.

3,434,989

POLYMERIZATION OF UNSATURATED COMPOUNDS USING AMINO SALTS OF ADDUCTS OF HYDROLYL COPOLYMER ESTERS AS EMULSIFYING AGENTS

Joel Fanti and Frank J. Hahn, Springfield, Mass., Edgar E. Hardy, Brentwood, Mo., and John F. Heaps, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 9, 1965, Ser. No. 486,231

Int. Cl. C08f *1/13;* B01f *17/34*

U.S. Cl. 260—23.7 13 Claims

Disclosed herein is a process for polymerizing vinylidene compounds in the presence of an emulsifying agent which comprises an amino salt of, for example, the maleinized fatty acid or rosin acid ester of an interpolymer of styrene and allyl alcohol. Latices formed by this process are useful as surface coatings.

3,434,990

ACCELERATING THE CURE RATE OF CARBOXYLATED POLYBUTADIENE-AZIRIDINYL COMPOUND MIXTURES WITH LITHIUM OLEATE

Arnold Adicoff and Arnold A. Yukelson, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed May 13, 1966, Ser. No. 551,179

Int. Cl. C08f *21/00*

U.S. Cl. 260—23.7 4 Claims

Lithium oleate is used to increase the cure rate of carboxylated polybutadiene by aziridinyl compounds.

3,434,991

RUBBER DISPERSING AGENTS COMPRISING FATTY ACID SALTS, ALCOHOL AND HYDROCARBON

Erwin Aron, Paterson, N.J., assignor to Technical Processing, Inc., Paterson, N.J., a corporation of New Jersey

No Drawing. Filed May 24, 1965, Ser. No. 458,478

Int. Cl. C08c *11/68, 11/70, 11/64*

U.S. Cl. 260—23.7 8 Claims

There are disclosed mixtures of about 5 to about 12 parts of an oleate salt of zinc, magnesium, calcium, strontium or barium; about 2 to about 5 parts of a monohydric alcohol of from 8 to 18 carbons; about 20 to about 40 parts of petroleum jelly or paraffin; about 10 to about 15 parts of potassium stearate; and about 42 to about 58 parts of stearic acid. These mixtures may be incorporated into rubber in small amounts, e.g., ½ to 2 percent, to improve carbon black dispersion, flow characteristics and other physical properties of the rubber.

3,434,992

BINDER COMPOSITION COMPRISING A MIXTURE OF A BARIUM HYDROXIDE CATALYZED PHENOL-FORMALDEHYDE RESOLE AND A MELAMINE FORMALDEHYDE CONDENSATE

Ulrich Holtschmidt, Essen, and Alfred Michel, Schoppenstadt, near Braunschweig, Germany, assignor to Th. Goldschmidt A.-G., Essen, Germany

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,969

Claims priority, application Germany, Sept. 18, 1964, G 41,545

Int. Cl. C08g *37/32, 37/18;* C09j *3/16*

U.S. Cl. 260—29.3 2 Claims

Compositions containing a mixture of resins in aqueous solution and a process of preparing such compositions is disclosed. Such compositions are obtained by mixing together the reaction products from the preparation of (i) a phenol-formaldehyde resole phenoplast prepared with barium hydroxide as catalyst, and (ii) a melamine aminoplast within certain proportions. The barium hydroxide is neutralized to an insoluble salt which is retained in the composition. The compositions are suitable as binders for wood fiber boards and adhesives for impregnation of papers, fleeces, fabrics and similar carriers, which upon impregnation and after drying are used in making laminates to improve the surface of base materials.

3,434,993

AQUEOUS EMULSION OF EMULSIFIABLE OXIDIZED POLYETHYLENE

Frank A. Mirabile, Wayne, and Steven T. Rabel, Boonton, N.J., assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,583

Int. Cl. C08f *27/04, 27/22, 47/16*

U.S. Cl. 260—29.6 4 Claims

1. An aqueous emulsion composition consisting of (a) emulsifiable oxidized polyethylene containing at least 1.0 milliequivalent carboxyl per gram of polyethylene, (b) a water soluble base in an amount in the range of 50–150% of the stoichiometric amount required to react with the carboxylic acid groups on said oxidized polyethylene and (c) sufficient water to obtain an emulsion containing 10–60% total solids by weight.

3,434,994

OIL EXTENSION OF HIGH SOLIDS LATEX

Hendrik Smit, deceased, late of Sarnia, Ontario, Canada, by Lambton Trust Co. Limited, executor, Sarnia, Ontario, Canada, and Theodore Elmer Dunfield, deceased, late of Sarnia, Ontario, Canada, by Mauretia Mona Dunfield, administratrix, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Continuation-in-part of application Ser. No. 344,503, Feb. 12, 1964. This application Jan. 4, 1966, Ser. No. 518,736

Claims priority, application Canada, Feb. 19, 1963, 869,079

Int. Cl. C08d *7/02;* C08c *11/32*

U.S. Cl. 260—29.7 6 Claims

Up to 1,000 parts of unemulsified oil per 100 parts of polymer may be readily blended into aqueous emulsion polymerized latices of rubbery polymers of open-chain multiolefin monomers without the aid of emulsifiers or emulsifier forming compounds additional to the amounts of emulsifiers used in preparing the latices, if the latices are concentrated to at least 55% solids before the oil is added. The resulting latices are stable and do not exhibit oil separation.

3,434,995

RODENT REPELLENT COATING

James A. Shotton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,725

Int. Cl. C09d *5/14;* C08f *45/64*

U.S. Cl. 260—31.2 9 Claims

A coating composition comprising an N,N-dimethyl sulfenyl dithiocarbamate and polyvinylbutyral, said composition being suitable for protecting against rodents objects made of natural or synthetic materials.

3,434,996

POLYTETRAFLUOROETHYLENE EXTRUSION COMPOSITIONS AND EXTRUSION PROCESS

Peter P. Salatiello, Morris Plains, and Stephen C. Dollman, Succasunna, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 10, 1967, Ser. No. 651,993

Int. Cl. C08f *45/30;* C08g *51/30*

U.S. Cl. 260—33.8 30 Claims

Disclosed are extrusion compositions comprising granular polytetrafluoroethylene and perhalogenated ethanes containing only fluorine and chlorine as halogen, and containing at least one, but not more than three fluorine atoms, and processes for extrusion fabrication of polytetrafluoroethylene utilizing these extrusion compositions.

3,434,997

NOVOLAK RESINS MIXED WITH POLYVINYL ALCOHOL

Kurt Schmoll, Hangelar-Niederberg, Germany, assignor to Dynamit Nobel Aktiengesellschaft, a corporation of Germany

No Drawing. Filed Mar. 30, 1967, Ser. No. 627,600

Claims priority, application Germany, Apr. 1, 1966, D 49,756

Int. Cl. C08g *37/16, 41/04, 51/34*

U.S. Cl. 260—33.4 9 Claims

A process for manufacturing molding compositions on the basis of novolaks and hexamethylene tetramine and containing a filler wherein the hardening time is considerably and significantly shortened by incorporating into the novolak prior to the removal of the water therefrom, or into the molding compound itself, polyvinyl alcohol in an amount of from 0.05 to 2.5 weight percent referred to the novolak. The invention also covers the novel molding compositions thus produced.

3,434,998

MODIFIED ORGANIC BASE FRICTION MATERIAL

F. William Aldrich and Theodore E. Deane, Troy, N.Y., assignors to The Bendix Corporation, a corporation of Delaware

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,052

Int. Cl. C08g *51/08;* C09k *3/14;* F16d *69/02*

U.S. Cl. 260—38 5 Claims

An organic base friction material having dispersed therein chunks of a semi-metallic friction modifying material to serve as the friction controlling means. The semi-metallic modifier being essentially high concentrations of metal and metal oxide powders in a base organic resin matrix.

3,434,999

VULCANIZATION OF RUBBER BY USE OF AMINE BORATE ACTUATORS

Raymond Thompson, Esher, Surrey, and James D. Harris, Macclesfield, Cheshire, England, assignors to United States Borax & Chemical Corporation, Los Angeles, Calif.

No Drawing. Filed July 11, 1966, Ser. No. 563,958

Claims priority, application Great Britain, July 20, 1965, 30,880/65

Int. Cl. C08c *11/66*

U.S. Cl. 260—41.5 13 Claims

The vulcanization of rubber containing siliceous material is accelerated by use of an amine borate activator, such as the cyclohexylamine borates, morpholine borate and alkanolamine borates.

3,435,000

ORGANOPOLYSILOXANE COMPOSITIONS

Ben A. Bluestein, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 1, 1967, Ser. No. 679,653

Int. Cl. C08g *47/00, 51/56*

U.S. Cl. 260—45.75 9 Claims

Organopolysiloxane compositions convertible to the cured solid elastic state are provided comprising organopolysiloxane polymer having cyanoalkyl radicals attached to silicon and an effective amount of zinc carbonate. Elastomers obtained from the organopolysiloxane compositions show improved resistance to swell in organic solvents and resistance to degradation in hot oil.

3,435,001

METHOD FOR HYDROLYZING ORGANOCHLOROSILANES

Duane F. Merrill, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,924

Int. Cl. C08g *31/36*

U.S. Cl. 260—46.5 5 Claims

A method is provided for controlling the hydrolysis of organohalosilanes and the production of various organopolysiloxane, involving the employment of a paste consisting essentially of water and a hydrophylic particulated inert material. Some of the organopolysiloxane has an average ratio of about one organo radical per silicon atom. In instances where organohalosilane is hydrolyzed having a ratio of about 2 organo radicals per silicon atom, relatively high molecular weight organopolysiloxane is obtained directly.

3,435,002

POLYAMIDE ACID RESINS AND POLYIMIDES THEREFROM

Fred F. Holub, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 15, 1967, Ser. No. 638,636

Int. Cl. C08g *20/20, 20/32*

U.S. Cl. 260—46.5 7 Claims

Esters or amides of trimellitic anhydride can be pre-

pared by reacting the latter with either a polyol or a disecondary amine at elevated temperatures and by a rearrangement reaction involving the elimination of water to obtain the ester or amide polyanhydride. Polyamide acid resins and polyamides can be prepared from such compositions.

3,435,003

CROSS-LINKED THERMALLY REVERSIBLE POLYMERS PRODUCED FROM CONDENSATION POLYMERS WITH PENDANT FURAN GROUPS CROSS-LINKED WITH MALEIMIDES

James M. Craven, Cardiff, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 1, 1966, Ser. No. 554,300
Int. Cl. C08g *17/14, 51/84, 22/02*
U.S. Cl. 260—47 10 Claims

Polymer products having thermally reversible cross-linking, which comprise chains of saturated condensation polymer backbones bearing furan groups reacted with maleimides, useful as plastics and as adhesives.

3,435,004

NITROGENOUS POLYMERS PREPARED FROM ESTERS OF AROMATIC TETRACARBOXYLIC ACID DERIVATIVES AND AROMATIC TETRAMINES

Clayton E. Hathaway, Jr., and Ralph E. De Brunner, Kettering, and John Mann Butler, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo.

No Drawing. Filed July 27, 1966, Ser. No. 568,130
Int. Cl. C08g *20/32*
U.S. Cl. 260—65 10 claims

Process of preparing nitrogenous polymers by contacting (a) ester obtained from the reaction of an aromatic dianhydride, tetraacid or ester derivative with a glycol or glycol monoether with (b) an aromatic tetramine, and curing at 100–525° C.

3,435,005

BRANCHED OXYMETHYLENE COPOLYMERS AND METHOD OF PREPARATION

Francis B. McAndrew, Summit, N.J., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed July 1, 1964, Ser. No. 379,740
Int. Cl. C08g *1/14*
U.S. Cl. 260—67 5 Claims

Disclosed herein is a description of certain alkylol-substituted oxacyclic compounds that advantageously affect the flow characteristics of oxymethylene polymers.

3,435,006

COPOLYACETALS AND PROCESS FOR THEIR MANUFACTURE

Klaus Weissermel, Kelkheim, Taunus, Edgar Fischer, Frankfurt am Main, and Claus Schott, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 17, 1966, Ser. No. 572,893
Claims priority, application Germany, Sept. 8, 1965, F 47,118
Int. Cl. C08g *1/14*
U.S. Cl. 260—67 2 Claims

Copolymers of trioxane, cyclic ethers and bis(epoxyethyl)benzenes are disclosed. The polymers may be prepared by copolymerizing mixtures of 98 to 89% by weight of trioxane, 2 to 10% by weight of cyclic ether and 0.05 to 2% by weight of bis(epoxyethyl)benzene in the presence of a cationic catalyst at a temperature of —50° to 100° C. The polymers are characterized by improved ball indentation, hardness and are especially useful as bearing materials and other objects which are exposed to high mechanical stress such as, for example, the highly stressed parts of weaving looms.

3,435,007

MERCURY DERIVATIVE OF GLUTARIMIDE-β-ACETIC ACID

Nicolas A. Starkovsky, Weston, and Horst G. Langer, Cochituate, Mass., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,086
Int. Cl. C08g *33/20;* C07f *3/14*
U.S. Cl. 260—78 15 Claims

Novel mercury derivatives of glutarimide-β-acetic acid. The invention also includes a preparatory process comprising reacting an organomercury compound or a reactive inorganic mercury compound, with glutarimide-β-acetic acid, or N-alkylglutarimide-β-acetic acid.

3,435,008

METHOD FOR PREPARATION OF ISOMERICALLY PURE β-GLYCOLIDE AND POLYMERIZATION METHOD FOR GLYCOLIDE COMPOSITIONS EMPLOYING PARTIAL HYDROLYZATE OF SAID β-GLYCOLIDE

Edward Emil Schmitt, Norwalk, and Martin Epstein, Stamford, Conn., and Rocco Albert Polistina, Port Chester, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of abandoned application Ser. No. 484,111, Aug. 31, 1965. This application Aug. 22, 1967, Ser. No. 662,309
Int. Cl. C08g *17/00;* C07d *13/06*
U.S. Cl. 260—78.3 10 Claims

Recrystallization below the transition temperature of 42° C. is the basis of a process for preparing pure β-glycolide isomer from the isomer mixture. The β-glycolide partially hydrolyzes in moist air to a material (probably hydroxyacetyloxyacetic acid) which initiates polymerization at 50–245° C. of mixed glycolide compositions to polyesters free of extraneous catalysts.

3,435,009

DERIVATIVES OF ANIONIC LINEAR COPOLYMERS

Lucien Sellet, Saddle River, N.J., assignor to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Application Feb. 23, 1965, Ser. No. 434,690, now Patent No. 3,317,476, dated May 2, 1967, which is a division of application Ser. No. 60,576, Oct. 5, 1960, now Patent No. 3,223,751, dated Dec. 14, 1965. Divided and this application Oct. 24, 1966, Ser. No. 588,712
Int. Cl. C08f *27/08*
U.S. Cl. 260—78.5 6 Claims

1. Condensates of molar proportions of
(a) dicyandiamide, and
(b) a member selected from the group consisting of the free acid form of, the partially neutralized ammonium salt form of and the partially neutralized alkali metal salt form of water-soluble anionic linear copolymers, said copolymers containing approximately equimolar amounts of at least one member of the group consisting of maleic anhydride, maleic acid and itaconic acid and at least one other ethylenically unsaturated monomer copolymerizable therewith with the proviso that when said copolymers contain acrylamide copolymerized with a comonomer selected from a group consisting of itaconic acid and salts of itaconic acid, there are from 1 to 3 moles of acrylamide per mole of said monomer.

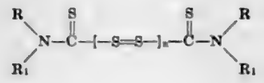
3,435,010

CURING SYSTEM FOR HALOGEN CONTAINING ACRYLIC ELASTOMERS

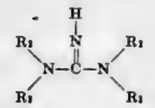
Ira Starer and Arthur Clarence Lindaw, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,057
Int. Cl. C08f *27/06, 3/42*
U.S. Cl. 260—79.5 5 Claims

Improved acrylic elastomers are obtained by vulcanizing an active halogen-containing acrylic resin which has been compounded with between 0.5 and 5.0% each of (a) a thiuram-type sulfur-donor represented by the formula:



wherein *n* is a whole integer equal to one or two and the R's are individually selected from the group consisting of lower alkyl, monocarbocyclic aryl, monocarbocyclic ar(lower alkyl), or may together with the nitrogen of the thiuram form a heterocyclic ring; (b) a substituted guanidine of the formula:



wherein the R's are individually selected from the group consisting of hydrogen, monocarbocyclic aryl or monocyclic ar(lower alkyl), at least one R on each nitrogen of the guanidine being other than hydrogen.

3,435,011

MODIFIED POLYMERS OF CONJUGATED DIENES

Carl A. Uraneck and William J. Trepka, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 7, 1964, Ser. No. 416,612
Int. Cl. C08d *1/32, 3/04, 3/02*
U.S. Cl. 260—80.7 17 Claims

Polymers of conjugated dienes, having reduced tendency to cold flow, are made by polymerizing the conjugated diene monomer with an organoalkali metal catalyst and adding to the polymerization reaction mixture a small amount of a halogenated compound selected from the group consisting of chloroprene, vinylidene chloride, halogenated styrenes and halogenated vinylnaphthalenes.

3,435,012

ANAEROBIC SEALANT COMPOSITION CONTAINING MONOACRYLATE ESTERS

Birger W. Nordlander, Schenectady, N.Y., assignor to Loctite Corporation, Newington, Conn., a corporation of Connecticut

No Drawing. Filed Aug. 2, 1965, Ser. No. 484,507
Int. Cl. C09j *3/14;* C09k *3/10;* C08f *3/64*
U.S. Cl. 260—88.3 12 Claims

Polymerizable anaerobic adhesives and sealants (compositions which cure in the absence of air) can be prepared from monoacrylate esters and hydroperoxides. The acrylate esters which can be used are those wherein the alcoholic moiety of the ester contains an activating group for the polymerization reaction, such as hydroxy, cyano and amino groups.

3,435,013

METHOD FOR PREPARING POLYMERS OF PHOSPHINIC AMIDES

Morris L. Nielsen, Dayton, Ohio, and Robert Z. Greenley, St. Louis, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Division of application Ser. No. 576,537, Sept. 1, 1966, now Patent No. 3,359,276, dated Dec. 19, 1967, and continuation-in-part of applications Ser. No. 333,194, Dec. 24, 1963, and Ser. No. 421,657, Dec. 28, 1964. This application Dec. 29, 1966, Ser. No. 642,254
Int. Cl. C08f *7/12, 45/54;* C07d *49/38*
U.S. Cl. 260—88.3 4 Claims

A method for preparing a polymeric reaction product of imidazol-1-yl attached phosphinic amides with benzimidazoles.

3,435,014

POLYMERIZATION PROCESS

Gerhard Wolfgang Helmut Scherf and John Frederick Henderson, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic of Canada

No Drawing, Filed Sept. 14, 1964, Ser. No. 396,419
Claims priority, application Canada, Sept. 20, 1963, 884,970
Int. Cl. C08g *23/06;* C08f *15/18*
U.S. Cl. 260—89.5 19 Claims

Vulcanizable acrylic/saturated epoxy copolymers containing ether linkages in its backbone, prepared in the presence of a catalyst comprising an organometallic compound of a metal selected from Groups II and III of the Periodic Classification of the Elements, said organometallic compound having at least one organic radical linked to the metal atom through a carbon atom.

3,435,015

TETRAHYDROFURAN POLYMERS

Irving Kuntz, Westfield, and Robert M. Thomas, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 8, 1965, Ser. No. 446,714
Int. Cl. C08g *23/02, 23/14*
U.S. Cl. 260—93.1 19 Claims

Tetrahydrofuran is polymerized with a monomer system made up of either cyclopentadiene or cyclopentadiene and an oxirane or oxetane compound with either a mono or bis triarylmethyl carbonium ion salt catalyst.

3,435,016

CHEMICAL COMPOSITION AND PROCESS OF PREPARATION AND USE

Robert E. Rinehart, Wayne, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed June 29, 1966, Ser. No. 561,396
Int. Cl. C08f *1/46, 5/00*
U.S. Cl. 260—93.1 15 Claims

A complex of a cyclic olefin, including diolefins and an iridium halide is used to polymerize bicyclic diolefins, norbornadiene, norbornene and derivatives thereof. The complex has the general formula $(IrX(R)_y)_2$ where X is a halogen, either chlorine or bromine; R is a cyclic olefin or cyclic diolefin radical, either C_8H_{12} or C_8H_{14} and Y is 1 when R is C_8H_{12} and is 2 when R is C_8H_{14}.

3,435,017
ISOTACTIC POLYMERS OF BUTENE-1

Giulio Natta, Piero Pino, and Giorgio Mazzanti, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

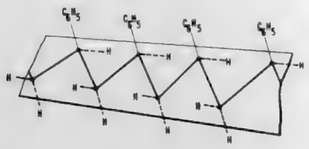
Original application June 8, 1955, Ser. No. 514,099. Divided and this application June 13, 1958, Ser. No. 741,715
Claims priority, application Italy, July 27, 1954, (Rome) 10,037/54, (Milan) 25,109/59
Int. Cl. C08f *3/12, 1/56*
U.S. Cl. 260—93.7 5 Claims

Polybutene-1 consisting essentially of isotactic polybutene-1 is described. The polymer may be prepared by successive solvent fractionation of crude polybutene-1 containing the isotactic macronmolecules with boiling acetone and boiling ethyl ether.

3,435,018
ISOTACTIC POLYMERS OF STYRENE AND PENTENE-1, AND PRODUCTS MADE THEREOF

Giulio Natta, Piero Pino, and Giorgio Mazzanti, Milan, Italy, assignors to Montecatini Edision S.p.A., Milan, Italy

Original application June 8, 1955, Ser. No. 514,099. Divided and this application May 5, 1958, Ser. No. 732,810
Claims priority, application Italy, July 27, 1954, 537,425/54
Int. Cl. C08f *1/40, 5/00, 3/00*
U.S. Cl. 260—93.5 7 Claims



1. As a new product, polystyrene consisting essentially of isotactic polystyrene made up of isotactic macromolecules having, for substantially the entire length of the macromolecular main chain, the type of stereoregular structure illustrated in the model of a portion of an isotactic polystyrene macromolecule fully extended in a plane, as shown in FIGURE 2 of the accompanying drawing, said polystyrene having a high molecular weight, being crystallizable and having, in the crystalline state, the following characteristics: a melting point of about 230° C., a period of identity in the range 6.6–6.7 A., and a density of 1.08, and being further characterized in being insoluble in boiling n-heptane.

3,435,019
DEACTIVATING RESIDUAL POLYMERIZATION CATALYST IN POLYPROPYLENE

George A. Goebel, Pompton Plains, and Peter J. Canterino, Towaco, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 4, 1965, Ser. No. 477,295
Int. Cl. C08g *20/18, 33/16*
U.S. Cl. 260—93.7 3 Claims

1. In the process of polymerizing propylene using a titanium chloride/aluminum trichloride/diethylaluminum chloride catalyst, the method of deactivating residual catalyst which comprises heating the polypropylene to a temperature of 160 to 500° C., and then contacting in an extruder said polypropylene while in a softened condition with a 2–15% by weight aqueous ammonium hydroxide in the ratio of 0.1–10 gallons of said aqueous ammonium hydroxide per 60 pounds of polypropylene, evaporating from the extruder the water and ammonium chloride formed from the decomposition of the catalyst residue, and extruding the thus treated polypropylene from the extruder.

3,435,020
CRYSTALLINE POLYMERS OF ALPHA,OMEGA-DIOLEFINS

Setha G. Olson, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 7, 1958, Ser. No. 719,764
Int. Cl. C08f *3/16, 3/02*
U.S. Cl. 260—94.2 9 Claims

1. Substantially saturated, highly crystalline poly(1,6-heptadiene), said polymer having been prepared by homopolymerizing 1,6-heptadiene in the presence of a mixture of a salt of a metal selected from the group consisting of Groups IV–B, V–B and VI–B of the Periodic Table and an aluminum trialkyl.

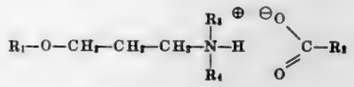
9. A highly crystalline, predominantly saturated homopolymer of hexadiene-1,5.

3,435,021
COMPOSITIONS OF ANTISTATIC AGENTS AND POLYETHYLENE AND CRACK-FREE ANTISTATIC MOLDED POLYETHYLENE BODIES

Konrad Rombusch and Friedrich Seifert, Marl, Germany, assignors to Chemische Werke Huels A.G., Marl, Germany

No Drawing. Filed Sept. 30, 1966, Ser. No. 583,411
Claims priority, application Germany, Oct. 8, 1965, C 37,094
Int. Cl. C08d *3/04;* C09k *3/16*
U.S. Cl. 260—94.9 6 Claims

1. An antistatic molding composition comprising polyethylene and about 0.1 to 4% by weight of said polyethylene of an antistatic agent having the following formula:



wherein

R_1 is selected from the group consisting of alkyl, alkenyl, alkylcycloalkyl, aryl, alkylaryl, and alkenylaryl groups having 6–26 carbons atoms in the alkyl and alkenyl groups;

R_2 is selected from the group consisting of alkyl, alkenyl, and aryl groups having 5–25 carbon atoms in the alkyl and alkenyl groups; and

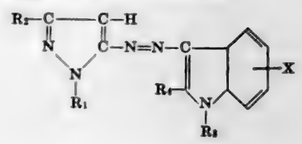
R_3 and R_4 are selected from the group consisting of alkyl radicals having 1–5 carbon atoms, alkenyl radicals having 1–5 carbon atoms and the radical $(C_xH_{2x}O)_nH$ wherein x is 2 and 3 and n is 0–10.

3,435,022
PYRAZOLONE MONOAZO DYES CONTAINING INDOLE OR CARBAZOLE GROUPS

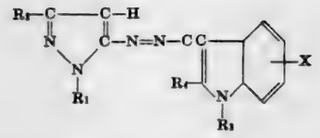
Jacques Voltz, Riehen, Switzerland, assignor to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed July 8, 1965, Ser. No. 470,602
Claims priority, application Switzerland, July 10, 1964, 9,045/64; July 7, 1965, 9,536/65
Int. Cl. C09b *29/38, 29/36*
U.S. Cl. 260—147 10 Claims

Dyes are disclosed of the formulas



and



wherein:

R_1 represents hydrogen, lower alkyl, cyano-alkyl, hydroxy-alkyl lower alkoxy-alkyl the aforesaid substituted alkyl radicals having in each case from 2 to 4 carbon atoms in their alkyl moiety cyclohexyl, benzyl, phenyl, chlorophenyl, bromophenyl, nitro-phenyl, lower alkyl-phenyl, lower alkoxy-phenyl or lower alkanoylamino-phenyl,

R_2 represents lower alkyl, phenyl or carbamyl,

R_3 represents hydrogen, lower alkyl, cyano-lower alkyl, hydroxy-alkyl, lower alkoxy-alkyl, chloro-alkyl, bromo-alkyl, the aforesaid substituted alkyl radicals having in each case from 2 to 4 carbon atoms in their alkyl moiety, or benzyl,

R_4 represents hydrogen, lower alkyl or phenyl, and

X represents hydrogen, lower alkyl, chlorine, bromine or lower alkoxy.

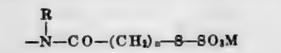
These dyes are of the class known as disperse dyes, generally useful for the dyeing of hydrophobic fibers. Cationic dyes may be made from these disperse dyes. The cationic dyes have the same general configuration and are useful in the dyeing of acrylonitrile fibers. Also disclosed is a method of diazotizing the 5-amino pyrazoles set forth above using nitrosyl sulfuric acid in certain acidic media.

3,435,023
WATER-SOLUBLE MONO AND DISAZO DYESTUFFS CONTAINING N-(THIOSULFATO-ALKANOYLAMINO) GROUPS

Fritz Meininger and Ernst Hille, Frankfurt-am-Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt-am-Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,233
Claims priority, application Germany, Nov. 6, 1964, F 44,381
Int. Cl. C09b *29/00, 39/00*
U.S. Cl. 260—163 7 Claims

Azo dyestuffs containing at least one group of the formula



wherein R is a hydrogen atom or an alkyl group of 1 to 4 carbon atoms, M is a hydrogen or an alkali metal atom and n is an integer 1 or 2, which dyestuffs are suitable for dyeing natural or regenerated cellulose fibers or nitrogen-containing fibers of both natural and synthetic origin.

3,435,024
PROCESS FOR THE PREPARATION OF SURFACTANTS FROM HYDROXYLATED ORGANIC COMPOUNDS, FATTY ACID ESTERS AND ALKYLENE OXIDES

Luciano Nobile, Emanuele Condorelli, Tullio La Noce, and Anteo Poma, Milan, Italy, assignors to Ledoga S.p.A., Milan, Italy

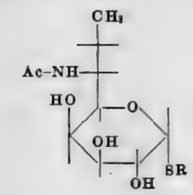
No Drawing. Filed June 14, 1965, Ser. No. 463,921
Claims priority, application Italy, Mar. 18, 1965, 6,130/65
Int. Cl. C11d *1/74;* C11c *3/04;* C07c *69/32*
U.S. Cl. 260—210 25 Claims

This invention provides surfactant products obtained by simultaneously reacting 10 to 50 parts by weight of at least one hydroxylated organic substance selected from the group consisting of mono-hydric alcohols, glycols, tri-hydric alcohols, tetra-hydric alcohols, pentitols, hexitols, disaccharides, trisaccharides having from 1 to 18 carbon atoms, 50 to 90 parts by weight of at least one fatty acid ester selected from the group consisting of methyl- and glycerin-esters of fatty acids having from 10 to 20 carbon atoms, and 100 to 300 parts by weight of at least one alkylene oxide having from 2 to 4 carbon atoms, in the presence of an alkaline catalyst at a temperature of between 70° and 200° C. and at a pressure of between 1 and 50 atmospheres.

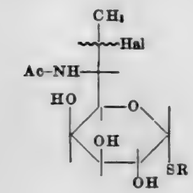
3,435,025
7-DEOXYLINCOMYCIN AND ANALOGS AND ISOMERS THEREOF AND PROCESS FOR MAKING THE SAME

Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Michigan, a corporation of Delaware

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,328
Int. Cl. C08b *19/00;* A61k *21/00*
U.S. Cl. 260—210 11 Claims



are prepared by dehalogenation of a compound of the formula:



3,435,026
PROCESS FOR THE RECOVERY OF NICOTINIC ACIDAMIDE-ADENINE DINUCLEOTIDE

Horotoshi Samejima, Hiroshi Teranishi, and Takashi Deguchi, Tokyo-to, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd. (Kyowa Hakko Kogyo Kabushiki Kaisha), Tokyo-to, Japan, a body corporate of Japan

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,672
Claims priority, application Japan, Aug. 23, 1965, 40/51,067; Sept. 3, 1965, 40/53,615
Int. Cl. C08b *19/00*
U.S. Cl. 260—211.5 10 Claims

A process for recovering nicotinic acidamide—adenine-dinucleotide from crude aqueous solutions by contacting the crude solution with a weakly basic anionic exchange resin which has been degenerated to its free base form, and which has been washed with water or with a salt solution until the washings therefrom are at a pH of less than 9.

3,435,027
CELLULOSE ETHER-ESTERS AND PROCESS

Armand J. Desmarais and Albert R. Reid, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,562
Int. Cl. C08b *13/00, 21/34*
U.S. Cl. 260—226 4 Claims

Water-soluble ether-esters of cellulose and process of

preparing comprising acylating a water soluble cellulose ether in the presence of a nonsolvent reaction medium to an acyl content of about 0.1%–18%.

3,435,028

IMINODIBENZYL DERIVATIVES

Henri Dietrich, Arlesheim, Baseland, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application July 10, 1964, Ser. No. 381,886, now Patent No. 3,342,807, dated Sept. 19, 1967. Divided and this application June 9, 1967, Ser. No. 655,703

Claims priority, application Switzerland, Feb. 17, 1961, 1,921/61

Int. Cl. C07d *41/04, 57/00;* **A61k** *27/00*

U.S. Cl. 260—239 **4 Claims**

The new compounds 3-alkylsulfonyl-5-(1-am-2-methylpropyl)-iminodibenzyl, where alkyl is methyl or ethyl and am is lower alkylamino or di-lower alkylamino, are useful as adrenolytics and antiemetics.

3,435,029

16 - OXYGENATED - 20 - METHYL - 21 - OIC ACIDS AND 16 - OXYGENATED - 17α,20 - METHYLENE-21-OIC ACIDS OF THE PREGNANE SERIES AND THE 21-LOWER ALKYL ESTERS THEREOF

Robert W. Jackson and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,520

Int. Cl. C07c *169/36, 173/00;* **A61k** *17/12*

U.S. Cl. 260—239.55 **20 Claims**

Novel 16-oxygenated-20-methyl-$\Delta^{17,20}$-pregnen - 21 - oic acids and the 21-lower alkyl-esters thereof, novel 16-oxygenated-17α,20α-methylene-21-oic acids of the pregnane series and the 21-lower-alkyl esters, thereof, which are useful as anti-inflammatory, anti-viral, anti-microbial, hormonal and antibradykinin agents, and processes for their production.

3,435,030

17-ALKENYL/ALKYNYL-5α-ANDROST - 1 - ENE-3β, 17β-DIOLS, ESTERS THEREOF AND INTERMEDIATES THERETO

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 468,578, June 30, 1965. This application Mar. 9, 1966, Ser. No. 532,874

Int. Cl. C07c *173/00, 169/20;* **A61k** *17/00*

U.S. Cl. 260—239.55 **10 Claims**

17 - alkenyl/alkynyl - 5α - androst-1-ene-3β,17β-diols and esters thereof useful as pharmacological agents as evidenced by their hormone-like activity, e.g., androgenic and anabolic, and intermediates in the manufacture thereof.

3,435,031

NOVEL THIATRIAZINEDIONEDIOXIDES

Calvert W. Whitehead, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,850

Int. Cl. C07d *93/00*

U.S. Cl. 260—242 **4 Claims**

Novel substituted 3,5-dioxotetrahydro-1,2,4,6-thiatriazine-1,1-dioxides, and methods of preparation thereof, useful as bactericides, fungicides, and fly repellents.

3,435,032

THIADIAZINE RING CONTAINING ETHYLENE DITHIOCARBAMATE COMPOUNDS

Shiro Watanabe, Osaka, and Susumu Misaki, Sakai-shi, Japan, assignors to Daikin Kogyo Co., Ltd., Osaka, Japan

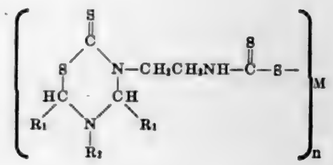
No Drawing. Filed May 4, 1966, Ser. No. 547,422

Claims priority, application Japan, Dec. 15, 1965, 40/77,404

Int. Cl. C07f *15/00, 3/00;* **A01n** *9/12*

U.S. Cl. 260—242 **2 Claims**

Thiadiazine-ring containing ethylene dithiocarbamate compounds of the formula:



wherein R_1 is hydrogen, methyl or phenyl, R_2 is hydrogen, alkyl having 1 to 6 carbon atoms or benzyl, M is a metal having a valency of 2–3 selected from Zn, Cu, Mn, Co, Cd and Fe, and *n* is an integer 2–3, a method for preparing said compounds by reacting 3,3'-ethylene-bis-(tetrahydro-thionothiadiazine) with a salt of the corresponding metal in the presence of water and an agricultural fungicidal composition having incorporated therein a minor effective amount of at least one of said compounds in admixture with a major amount of inert carrier.

3,435,033

INDOLIZINONE DERIVATIVES

Janis Plostnieks, Philadelphia, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 428,529, Jan. 27, 1965. This application May 2, 1967, Ser. No. 635,387

Int. Cl. C07d *87/20, 29/24, 29/20*

U.S. Cl. 260—244 **4 Claims**

The compounds are of the class of hydro-indolizinone derivatives useful as central nervous system depressants.

3,435,034

PYRIDAZINO[3,4-b]INDOLES

William J. Houlihan, Mountain Lakes, Robert E. Manning, Parsippany, and William S. Theuer, Chatham, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,800

Int. Cl. C07d *51/04;* **A61k** *27/00*

U.S. Cl. 260—250 **7 Claims**

The compounds are of the class of 3-aryl-9-(ω-aminoalkyl)-pyridazino[3,4-b]indoles, useful as mild tranquilizers and sedatives.

3,435,035

PYRIMIDINE SULFONES

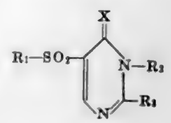
Ernst Habicht and Ruggero Zubiani, Schaffhausen, Switzerland, assignors to Ciba-Chemie Limited, a Swiss company of Schaffhausen, Switzerland

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,512

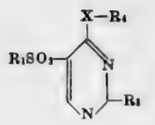
Int. Cl. C07d *51/42, 51/34;* **A61k** *27/00*

U.S. Cl. 260—251 **3 Claims**

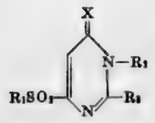
1. A compound selected from the group consisting of



I

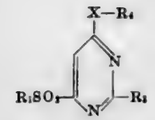


Ib



II

and



IIb

wherein R_1 is selected from the group consisting of lower alkyl, phenyl and methylphenyl, R_2 is selected from hydrogen, lower alkyl, lower hydroxyalkyl, lower alkanoyloxyalkyl, R_3 is selected from the group consisting of alkyl, phenyl-lower alkyl, phenyl, amino, lower alkylamino, di-lower alkylamino, lower alkanoylamino mercapto, lower alkylmercapto and trifluoromethyl, X is a member selected from the group consisting of oxygen and —NH— and R_4 is selected from the group consisting of hydrogen and lower alkyl.

3,435,036

DI- AND TRIPHENYLPROPYL PIPERAZINE PYRIMIDYL AND QUINAZOLINYL COMPOUNDS

Gilbert Regnier, Sceaux, Roger Canevari, La Hay-les-Roses, Jean-Claude Le Douarec, Suresnes, and Michel Laubie, Vaucresson, France, assignors to Science Union Et Cie, Societe Francaise de Recherche Medicale, Suresnes, France, a French society

No Drawing. Filed Dec. 7, 1966, Ser. No. 599,714

Claims priority, application Great Britain, Dec. 16, 1965, 53,477/65

Int. Cl. C07d *57/00*

U.S. Cl. 260—256.4 **12 Claims**

Diphenylpropyl or triphenylpropyl-piperazines substituted at the other piperazine nitrogen atom by a heterocyclic radical selected from pyrimidyl and benzopyrimidyl radicals, and acid addition salts thereof; useful as analgesic and anti-inflammatory agents.

3,435,037

ORGANOTIN DERIVATIVES OF GLUTARIMIDE-β-ACETIC ACID

Horst G. Langer, Cochituate, and Nicolas A. Starkovsky, Weston, Mass., assignors to The Dow Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,109

Int. Cl. C07f *7/22;* **C07d** *29/24;* **A01n** *9/00*

U.S. Cl. 260—270 **16 Claims**

Novel metal derivatives of glutarimide-β-acetic acid wherein the metal is a metal atom from Group IV–A or V–A. The novel compounds are prepared by reacting a reactive organometal compound containing at least one inorganic substituent, or a reactive inorganic metal compound, e.g., the metal chloride, with glutarimide-β-acetic acid, esters of said acid, and N-alkylglutarimide-β-acetic acid.

3,435,038

5,6,7,9,10,14b-HEXAHYDROISOQUINOLO [2,1-d] BENZO [1,4] DIAZEPINES

Goetz E. Hardtmann, Madison, and Hans Ott, Convent Station, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed June 1, 1965, Ser. No. 460,574

Int. Cl. C07d *57/00, 53/06;* **A61k** *27/00*

U.S. Cl. 260—286 **12 Claims**

The compounds are of the class of 5,6,7,9,10,14b-hexahydroisoquinolo[2,1-d]benzo[1,4]diazepines and are useful as anti-inflammatories. The compounds may be obtained by reduction of appropriate 5,6,7,9,10,14b-hexahydroisoquinolo[2,1-d]benzo[1,4]diazepin-6-ones or 5,6,7,9,10,14b - hexahydroisoquinolo[2,1 - d]benzo[1,4] - diazepine-6-thiones.

3,435,039

QUATERNARY AMMONIUM SALTS OF ALCOHOL ETHER SULFATES

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors to Millmaster Onyx Corporation, Jersey City, N.J., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 315,708, Oct. 11, 1963. This application Aug. 31, 1966, Ser. No. 576,232

Int. Cl. C07c *141/02, 95/00;* **A01n** *9/20*

U.S. Cl. 260—286 **5 Claims**

Quaternary ammonium salts of alcohol ether sulfates having germicidal properties and low solubility are described.

3,435,040

PREPARATION OF ISOQUINOLINES

Goetz E. Hardtmann, Madison, and Hans Ott, Convent Station, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed June 28, 1965, Ser. No. 467,713

Int. Cl. C07d *35/20, 35/36, 57/02*

U.S. Cl. 260—288 **4 Claims**

Hexahydroisoquinolobenzodiazepinones (I) useful as anti-anxiety agents are prepared by (a) reacting a β-phenethylchloride and an o-halobenzonitrile in the presence of stannic chloride or titanium tetrachloride to form a 1-(o-halophenyl)-3,4-dihydroisoquinoline, which is then (b) reacted with an amino compound in the presence of copper powder and cuprous chloride to form a 1-(o-aminophenyl)-3,4-dihydroisoquinoline, which is then (c) reduced to the corresponding 1,2,3,4-tetrahydroisoquinoline compound, which is then (d) condensed with an α-haloacetic acid alkyl ester to form the corresponding 2-carbalkoxymethyl compound, which is then (e) cyclized to (I).

3,435,041

2-ANILINOQUINOLINES

Alexander E. Drukker, Milwaukee, and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,519

Int. Cl. C07d *33/52, 33/18;* **A61k** *27/00*

U.S. Cl. 260—288 **3 Claims**

The compounds are 2-anilinoquinolines which are useful as diuretic agents. A compound disclosed is 2-(2-benzoyl-4-chloro)anilino-4-phenyl-6-chloroquinoline.

3,435,042

NOVEL MORPHANTHRIDINE DERIVATIVES

Alexander E. Drukker, Milwaukee, and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,025

Int. Cl. C07d *57/02, 41/08;* **A61k** *27/00*

U.S. Cl. 260—293 **5 Claims**

The compounds are dihydroimidazomorphanthridines useful as anticholinergic, antihistaminic and psychopharmacologic agents. A species disclosed is 8-(3-methyl-

aminopropyl) - 2,3 - dihydroimidazo[1,2-a]morphanthridine.

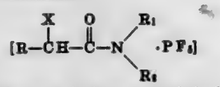
3,435,043

PF_5 ADDUCTS OF CERTAIN SUBSTITUTED ACETAMIDES

Mervin E. Brokke, Richmond, Calif., and George E. Lukes, deceased, late of El Cerrito, Calif., by John Hazzard, administrator, Kentfield, Calif., and Duane R. Arneklev, Sunnyvale, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1965, Ser. No. 450,262
Int. Cl. C07f 9/02; C07d 29/20; C07c 103/30
U.S. Cl. 260—294.7 6 Claims

Compounds which are adduct complexes of phosphorus pentafluoride and certain substituted acetamides corresponding to the formula



in which R is hydrogen, halogen, naphthyl, or naphthoxy, R_1 and R_2 are individually hydrogen, lower alkyl, lower alkenyl, or jointly a divalent alkylene having 5 carbon atoms, X is hydrogen or lower alkyl. The above compounds effective herbicides. Rerpresentative compounds are: 2-chloroacetamide-phosphorus pentafluoride complex, 2-chloro-N,N-diethylacetamide - phosphorus pentafluoride complex, 1 - naphthaleneacetamide - phosphorus pentafluoride complex, 2-chloro - N,N-diallylacetamide-phosphorus pentafluoride complex and 2-bromo-N,N-pentamethylene - propionamide - phosphorus pentafluoride-complex.

3,435,044

PROCESSES FOR PREPARING NICOTINONITRILE

Norman L. Wendler, Summit, David Taub, Metuchen, and Chan Hwa Kuo, South Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 3, 1966, Ser. No. 554,999
Int. Cl. C07d 31/14, 31/46, 31/44
U.S. Cl. 260—294.9 6 Claims

Nicotinamide is produced by reacting 1-acyl-3-cyano-4-amino-1,2,5,6-tetrahydropyridine with a strong acid to produce a tautomeric mixture of 1-acyl-3-cyano-4-keto-hexahydropyridine and 1-acyl-3-cyano-4-hydroxy-1,2,5,6-tetrahydropyridines, reducing this tautomeric mixture with borohydride to produce a mixture of cis and trans isomers of 1-acyl-3-cyano-4-hydroxyhexahydropyridine, acylating these isomers to produce the corresponding 4-acyloxy derivatives, and dehydrogenating the latter derivatives with a noble metal. Alternatively, the 4-acyloxy derivative is contacted with a strong base to produce 1-acyl-3-cyano-1,2,5,6-tetrahydropyridine which is reacted with a noble metal to produce nicotinonitrile. Nicotinonitrile is useful as an intermediate in the preparation of nicotinamide.

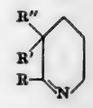
3,435,045

PRODUCTION OF 3,4,5,6-TETRAHYDROPYRIDINE DERIVATIVES CONTAINING γ-AMINOPROPYL GROUPS

Gerhard Daum, Cologne-Raderberg, Rudolf Modic, Lulsdorf uber Troisdorf, and Hermann Richtzenhain, Cologne-Sulz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 336,084, Nov. 29, 1963. This application Sept. 11, 1967, Ser. No. 666,929
Claims priority, application Germany, Nov. 28, 1962, D 372
Int. Cl. C07d 31/02, 33/02, 29/38
U.S. Cl. 260—296 21 Claims

A novel class of 3,4,5,6-tetrahydropyridine derivatives is disclosed having the formula:



wherein R is lower alkyl or lower alkenyl, R′ is γ-aminopropyl, lower alkyl, or lower alkenyl and R″ is γ-aminopropyl, wherein R and R′ taken together within the carbon atoms to which they are attached may form a carbocyclic radical. These novel 3,4,5,6-tetrahydropyridine derivatives are prepared by hydrogenating a di- or tricyanethylated ketone at a temperature of less than 180° C. in the presence of a hydrogenation catalyst.

The 3,4,5,6-tetrahydropyridine derivatives of the invention can be used to great advantage as hardening agents for epoxy resins.

3,435,046

TRIALKYL-SILYL ETHERS OF N-CARBOXY ANHYDRIDES OF MONOHYDROXY α-AMINO ACIDS AND PROCESSES FOR PREPARING THEM

Erwin F. Schoenewaldt, Watchung, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1965, Ser. No. 504,978
Int. Cl. C07f 7/02; C07d 103/02
U.S. Cl. 260—307 7 Claims

1. O-trimethylsilyl serine N-carboxy anhydride.

5. A process for the preparation of O-trimethylsilyl serine N-carboxy anhydride which comprises mixing substantially equimolar quantities of said anhydride and trimethylchlorosilane in tetrahydrofuran, in an inert atmosphere, at a temperature of from about −5° C. to about 5° C. and thereafter adding a substantially equimolar quantity of 4-methyl thiazole.

3,435,047

PROCESS FOR PREPARING 3-AMINOISOXAZOLE DERIVATIVES

Issei Iwai and Norio Nakamura, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Filed Sept. 10, 1965, Ser. No. 486,518
Claims priority, application Japan, Sept. 14, 1964, 39/52,516, 39/52,517
Int. Cl. C07d 85/22; A01n 9/02
U.S. Cl. 260—307 1 Claim

A ring synthesis is disclosed wherein 3-aminoisoxazoles are prepared by reacting propiolonitriles with alkaline hydroxylamine.

3,435,048

PROCESS FOR PREPARING 5-ARYL-3-AMINOISOXAZOLES

Issei Iwai and Norio Nakamura, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Original application Sept. 10, 1965, Ser. No. 486,518. Divided and this application Oct. 11, 1967, Ser. No. 674,640
Claims priority, application Japan, Sept. 14, 1964, 39/52,516, 39/52,517
Int. Cl. A61k 27/00; C07d 85/22, 85/46
U.S. Cl. 260—307 1 Claim

Process for the preparation of 3-amino-5-phenylisoxazole derivatives. The corresponding β-bromocinnamonitrile derivate is reacted with hydroxylamine in the presence of an alkali metal hydroxide. The 3-amino-5-phenylisoxazole derivatives are useful intermediates for the synthesis of sulfa drugs.

3,435,049

NITROIMIDAZOLE DERIVATIVES

Max Hoffer, Nutley, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 19, 1965, Ser. No. 457,212
Int. Cl. C07d 49/36, 99/02; A01n 9/02
U.S. Cl. 260—309 2 Claims

Antitrichomonal 1-(3-halo-2-hydroxypropyl) - 5-nitroimidazole derivatives are prepared inter alia by reacting 4,5-nitroimidazole or a 2-lower alkyl or 2-halo derivative thereof with bis (3-halo-2-hydroxypropyl) sulfate.

3,435,050

2,4,5-TRICHLOROIMIDAZOLE AND METHOD OF PREPARATION

Joseph L. Wasco, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,110
Int. Cl. C07d 49/36; A01n 9/22
U.S. Cl. 260—309 3 Claims

The compound 2,4,5-trichloroimidazole and its preparation from 2,4,5-tribromoimidazole by reaction with lithium chloride are disclosed. The compound is useful as a toxic agent in controlling the lone star tick.

3,435,051

CYCLIZATION OF SUBSTITUTED PROPARGYL UREAS TO 2-IMIDAZOLONE DERIVATIVES

Enos Charles Pesterfield, Jr., Briarcliff Manor, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,469
Int. Cl. C07d 49/36; A61k 27/00
U.S. Cl. 260—309.6 8 Claims

1,5-substituted-3-acetyl-2-imidazolones optionally substituted in the 4-position are prepared by cyclization of N-mono-substituted-N′-propargyl ureas under the catalytic influenece of mercuric acetate. The compounds are useful as analgesics, antipyretics, anti-inflammatories, and CNS depressants.

3,435,052

ALPHA-SUBSTITUTED BETA-PROPIOLACTONE STABILIZATION WITH ALPHA-HALOCARBOXYLIC ACIDS

Arie Klootwijk, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,780
Claims priority, application Netherlands, Sept. 15, 1965, 6511986
Int. Cl. C07d 3/00
U.S. Cl. 260—343.9 8 Claims

Stabilized α-substituted β-lactone compositions, prepared by intimately contacting an α-substituted β-lactone and an α-halogenated carboxylic acid or carboxylic acid anhydride.

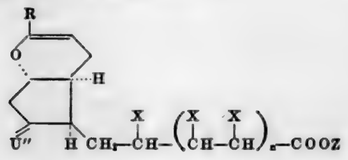
3,435,053

CYCLOPENTA[b]PYRANS

Philip F. Beal III, Kalamazoo, Frank H. Lincoln, Jr., Portage, and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 6, 1966, Ser. No. 555,283
Int. Cl. C07d 7/18; A61k 27/00
U.S. Cl. 260—345.2 10 Claims

1. A compound of the formula

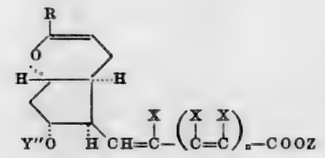


wherein R is an alkyl group containing from 1 to 18 carbon atoms, inclusive, U″ is keto or



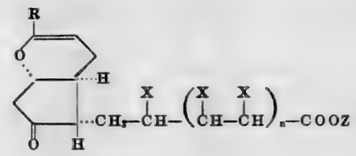
wherein Y″ is hydrogen or carboxyacyl, X is hydrogen or methyl, with the proviso that not more than one methyl group can be present in a given side chain, Z is hydrogen or a hydrocarbyl group containing from 1 to 12 carbon atoms, inclusive, and *n* is 0, 1 or 2 and the enantiomer and racemic mixture thereof.

5. A compound of the formula:



wherein R is an alkyl group containing from 1 to 8 carbon atoms, inclusive, X is hydrogen or methyl with the proviso that not more than one methyl group can be present in a given side chain, Y″ is hydrogen or carboxyacyl, Z is hydrogen or a hydrocarbyl group, and *n* is 0, 1 or 2, and the enantiomer and the racemic mixture thereof.

10. A compound of the formula:



wherein R is an alkyl group containing from 1 to 8 carbon atoms, inclusive, X is hydrogen or methyl with the proviso that not more than one methyl group can be present in a given side chain, Z is hydrogen or a hydrocarbyl group and *n* is 0, 1 and 2, and the enantiomer and the racemic mixture thereof.

3,435,054

ALPHA-ALKOXYALKYLAMINO-ANTHRAQUINONE DYES FOR GASOLINE

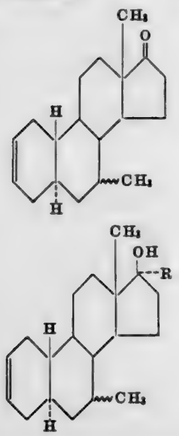
Joachim Kranz and Karl Maier, Ludwigshafen (Rhine), and Rudolf Polster, Frankenthal (Pfalz), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,150
Claims priority, application Germany, Nov. 25, 1964, B 79,475
Int. Cl. C09b 1/16, 1/28; C10l 1/10
U.S. Cl. 260—378 5 Claims

1-, 1,4- and 1,5-alkoxy alkylamino-anthraquinones of 3 or 4 carbon atoms in the alkyl group and 4 to 12 carbon atoms in the alkoxy group. These anthraquinones are highly soluble in petroleum products and are most useful in preparing concentrated stock solutions for coloring gasoline.

3,435,055
7-METHYLESTR-2-EN-17-ONE AND DERIVATIVES THEREOF
Paul D. Klimstra, North Brook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Sept. 23, 1966, Ser. No. 581,430
Int. Cl. C07c *169/08, 169/10;* **A61k** *27/00*
U.S. Cl. 260—397.3 **11 Claims**

1. A member selected from the group consisting of compounds of the formulas



together with the 17-(lower alkanoates) thereof, wherein R is a member of the class consisting of hydrogen and a lower alkyl radical.

3,435,056
HALOGENATED CYCLOPROPYL AND CYCLOPROPENYL STEROIDS AND PROCESS FOR THEIR PREPARATION
John A. Edwards, Palo Alto, Calif., and Lawrence H. Knox, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Continuation of application Ser. No. 514,139, Dec. 15, 1965. This application Sept. 13, 1967, Ser. No. 667,606
Int. Cl. C07c *173/00, 169/14*
U.S. Cl. 260—397.4 **22 Claims**

17-α-dihalocyclopropyl, -dihalocyclopropenyl, and -oxocyclopropyl steroids of the androstane and 19-nor androstane series having progestational activity.

3,435,057
16α,17α-ETHYLENE AND SUBSTITUTED ETHYLENE PREGNANE DERIVATIVES AND PROCESS
John A. Zderic, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,954
Int. Cl. C07c *169/34, 169/30;* **A61k** *17/16*
U.S. Cl. 260—397.45 **24 Claims**

New 16α,17α-ethylene and 16α,17α-substituted ethylene derivatives of the pregnane series prepared by the photochemical reaction of an olefin or substituted olefin with a Δ^{16}-ene of the pregnane series useful as anti-inflammatory agents.

3,435,058
CYCLOOCTADIENYL PALLADIUM CHLORIDE COMPLEX
Robert E. Rinehart, Wayne, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Filed June 18, 1965, Ser. No. 465,169
Int. Cl. C07f *15/00;* **C08d** *1/14;* **C08f** *1/30*
U.S. Cl. 260—429 **8 Claims**

The present invention relates to the reaction products of palladium chloride and a cyclooctadiene. The resulting cyclooctadienyl compounds are useful as polymerization and isomerization catalysts.

3,435,059
ALUMINUM MONOHYDRIDE CATECHOLATE
Donald L. Schmidt, Midland, and Arthur L. Daniels, Coleman, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 31, 1966, Ser. No. 553,689
Int. Cl. C07f *5/06*
U.S. Cl. 260—448 **1 Claim**

The novel compound aluminum monohydride catecholate is disclosed which is utilized as a reducing agent particularly in organic chemical reactions and as a reactant and aluminum source material for depositing aluminum coatings on various substrates.

3,435,060
NOVEL ORGANIC PERESTERS AND PROCESS THEREFOR
Christoph Johannes, Rüchardt, Munich, Germany, assignor to Elektrochemische Werke München A.G., Munich, Germany
No Drawing. Filed Mar. 12, 1965, Ser. No. 439,448
Claims priority, application Germany, Mar. 17, 1964, R 37,475
Int. Cl. C07c *69/12*
U.S. Cl. 260—453 **6 Claims**

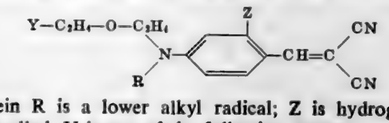
Tertiary alkyl esters of phenoxy, chlorophenoxy or cresyloxy peracetates useful as initiators of radical polymerizations.

3,435,061
MANUFACTURE OF AROMATIC ALDEHYDES AND NITRILES
Robert K. Grasselli, Garfield Heights, and James L. Callahan, Bedford Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 6, 1965, Ser. No. 423,818
Int. Cl. C07c *121/02*
U.S. Cl. 260—465 **13 Claims**

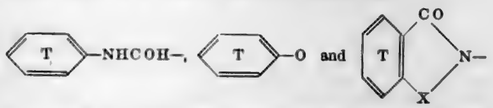
A process for oxidizing vinyl substituted aromatic compounds to unsaturated nitriles with oxygen and ammonia over a catalyst comprising antimony oxide and at least one other polyvalent metal oxide.

3,435,062
WATER-INSOLUBLE MALONONITRILE-DERIVED STYRYL DYESTUFFS
Christopher David Marrable, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Sept. 8, 1966, Ser. No. 577,797
Claims priority, application Great Britain, Sept. 16, 1965, 39,585/65; Apr. 13, 1966, 16,178/66
Int. Cl. C07c *121/00*
U.S. Cl. 260—465 **2 Claims**

Water-insoluble styryl dyestuffs of the formula



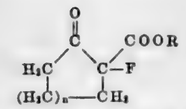
wherein R is a lower alkyl radical; Z is hydrogen or lower alkyl, Y is one of the following groups



wherein X is —CO— or —SO_2— and the benzene ring T may contain the following substituents, chlorine, bromine, nitro, cyano, lower alkyl, lower alkoxy, lower alkylsulphonyl, carbo lower alkoxyl, carbonamido, acetyl, phenyl and phenoxy are valuable for colouring synthetic textile materials such as cellulose acetate textile materials, polyamide textile materials or aromatic polyester textile materials.

3,435,063
FLUORINATED CYCLIC KETO ESTERS
Hans Machleidt, Biberman, and Valentin Hartmann, Riehen, Germany, assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 25, 1965, Ser. No. 436,720
Int. Cl. C07c *69/74, 67/00, 69/62*
U.S. Cl. 260—468 **10 Claims**

The invention relates to fluorinated cyclic keto esters of the formula



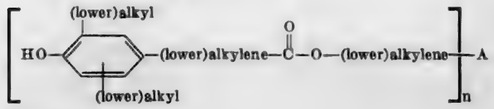
wherein R is lower alkyl and *n* is 1 to 3, compounds useful as intermediates.

3,435,064
PROCESS TO CONVERT ACTIVATED METHYLENE GROUPS TO THE CORRESPONDING CARBONYL GROUPS
Edgar Schipper, Clifton, William Oroshnik, Plainfield, and Jerome M. Cinnamon, North Caldwell, N.J., assignors to Shulton, Inc., Clifton, N.J., a corporation of New Jersey
No Drawing. Filed June 30, 1965, Ser. No. 468,640
Int. Cl. C07c *69/76, 49/27*
U.S. Cl. 260—469 **10 Claims**

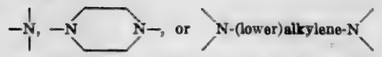
A process is described for the oxidation of compounds containing activated methylene groups to convert the activated methylene group to the corresponding carbonyl group. In the process the compound is oxidized in a mixture of a dilower alkyl sulfoxide such as dimethyl sulfoxide and either hydrogen bromide or hydrogen chloride. The process is used to make 2-carboethoxy-1,3-benz-[f] indanedione, its sodium salt and other compounds which have utility as intermediates or constituents of sensitive coatings used in thermographic reproduction processes.

3,435,065
N,N,N',N' - (ETHYLENEDIAMINE) - TETRAKIS [ETHYLENE - 3 - (3',5' - DI-TERT-BUTYL-4' - HYDROXYPHENYL)PROPIONATE] AND COMPOSITIONS STABILIZED THEREWITH
Martin Dexter, Briarcliff Manor, John Denon Spivack, Spring Valley, and David Herbert Steinberg, Bronx, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,529
Int. Cl. C07c *93/26*
U.S. Cl. 260—473 **1 Claim**

Co.npounds of the formula:



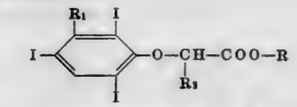
wherein A is



and in which *n* has a value from 2 to 4, are useful for stabilizing organic material such as polyolefins. A preferred compound is N,N,N',N'-(ethylenediamine)-tetrakis[ethylene - 3 - (3',5' - di - tert-butyl-4'-hydroxyphenyl) propionate].

3,435,066
RADIOPAQUE ESTERS OF TRIIODOPHENOXY-ALKANOIC ACIDS
Hans Suter, Dorflingen, and Hans Zutter, Schaffhausen, Switzerland, assignors to Eprova Limited, Schaffhausen, Switzerland
No Drawing. Filed Nov. 1, 1965, Ser. No. 506,006
Claims priority, application Switzerland, Dec. 23, 1964, 16,627/64; May 28, 1965, 7,468/65
Int. Cl. C07c *69/76;* **A61k** *27/08*
U.S. Cl. 260—473 **4 Claims**

Esters of the formula



wherein R_1 is hydrogen or methly, R_2 is alkyl having two to four carbon atoms, R_1 and R_2 together have at least three carbon atoms, and R is lower alkyl or lower-alkoxy-lower-alkyl, are liquids suited by low toxicity, low viscosity, insolubility in water, and solubility in animal oils and fats as X-ray contrast agents, particularly in lymphography.

3,435,067
PROCESS FOR PREPARING HIGH PURITY BIS(β-HYDROXYETHYL) TEREPHTHALATE
Michitoshi Kitabatake, Masatomo Ito, Takashi Ikeda, Noriyoshi Aozuka, and Yoshitaka Noguchi, Tokyo, Japan, assignors to Showa Denko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 19, 1966, Ser. No. 566,218
Claims priority, application Japan, July 26, 1965, 40/44,823; Aug. 21, 1965, 40/50,886, 40/50,887; Nov. 17, 1965, 40/70,173
Int. Cl. C07c *69/82*
U.S. Cl. 260—475 **3 Claims**

A process for preparing high purity bis (β-hydroxyethyl) terephthalate which comprises reacting terephthalonitrile, ethylene glycol and water in the presence of a reaction accelerating catalyst selected from the group consisting of oxides and salts of zine, cadmium, lead, magnesium, cobalt and nickel, the improvement which comprises adding a color inhibiting agent selected from the group consisting of thallium (I) carbonate, thallium (I) chloride, indium (III) oxide, indium (III) chloride, aluminum chloride, tin (II) chloride, antimony (III) chloride, bismuth (III) chloride, magnesium, zinc, aluminum, tin, lead and bismuth. Bis (β-hydroxyethyl terephthalate is useful as an intermediate for the production of films and fibers.

3,435,068
PROCESS FOR THE MANUFACTURE OF p-HYDROXYBENZOIC ACID
Albert Gehring, Tamins, Grisons, and Richard Sailer, Domat-Ems, Grisons, Switzerland, assignors to Inventa A.G. fur Forschung und Patentverwertung, Zurich, Switzerland
Filed Aug. 6, 1965, Ser. No. 477,845
Claims priority, application Switzerland, Aug. 6, 1964, 10,301/64
Int. Cl. C07c *65/04*
U.S. Cl. 260—521 **4 Claims**

A process for the manufacture of p-hydroxybenzoic acid by reacting the potassium salt of phenol with CO_2 at temperatures of 190–210° C. and pressures between 3 and 6 atmospheres gauge, which comprises the improvement of treating the K-phenate in the form of granules or briquettes, whose diameter or length of side ranges from

5 mm. to 30 mm. with a circulated mixture of inert gas and CO_2 brought into reaction temperature. p-Hydroxybenzoic acid is employed as a preservative and as an intermediate in the manufacture of plastics.

3,435,069

OXIDATION OF ACROLEIN AND METHACROLEIN WITH A MOLYBDENUM POLYVALENT METAL-OXYGEN CATALYST

James Robert Bethell, Edward James Gasson, and David James Hadley, Epsom Downs, and Roderick Frank Neale, Great Bookham, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Continuation-in-part of application Ser. No. 100,492, Apr. 4, 1961. This application Oct. 6, 1965, Ser. No. 493,561

Claims priority, application Great Britain, Apr. 14, 1960, 13,310/60; May 12, 1960, 16,750/60

Int. Cl. C07c *51/26, 51/32*

U.S. Cl. 260—530 13 Claims

1. A process which comprises reacting in vapor phase at about 300–500° C. an aldehyde selected from the group consisting of acrolein and methacrolein to produce the corresponding acid with molecular oxygen over an oxidation catalyst consisting essentially of (1) a mixture of an oxide of molybdenum and an oxide of a polyvalent metal selected from the group consisting of the oxides of vanadium, iron, cerium, titanium, antimony, tin, tungsten and bismuth or (2) a compound of molybdenum, oxygen and said polyvalent metal; the atomic ratio of polyvalent metal to molybdenum being from 20:1 to 1:6.5; the percentage of feed substance in the reactant feed being from 1 to 20% by volume, the reactant feed containing from 1 to 20% by volume of oxygen, and the contact time being from 1 to 30 seconds.

3,435,070

ALKALI METAL-d,l-MALATE MONOHYDRATES

Chao-Shing Cheng, Williamsville, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,168

Int. Cl. C07f *1/04*

U.S. Cl. 260—535 3 Claims

Production of novel alkali metal-d,l-malate monohydrates by concentration of a dilute aqueous solution of an alkali metal malate, preferably at a temperature of at least 110° C., cooling the resultant solution to below about 30° C., and permitting the desired alkali metal-d,l-malate monohydrate to crystallize. The novel alkali metal-d,l-malate monohydrates of the present invention are stable in humid atmosphere retaining their crystalline and free-flowing character and are useful as buffering agents, particularly as substitutes for sodium citrate in edible compositions.

3,435,071

PROCESS FOR PREPARING TROPONEIMINES

Genshun Sunagawa, Nobuo Soma, Taiichiro Watanabe, and Yoshio Sato, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan

No Drawing. Filed June 29, 1965, Ser. No. 468,131

Int. Cl. C07c *85/06, 85/00, 85/02*

U.S. Cl. 260—566 1 Claim

Process for preparing 2-aminotroponeimine derivatives useful as antiinflammatory, analgesic and antipyretic agents and as intermediates for the synthesis of color formers. The process comprises reacting 2-oxy (or thio) troponeimine derivatives with an amine derivative in the presence of an inorganic acid or an aliphatic carboxylic acid.

3,435,072

CYCLOHEXENEIMINE THIOCYANATES

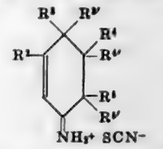
Guglielmo Kabas, Binningen, Switzerland, assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 14, 1966, Ser. No. 557,360

Int. Cl. C07c *161/02*

U.S. Cl. 260—566 6 Claims

The invention provides, as new compounds having herbicidal activity an imine thiocyanate of the formula



wherein R^2 is selected from the group consisting of methyl and phenyl; R^3 is hydrogen; and R^2 and R^3 together are tetramethylene; $R^{3'}$, R^4 and $R^{4'}$ are selected from the group consisting of hydrogen and methyl; and R^5 and $R^{5'}$ are hydrogen.

3,435,073

5-(N-BENZYL-N-LOWER ALKYLAMINOALKYLENE)-5H-DIBENZO[a,d]CYCLOHEPTENES

Claude I. Judd, Mequon, and Alexander E. Drukker and John H. Biel, Milwaukee, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 301,658, Aug. 12, 1963. This application Apr. 19, 1966, Ser. No. 543,539

Int. Cl. C07c *87/40;* A61k *27/00*

U.S. Cl. 260—570.8 2 Claims

The compounds are 5-(N-benzyl-N-loweralkylaminoalkylene)-5H-dibenzo[a,d]cycloheptenes useful as intermediates in the preparation of 5-(N-methylaminoalkylene)-5H-dibenzo[a,d]cycloheptenes which are antidepressant agents.

3,435,074

PROCESS FOR PRODUCING NITRODIARYLAMINES

Shinichiro Terao, Ashiya-shi, Seizi Sagawa, Hirakata-shi, and Seizo Yabuta, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed May 20, 1965, Ser. No. 457,482

Claims priority, application Japan, May 22, 1964, 39/28,919

Int. Cl. C07c *79/12*

U.S. Cl. 260—576 6 Claims

Nitrodiphenylamines are produced by condensing at a reduced pressure and at a temperature of 100–300° C. a halogenated nitrophenyl compound and a phenylamine in the presence of a phenylamide such as formanilide, a dehydrohalogenating agent, and a neutralizing agent. The phenylamine reactant is distilled off with water during the course of the reaction, and after dehydration may be recycled to the condensing step.

3,435,075

PROCESS FOR PREPARING (HALOPHENYL) ALKYL KETONE COMPOUNDS

Edward J. Glamkowski, Plainfield, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 15, 1965, Ser. No. 464,227

Int. Cl. C07c *49/76, 45/00*

U.S. Cl. 260—590 1 Claim

Invention relates to a process for preparing (halophenyl) alkyl ketone compounds which comprises reaction of a benzene compound with an alkanoyl halid to form a phenyl ketone compound and then converting the latter compound to a (halophenyl) alkyl ketone. The (halophenyl) alkyl ketone compounds are useful in the preparation of α-alkyl-(halophenyl) acetic acid compounds which latter compounds are anti-inflammatory agents.

3,435,076

TRICYCLIC PHOSPHINES AND THE PREPARATION THEREOF

Ronald F. Mason, Mill Valley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1966, Ser. No. 566,243

Int. Cl. C07f *9/28, 9/02*

U.S. Cl. 260—606.5 10 Claims

1. 13-monophosphatricyclotridecanes, having 12 to 15 carbon atoms, 12 carbon atoms thereof together with the phosphorus atom being members of the tricyclic skeletal structure, in which the smallest phosphorus-containing ring contains at least 5 atoms and the phosphorus atom therein is a member of each of the three rings.

3,435,077

PROCESS FOR THE PRODUCTION OF ASYMMETRICAL FORMALS

Ekkehard Henckel and Hans Von Portatius, Marl, Germany, assignors to Chemische Werke Huls A.G., Marl, Germany

Filed Jan. 12, 1966, Ser. No. 520,155

Claims priority, application Germany, Jan. 16, 1965, C 34,873

Int. Cl. C07c *41/10, 41/00, 41/02*

U.S. Cl. 260—611 12 Claims

1. A process for the production of asymmetrical formals, which process comprises reacting a substantially pure hemiformal selected from the group consisting of a hemiformal of an alcohol selected from the group consisting of diethylene glycol monoethyl ether, triethylene glycol monoethyl ether, triethylene glycol monobutyl ether, 1,2-propylene glycol-1-n butyl ether and ethylene glycol monomethyl ether and a hemiformal of the formula $R—(O—CH_2—OH)_m$ with an epoxide at 0–120° C. in the presence of a Lewis acid catalyst having a concentration of about 0.0005–7% by weight of the hemiformal;

said epoxide being selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide, cyclohexene oxide, epichlorohydrin, cyclooctene oxide, a butene oxide, butadiene monoxide, styrene oxide, α-methyl styrene oxide, and cyclohexyl ethylene oxide; and

wherein R is a radical having a valence of 1–4 selected from the group consisting of saturated aliphatic hydrocarbon of 1–200 carbon atoms, acyclic hydrocarbons of 4–20 carbon atoms in the ring and having 0–5 side chains having 1–8 carbon atoms; aliphatic hydrocarbon having 3 to 40 carbon atoms and having no more than 10 double or triple bonds, hydrocarbon aryl of 1–3 rings; and hydrocarbon aralkyl having in the alkyl portion 1–20 carbon atoms and in the aryl portion 1–3 rings; and

m is an integer of 1–4.

3,435,078

α,ω-BIS(FLUOROPERHALOISOPROPOXY) - PERFLUOROALKANES AND PROCESS FOR PREPARING THEM

Henry R. Nychka, Dover, and Louis G. Anello, Basking Ridge, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 16, 1967, Ser. No. 638,722

Int. Cl. C07c *41/00, 43/12*

U.S. Cl. 260—615 11 Claims

α,ω-Bis(fluoroperhaloisopropoxy)-perfluoroalkanes useful as thermally stable dielectric coolants, and to a process for preparing them by condensation with zinc in an inert solvent medium of two moles of a α-(fluoroperhaloisopropoxy)-omega-iodoperfluoroalkane.

3,435,079

FLUORODINITROMETHANE AND PREPARATION OF HALODINITROMETHANES

Horst G. Adolph and Mortimer J. Kamlet, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 31, 1964, Ser. No. 357,018

Int. Cl. C07c *79/12*

U.S. Cl. 260—644 9 Claims

1. Fluorodinitromethane.

2. The method of preparing a halodinitromethane which comprises intimately contacting a halodinitroethanol with a strong base, separating a halodinitromethide salt from the reaction medium and treating said salt with a strong mineral acid to generate free halodinitromethane.

3,435,080

CYCLIZATION REACTION AND VINYL-CYCLOPENTANE DERIVATIVES

El-Ahmadi I. Heiba, Princeton, and Ralph M. Dessau, Highland Park, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Jan. 6, 1966, Ser. No. 518,989

Int. Cl. C07c *17/32, 21/06, 17/28*

U.S. Cl. 260—648 7 Claims

Vinylcyclopentane derivatives, including certain novel dihalogenated compounds exemplified by 1,1-dichloro-2-(2-methyl-cyclopentyl)-ethylene, are obtained by reacting certain long-chain acetylenes, such as heptyne-1, with a free radical donor, such as carbon tetrachloride, using a free radical catalyst or radiation to produce a rearrangement and cyclization of the carbon chain of the acetylene reactant.

3,435,081

PROCESS FOR THE PRODUCTION OF HEXACHLOROMETHANOINDENE ISOMER

Louis P. Wilks and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 306,696, Sept. 5, 1963. This application Feb. 10, 1966, Ser. No. 526,341

Int. Cl. C07c *17/00, 25/22*

U.S. Cl. 260—648 8 Claims

The method for the preparation of isomers of 4,5,6,7,8,8 - hexachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene, said indene compound having a melting point of about 210°–211° C. under nitrogen, which comprises isomerizing said indene compound by heating said indene compound to a temperature below about 200° C. in the presence of free-radical initiating catalytic compounds for a period of at least about one hour.

3,435,082

PREPARATION OF FLUOROCARBONS BY REACTING CARBON TETRACHLORIDE OR HEXACHLOROETHANE WITH CARBONYL FLUORIDE

John W. Ager, Jr., Princeton, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,181

Int. Cl. C07c *17/24, 17/20*

U.S. Cl. 260—653.8 4 Claims

Fluorocarbons of 1 to 2 carbon atoms are prepared by heating carbon tetrachloride or hexachloroethane with carbonyl fluoride, preferably in the presence of a chloride of aluminum, tungsten, molybdenum or tantalum.

3,435,083
PROCESS FOR THE JOINT MANUFACTURE OF 2 - CHLOROBUTADIENE - (1,3) AND 1-CHLOROBUTADIENE-(1,3)

Herbert Baader, Hermulheim, near Cologne, Kurt Sennewald, Knapsack, near Cologne, and Helmut Reis, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

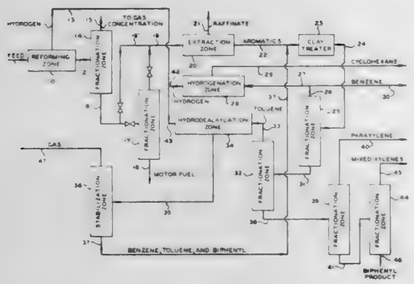
No Drawing. Filed June 22, 1967, Ser. No. 647,917
Claims priority, application Germany, July 26, 1966, K 59,876
Int. Cl. C07c *17/34*
U.S. Cl. 260—655 5 Claims

2-chlorobutadiene-(1,3) and 1-chlorobutadiene-(1,3) are prepared jointly by dehydrochlorination of 1,4-dichlorobutane-(2) and/or 3,4-dichlorobutene-(1). The dichlorobutene is heated together with an alkyl or aryl phosphine or a hydrochloride or quaternary phosphonium chloride thereof as the catalyst, to a temperature between 50 and 200° C., and resulting hydrogen chloride and chlorobutadiene-mixture are distilled off in conventional manner.

3,435,084
COMBINATION PROCESS WITH BIPHENYL PRODUCTION

John T. Cabbage, David G. Blaker, and Richard F. Berger, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed June 24, 1966, Ser. No. 560,175
Int. Cl. C07c *3/62, 3/00*
U.S. Cl. 260—667 5 Claims



Production and recovery of biphenyl and other aromatics comprising recovering a concentrate of benzene, toluene and xylenes from a reformate formed from C_6–C_9 hydrocarbons, and recovering from the concentrate separate streams of benzene, which can be hydrogenated to cyclohexane, toluene, which can be hydrodealkylated to benzene, xylenes and biphenyl, and a C_8 aromatic fraction from which biphenyl can be separated.

3,435,085
AROMATIC HYDROGENATION USING A FLUORIDED ALUMINA CATALYST

Robert J. White, Pinole, and Robert J. Houston, San Rafael, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 25, 1967, Ser. No. 670,384
Int. Cl. C07c *5/10, 5/14*
U.S. Cl. 260—667 7 Claims

Aromatics are hydrogenated in the presence of sulfur over a catalyst containing a Group VIII hydrogenation metal disposed on an essentially nonsiliceous support comprising alumina and 10–35 percent fluorine. Platinum is the preferred Group VIII metal. The catalyst retains a high degree of activity in the presence of up to 3 percent sulfur in the feed.

3,435,086
SELF-REGENERATIVE DEHYDROGENATION CATALYST FOR ELECTRIC RESISTANCE HEATED REACTORS

Frederick J. Soderquist, Essexville, Harold D. Boyce, Coleman, and Paul E. Kline, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

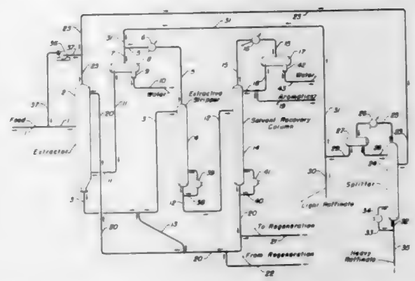
No Drawing. Filed Jan. 9, 1967, Ser. No. 607,889
Int. Cl. C07c *15/10*
U.S. Cl. 260—669 6 Claims

Self-regenerative dehydrogenation catalysts containing a major portion of chromium oxide or certain mixtures of chromium oxide, iron oxide, zinc oxide and magnesium oxide have improved electrical resistivity characteristics for use in an electrically heated catalytic reactor for the preparation of vinyl monomers by the dehydrogenation of hydrocarbons. By appropriate combination of these catalytic metal oxides, self-regenerative dehydrogenation catalysts can be fabricated with an optimum resistivity for particular reactor designs and process conditions.

3,435,087
RECOVERY OF AROMATICS

Donald B. Broughton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,974
Int. Cl. C07c *7/10, 15/00*
U.S. Cl. 260—674 12 Claims



In the separation and recovery of aromatic hydrocarbons from a hydrocarbon feed containing at least 75% by weight of aromatics by countercurrent extraction with a sulfolane-type solvent to produce a raffinate phase containing non-aromatics and an extract phase containing aromatics, the improvement which comprises commingling with the feed, prior to its introduction into the extraction column, a sufficient amount of recycled raffinate phase to produce an overall feed mixture which is substantially immiscible with the solvent.

3,435,088
CATALYST AND PROCESS FOR OLIGOMERIZING CONJUGATED DIENES

Ernest A. Zuech, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

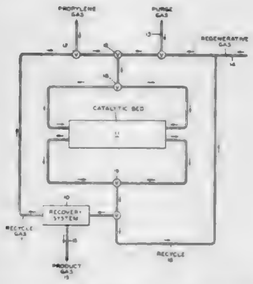
No Drawing. Filed Apr. 15, 1966, Ser. No. 542,764
Int. Cl. C07c *3/60, 3/10;* B01j *11/82*
U.S. Cl. 260—677 10 Claims

Conjugated dienes such as butadiene are oligomerized, for example to linear dimers, using a catalyst formed from at least one nickel compound such as nickel acetylacetonate, at least one conjugated diene-organolithium adducts such as an adduct of n-butyllithium and butadiene, at least one phosphorous, arsenic, or antimony containing compound such as triphenyl phosphite, and at least one alcohol such as ethanol.

3,435,089
DEHYDRODIMERIZATION PROCESS AND CATALYST THEREFOR

William P. Moore, Jr., Chester, and Jack W. Mosier, Petersburg, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 499,287
Int. Cl. C07c *11/12, 3/20;* B01j *11/32*
U.S. Cl. 260—680 11 Claims



Biallyl is produced by contacting propylene with PbO supported on an inert carrier having a surface area no greater than about 1 meter² per gram. The reaction is conducted in the absence of molecular oxygen at a temperature of between about 320° C. and about 700° C. until the PbO is reduced to Pb_2O. The Pb_2O is subsequently converted back to PbO by heating in contact with a molecular oxygen-containing gas. The biallyl can be readily separated in high yield and purity from unreacted propylene which can be recycled.

3,435,090
CALCINATION OF PLATINUM-ALUMINA CATALYST FOR ALKANE DEHYDROGENATION

Joseph B. Abell, Jr., St. Louis, Mo., Loyd W. Fannin, Dickinson, Tex., and James F. Roth, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 421,720, Dec. 28, 1964. This application Apr. 19, 1967, Ser. No. 631,901
Int. Cl. C07c *5/18;* B01j *11/12*
U.S. Cl. 260—683.3 10 Claims

A process for the dehydrogenation of saturated hydrocarbons of 2 to 30 carbon atoms in the presence of hydrogen. The process utilizes a noble metal on alumina catalyst prepared by impregnating the alumina with the noble metal, drying, calcining in air at less than 450° C. and reducing the catalyst before use.

3,435,091
PREPARATION OF 1,2,4-TRIMETHYL-5-ISOPROPYLBENZENE

Paul Hofmann and Karl Peterlein, Gladbeck, Germany, assignors to Gelsenberg Benzin Aktiengesellschaft, Gelsenkirchen, Germany

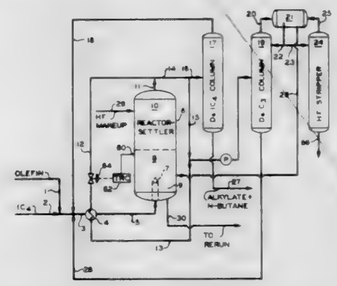
No Drawing. Continuation-in-part of application Ser. No. 514,394, Dec. 16, 1965. This application May 22, 1967, Ser. No. 640,369
Claims priority, application Germany, Dec. 18, 1964, G 42,312
Int. Cl. C07c *15/00*
U.S. Cl. 260—671 10 Claims

A process is disclosed for the selective alkylation of pseudocumene with propene to 1,2,4-trimethyl-5-isopropyl-pseudocumene wherein as catalyst there is employed $AlCl_3$, $H_3PO_4 \cdot BF_3$, $AlCl_2 \cdot H_2PO_4$ or $AlCl_2 \cdot H_2PO_4$ saturated with BF_3 and wherein the propene is reacted with the pseudocumene in a molar ratio that is greater than 1:1.

3,435,092
ALKYLATION UTILIZING FINE DISPERSION OF REACTANTS IN A CONSTANT CATALYST MASS

Tom Hutson, Jr., and Cecil O. Carter, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,611
Int. Cl. C07c *5/54, 3/56, 9/14*
U.S. Cl. 260—683.43 15 Claims



Alkylation reactants are introduced into a relatively static catalyst phase in the form of a fine dispersion of small droplets so as to form an emulsion in which the small droplets have an appreciable residence time in the relatively static catalyst phase.

3,435,093
POLYMER BLENDS OF POLYETHYLENE TEREPHTHALATE AND α-OLEFIN, α,β-UNSATURATED CARBOXYLIC ACID COPOLYMERS

Oswald James Cope, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,681
Int. Cl. C08g *39/10, 41/04*
U.S. Cl. 260—857 5 Claims

Blend of polyethylene terephthalate and an ionic hydrocarbon copolymer of an alpha olefin and a 3–5 carbon α,β-ethylenically unsaturated acid, in which the carboxylic acid groups are randomly distributed over the copolymer. The acid groups may be neutralized. The blend may also contain polyhexamethylene adipamide.

3,435,094
ETHYLENE GLYCOL-BASED, ORGANIC SOLVENT-RESISTANT POLYESTER RESINS

Earl E. Parker, Allison Park, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 561,759, June 30, 1966. This application Feb. 14, 1968, Ser. No. 705,302
Int. Cl. C08g *17/10;* C08f *11/02;* C09k *3/68*
U.S. Cl. 260—872 16 Claims

An organic solvent-resistant polyester resin is formed from a glycol comprising a major amount of ethylene glycol and a minor amount of a neopentyl glycol-type diol and an acid component comprising a major amount of a polymerizable, ethylenically unsaturated dicarboxylic acid and a minor amount of a member selected from the group consisting of terephthalic acid or a lower alkyl diester thereof and isophthalic acid or a lower alkyl diester thereof. Compositions containing the polyester and a polymerizable ethylenically unsaturated monomer may be coated on substrates to protect them from attack from organic solvents.

3,435,095

THERMAL DEGRADATION OF ETHYLENE/PROPYLENE BLOCK COPOLYMERS

Donald E. Hostetler, Pompton Plains, N.J., assignor, by mesne assignments, to Rexall Drug and Chemicals Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 21, 1964, Ser. No. 391,299
Int. Cl. C08f 27/28
U.S. Cl. 260—878 2 Claims

A high molecular weight block copolymer having alternating homopolymer propylene and ethylene units is subjected to a thermal degradation step to obtain a treated block copolymer exhibiting superior low temperature impact resistance and superior tensile impact strength over the untreated block copolymer.

3,435,096

METHOD OF MAKING GRAFT POLYMERS OF VINYL MONOMERS ONTO ETHYLENE/PROPYLENE TERPOLYMER IN A LATEX

Frank J. Limbert and Charles F. Paddock, Wayne, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,866
Int. Cl. C08f 15/40
U.S. Cl. 260—878 18 Claims

Graft polymers of unsaturated monomers such as styrene and acrylonitrile onto an ethylene/propylene polymer backbone are prepared by first grafting a polyfunctional monomer having two or more ethylenically unsaturated double bonds onto an aqueous emulsion of the polymer and subsequently polymerizing with a vinyl monomer having only one ethylenically unsaturated double bond. The preferred catalyst is t-butyl peroxypivalate.

3,435,097

PHENOLIC-SULFIDE-PHOSPHITE COMPOUNDS

James Bottomley, Tewksbury, and Richard Strauss, Lexington, Mass., assignors to National Polychemicals, Inc., Wilmington, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,174
Int. Cl. C08f 45/58; C08c 13/08
U.S. Cl. 260—887 10 Claims

Polymer compositions are stabilized to elevated temperatures by the addition of a phenolic-sulfide-phosphite polymer which is prepared either by (1) the esterification of a phenol sulfide with a trivalent inorganic phosphorus compound or (2) by the sulfurization of an aromatic phosphite.

3,435,098

RESIN COMPOSITION OF A VINYL CHLORIDE POLYMER BLENDED WITH AN ETHYLENE-VINYL CHLORIDE COPOLYMER

Hiroshi Watanabe, Kamakura, Masami Ozaki, Odawara, and Junji Hara, Yokohama, Japan, assignors to Toyo Koatsu Industries, Incorporated, Tokyo, Japan, a corporation of Japan

No Drawing. Continuation of application Ser. No. 437,564, Mar. 5, 1965. This application Mar. 27, 1968, Ser. No. 716,665
Claims priority, application Japan, Mar. 9, 1964, 39/12,782
Int. Cl. C08f 37/18, 29/04
U.S. Cl. 260—897 12 Claims

Rigid and semi-rigid vinyl chloride polymer composition comprising a blend of a vinyl chloride polymer with from 6 to 80% by weight of the blend of an ethylene-vinyl chloride polymer having a combined ethylene content of less than 16% by weight of said ethylene-vinyl chloride polymer.

3,435,099

POLYMETHYLENE AND POLYALKYLENE ETHER POLYTHIONOPHOSPHATE ESTERS

Enrique R. Witt, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Original application Apr. 8, 1964, Ser. No. 368,434. Divided and this application June 13, 1967, Ser. No. 655,706
Int. Cl. C07f 9/16, 9/04
U.S. Cl. 260—929 2 Claims

Disclosed herein are polythionophosphate esters and methods for their preparation. These materials are useful in polyurethane foam production. They react with diisocyanates to confer a degree of flameproofing to the polyurethane. The compounds are prepared by transesterification followed by sulfurization. For example, materials can be prepared by reacting a polyhydric alcohol with a phosphate triester by ester interchange and then reacting the ester interchange reaction product with sulfur. The compounds disclosed herein include bridged ring thionophosphates and cross linked esters.

3,435,100

O,O-DILOWER ALKYL-O-(3-LOWER ALKYL-4-SULFONOYL)PHENYL PHOSPHOROTHIOATES

Milon W. Bullock, Hopewell, and George H. Rohrbacher, Jr., Princeton Junction, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 257,746, Feb. 11, 1963. This application July 6, 1964, Ser. No. 380,607
Int. Cl. C07f 9/18, 9/2; A61k 27/00
U.S. Cl. 260—944 2 Claims

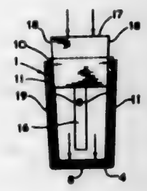
The preparation of phosphorothioic acid or phosphoric acid, O,O-dilower alkyl-O-(3-lower alkyl-4-sulfamoyl) phenyl esters from benzene sulfonates such as, potassium 2-methyl-4-hydroxybenzene sulfonate through a series of reactions, is described. The novel compounds of the invention are systemic insecticides.

3,435,101

METHOD FOR THE MANUFACTURE OF AN ANTI-SWEAT WATER CLOSET TANK

John K. Boorman, Don Mills, Ontario, Canada, assignor to American Standard Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,319
Claims priority, application Canada, Jan. 30, 1964, 894,148
Int. Cl. B29d 9/00
U.S. Cl. 264—45 11 Claims



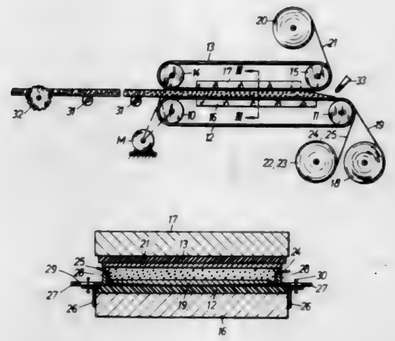
Method for forming a synthetic resin lining on the inner side and bottom surfaces of a toilet flush tank having a bottom, four side walls and an open top which comprises the steps of inserting a self-expanding synthetic resin mixture into the tank, placing a core of the same general configuration as the tank having outer side and bottom surfaces within and in spaced apart relationship to the tank to form a cavity between the inner surfaces of the tank and the outer surfaces of the core, allowing the synthetic resin mixture to expand to fill the cavity.

3,435,102

METHOD OF AND APPARATUS FOR MAKING COVERED PLATES OF POLYURETHANE IN A CONTINUOUS PROCESS

Heinz Sullhofer, Niederrheinstrasse 158, Dusseldorf, Germany

Filed July 18, 1966, Ser. No. 565,868
Claims priority, application Germany, July 22, 1965, S 98,366
Int. Cl. B29h 7/20
U.S. Cl. 264—47 10 Claims



1. A method of making in a continuous process polyurethane foam sheet material covered on opposite sides by foils, which includes the steps of: providing a moving endless conveyor belt as support for the sheet material to be formed, said conveyor belt having lateral marginal portions respectively feeding two marginal strips of thin material upon the lateral marginal portions of said conveyor belt, feeding a first thin cover foil over and placing the same onto both of said marginal strips, feeding a second cover foil in substantially parallel but spaced relationship to and over said first cover foil, introducing foamable polyurethane material between said first and second cover foils while causing said foamable material to foam so as to have fully reacted before leaving said conveyor belt, and allowing excessive foam material between said cover foils while still on said conveyor belt to escape from between said cover foils.

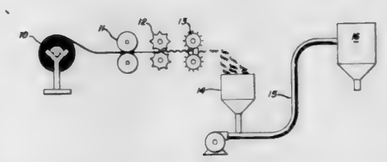
3. An apparatus for making in a continuous process polyurethane foam sheet material covered on opposite sides thereof by foils, which includes: an endless movable conveyor belt forming lower supporting and feeding means for a lower cover foil intended to cover one side of the foam sheet material to be produced, upper supporting means arranged above and in vertically spaced relationship to said lower supporting means for feeding an upper cover foil over the foam sheet material to be produced, means adjacent the incoming end of the upper conveyor belt section for depositing foam material from which said sheet material is to be made between said lower and upper supporting means after the cover foils have been introduced therebetween, and lateral supporting and guiding means laterally defining the space between said upper and lower supporting means for receiving the foam material from which the sheet material is to be made, said lateral supporting and guiding means being so located as to permit excessive foam material between said upper and lower supporting means to escape toward the outside.

3,435,103

PROCESS FOR FORMING SOLID ARTICLES FROM EXPANDABLE POLYMER

Ralph C. Medhurst, Park Forest, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Mar. 1, 1965, Ser. No. 435,944
Int. Cl. B29c 24/00; B29g 5/00; B29f 3/00
U.S. Cl. 264—53 2 Claims



A process for preparing foamed articles comprising the steps of extruding an expandable polymer in the form of a substantially unexpanded sheet, slitting the polymer sheet into multiple ribbons, corrugating the ribbons, and expanding the corrugated ribbons by the application of heat.

3,435,104

METHOD OF MAKING A BARIUM TITANATE BODY

Ronald J. Brandmayr, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed May 3, 1966, Ser. No. 547,716
Int. Cl. C01g 23/00; C04b 35/46
U.S. Cl. 264—65 1 Claim

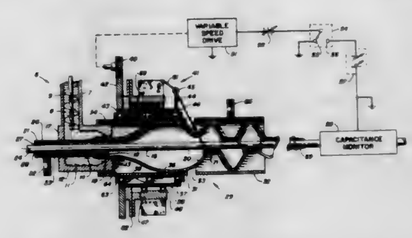
A ceramic dielectric powder, as for example, barium titanate is prepressed at a pressure of about 10,000 pounds per square inch and then hot pressed at a temperature of 800° C. to 850° C. at a pressure of about 30,000 pounds per square inch for about one half hour. There results a dense barium titanate body having a positive coefficient of dielectric constant in the temperature range of —70° C. to 110° C.

3,435,105

MANUFACTURING A BALLOON-TYPE HELICAL INSULATOR

Armando Gene Ferrari, Trenton, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 11, 1965, Ser. No. 494,753
Int. Cl. B29c 17/04
U.S. Cl. 264—95 16 Claims

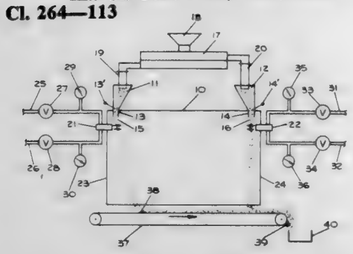


A balloon-type helical insulator of adjustable pitch is formed about an advancing elongated conductor by continuously extruding a tube of moldable plastic around the conductor and inflating the tube to a predetermined diameter. A filament is helically wound at a selectable speed about the advancing inflated tube under sufficient tension to constrict the underlying portions of the tube against the outer surface of the conductor.

3,435,106
METHOD FOR AGGLOMERATING POWDERED MATERIAL

John L. Hager, Northfield, Minn., assignor to Northfield Processed Food Systems Company Inc., Northfield, Minn., a corporation of Minnesota

Filed May 31, 1966, Ser. No. 553,991
Int. Cl. C09c *1/60, 3/02*; A23l
U.S. Cl. 264—113 6 Claims



Powdered materials comprising a mixture of coarse and fine particles are agglomerated by separating the powdered materials into two streams of coarse and fine particles, respectively, and spraying the respective streams with separate sprays of moistening fluid, the concentration of moistening fluid being greater on the stream of fine particles; and the agglomerates formed are deposited in superimposed layers on a moving belt.

3,435,107
METHOD OF MANUFACTURING A MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY

Winthrop B. Conrad, Franklin, Mich., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 551,422, May 19, 1966. This application May 18, 1967, Ser. No. 643,011
Int. Cl. B29d *3/02*; F16c *1/10*
U.S. Cl. 264—159 22 Claims



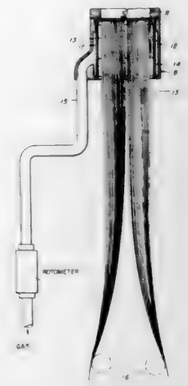
A method of manufacturing a motion transmitting remote control assembly utilizing a conduit for movably supporting a motion transmitting core element and having a substantially smooth outer surface of organic polymeric material and a fitting of organic polymeric material disposed about the conduit and adapted for attachment to a support structure. The method comprises the steps of forming irregularities in and along at least a portion of the organic polymeric material of the smooth outer surface of the conduit and subsequently molding a support fitting of organic polymeric material about at least some of the irregularities along a portion of the length of the conduit so that the fitting is disposed in mechanical interlocking engagement with the conduit for supporting the conduit.

3,435,108
FILAMENT PRODUCTION FOR SYNTHETIC LINEAR POLYMERS

Glenn G. Hendry, Jr., Shelby, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 398,330, Sept. 22, 1964. This application Sept. 11, 1967, Ser. No. 667,333
Int. Cl. B28b *3/20*
U.S. Cl. 264—176 4 Claims

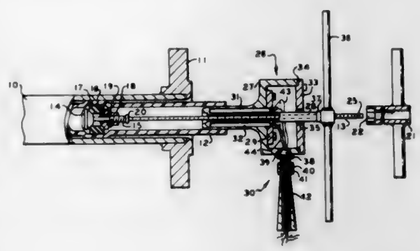
A method for increasing production rates of a melt spinning operation for synthetic linear polymeric filamentary material comprising dividing a filamentary extrudate into at least two separate portions and then subjecting the divided filamentary material for short time intervals to a nonturbulent cooling gaseous medium.



3,435,109
PROCESS FOR FLARING PLASTIC PIPE ENDS

Edwin H. Flaming, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Original application Nov. 20, 1963, Ser. No. 325,030, now Patent No. 3,341,894. Divided and this application Mar. 30, 1967, Ser. No. 627,074
Int. Cl. B29c *17/00*
U.S. Cl. 264—322 1 Claim



A method of forming a flange, on a thermoplastic pipe where the end of the pipe is heated and the walls of the pipe are forced outwardly to form a flange.

3,435,110
COLLAGEN FIBRIL MATRIX PHARMACEUTICALS

Joseph Nichols, Princeton, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,708
Int. Cl. A61k *27/00, 9/00*
U.S. Cl. 424—20 16 Claims

1. A composition of matter in oral pharmaceutical tablet or pill, or pharmaceutical gelatin capsule dosage form consisting essentially of an effective oral dosage amount of a powdered pharmaceutically active material homogeneously dispersed throughout a powder matrix of collagen fibrils.

3,435,111
PROCESS FOR DARKENING SKIN USING A GLYCERALDEHYDE COMPOSITION

Eldridge Myles Glenn, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 472,692, July 16, 1965. This application July 10, 1967, Ser. No. 652,014
Int. Cl. A61l *23/00*
U.S. Cl. 424—59 4 Claims

A method for darkening skin and rendering skin less permeable to ultraviolet radiation for cosmetic reasons to prevent sunburn by application of glyceraldehyde in association with a pharmaceutically acceptable carrier having a pH greater than 7 to noninflamed skin.

3,435,112
REPOSITORY VACCINE AND METHOD OF PREPARING THE SAME

Charles R. Kuhns and William H. Beckenhauer, Lincoln, Nebr., assignors to Norden Laboratories, Inc., Lincoln, Nebr., a corporation of Delaware

No Drawing. Filed June 21, 1966, Ser. No. 559,114
Int. Cl. A61k *23/00*
U.S. Cl. 424—89 15 Claims

1. The method of preparing a repository vaccine in the form of oil and water emulsion with an antigen contained in suspension in the emulsion, said method consisting of the steps of

preparing a gelled oil base,

reducing to amorphous and discontinuous constituent surface-active parts the cell walls and/or bodies of micro-organisms comprising the antigen component of the vaccine for releasing emulsifier constituents of the treated micro-organisms, and

mixing together the gelled base, water, and treated organisms to provide an emulsion with the micro-organism constituents providing the emulsifier agent for stability of the emulsion.

3,435,113
METHOD OF CONTROLLING INSECTS WITH DIMETHYL 2-CHLORO-1-(2,5-DICHLOROPHENYL) VINYL PHOSPHATE

Loyal F. Ward, Jr., Modesto, Calif., and Donald D. Phillips, Westfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 25, 1963, Ser. No. 253,980, now Patent No. 3,305,609, dated Feb. 21, 1967. Divided and this application Nov. 30, 1966, Ser. No. 597,859
Int. Cl. A01n *9/36*
U.S. Cl. 424—225 2 Claims

Insects are controlled by the application thereto of dimethyl 2-chloro-1-(2,5-dichlorophenyl) vinyl phosphate.

3,435,114
TOPICAL ANTIHISTAMINIC COMPOSITIONS CONTAINING METHDILAZINE SULFOXIDE

Paul Merrill Lish, John H. Welkel, and Stanley J. Dykstra, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,872
Int. Cl. A61k *27/00*
U.S. Cl. 424—247 8 Claims

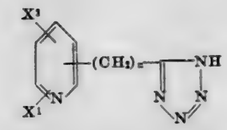
Methdilazine sulfoxide is uniquely adapted for topically antihistaminic use through its strong antihistaminic properties of lack of irritant and local anesthetic actions.

3,435,115
LIPID REGULATION WITH 5-(PYRIDYL) TETRAZOLE DERIVATIVES

Gerald F. Holland, Groton, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 15, 1964, Ser. No. 418,528
Int. Cl. A61k *27/00*; C07d *57/00*
U.S. Cl. 424—263 7 Claims

Compounds of the formula



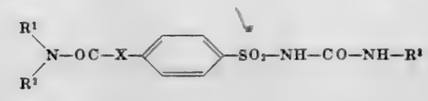
wherein X^1 and X^2 are hydrogen, alkyl containing from 1 to 4 carbon atoms or cycloakyl of from 3 to 7 carbon atoms; *n* is a whole number from 0 to 4; the N-oxides thereof and the pharmaceutically acceptable addition salts thereof as regulators of lipid metabolism in humans.

3,435,116
THE TREATMENT OF DIABETES MELLITUS WITH BENZENESULFONYL UREAS

Helmut Weber, Frankfurt am Main, Walter Aumuller, Kelkheim, Taunus, Rudi Weyer, Frankfurt am Main, and Karl Muth, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Original application Sept. 21, 1964, Ser. No. 398,106, now Patent No. 3,336,322, dated Aug. 15, 1967. Divided and this application Feb. 2, 1967, Ser. No. 643,747
Int. Cl. A61k *27/00*
U.S. Cl. 424—267 2 Claims

A method has been provided for lowering blood sugar by administering to a host a sulfonyl urea of the formula



in which

R^1 is a member selected from alkyl of 1 to 4 carbon atoms, cycloalkyl of up to 8 carbon atoms, alkyl substituted cycloalkyl of up to 8 carbon atoms, cyclohexylmethyl and cyclohexylethyl,

R^2 is hydrogen and alkyl of 1 to 4 carbon atoms,

R^1 and R^2 together with the nitrogen atom are linked to form a member selected from the group consisting of unsubstituted and methyl substituted heterocyclic nucleus of 4 to 6 carbon atoms in the heterocyclic ring,

X is a saturated hydrogen bridge of 1 to 2 carbon atoms or a vinyl bridge of 2 carbon atoms,

R^3 is a member selected from lower alkyl substituted cycloalkyl of 5 to 8 ring carbon atoms, cyclohexylmethyl, cyclohexylethyl and phenyl alkyl of 1 to 2 alkyl carbon atoms,

and pharmaceutically acceptable basic salts thereof. A composition containing a dose of 0.1 to 1 gram of at least one of the above compounds per unit of the composition are administered to the host. The blood sugar lowering method is characterized in its effectiveness by a method such as Hagedorn-Jensen. An advantage accruing when employing the present method is the prolonged effect in lowering the blood sugar such as determined by the effectiveness of the method after 24 hours.

3,435,117
COLLAGEN FIBRIL MATRIX PHARMACEUTICALS

Joseph Nichols, Princeton, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

No Drawing. Filed Mar. 9, 1966, Ser. No. 532,892
Int. Cl. A61k *21/00, 27/00*
U.S. Cl. 424—271 9 Claims

1. A stable homogeneous aqueous suspension or oil in water emulsion in oral, nasal, or vaginal gel dosage form having an acid pH and

(a) consisting essentially of an effective dosage amount of a pharmaceutically active compound and

(b) at least about 0.2 percent by weight of acid-swollen collagen fibrils dispersed throughout the continuous aqueous phase.

3,435,118
DIBUTYLTIN DIACETATE AS A FUNGICIDAL AGENT

Waldo B. Ligett, Pontiac, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 17, 1955, Ser. No. 509,099
Int. Cl. A01n *9/24*
U.S. Cl. 424—288 2 Claims

1. Method of controlling fungi on agricultural crops comprising applying to the locus of the fungi thereon dibutyltin diacetate admixed with an inert fungicidal adjuvant comprising a dispersant and a surface active agent.

3,435,119
SYNERGISTIC COMBINATION CONTAINING AN OXIODINIUM COMPOUND AND 3,4,4'-TRICHLOROCARBANILIDE

William N. Cannon, Greenwood, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

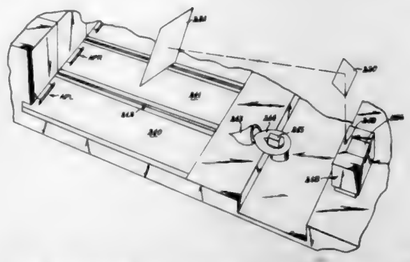
No Drawing. Continuation-in-part of application Ser. No. 338,025, Jan. 16, 1964. This application July 27, 1967, Ser. No. 656,354
Int. Cl. A61k *27/00*
U.S. Cl. 424—322 4 Claims

Synergistic combinations of bactericides containing 3,4,4'-trichlorocarbanilide and a dibenz[be][1,4]oxiodinium salt are disclosed.

3,435,120
AUTOMATIC BOWLING SCORER

William D. Cornell, Grand Haven, Morton F. Disney, Jr., Spring Lake, and Paul R. Hoffman, Grand Haven, Mich., assignors to Brunswick Corporation, a corporation of Delaware

Filed May 11, 1964, Ser. No. 366,297
Int. Cl. A63d *5/04*
U.S. Cl. 273—54 24 Claims



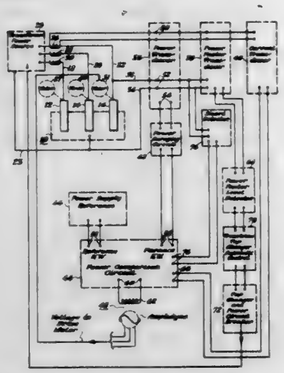
1. An apparatus for scoring a bowling game wherein balls are rolled concurrently by a multiplicity of players on a plurality of bowling lanes comprising: separate means associated with each of said lanes for detecting pinfall and for providing pinfall information, a single totaling and computation means common to said plurality of lanes, including a single counting means, connectable to each of said pinfall detecting means for receiving pinfall information for converting pinfall information from each of said detecting means to bowling score signals for each of the multiplicity of players bowling on each of the multiplicity of lanes, means responsive to the presence of pinfall information in any one of said detecting means for connecting the corresponding detecting means to said single totaling and computation means, memory means, including a plurality of storage channels, one for each of the multiplicity of players bowling on the plurality of lanes, for receiving from, storing, and providing to said single totaling and computation means, score information for each of the multiplicity of players, and means for printing bowling scores based on pinfall achieved on each of said plurality of lanes for each of said multiplicity of players responsive to said score signals.

ELECTRICAL

3,435,121
ARC POWER RESPONSIVE CONTROL SYSTEM FOR CONSUMABLE ELECTRODE FURNACE

Harold S. Jackson, Troy, N.Y., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Filed Mar. 17, 1966, Ser. No. 535,073
Int. Cl. H05b *7/18*
U.S. Cl. 13—13 13 Claims

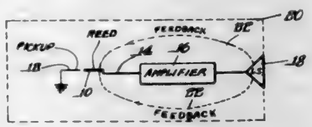


Described is a new and improved electrode control system for arc melting furnaces, particularly those powered by a three-phase alternating current supply, which utilizes a signal proportional to average arc melting power to control and maintain the furnace electrode or electrodes. The system additionally includes means for measuring the power factor of the power supply system as well as arc current, and adjusts the electrode position to compensate for off-normal values of these parameters.

3,435,122
ELECTRONIC PIANO FEEDBACK REDUCTION

Anthony C. Ippolito, North Tonawanda, N.Y., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Filed Mar. 31, 1965, Ser. No. 444,202
Int. Cl. G10h *3/00;* G01k *9/00*
U.S. Cl. 84—1.14 4 Claims

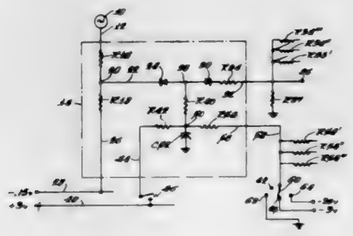


An electronic piano utilizing cantilevered, vibratile reeds as the tone generating elements. The reeds are in electrical capacitive relation with a comb-shaped pickup, vibrating in the slots in the pickup to vary the capacity between the reeds and the pickup, which variation in capacity is electrically amplified and converted in a loudspeaker into audible piano-like tones. The positional relation of each reed to the pickup is such that, at low amplitudes of vibration, the variation in capacity contains a high percentage of second harmonic as compared with the fundamental frequency of vibration of the reed, whereby there is little fundamental frequency energy available that might be fed back from the loudspeaker to the reed, whereby undesirably to sustain reed vibration.

3,435,123
ELECTRICAL MUSICAL INSTRUMENT KEYING SYSTEM

Ray B. Schrecongost, Park Ridge, Ill., assignor to Hammond Corporation, Chicago, Ill., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,257
Int. Cl. G10h *1/02, 3/00*
U.S. Cl. 84—1.26 6 Claims



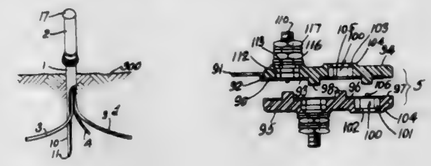
An electrical musical instrument keying system which provides double diode keyers for each signal source to be keyed. All keyers are normally held off by a common bias voltage which is variable, and are turned on individually by a keyed counter voltage which overcomes the bias voltage for the particular keyer. RC timing circuits are used to control decay subsequent to disconnection of the keying voltage source. Decay rate is variable depending upon the selected level of the common bias voltage. Variations in the basic system include provision of a dual slope decay envelope by the addition of a resistor and diode connection in the RC timing circuit and the provision of two types of percussion by the incorporation of RC and diode connections in the keying circuits.

3,435,124
PEDESTAL AND UNDERGROUND TERMINALS FOR BURIED CABLE SYSTEMS

William H. Channell, 122 Oak Tree Drive, Glendora, Calif. 91740

Filed Feb. 7, 1966, Ser. No. 525,487
Int. Cl. H02g *9/02*
U.S. Cl. 174—38 14 Claims

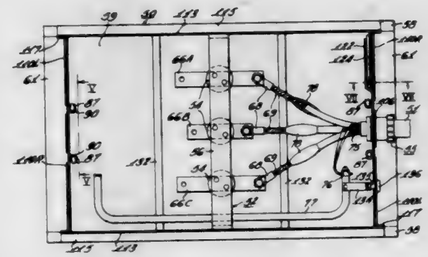
The device is for pressurized and non-pressurized cable systems for both pedestal or direct burial installations. In the pressurized and non-pressurized form a plastic stake is placed upright in a hole in the ground. This stake is open at both ends and carries an axially positioned housing above the ground and separable from the stake. The stake within the same is provided with means to ground the cable sheath comprising a metal terminal and grounding post the upper end of which is received within the housing. The post within the housing is provided with a terminal block and with a plastic cable bundle support. The pressurized form includes the addition of hermetic sealing units at the point of joinder between the housing and the stake thereby preventing communication between the stake and the housing.



3,435,125
T-JUNCTION BOX FOR THREE PHASE PRIMARY FEEDER CABLE

Thomas H. Keogh, Pittsburgh, and Norman E. Haglund, Gibsonia, Pa., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 5, 1967, Ser. No. 673,148
Int. Cl. H01r *13/46;* H02g *5/06*
U.S. Cl. 174—59 7 Claims



A T-junction box for tapping a three phase electrical power primary feeder cable has a rigid framework including a pair of elongated side frame members secured to the bottom panel of the junction box, an inverted U-shaped support secured adjacent its ends at the center of the side frame members, a pair of end frame members secured to the side frame members and having arcuate cutout portions partially defining cable entrance ports at opposite ends of the junction box, and standoff insulators depending from the crosspiece of the inverted U-shape support and carrying terminals for the phase conductors of the primary and tap cables. End plate members cooperate with the end frame members to form the cable entrance ports and the end plate members and side panels of the junction box are detachable to make all points within the junction box readily accessible.

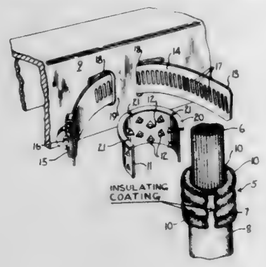
3,435,126
MEANS SECURING A CABLE SHEATH TO A GROUNDING AND SUPPORTING MEMBER

Douglas L. P. Hamilton, % Utility Products Co., 3111 W. Mill Road, Milwaukee, Wis. 53209

Filed Jan. 4, 1967, Ser. No. 607,258
Int. Cl. H02g *15/02, 15/08*
U.S. Cl. 174—78 2 Claims

Segments of the metal shield of a cable are folded back onto the butt end portion of the plastic cable sheath which has been cut away to expose the conductors of the cable. A metal band with integral inwardly directed

sharp pointed prongs is wrapped around the folded-back shield segments. A hose clamp embracing the band enwrapped butt end portion of the cable sheath and a neck portion on a metal grounding and cable supporting member, in an above ground enclosure, is tightened to cause the prongs to penetrate the folded back segments of the



metal shield to establish a good electrical connection between the shield and the grounding and supporting member, despite an insulative coating on the surfaces of the shield, both inside and out. The tightening of the hose clamp also mechanically anchors the cable to the grounding and supporting member.

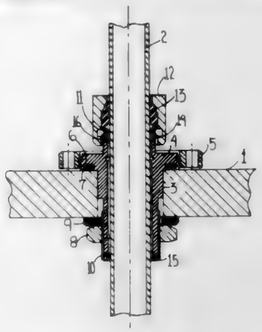
3,435,127
CONDUCTIVE ADHESIVE ARTICLES AND MANUFACTURE
Thomas P. Rose and Calvin T. Hollowood, Inkster, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 3, 1965, Ser. No. 452,484
Int. Cl. H01b *3/14*
U.S. Cl. 174—94 **12 Claims**



An electrically conductive metal screen having the interstices partially filled with a low viscosity non-tacky but reactivatable adhesive and the outer surfaces of the screen clear of the adhesive. A method of producing the coated screen by submerging it in a bath of adhesive and hanging the coated screen in a vertical position to dry. A method of bonding the coated screen to another conductive article in metal-to-metal contact by reactivating the adhesive through heat or solvent, applying pressure to bond the article until cooled or until the solvent is evaporated respectively, and then removing the pressure. A method of repairing ruptures in the printed circuits plated on a plastic backing by reactivating the adhesive of the conductive article over the break and allowing the adhesive to harden under pressure.

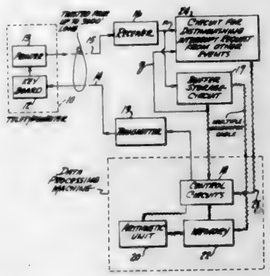
3,435,128
REPLACEABLE VACUUM-TIGHT CURRENT FEEDTHROUGHS
Rudolf Dörwald, Triesen, Liechtenstein, assignor, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,837
Claims priority, application Switzerland, July 16, 1965, 10,180/65, Patent 428,881
Int. Cl. H01b *17/26;* **H05k** *5/02*
U.S. Cl. 174—151 **6 Claims**

Current feedthroughs for vacuum systems capable of carrying high magnitudes of current and capable of executing rotary motion about their axes and sliding motion along their axes are disclosed. Current is carried by a central rod of copper, or other electricity conducting material, which is insulated from the vacuum housing as well



as the rest of the feedthrough apparatus. When carrying high magnitude currents, the central conductor may be tubular so that coolant may be circulated therein.

3,435,129
CIRCUIT FOR DISTINGUISHING INTERRUPT SIGNAL FROM OTHER SIGNALS
Robert A. Rodner, North Palm Beach, Fla., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,731
Int. Cl. H04l *15/00;* **G11b** *13/00;* **G06f** *1/00*
U.S. Cl. 178—3 **5 Claims**

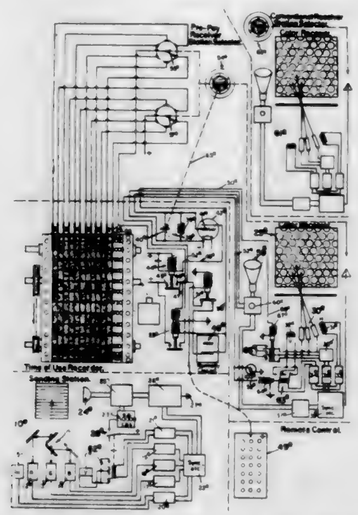


A data transmission device such as a teletypewriter is capable of transmitting an interrupt signal and other signals to, for example, a data processing machine. A circuit is provided for distinguishing among these signals on the basis of pulse width discrimination. A relatively long first enabling signal is generated in response to receipt of the leading edge of a signal from the data transmission device and a second relatively short enabling signal is generated in response to the trailing edge of the device signal. A circuit responsive to the concurrent receipt of both enabling signals produces an output when the device signal is an interrupt signal but not when the device signal is shorter than an interrupt signal.

3,435,130
TELEVISION SYSTEMS AND OPERATIONS
Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Apt. 1408, Chicago, Ill. 60637
Continuation-in-part of applications Ser. No. 245,277, Dec. 17, 1962, Ser. No. 300,946, Aug. 8, 1963, and Ser. No. 383,144, July 16, 1964. This application July 29, 1964, Ser. No. 386,031
Int. Cl. H04n *9/02, 1/46, 7/16*
U.S. Cl. 178—5.2 **9 Claims**

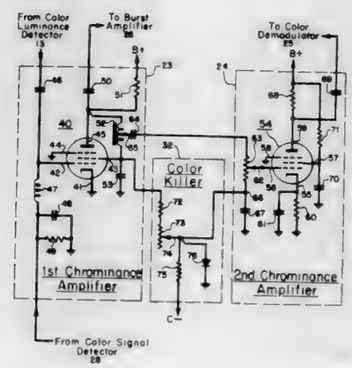
This case discloses various forms of emission of television programs or audio-radio programs, and reception

of the same in a first degraded form of intelligible translation; with provision for receiving and translating such programs by pay or subscription receiver operation, as



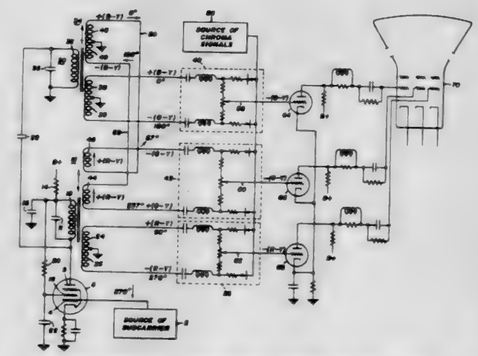
intelligible translations, without such first form of degradation, either in an inferior aesthetic quality without pay or subscription operation, or in a superior aesthetic quality by making pay or subscription operation.

3,435,131
AUTOMATIC CHROMINANCE CONTROL SYSTEM
Robert W. Krug, Oak Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,805
Int. Cl. H04n *9/48, 5/38, 5/44*
U.S. Cl. 178—5.4 **9 Claims**



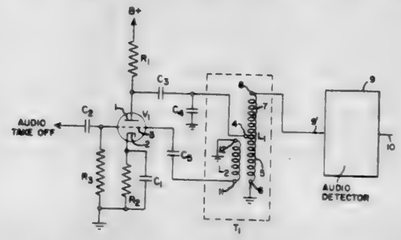
A color-killer circuit in the chrominance channel of a color television receiver which utilizes the ACC-controlled first chrominance amplifier as a DC amplifier to amplify the ACC signal to a level suitable for rendering the second chrominance amplifier operative during color reception and inoperative during monochrome reception. The amplified ACC signal at the anode circuit of the first chrominance amplifier is coupled by a voltage divider network to the control grid of the second chrominance amplifier, which is biased heavily negative to disable that stage except during color reception when the amplified ACC signal is sufficient to overcome the negative bias. A diode connected from the control grid to ground prevents the grid from becoming positively biased. Utilizing the first chrominance amplifier as a DC amplifier in this manner eliminates the need for a separate color-killer voltage amplifier.

3,435,132
REFERENCE WAVE GENERATOR FOR A COLOR TELEVISION RECEIVER
Michael J. Palladino, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 18, 1966, Ser. No. 528,545
Int. Cl. H04n *5/38, 5/44*
U.S. Cl. 178—5.4 **3 Claims**



A subcarrier reference signal supply for a color television receiver providing reference signals on three phase axes from a source signal occurring on a single phase axis. Signals along two phase axes are provided through two transformers, one of which may be tuned to provide a phase shift with respect to the other. A signal along a third phase axis is provided by combining portions of the signals occurring along the first two phase axes by means of tertiary windings on the two transformers.

3,435,133
INTERSTAGE COUPLING AND NEUTRALIZATION CIRCUIT
Van R. Gibson, Jr., Baldwinsville, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 10, 1965, Ser. No. 454,401
Int. Cl. H04n *7/00;* **H03f** *1/00;* **H01h** *7/08*
U.S. Cl. 178—5.6 **5 Claims**

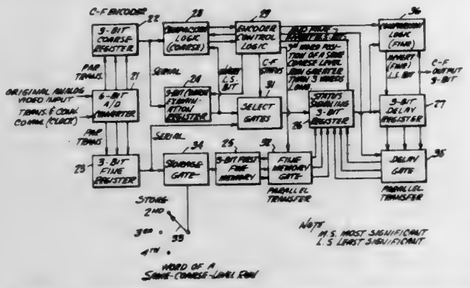


In order to provide for coupling and neutralization in multi-stage circuits there is provided an autotransformer having a primary portion and a secondary portion. Magnetically coupled to the autotransformer is a second winding wound in bifilar fashion with the primary portion to derive a signal equal in amplitude to the output of a first stage, but out of phase with that signal. This signal is then fed back to the input of the first stage to exactly balance the signal feedback to that input due to interelectrode capacity in the first stage. The output of the autotransformer is supplied as an input to a succeeding stage.

3,435,134
DIGITAL TELEVISION DATA COMPRESSION SYSTEM

Gerald P. Richards, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 535,770
Int. Cl. H04n 7/04
U.S. Cl. 178—6 17 Claims



1. In a television system for subject representative digital signals in which the brightness values of the elemental subject areas are represented respectively by a code of N digits of which the first $N/2$ digits constitute a coarse word signifying one of K coarse brightness values of said subject and the last $N/2$ digits constittue a fine word signifying one of K fine brightness values of said subject within any one of said coarse brightness values, the combination comprising:

means for sequentially transmitting a first predetermined number of said coarse words representing a first coarse brightness value of said subject;

means for discontinuing said coarse word transmission in response to a determination that said first coarse picture brightness value is represented by at least a second predetermined number greater than said first predetermined number of said coarse words;

means following said coarse word transmission discontinuation for sequentially transmitting one or more of said fine words representing fine brightness values of said subject within said first coarse brightness value;

means responsive to a determination that at least one other coarse word is produced representing a second coarse brightness value of said subject for discontinuing said fine word transmission and reverting to said coarse word transmission;

means for sequentially receiving both of said coarse and fine words; and

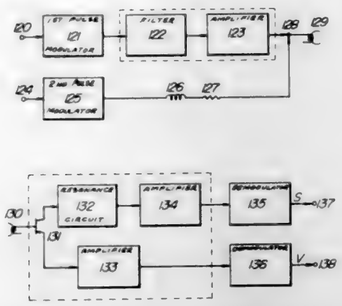
means having coarse and fine word operating modes respectively, for processing said sequentially received coarse and fine words of $N/2$ digits so as produce signals having N digits and comprising combinations of said coarse and fine words of $N/2$ digits.

3,435,135
MAGNETIC RECORDING AND REPRODUCING DEVICE FOR TELEVISION SIGNALS USING PULSE MODULATION

Shine Yasuoka and Tomio Oyama, Toyonaka-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Oct. 25, 1965, Ser. No. 505,431
Int. Cl. H04n 5/76
U.S. Cl. 178—6.6 6 Claims

A device for recording and reproducing composite television signals comprising first and second pulse modulators for modulating the video and sound signals respectively. Each modulator transforms the signal into a pulse train with a sampling time interval proportional to the instantaneous amplitude of the signal to be modulated. Thus the two modulated signals have respective frequency

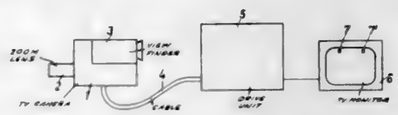


spectra which do not overlap each other. Means are provided for superposing the two modulated signals upon each other and including a common magnetic head for recording the superposed signals on a magnetic tape.

3,435,136
ARRANGEMENTS FOR INDICATING THE STATE OF ADJUSTMENT OF OPTICAL COMPONENTS IN A TELEVISION CAMERA

Horst Bachmann, Darmstadt, Hans-Dieter Schneider, Gross-Gerau, and Emil Sennhenn, Darmstadt-Arheilgen, Germany, assignors to Fernseh GmbH, Darmstadt, Germany

Filed Oct. 22, 1965, Ser. No. 500,782
Claims priority, application Germany, Nov. 4, 1964, F 44,361
Int. Cl. H04n 5/38, 5/44
U.S. Cl. 178—6.8 10 Claims



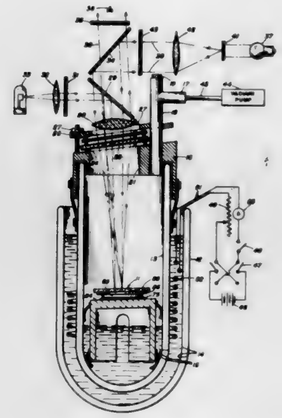
An arrangement in which the diaphragm aperture and the focal length of the lens in a television camera may be remotely displayed on the screen of a television receiver or on the screen of the viewfinder on the camera. Potentiometers are mechanically coupled to the mechanisms which adjust and determine the positions of the diaphragm aperture and the focal length of the lens. The voltages provided by the potentiometers are used to modify the waveform of pulses so that the pulses are representative of the parameters being measured and to be displayed. The modified pulses are mixed into the video signal which is transmitted to the viewfinder on the camera or a remotely located television receiver. By applying a scale to the screen along an edge, the periodically appearing pulses on the screen provide a reading of either or both the diaphragm aperture and the focal length.

3,435,137
INFRARED CAMERA TUBE UTILIZING A SUPERCONDUCTOR MATERIAL DETECTOR

Thomas L. Altshuler, Wayne, Pa., Thomas E. Harr, Orlando, Fla., and George E. Ledges, Dryden, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 14, 1965, Ser. No. 463,974
Int. Cl. H04n 1/24; H03k 3/38, 3/42
U.S. Cl. 178—7.1 13 Claims

A wide bandpass infrared camera in which the infrared sensitive detector consists of a mosaic of superconductive material, this superconductive material being located in an area of intense cold and within a magnetic field. When infrared radiation strikes the detector it causes the superconductor to pass from the transition zone into the normal

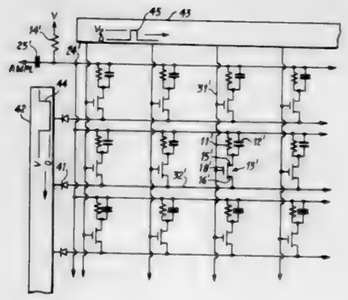


conducting zone thereby permitting a portion of the magnetic field to pass through it. The magnetic field passed then causes rotation of a readout light in proportion to the received infrared radiation.

3,435,138
SOLID STATE IMAGE PICKUP DEVICE UTILIZING INSULATED GATE FIELD EFFECT TRANSISTORS

Harold Borkan, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 30, 1965, Ser. No. 517,623
Int. Cl. H04n 3/14; H03k 23/22; H01j 39/22
U.S. Cl. 178—7.1 6 Claims

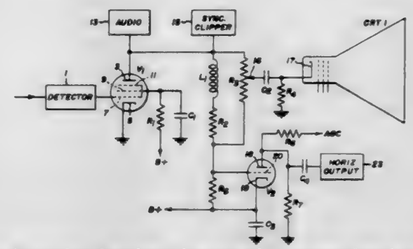


An image sensing panel with a thin film transistor at each pickup element is provided, the source electrodes of each row of the transistors are all energized at one time by pulses from a vertical scanning generator and the insulated-gate electrodes of each column of the transistors are all energized at one time by pulses from a line scanning generator, coincidence of the two kinds of pulses at one of the transistors being effective to transfer the charge, produced by light on the associated elemental area of a photoconductor, to an output circuit to develop a video signal.

3,435,139
CONTRAST CONTROL CIRCUIT FOR TELEVISION RECEIVER

Norman Szeremy, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 25, 1966, Ser. No. 537,463
Int. Cl. H04n 3/16
U.S. Cl. 178—7.3 5 Claims

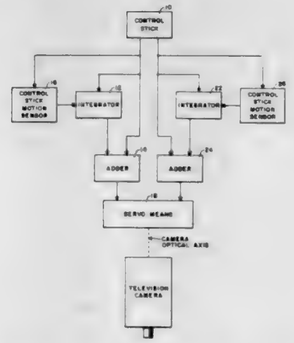


The invention involves the use of a conventional stopless potentionmeter for the contrast control, the "cold" end of the potentiometer being connected to the grid of the AGC keyer stage conventionally employed in television receivers rather than directly to the B+ supply. The grid of such an AGC keyer tube is connected to the B+ supply through a relatively low value resistor which thus serves as a limiting resistor in series with the contrast control potentiometer. In this manner the necessity for a discrete limiting resistor or a potentiometer employing a stop is eliminated.

3,435,140
ADAPTIVE CONTROL SYSTEM FOR AIRBORNE TELEVISION CAMERA

Werner G. Hueber, Riverside, Calif., and Klaus J. Hecker, Oberursel, Germany, assignors to the United States of America as represented by the Secretary of the Navy

Filed Nov. 24, 1965, Ser. No. 510,164
Int. Cl. H01j 29/02; B64c 13/50
U.S. Cl. 178—7.81 9 Claims



1. An adaptive control system for airborne electro-optical guidance systems which allows effective control of the direction of the optical axis during different types of operation, comprising:

(a) a control stick means which provides output signals in pitch and in yaw,

(b) separate pitch and yaw channels,

(c) each separate said pitch channel and said yaw channel including an integrator means, an adding circuit means, and a control stick motion sensor means,

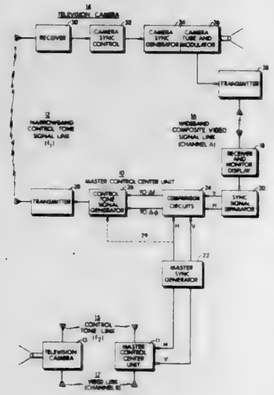
(d) output signals in pitch being fed to said integrator means, said adding circuit means and said control stick motion sensor means in the pitch channel,

(e) output signals in yaw being fed to said integrator means, said adding circuit means and said control stick motion sensor means in the yaw channel,
(f) the outputs of said pitch channel control stick motion sensor means and said yaw channel control stick motion sensor means being fed to said integrator means in their respective channels, the outputs of each said control stick motion sensor means being used to cause discharge of respective said integrator means,
(g) the output of said integrator means being fed to respective said adding circuit means,
(h) camera means having an optical axis,
(i) a servo means being connected to said camera means for controlling the movement of the camera axis,
(j) the output of both the pitch channel adding circuit means and the yaw channel adding circuit means being fed to said servo means for controlling said camera axis.

3,435,141
TELEVISION CAMERA SYNCHRONIZATION CONTROL SYSTEM

Ronald E. Hileman, Clarence, and Vincent C. Oxley, Buffalo, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,801
Int. Cl. H04l *7/06*
U.S. Cl. 178—69.5 **8 Claims**



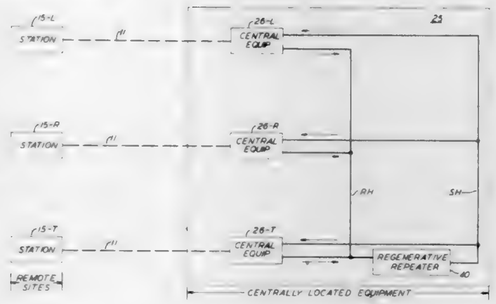
A synchronization system for automatically controlling the phase timing of a selected remote television camera from a control center by means of frequency and phase shift corrections of an audio frequency control tone. At the control center, a digital sync separator derives horizontal and vertical frame synchronization signals from composite video information received from the camera. These derived signals are digitally compared with horizontal and vertical reference signals to produce error signals indicative of the direction of phase correction required. In a stepwise manner, the vertical synchronizing error signal advances or retards the frequency of the control tone being transmitted to the camera and the horizontal error signal advances or retards the phase of the control tone. The means for making frequency and phase corrections in the control tone comprises either a digital phase modulator or means for adding or deleting pulses at a specified frequency in the tone generating process.

In a first embodiment, the camera includes a discriminator and logic network to detect the control tone frequency shifts and accordingly advance or retard the camera sync pulse generator in increments of one horizontal line to effect correction of vertical sync pulse timing. era sync pulse generator in increments of one horizontal by use of a phase locked oscillator which drives the camera sync pulse generator and follows the phase shifts of the control tone. In a second embodiment, the camera employs a single phase locked loop which is responsive to both the frequency and phase shifts of the control tone to sequentially effect vertical and horizontal sync pulse time corrections.

3,435,142
STEERABLE REGENERATIVE REPEATER CIRCUIT

Fred B. Crowson, Brooklyn, and George S. Groth, Bronx, N.Y., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 16, 1965, Ser. No. 480,017
Int. Cl. H04l *25/20, 25/52, 15/00*
U.S. Cl. 178—73 **12 Claims**

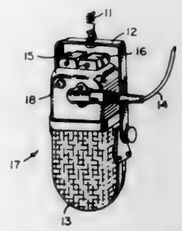


A control circuit for a multiple station telegraph network is arranged so that only one remote station at a time transmits a message through a receive hub, a regenerative repeater, and a send hub to receivers of all other stations in the network. The control circuit is further arranged so that while that one station is transmitting, any receiving station can send selected control signals, such as a break signal, by way of a path bypassing the regenerative repeater and going directly to the receiver of the transmitting station. The control signals therefore do not interfere with the message received at any of the other receiving stations.

3,435,143
RIBBON MICROPHONE

Charles P. Fisher, Framingham, Mass. (473 Washington St., Wellesley, Mass. 02181)

Filed Aug. 2, 1965, Ser. No. 476,290
Int. Cl. H04m *1/00;* **H04r** *9/00, 9/08*
U.S. Cl. 179—1 **13 Claims**

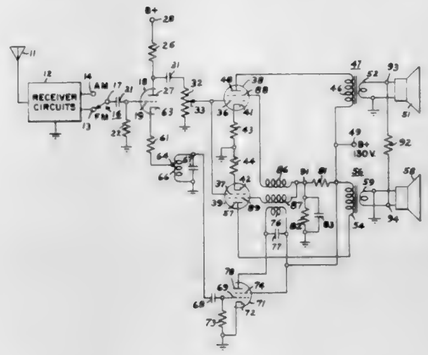


In a ribbon microphone, the width of the ribbon, the cross sectional area of the poles, and the separation between the poles is varied along their common length thereby maintaining saturation of the poles and a uniform magnetic field in the ribbon gap. A feedback circuit is used to reduce the bass sensitivity of the transmission.

3,435,144
CROSS-TALK COMPENSATION FOR STEREO RECEIVERS

Antal Csicsatka, Utica, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 22, 1965, Ser. No. 501,414
Int. Cl. H04m *1/00;* **H04j** *1/12, 3/10*
U.S. Cl. 179—1 **3 Claims**

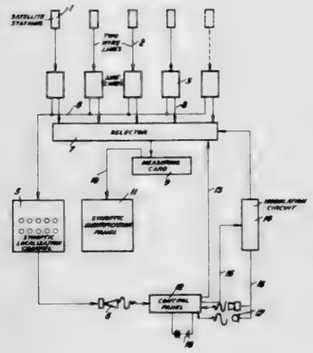


A cross-talk compensation circuit for a stereo receiver comprising a single resistor connected between oppositely phased ends of corresponding signal-coupling windings in the two channels.

3,435,145
REMOTE-CONTROLLED ALARM NETWORKS

Jacques Gilbert Pinault, Chatillon-sous-Bagneux, Jean Paul Lallet, Clamart, and Henri Amédée Basile Carbonnel, Antony, France, assignors to Société Anonyme: Groupement Atomique Alsacienne Atlantique (G.A.A.A.), Le Plessis-Robinson, France, a French corporation

Filed Nov. 24, 1965, Ser. No. 509,571
Claims priority, application France, Nov. 26, 1964, 996,434
Int. Cl. H04m *11/00*
U.S. Cl. 179—2 **3 Claims**

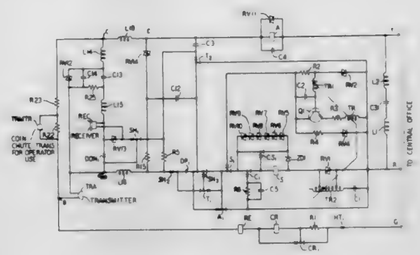


Described herein is an electrical surveillance and alarm system which employs two detectors to sense current changes in wiring between main and satellite stations, a synoptic panel designating particular satellites, an audible warning device, satellite selectors, plug-in measuring circuits to determine the circuit anomaly, and an alarm condition synoptic panel.

3,435,146
COIN TELEPHONE CONTROL CIRCUIT

Alessandro Busala, Rembert R. Stokes and Lawrence A. Strommen, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 11, 1965, Ser. No. 454,889
Int. Cl. H04m *17/02*
U.S. Cl. 179—6.3 **7 Claims**

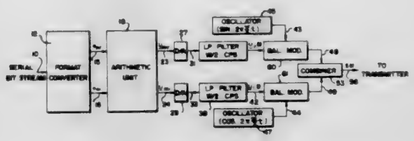


In the control circuit for a coin operated telephone the contacts of a relay in the tip lead are employed to eliminate coin signal simulated transients and an equalizing network is employed in combination with the coin signal oscillator so that the output voltage seen at the operator's position is compensated according to loop length.

3,435,147
ADAPTIVE DATA MODEM WHEREBY DIGITAL DATA IS ENCODED IN TIME DIVISION FORMAT AND CONVERTED TO FREQUENCY DIVISION

Robert E. Malm, Bethesda, Md., assignor to Page Communications Engineers, Inc., Washington, D.C., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,277
Int. Cl. H04j *1/00*
U.S. Cl. 179—15 **16 Claims**



A data modem in which, at the transmitting terminal, input information is modulated in a time division format in which the information is converted to digital sequences of amplitude values of the sine and cosine components of the output signals to be generated, the latter sequences digitally processed in sequential fashion for conversion to a sequential digital frequency division format in which the digital sequences are transformed to sequences representative of amplitude samples of quadrature-related components of the output signals to be generated, and the sequential digital frequency division format containing the amplitude sample-representative sequences then converted to analog band-limited output signals of frequency-division multiplexed configuration. At the receiving terminal, this operational process is effectively reversed to obtain the original input information.

3,435,148

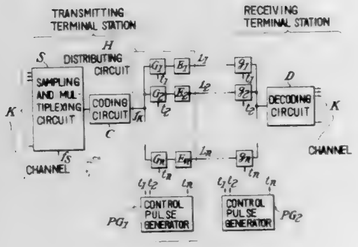
TIME DIVISION MULTIPLEX PULSE CODE MODULATION COMMUNICATION SYSTEM BY PULSE DISTRIBUTION TRANSMISSION

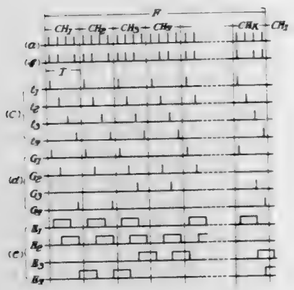
Hiroki Yoshine, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Continuation-in-part of application Ser. No. 218,713, Aug. 22, 1962. This application Sept. 26, 1966, Ser. No. 593,252

Int. Cl. H04j *3/02*

U.S. Cl. 179—15 **8 Claims**





A time-division, multiplex pulse-amplitude-modulation (PCM) communication system, wherein signals to be transmitted are successively converted into a PCM signal by a sampling and multiplexing circuit and by a coding circuit. The PCM signal obtained is distributed to a plurality of transmission lines, and the distribution is carried out with respect to each bit of the coded pulse train representing each transmitting signal or to each channel slot of the transmitting signals.

3,435,149

TONE GENERATORS FOR DELTA MODULATION TIME DIVISION COMMUNICATION SWITCHING SYSTEMS

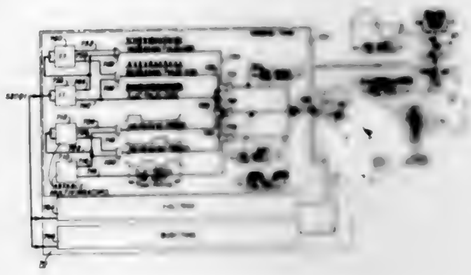
Hiroshi Inose, Tokyo, and Zenya Koono, Yokohama, Japan, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 17, 1965, Ser. No. 440,453

Int. Cl. H04m *3/42;* **H04j** *3/04*

U.S. Cl. 179—18 **12 Claims**

In a delta modulation communication system the required tones such as ringing, dial, and busy tones are generated by combinations of logic elements including flip-flops, multivibrators and gates. The pulse trains indicative of increasing, decreasing, and flat pulse codes are combined with pulses indicative of the tone periods for these codes and the resultant is gated to the delta demodulation equipment in the line circuit of the selected line to which the tone is to be applied.



3,435,150

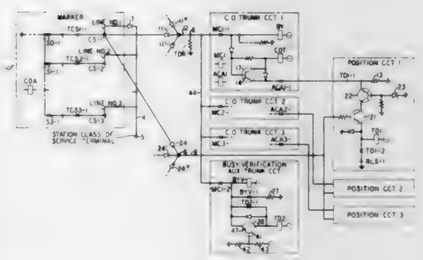
PRIVATE BRANCH EXCHANGE SYSTEM HAVING DATA TRANSMISSION LINES AND MEANS FOR PREVENTING APPLICATION OF TONES THERETO

Erwin H. Albrecht, Brick Township, Ocean County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 3, 1965, Ser. No. 511,508

Int. Cl. H04m *3/60*

U.S. Cl. 179—27 **11 Claims**



In a PBX having lines which are used for data transmission, the camp-on and butt-in facilities of the PBX apply camp-on and butt-in indicating tones to the lines. In the case of data lines the tones would tend to decrease the quality of the data transmission. Solid state circuitry which is easily attachable to PBX circuitry is used to prevent the application of camp-on and butt-in tones to the lines of the PBX that are of the data transmission class.

3,435,151

ARRANGEMENT OF BRANCHED TELEPHONE SUBSETS

Percy Arthur Russell, San Isidro, Buenos Aires, Argentina, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

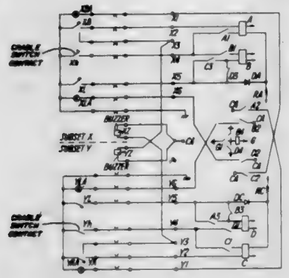
Filed Dec. 28, 1965, Ser. No. 516,881

Int. Cl. H04m *1/70, 3/58*

U.S. Cl. 179—27 **9 Claims**

An arrangement is provided for two branched telephone subsets to enable either subset to directly connect to the other, to transfer calls to the other and to make

external calls independently of each other. The system also assures secrecy of incoming and outgoing calls and prevents the other subset from breaking into existing calls by itself.



3,435,152

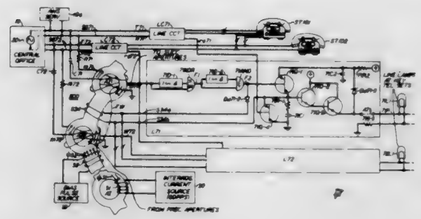
RINGING SIGNAL DETECTOR WHICH DISTINGUISHES RINGING SIGNAL FROM PERIODIC NOISE

Ernest M. Gunter, Lanham, Md., and James L. Simon, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 13, 1966, Ser. No. 549,886

Int. Cl. H04m *3/00*

U.S. Cl. 179—84 **7 Claims**



Interrogates central office line at 60 p.p.s. using a magnetic structure. Output is coupled to detector circuit. When ringing signal is present, detector circuit senses polarity reversal in subsequent output pulses and activates lamp at telephone.

3,435,153

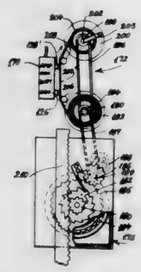
ELECTRONIC SOUND PRODUCING WALKING CANE

Carl D'Amato, 8784 23rd Ave., Brooklyn, N.Y. 11214

Filed Oct. 14, 1965, Ser. No. 496,097

Int. Cl. G11b *5/10;* **A63h** *5/00*

U.S. Cl. 179—100.2 **3 Claims**



1. A device of the character described, comprising an elongated tubular cane, a handle at one end of the cane, said cane having an enlargement as said one end adjacent the handle defining a housing, a loudspeaker in the housing, an amplifier in the cane connected in a circuit with said loudspeaker, a sound record carried by the cane, and transducer means connected to said amplifier and disposed for picking up recorded signals from said record and conveying the signals to said amplifier for audible reproduction by said loudspeaker, said sound record being a magnetized tape, a spring powered clock motor arranged to drive said tape in one direction, said transducer means being a magnetic head disposed at said tape to pickup magnetically recorded signals therefrom, said cane having two telescoped sections, and gear means carried by one of the cane sections and operatively interconnected with said clock motor for winding said spring when the other cane section is advanced axially into the first cane section.

3,435,154

TAPE GUIDE APPARATUS FOR HELICAL SCAN RECORDERS

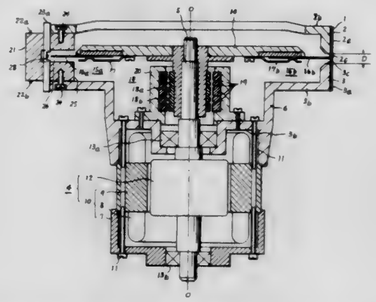
Nobutoshi Kihara, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Oct. 28, 1965, Ser. No. 505,518

Claims priority, application Japan, Oct. 31, 1964, 39/85,136

Int. Cl. G11b *5/00*

U.S. Cl. 179—100.2 **5 Claims**



Tape guide apparatus including a plurality of coaxial, cylindrical tape guide members, a supporting member for said tape guide members and comprising a plurality of spaced, stopper means extending axially therefrom, and means for attaching said tape guide members to said supporting member with the former in abutment with said stopper means to maintain said tape guide members in coaxial alignment.

3,435,155

POLE PIECES FOR MAGNETIC HEADS WITH ACCURATELY DETERMINED GAP HEIGHTS

Bastiaan Van Der Voo, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 348,335, Mar. 2, 1964. This application May 17, 1967, Ser. No. 639,249

Claims priority, application Netherlands, Mar. 1, 1963, 289,675

Int. Cl. G11b *5/22*

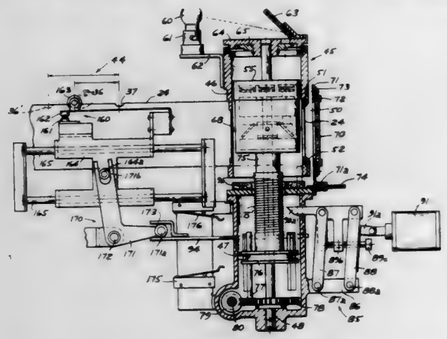
U.S. Cl. 179—100.2 **1 Claim**



A two piece magnetic head wherein one pole piece is provided with an auxiliary face. The additional face provides an accurate reference line for grinding the head sur-

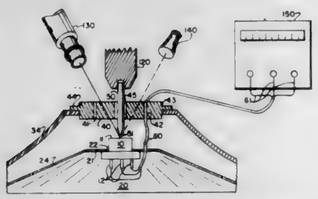
face to a desired height in that the straight edged boundary of the additional face replaces the relatively inaccurate gap face edge which is the result of the grinding and polishing step.

3,435,156
OPTICAL MULTIPLE TRACK SOUND PROJECTOR
Morris Schwartz and Werner K. Bender, Plainville, Conn., assignors to The Kalart Company Inc., Plainville, Conn., a corporation of New York
Continuation-in-part of application Ser. No. 199,411, June 1, 1962. This application Jan. 4, 1966, Ser. No. 518,614
Int. Cl. G11b *7/08, 7/00;* **G03b** *1/24*
U.S. Cl. 179—100.3 **8 Claims**



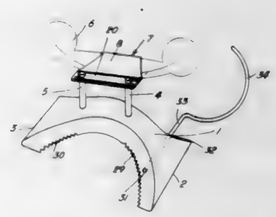
There is disclosed a sound projector for playing back sound from a sound record area formed on a strip of film by parallel sound record tracks. A sound record area to be played back is supported in curved guide means which, in turn, are mounted on a stationary housing coaxially therewith. The scanning assembly of the sound projector comprises optical means disposed within the housing rotatable about and lengthwise slidable along the common axis of the housing and the guide means. The source of light, such as a light bulb, for the optical means is inserted in a socket stationarily mounted with reference to the optical means. The socket is disposed so that the light bulb in the socket directs a light beam upon the optical means which, in turn, directs the beam of light upon the sound record area supported in the guide means. Drive means impart to the optical means combined rotary and axial motions, the rates of said motions being so correlated that the beam of light sequentially scans the parallel sound tracks on the sound record area.

3,435,157
SEMICONDUCTOR TRANSDUCER ASSEMBLY
Thomas F. Longwell, Mount Prospect, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,752
Int. Cl. H04r *17/00*
U.S. Cl. 179—110 **1 Claim**



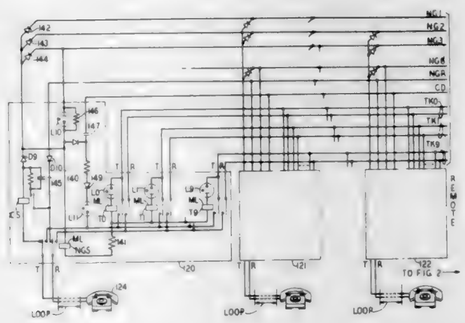
A semiconductor microphone assembly includes a hollow case with two open ends, having a diaphragm, carrying a semiconductor, mounted over one open end, and a cover, having one end of a stylus rigidly attached thereto, mounted over the other open end. The stylus extends into the case so that its tip bears against a stress-sensitive surface of the semiconductor. The stress on the semiconductor surface is varied in response to actuation of the diaphragm. The cover, in which the stylus is mounted, is of a transparent material to permit the viewing, through a microscope, of the stylus and the semiconductor during assembly.

3,435,158
TELEPHONE HANDSET HOLDER
Philippe Darrasse, 21 Chemin des Buttes, L'Etang-la-Ville, Yvelines, France
Filed Dec. 13, 1965, Ser. No. 513,274
Claims priority, application France, Dec. 14, 1964, 998,509
Int. Cl. H04m *1/04*
U.S. Cl. 179—157 **4 Claims**

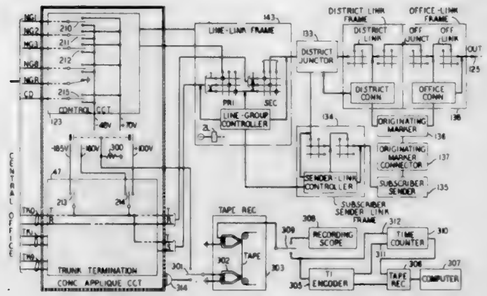


Telephone handset holders having rigid arcuate supports of expanded plastics shaped to fit a shoulder of a user and having a relatively narrow middle portion and wider end portions below the middle portion, having pins extending upward from the middle portion and opposed clamping plates attached to the top of the pins for holding a telephone in the vicinity of but spaced from the face of the user are described herein.

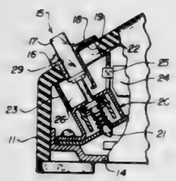
3,435,159
CIRCUIT AND METHOD FOR TESTING COMPLEX SYSTEMS
Chester E. Brooks, Montvale, James L. Henry, Madison, and John A. Meyerle, Manasquan, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,467
Int. Cl. H04m *3/22*
U.S. Cl. 179—175.2 **19 Claims**



A system for determining fault conditions in electrical equipment for generating and recording analog signals from contact microphones coupled to the equipment. The analog signals are digitalized and again recorded. The digitalized signals are compared with priorly established normal ranges for said signals. Signals departing from the normal range are identified.



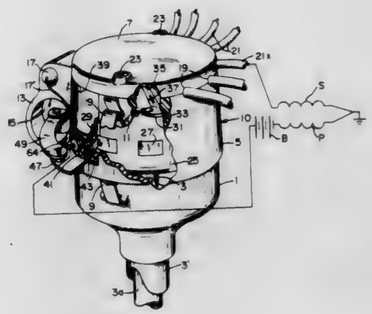
3,435,160
PUSHBUTTON SIGNALING ARRANGEMENT
Joseph M. Hartz, Elmhurst, Sigitas Miknaitis, Chicago, and Carl W. Vogel, Evanston, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,409
Int. Cl. H04m *1/02*
U.S. Cl. 179—179 **5 Claims**



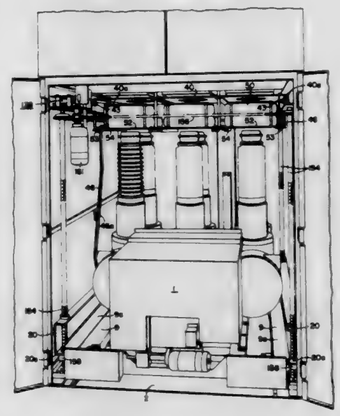
An illuminated key switching assembly for a telephone set having keys and an integrally molded upper housing unit of transparent material for pushbuttons and a designation strip. A lower integrally molded housing has separate compartments to confine the light to a particular pushbutton and corresponding area of the designation strip.

3,435,161
ROTARY TYPE DISTRIBUTOR
Millard A. Webster, 1213 Revell Ave., Rockford, Ill. 61107
Filed May 8, 1967, Ser. No. 636,921
Int. Cl. H01r *39/00;* **H01h** *19/00*
U.S. Cl. 200—26 **12 Claims**

This distributor operates completely on the rotary principle. A spring loaded contact button or ball in the plastic distributor cap has sliding contact with uniformly spaced arcuate metal segments lying flush with the smooth cylindrical surface of a plastic rotor for the primary circuit connection. Similarly, a lightly spring loaded elongated flat contact slidably mounted for radial movement relative to the top of the rotor has an arcuately shaped wider outer end disposed in sliding contact on the cylindrical inner surface of the plastic cap to make contact with one after another of uniformly spaced arcuate metallic segments that lie flush with the cylindrical interior of the cap for the secondary circuit connection, the high-voltage current being delivered to this flat radially disposed contact by another spring loaded contact button or ball mounted vertically in the center of the top of the distributor cap on the axis of the rotor and bearing downwardly with light constant spring pressure on the flat top surface of the aforesaid radially disposed contact. A vacuum operated spark advance unit incorporated in the cap shifts the primary circuit contact ball relative to the cap and rotor to retard the spark automatically in response to drop in pressure in the intake manifold of the engine.



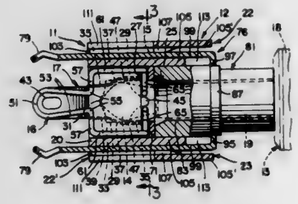
3,435,162
VERTICAL-LIFT METAL-CLAD SWITCHGEAR EQUIPMENT
John M. Kozlovic, Greensburg Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 19, 1966, Ser. No. 580,426
Int. Cl. H01h *9/20, 33/46*
U.S. Cl. 200—50 **3 Claims**



1. In vertical-lift metal-clad switchgear equipment, cell means (2) defining a circuit-breaker compartment having upper-disposed stationary primary disconnecting contacts, horizontally-movable shutter means (40) for opening and closing the openings to said stationary primary disconnecting contacts, a pair of horizontally-spaced vertically movable lifting channels (20) disposed in said circuit-

breaker compartment (2) and carrying an associated circuit-breaker unit (1) upwardly and downwardly to operative and test positions, at least one vertically-arranged pivotally-mounted shutter-operating arm (46) having the lower end thereof guided by movable guide means on one lifting channel (20) and having the upper end thereof operatively associated with said horizontally-movable shutter means (40), whereby upward movement of said pair of lifting channels (20) will rotate said vertically-arranged shutter-operating arm (46) and thereby effect horizontal opening movement of said shutter means (40).

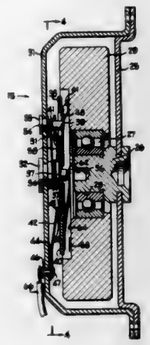
3,435,163
PHONE JACK HAVING A HOLLOW HOUSING WITH CONTACT ELEMENTS INTERFITTINGLY SECURED THEREIN
James R. Bailey, Chicago, and Kurt Lutzenberger, Arlington Heights, Ill., assignors to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 25, 1965, Ser. No. 482,495
Int. Cl. H01r *33/20, 17/18*
U.S. Cl. 200—51.1 **12 Claims**



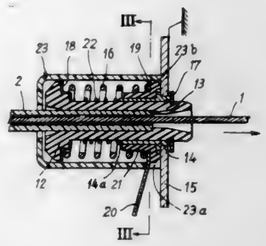
A phone jack embodying a housing having a cavity, open at its front end, and a rear end wall, forming the bottom of the cavity, cooperating switching elements assembled in the housing, through the open front end of the cavity, and seated in slots formed in and through said rear end wall, said elements having connection portions, extending outwardly of the rear wall and including a contactor of wire, bent to provide separable fingers overlying the inner face of the end wall, in position normally making electrical connection with opposite sides of another of said elements, said fingers being yieldingly separable by the stem of a jack plug, when inserted therebetween, to electrically disconnect the same from the other of said elements, while making electrical connection with the plug stem, the structure including a plug stem guiding sleeve, secured in the open end of the housing by an anchoring yoke adapted to latchingly engage with the housing, as the sleeve is assembled axially into its open end, in position to retain the switching elements in seated position on the rear wall of the housing.

3,435,164
ANGULAR SPEED CHANGE SENSOR
Desi de Perczel, Brussels, Belgium, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 18, 1967, Ser. No. 654,137
Int. Cl. H01h *29/26*
U.S. Cl. 200—61.46 **11 Claims**

An inertia apparatus for sensing changes in rotational speed of a rotary member, such as deceleration of a vehicle wheel, includes a housing which can be secured to the rotary member either coaxially or non-coaxially. Included within the housing is a flywheel, frictionally clutched to an actuator plate which is preloaded to a position of rest with respect to said housing. The flywheel thus remains at rest with respect to the housing and rotary member but rotates in space as the rotary member rotates. Thereafter, if the rotary member is decelerated, the inertia of the flywheel urges it to continue rotation. The flywheel is thus effective to rotate the actuating plate when the deceleration is great enough to overcome the preload on the actuating plate. Electrical contacts in the housing provide a signal indicating displacement of the actuating plate which can be conducted externally of the housing.



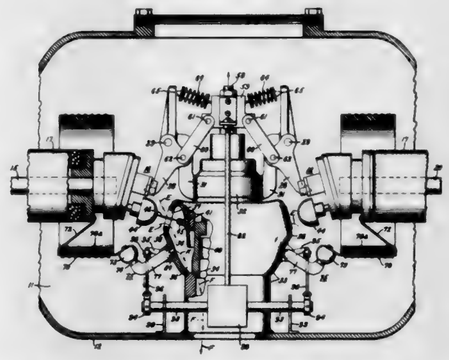
3.435,165
ELECTRIC CONTACT UNITS OF CABLE CONTROL DEVICES
Claude Lombard, Billancourt, France, assignor to Regie Nationale des Usines Renault Billancourt and Automobiles Peugeot, Billancourt, and Paris, France
Filed Nov. 2, 1967, Ser. No. 680,057
Claims priority, application France, Dec. 27, 1966, 88,897
Int. Cl. H01h *17/10*
U.S. Cl. 200—61.89 **2 Claims**



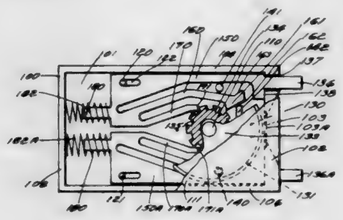
An electric contact unit for cable control device, notably an accelerator cable control device having a protection sheath as provided in automotive vehicles and machines, especially those equipped with an automatic transmission mechanism, said contact unit being adapted to operate as a sheath length compensator preventing by its resilient action any overload of ahe accelerator cable in the fully depressed accelerator pedal position.

3,435,166
GAS BLAST CIRCUIT BREAKER WITH IMPROVED RESISTOR SWITCH
Philip Barkan, Lima, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 16, 1965, Ser. No. 508,005
Int. Cl. H01h *33/82, 33/14, 9/30*
U.S. Cl. 200—148 **5 Claims**

Discloses a gas blast circuit breaker of the type in which a movable main contact is connected through a mechanical linkage to a movable resistor switch contact. A main blast valve downstream from the main contacts and the resistor-switch contacts controls the flow of arc-extinguishing gas past both sets of contacts. A resistor-switch blast passage communicates with the main exhaust passage downstream of the main contacts and upstream of the main blast valve and contains normally-closed secondary flow control means that is opened late in an interrupting operation to allow flow through the region of the resistor-switch contacts. The secondary flow control means blocks flow through the resistor-switch blast passage during the period when the main blast valve is first opened, and this allows a high speed blast to be quickly established past the main contacts upon main blast-valve opening without detraction by flow through the resistor-switch blast passage.



3,435,167
MULTIPOSITION PUSH-BUTTON SWITCH
Frederick W. Pfleger, 1152 Barbara Drive, Cherry Hill, N.J. 08034
Filed Aug. 3, 1967, Ser. No. 658,209
Int. Cl. H01h *19/20, 13/14, 19/14*
U.S. Cl. 200—156 **18 Claims**



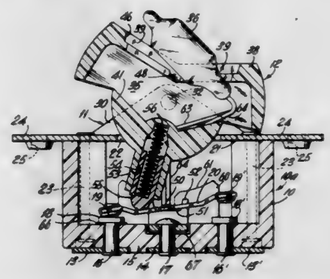
The instant disclosure is concerned with a switch construction wherein is provided a toothed rotary member, and a pair of reciprocatory operating members on opposite sides of the axis of the rotary member each including an actuating member having an engaging portion for engagement with the rotary member to rotate the latter.

3,435,168
ELECTRICAL CONTACT
James S. Cooney, Attleboro, Mass., assignor to Pylon Company, Inc., Attleboro, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 617,945, Feb. 23, 1967. This application Mar. 28, 1968, Ser. No. 721,551
Int. Cl. H01h *1/36*
U.S. Cl. 200—166 **14 Claims**

This invention is a plunger-type electrical contact of improved design. The contact consists of a metallic tube which may be either single layered or plural layered, within which slides a plunger, the end of the plunger extending outwardly from the tube to act as a contact. Within the tube is a smoothly polished ball which has been forcibly pushed into the tubing so as to expand slightly and burnish a portion of the inside wall thereof, within which the plunger slides. Suitable means retain the plunger in the tube, and a compression spring in the tube biases the plunger outwardly.



3,435,169
ROCKER TYPE ELECTRIC SWITCH WITH PILOT LIGHT
Wolfgang F. Bienwald, Huntington Station, and William J. Bowie, Flushing, N.Y., assignors to Leviton Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed July 19, 1967, Ser. No. 654,430
Int. Cl. H01h *9/18*
U.S. Cl. 200—167 **10 Claims**

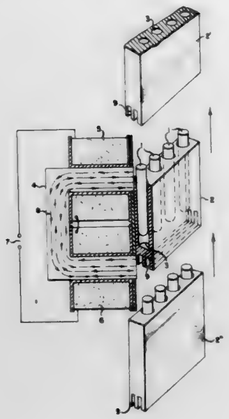


An electric switch of the type having an actuator for operating the switch in the form of a rocker member having a chamber containing one or more pilot lamps for illumination of the actuator. Said chamber being free of obstruction and permitting the pilot lamp to be positioned therein immediately beneath a light-transmitting lens in an upper surface of the actuator member. The actuator is pivotally mounted in switch operating position by trunnions which extend outwardly from opposite sides thereof and are journalled in openings in upstanding side pieces of a mounting strap which is attached to the base of the switch. Electrical connections are made to the pilot lamp through a passageway leading from the chamber in the actuator to the interior of the base.

3,435,170
DEVICE FOR HEATING CHEMICAL REAGENTS
Kai Robert Smith, Lidingo, Sweden, assignor to AB Autokeml, Stockholm, Sweden, a corporation of Sweden
Filed June 16, 1966, Ser. No. 558,099
Claims priority, application Sweden, June 22, 1965, 8,275/65
Int. Cl. H05b *5/08*
U.S. Cl. 219—10.49 **3 Claims**

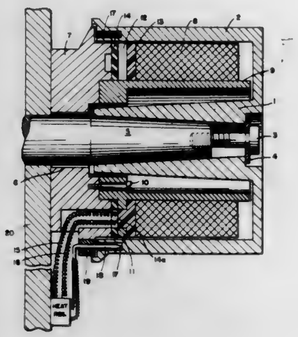
A device for heating chemical reagents including a series of test tube racks sequentially movable in adjacency to a magnetic field creating means which includes a core and windings. Each rack is made of a material having high electrical conductivity so that an electric current is induced in the rack by the magnetic field so as to heat the rack and the test tubes contained therein.

The present invention relates to a device for heating chemical reagents in automatic chemical analyzing machines having movable containers for the reagents which



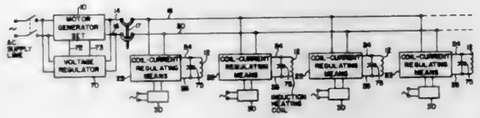
will be referred to below as test tubes. Analyzing machines of this type make it possible to analyze a great number of samples per unit time and to make a great number of different analyses on the individual samples.

3,435,171
HEATED GALETTE
Hans Lohest, Remscheid-Lennep, Germany, assignor to Barmag Barmer Maschinenfabrik AG, Wuppertal, Germany
Filed Nov. 29, 1966, Ser. No. 597,580
Claims priority, application Germany, Dec. 3, 1965, B 84,808
Int. Cl. H05b *5/08*
U.S. Cl. 219—10.61 **4 Claims**



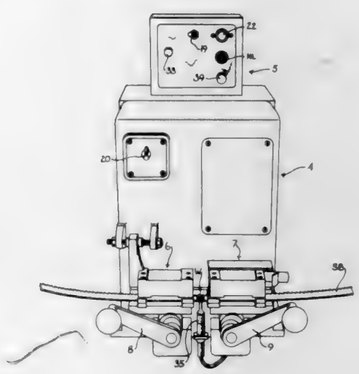
An adjustably heatable galette for thread conveying apparatus in which the cylindrical wall of a hollow galette is mounted for rotation by means connecting the outer end thereof to an axial drive shaft journaled in a supporting frame, the inner annular end surface of the galette wall facing the frame containing an annular slot to receive a heat sensitive measuring element, the galette wall being heated by means of an adjustable induction heating means comprising an annular flanged cylindrical coil carrier wound with an induction coil adjacent the flanged portion thereof, the entire induction coil assembly being connected in fixed position on the supporting frame.

3,435,172
INDUCTION HEATING SYSTEM
William A. Emerson, Catonsville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 2, 1967, Ser. No. 620,071
Int. Cl. H05b *5/00*
U.S. Cl. 219—10.75 **2 Claims**



An induction heating system in which a number of induction heating coils are operated from a single motor generator set while providing for individual regulation of power to the several coils. Current to each coil is regulated by a respective group of high-vacuum pure-tungsten diodes according to filament current supplied to such diodes. Voltage step-up transformers couple the diode groups to the common motor-generator set, and voltage step-down transformers couple such diode groups to the heating coils, thereby rendering compatible the operating conditions of the generator, diodes, and heating coils.

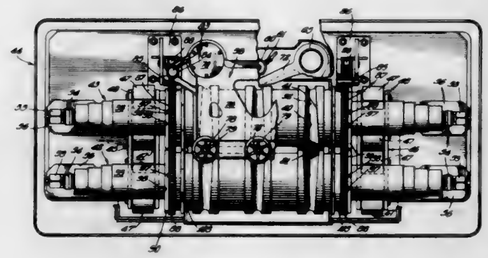
3,435,173
ANNEALING DEVICE WITH AUTOMATIC CONTROL THEREFOR
Eugene N. Connoy, Minneapolis, and Dale R. Boehne, Excelsior, Minn., assignors to Continental Machines, Inc. Savage, Minn., a corporation of Minnesota
Filed Aug. 25, 1966, Ser. No. 575,037
Int. Cl. H05b *1/02, 11/00*
U.S. Cl. 219—50 **1 Claim**



A photosensitive cell is positioned between a pair of jaws that grip a saw band at opposite sides of a weld extending transversely thereof, to be responsive to light rays emanating from the weld zone as the temperature thereof rises due to the passage of an electric current flowing from one jaw to the other through the weld zone, the photosensitive cell being connected in a bridge circuit which controls the connection of the jaws with a

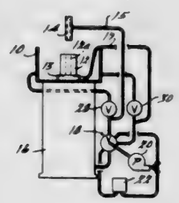
current source and terminates current flow at the proper instant as determined by the intensity of the light rays impinging the photosensitive cell.

3,435,174
ELECTRICAL DISCHARGE MACHINING APPARATUS DIES AND ROLL MANUFACTURE
Michael J. Celovsky, Detroit, Mich., assignor to Industrial Tool Engineering Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 13, 1965, Ser. No. 486,652
Int. Cl. B23p *1/02;* **F16c** *35/06*
U.S. Cl. 219—69 **19 Claims**



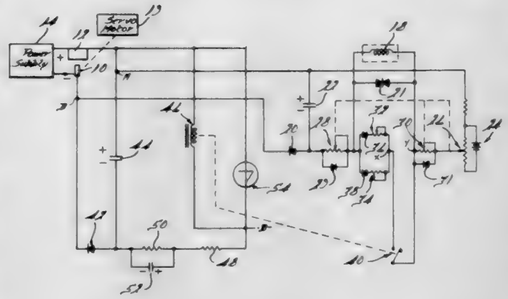
An electrical discharge machining apparatus and method for forming a series of rolls on a pair of shafts. A pair of shafts are orientated parallel to one another and are mounted in a fluid bath in preparation for the electrical discharge machining operation. A carriage is disposed adjacent to the shafts and has a series of tapered electrodes disposed in a line parallel to the axis of the shafts. The shafts are rotated by an appropriate gear mechanism as the tapered electrodes are lowered to a point intermediate the confronting rolls of the shafts.

3,435,175
COOLANT CIRCULATION SYSTEM FOR ELECTRICAL DISCHARGE MACHINING APPARATUS
William B. Shaffer, Grosse Pointe Woods, Mich., assignor, by mesne assignments, to Elox Inc., Troy, Mich., a corporation of Delaware
Filed Sept. 16, 1965, Ser. No. 487,841
Int. Cl. B23p *1/02;* **F16k** *11/02;* **D06f** *7/04*
U.S. Cl. 219—69 **5 Claims**



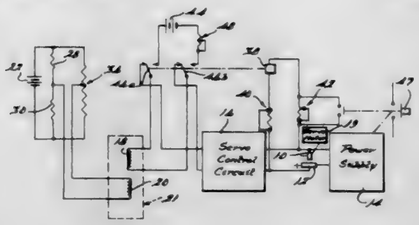
An EDM circulation system including a single pressure pump for providing all necessary flow paths to the machining gap through electrode and workpiece either in a reverse or in a forward flow pattern. A single rotatable valve is included in the system with a valve operator for registering a plurality of ports to control selectively the necessary conduit connections between workpan, reservoir, pump and the gap elements.

3,435,176
VARIABLE VELOCITY SERVO CONTROL CIRCUIT FOR ELECTRICAL DISCHARGE MACHINING APPARATUS
Walter Lobur, Clawson, Mich., assignor, by mesne assignments, to Elox Inc., Troy, Mich., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 532,974
Int. Cl. B23k *9/10*
U.S. Cl. 219—69 **6 Claims**



A servo feed control circuit with a sensing circuit for responding to gap open circuit condition and prolonged gap short circuit condition and increasing the magnitude of control voltage to initiate a higher velocity operation of the servo feed during those conditions.

3,435,177
SERVO CONTROL CIRCUIT FOR ELECTRICAL DISCHARGE MACHINING APPARATUS
William B. Shaffer, Grosse Pointe Woods, Mich., assignor, by mesne assignments, to Elox Inc., Troy, Mich., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 532,975
Int. Cl. B23k *9/10*
U.S. Cl. 219—69 **7 Claims**

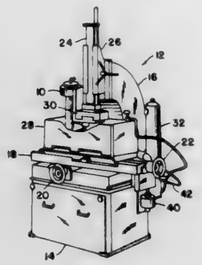


A rapid approach servo feed control circuit for electrical discharge machining apparatus in which initial high velocity approach is provided by a high voltage superimposed downfeed D.C. source. The downfeed source is removed upon initial gap breakdown between workpiece and electrode.

3,435,178
QUICK-CHANGE TOOL FOR ELECTRICAL MACHINING OF DEEP HOLES
Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104
Continuation-in-part of application Ser. No. 504,971, Oct. 24, 1965, which is a continuation-in-part of application Ser. No. 250,321, Jan. 9, 1963. This application Jan. 8, 1968, Ser. No. 696,160
Int. Cl. B23k *9/16*
U.S. Cl. 219—69 **8 Claims**

A tool for use with electrical machining apparatus to permit electrical machining of holes deeper than the ram travel of electrical machining apparatus to which the tool

is secured, along with means for rotating the machining electrode to provide uniform electrode wear. A dovetail, tool base plate, portion is provided for rapidly and accurately securing the tool to electrical machining apparatus. In one embodiment a long, rotatably mounted tube is provided to receive a long electrode and means is provided for rotating the tube while feeding fluid there-

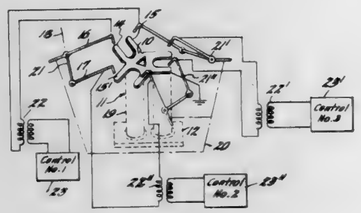


through to the electrode. In a second embodiment, the tool includes a stationary tube for receiving one end of an electrode inserted therein, a sleeve extends over and is secured to the other end of the electrode, and means are provided for rotating the sleeve secured to the electrode to provide rotation of the electrode about the longitudinal axis thereof.

3,435,179
CATHODE RAY TUBE COLOR GUN CENTERING BRACE WELDING SYSTEM

Chester O. Merchant, Owensboro, Ky., assignor to Kentucky Electronics, Inc., Owensboro, Ky., a corporation of Delaware

Filed Oct. 14, 1966, Ser. No. 586,834
Int. Cl. B23k *9/00*
U.S. Cl. 219—78 **4 Claims**



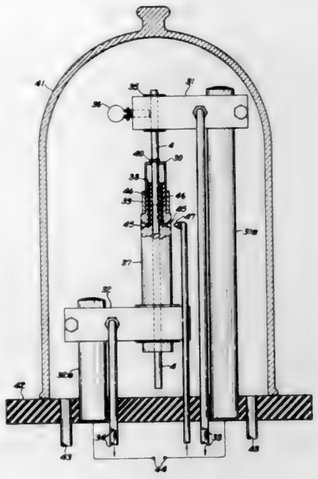
A special purpose welding assembly is provided for simultaneously positioning and welding a centering brace to three similar electrodes of an electron gun of a three gun color picture tube at six extending finger portions.

3,435,180
METHOD OF MAKING A MOLYBDENUM-TUNGSTEN THIMBLE SEAL

Delmar D. Kershaw, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York

Original application Sept. 29, 1964, Ser. No. 400,268. Divided and this application Aug. 3, 1967, Ser. No. 671,517
Int. Cl. B23k *1/02, 1/04*
U.S. Cl. 219—85 **3 Claims**

A molybdenum thimble-tungsten rod assembly for a quartz stem thimble seal wherein the thimble is formed by drawing a shallow cup from a circular molybdenum disc which is then rolled out to the desired length and etched to a feather sealing edge. The molybdenum thimble is joined to the tungsten rod by a fused joint

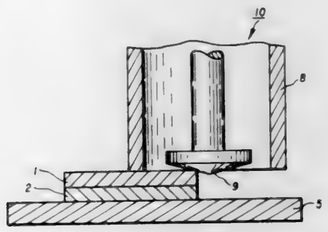


consisting solely of intermingled molybdenum and tungsten.

3,435,181
METHOD OF WELDING USING CONCENTRIC ELECTRODES

Arnold M. Walkow, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,224
Int. Cl. B23k *9/28*
U.S. Cl. 219—91 **3 Claims**



A method of welding wherein an electrode fixture containing a cylindrical outer electrode and conical center electrode is used to weld microminiature electronic components. The electrode is placed so that a portion of the outer electrode is in contact with the surface of one of two objects to be welded and a portion of the conical inner electrode is in contact with the edge of that surface.

3,435,182
WELDING METHOD

Eberhard Rietsch, Burscheid, Germany, assignor to Theodor Wuppermann Gesellschaft mit beschrankter Haftung, Leverkusen, Germany

Filed Aug. 18, 1966, Ser. No. 573,259
Claims priority, application Germany, Aug. 19, 1965, W 39,765
Int. Cl. B23k *11/04*
U.S. Cl. 219—100 **8 Claims**

1. A method of improving the welding seam structure of workpieces which have been electrically flash butt welded, which comprises subjecting the welding seam,

after welding, to an upsetting pressure of a magnitude sufficient to cause plastic deformation or flowing of the welding seam at a temperature which is at least equal to the temperature of the transformation point of the welding

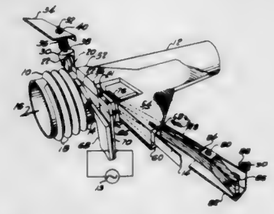


seam, and heating the welding seam to a temperature above said transformation point temperature, whereby the welding seam continues to flow until the welding seam has cooled down to a temperature approximating that of the transformation point.

3,435,183
METHOD AND APPARATUS FOR WELDING AN ALUMINUM FIN TO A FERROUS METAL

Julius J. Vagi, Columbus, Ohio, assignor, by mesne assignments, to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed May 19, 1965, Ser. No. 456,954
Int. Cl. B23k *11/20, 11/04*
U.S. Cl. 219—107 **5 Claims**

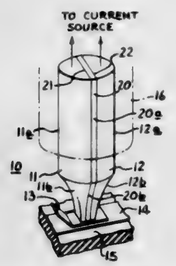


The following specification describes a method and apparatus for welding an L-shaped aluminum fin to a stainless steel tube by controlling the length of the current path in the steel relative to the aluminum and by maintaining high welding speeds relative the current passed between the strip and the tube.

3,435,184
PARALLEL GAP WELDING

John H. Schroeppel, Lemont, and Raymond L. McGaughey, Dundee, Ill., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed July 12, 1965, Ser. No. 471,344
Int. Cl. B23k *9/24, 11/30, 11/10*
U.S. Cl. 219—119 **3 Claims**

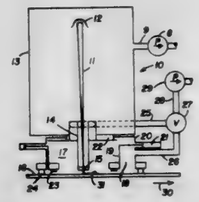


A welding electrode construction for parallel gap welding in which the individual electrodes, arranged side by side, have a central layer of good conducting metal filling the space between them, the central layer being intimately bonded to the electrodes to provide electrical insulation with good thermal transfer and with the presented faces of the electrodes and central layer in the same plane for simultaneous intimate contact with the workpiece.

3,435,185
SLIDING VACUUM SEAL FOR ELECTRON BEAM WELDER

Milan E. Gerard, Chula Vista, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Jan. 11, 1966, Ser. No. 520,002
Int. Cl. B23k *15/00*
U.S. Cl. 219—121 **9 Claims**

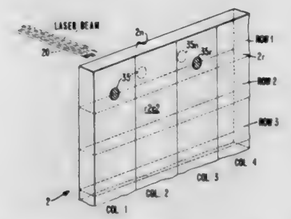


Open ended inner and outer walking chambers have a liquid sealed sliding connection between them, and the outer chamber has a similar liquid sealed sliding connection with the high vacuum chamber of an electron beam gun whose beam passes through the liquid sealed chambers to impinge upon the surface of a workpiece. The open ends of the walking chambers have inflatable seals which, upon being inflated, move to engage the work surface in releasable locking engagement therewith. The walking chambers also have pneumatic motors and metering devices to index the chambers relative to the beam. A walking seal system, including the pneumatic motors, metering devices, valves, and associated elements and circuitry, operates cyclically to alternately inflate the chamber end seals, evacuate the walking chambers, and actuate the indexing motors to advance the chambers relative to the beam while maintaining therewithin the required low order vacuum environment for the beam as it moves relative to the workpiece.

3,435,186
SELECTIVE PIERCING AND MACHINING OF SHEET MATERIAL

David D. Roshon, Jr., Binghamton, and Thomas Young, Apalachin, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

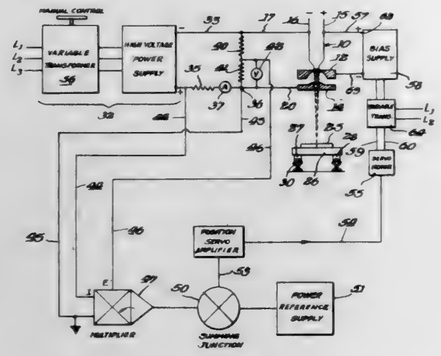
Original application Feb. 20, 1964, Ser. No. 346,215, now Patent No. 3,293,652, dated Dec. 20, 1966. Divided and this application May 16, 1966, Ser. No. 550,554
Int. Cl. B23k *15/00, 9/16, 9/00*
U.S. Cl. 219—121 **5 Claims**



Selective machining of thin materials such as ceramic substrates, sheets of paper, card stock, and the like, are effected by adding a coating to selected surface areas on

the back surface of the thin material and applying a laser beam to the front surface of the material, the coating having a higher energy absorbing characteristic than that of the material. The beam energy of the laser is at a level which is insufficient to machine the material; however, when the coating is encountered by the beam on the back surface, enough energy will be accumulated to cause machining and removal of substrate along with the coating, the remaining portions of the substrate being unaffected by the beam.

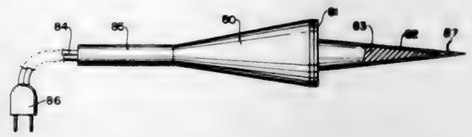
3,435,187
ELECTRON BEAM WELDING METHOD WITH FEED BACK CONTROL
David Sciaky, Chicago, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois
Filed July 14, 1966, Ser. No. 565,177
Int. Cl. B23k *9/10*
U.S. Cl. 219—121 **7 Claims**



4. In welding apparatus of the character described, the combination with an electron gun for projecting an electron beam for welding a workpiece, said gun having an electrode and an anode, a high voltage power regulator, conductors connecting the power regulator with the electrode and with the anode, respectively, for supplying electrical energy to said parts, an electrical multiplier, means supplying representative values of the voltage and the current of said electrical energy to the multiplier, whereby to obtain a first signal from the multiplier proportional to the power being supplied by the electron beam to the workpiece, a summing junction electrically connected to the multiplier for receiving said first signal, a power reference supply for feeding to the summing junction a second signal which is proportional to the power desired for the electron beam, a position servo amplifier, a conductor for feeding to the amplifier any error signal such as may be obtained from the summing junction, and a servo motor in electrical connection with the servo position amplifier for adjusting the high voltage power regulator in response to the error signal so that the product of the current and the voltage will equal the power desired for the electron beam.

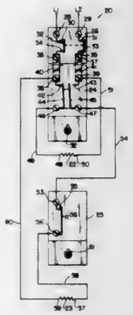
3,435,188
ELECTRIC SOLDERING IRON WITH A LOW ADHESIVE PROTECTIVE SLEEVE
Allison C. Collard, Douglaston, N.Y., assignor to Patent Service Corporation of America, New York, N.Y.
Filed June 6, 1966, Ser. No. 555,312
Int. Cl. H05b *3/42*
U.S. Cl. 219—237 **4 Claims**

A heating apparatus having one or more extending members which serve as heating elements and include a low adhesive, high temperature resistant sleeve secured to the external surfaces of the heating elements. The sleeve may consist of a shrinkable tube of a fluorocarbon polymer such as Teflon which after being treated by either



heat or chemicals, shrinks around the heating element to form a tight bond therewith. The heating element may then be placed in direct contact with articles to be heated without contamination.

3,435,189
THERMOSTATIC CONTROL SYSTEM FOR WATER HEATER TANKS OR THE LIKE
Siegfried E. Manecke, 1704 Church St., Indiana, Pa. 15701
Filed June 28, 1965, Ser. No. 467,409
Int. Cl. H05b *1/02;* **H05** *3/02;* **H01h** *37/54*
U.S. Cl. 219—321 **12 Claims**

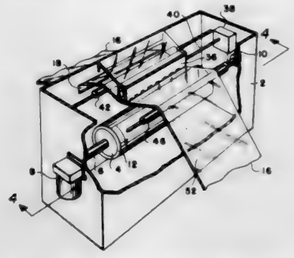


A thermostatic control system for controlling the temperature of a water heater tank has a first thermostat for controlling an upper heater in the tank and a second thermostat for controlling the operation of a heater in the lower portion of the tank. Both thermostats are under the control of a safety limit switch which, upon attainment of a temperature above a safe limit, terminates the operation of the heaters until the safety switch is manually reset. The thermostats and heaters are connected in circuit with each other in such manner that simultaneous operation of both heaters is impossible.

3,435,190
APPARATUS FOR PERFORATING FILM
Henry G. Schirmer, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Original application Aug. 26, 1964, Ser. No. 392,168, now Patent No. 3,348,022, dated Oct. 17, 1967. Divided and this application June 27, 1967, Ser. No. 662,229
Int. Cl. H05b *7/18*
U.S. Cl. 219—384 **2 Claims**

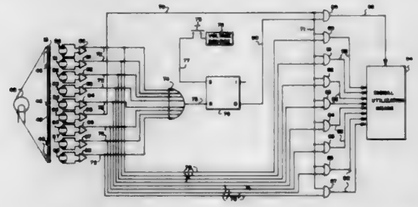
Apparatus for perforating a film of dielectric material by electrical discharge comprising first and second spaced apart electrodes, said first electrode being blade-like and having distinct areas along its length for the concentration

of electrical energy. A source of alternating high value current to produce a corona between the first and second electrodes; means for continuously passing said film be-



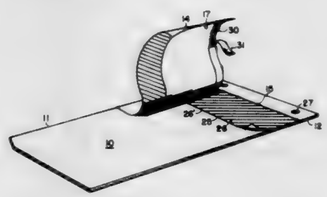
tween said first and second electrodes; and, means for periodically interrupting said corona as the film passes between said electrodes.

3,435,191
TAPE START DETECTOR
Charles I. Peddle, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,417
Int. Cl. G06k *7/00;* **G11b** *5/00*
U.S. Cl. 235—61.11 **2 Claims**



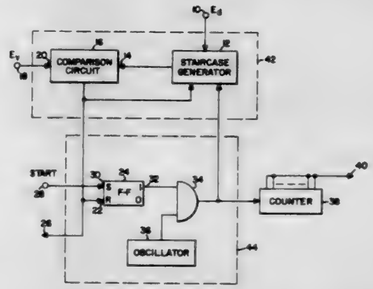
A tape transport for automatically sensing the beginning of data on a punched tape by inhibiting signals corresponding to the tape leader sprocket holes until the occurrence of a data signal represented by an additional hole.

3,435,192
RECORD DEVICE AND SYSTEM
Thomas C. Hartney, 7385 Pineville Drive, Jacksonville, Fla. 32210
Filed Nov. 9, 1964, Ser. No. 409,774
Int. Cl. G06k *21/00*
U.S. Cl. 235—61.12 **11 Claims**



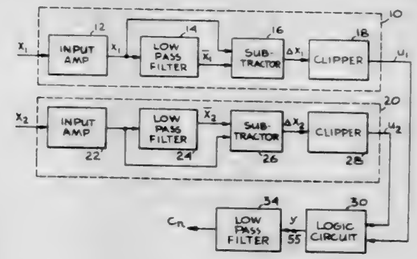
A record device including a tabulating card and an overlay sheet with aligned pre-weakened portions in each of the card and sheet for simultaneous depression and removal therefrom. The sheet is detachably secured to the card and a transfer means is interposed therebetween to transfer information written on the sheet to the card. An adhesive backing is applied beneath a portion of the sheet and a removable connected protective covering is applied to the adhesive backing for preventing adherence to the other portions of the record device. The pre-weakened portions are round and are sufficiently large to be readily removed from the card and sheet. The continuous shoulder around the opening of the card when the portions are removed provide continuous peripheral support for the element used to manually remove such portions.

3,435,193
ANALOG-DIGITAL HYBRID DIVIDER APPARATUS
Don E. Aitchison, Duarte, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,952
Int. Cl. G06j *1/02;* **H03k** *4/10, 3/45*
U.S. Cl. 235—150.52 **4 Claims**



A hybrid divider which divides one analog signal by a second analog signal to provide a digital output. The divisor signal is converted to a staircase type of waveform wherein each step is indicative of a predetermined fraction of the divisor. The staircase waveform is compared to the dividend, and when the magnitude of the staircase waveform equals or exceeds the magnitude representing the dividend, the division process is complete. Each time the staircase waveform is incremented, the count in a counter is increased by one and at the end of the division process the total count in the counter represents the quotient.

3,435,194
COMPUTER FOR THE APPROXIMATION OF THE CORRELATION BETWEEN SIGNALS
John Peschon and Robert E. Larson, Los Altos, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed May 11, 1966, Ser. No. 549,298
Int. Cl. G06f *15/34;* **G06g** *7/19, 7/18*
U.S. Cl. 235—181 **8 Claims**



1. A correlation circuit comprising:
first and second signal averaging means responsive to first and second input signals respectively for providing first and second averaged signals;
first means responsive to said first input signal and said first average signal for providing a first difference signal therebetween the polarity thereof being a func-

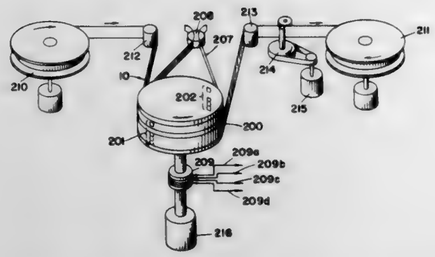
tion of the relative magnitudes of the signals supplied thereto;

second means responsive to said second input signal and said second averaged signal for providing a second difference signal therebetween the polarity thereof being a function of the relative magnitudes of the signals supplied thereto;

means responsive is said first and second difference signals for providing an output of a first polarity when said first and second difference signals have the same polarity and an output of a second polarity opposite said first polarity when said first and second signals are of opposite polarities; and

third averaging means for providing an average of the outputs of said first and second polarities.

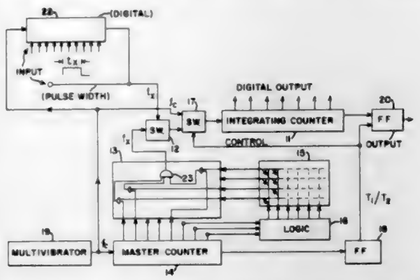
3,435,195
CORRELATING SEISMIC SIGNALS
George B. Loper, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 6, 1965, Ser. No. 445,909
Int. Cl. G06g 7/19; G06f 15/34
U.S. Cl. 235—181 **6 Claims**



This specification discloses a method and apparatus for cross-correlating seismic data comprised of an input signal and an output signal which are recorded on a magnetic tape to produce a cross-correlation function. A magnetic tape having an input signal and an output signal recorded thereon is moved past a fast rotating drum having transducers mounted on the periphery thereof. A fixed magnetic medium is disposed about the periphery of the rotating drum. The input signal is scanned from the magnetic tape and recorded on the fixed magnetic medium by means of the transducers and associated apparatus. The input signal and output signal are scanned by the transducers and applied to a multiplier and thence to an integrator to produce a cross-correlation function representing the cross-correlation of the input signal and the output signal.

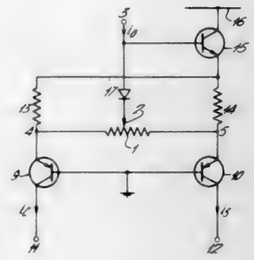
3,435,196
PULSE-WIDTH FUNCTION GENERATOR
Hermann Schmid, Binghampton, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,728
Int. Cl. G06f 3/00
U.S. Cl. 235—197 **6 Claims**

A function generator which utilizes a clock driven master binary counter to generate a desired function and an integrating counter to store the function. A rate signal proportional to the time derivative of the desired function is generated by a programmed selection of the parallel binary counter signals. Each pulse-width period is segmented by sensing the significant bits accumulated by the master counter in response to constant frequency clock pulses. For each segment, a logic network selects the desired pulse rate. The derivative of the function is thereby generated and an integrating counter accumulates the function under switching control of a synchronized input pulse having a pulse-width proportional to the variable of



the function. By subsequently counting down the integrating counter with the clock pulses, a pulse-width signal is generated proportional to the desired function.

3,435,197
TRIGONOMETRICAL FUNCTION GENERATORS
Ivor Noel Hooton, Cassington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 15, 1966, Ser. No. 527,613
Claims priority, application Great Britain, Mar. 10, 1965, 10,089/65
Int. Cl. G06g 7/22
U.S. Cl. 235—197 **4 Claims**



A trigonometrical function generator comprises a linear potentiometer having a movable contact supplied with an input current i_0 and arranged to be positioned to correspond with the value of an input angle θ, at least one adding circuit, two further contacts on the potentiometer from at least one of which a current i_1 (bearing a relationship to i_0 dependent upon the position of the movable contact) is fed to the adding circuit. The generator further includes means for holding the other two contacts at the same potential, and means for supplying to the adding circuit a further current bearing a predetermined relationship with the potential difference between the movable contact and the other contacts, whereby when the current i_1 and the further current are added in the adding circuit, the output from the adding circuit is substantially proportional to $i_0 \sin\theta$ or $i_0 \cos\theta$.

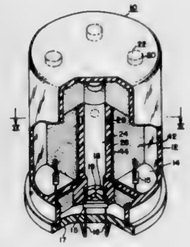
3,435,198
PHOTOFLASH CUBE
William T. Ryan, Jr., Bloomfield, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 16, 1966, Ser. No. 594,893
Int. Cl. G03b 15/05
U.S. Cl. 240—1.3 **5 Claims**

1. In combination with a plurality of photoflash lamps joined to form an assemblage, each of said photoflash lamps comprising a sealed light-transmitting organic

plastic envelope of predetermined thickness and enclosing a charge of flash-producing material, and ignition means associated with each of said lamps to permit said lamps to be flashed individually, the improvement which comprises:

(a) at least one sealed pressure relief chamber forming a part of said assemblage, and each of said individual lamps having a common wall with said pressure relief chamber;

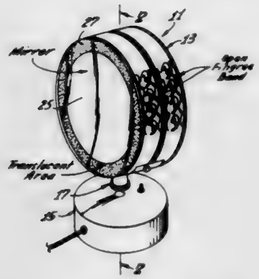
(b) a relatively small portion of each of said common walls between each of said individual lamps and said pressure relief chamber having a thickness which is less by a predetermined amount than the thickness of the remaining portion of each of said common walls as well as the thickness of all other portions of the individual lamp envelopes;



(c) a location for controlled rupture provided by each said small common wall portion of reduced thickness, and upon activation of said ignition means to flash any one of said lamps, said portion of reduced thickness in said common wall of said lamp being flashed rupturing under the generated pressure to form a gas-throttling aperture from the envelope of the lamp being flashed into said pressure relief chamber;

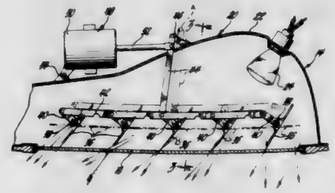
(d) the thickness of said portion of reduced thickness in all of said common walls of yet-unflashed lamps being sufficient to withstand rupture under the pressure encountered in said pressure relief chamber during flashing of any of said individual lamps.

3,435,199
ILLUMINATED VANITY MIRROR
Laurice D. Ely, West Los Angeles, Calif., assignor to Casco Products Corp., a corporation
Filed Oct. 5, 1966, Ser. No. 584,539
Int. Cl. F21v 33/00
U.S. Cl. 240—4.2 **6 Claims**



An illuminated vanity mirror including a base and a drum connected to the base. The drum has an opaque section and a translucent section with a light source mounted within the drum. The drum can be pivoted relative to the base without twisting of the electrical conductors which extend through the base to the light source.

3,435,200
CORNERING LAMP ASSEMBLY
Stanley R. Massoll, Detroit, and Donald G. Roper, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,639
Int. Cl. B60q 1/32
U.S. Cl. 240—8.2 **12 Claims**



A vehicle cornering and backup lamp assembly having light directing louvers movable between a first position wherein light rays are directed laterally outwardly of the vehicle and to a second position wherein light rays are reflected toward the rear of the vehicle. A motor is provided for moving the louvers between the two positions and is operatively connected to the turn signal lever and the transmission selector lever.

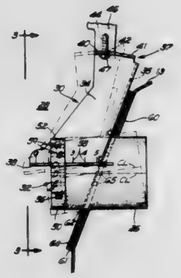
3,435,201
HEAT-ROTATED ILLUMINATED ORNAMENT
Miklos Kemenczky, Point Pleasant Beach, N.J., assignor to Paul Guilden, New York, N.Y.
Filed Mar. 27, 1967, Ser. No. 626,036
Int. Cl. A47g 33/16
U.S. Cl. 240—10.1 **10 Claims**



Apparatus for producing sparkling point sources of brilliant light in the spherical zone surrounding a partially shielded central lamp element comprising a rotor assembly powered by convective currents generated by the lamp, the rotor including a plurality of optical channels discretely energized by the lamp element. A lamp shield having spaced opaque heat-conducting elements functions to significantly increase the temperature of the air mass immediately surrounding the lamp. As the heated air mass rises by convection, it is deflected by rotor vanes to impart rotation to the rotor assembly. As the rotor assembly rotates, the lamp shield has the further effect of transmitting discrete bundles of light rays to each of the plurality of optical channels, each channel comprising a lens element which rectifies incident light energy into

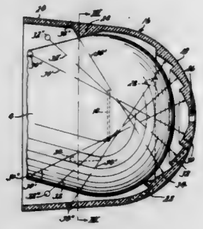
parallel rays, a light-conducting member which is internally reflective throughout its length and an output element in the form of a planar surface or mirror. The planar surfaces are disposed in spherical zones surrounding the lamp element and transmit discrete bundles of light energy thereby simulating the effect of a chemical sparkler.

3,435,202
LUMINAIRE
Edward R. Jablonski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,473
Int. Cl. F21s *3/10*
U.S. Cl. 240—25 **12 Claims**



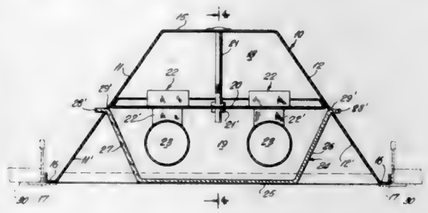
A luminaire assembly including a housing, a reflector and an adjustable lamp socket support for varying in two dimensions the position of the lamp with respect to the reflector to vary the light pattern produced by the luminaire. The assembly further includes a gasket surrounding a lamp socket and slideable relative to the reflector to maintain a dust shield between the lamp socket and the reflector as the lamp socket is moved to vary the light pattern.

3,435,203
COLOR FILTER FOR LIGHT BULBS
Oscar W. Reading, 126 E. Linwood, Kansas City, Mo. 64111
Filed Jan. 4, 1968, Ser. No. 699,286
Int. Cl. F21v *17/04*
U.S. Cl. 240—46.57 **3 Claims**



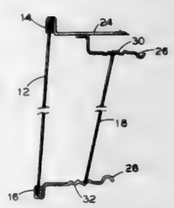
A cup-shaped and translucent filter member adapted to be applied over the free end portion of each electric bulb of an electric advertising or display sign to permit the changing at will of the apparent color of the bulb so that multi-colored effects may be obtained with the use of clear bulbs. The filter member is open at its rearward end to permit back-lighting of the sign panel with clear light, and has prismatic elements formed therein to improve the distribution of light emanating from the bulb.

3,435,204
LIGHTING FIXTURE
Theodore John Lepak, Meriden, Conn., assignor to The Miller Company, Meriden, Conn., a corporation of Connecticut
Filed Jan. 17, 1966, Ser. No. 520,984
Int. Cl. H05b *33/02*
U.S. Cl. 240—51.11 **1 Claim**



A lighting fixture comprising a lens having a plane bottom surface with upwardly and outwardly inclined side and end walls. A housing having a flat top wall with downwardly and outwardly inclined side and end walls surrounds the lens. The side and end walls of the housing extend at least to the lower surface of the lens, and the lower portion of the side and end walls act as a light controlling member. The light controlling member and the lens form downwardly divergent channels therebetween.

3,435,205
COLLAPSIBLE LAMP SHADE
Anthony Paul, 17—51 160th St., Whitestone, N.Y. 11357
Filed Oct. 12, 1967, Ser. No. 674,947
Int. Cl. F21v *1/06*
U.S. Cl. 240—108 **4 Claims**

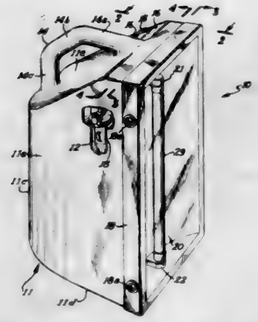


A collapsible lamp shade that includes a shade member secured between oppositely disposed channel members. The channel members are releasably held on the shade member by means of elongated resilient members which are adjustably mounted in positions inwardly displaced from said shade member at a distance sufficient to avoid casting shadows thereof on the shade member when the lamp shade is in use.

3,435,206
PORTABLE FLUORESCENT LAMP
Richard C. Swanson, 9331 Clinton Ave., Minneapolis, Minn. 55420
Filed Dec. 19, 1966, Ser. No. 602,842
Int. Cl. F21l *3/00*
U.S. Cl. 240—11.4 **6 Claims**

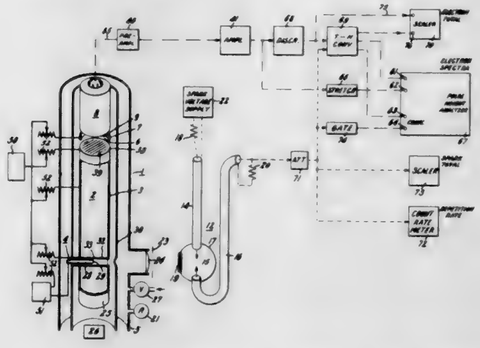
A fully portable fluorescent lamp having an internal D.C. power source, a transistor inverter circuit including a transformer for converting the low D.C. voltage output of said D.C. power source to relatively high voltage, high frequency alternating current supplied to a fluorescent tube, and a recharging circuit by means of which said internal power source may be recharged from an external D.C. power source. An electrical connector may be utilized to connect the external power source in the transistor inverter circuit to energize same; and a special

secondary winding of the aforesaid transformer connected in said recharging circuit in series with said internal power



source receives an induced voltage from said inverter circuit to accomplish the recharging of said internal power source.

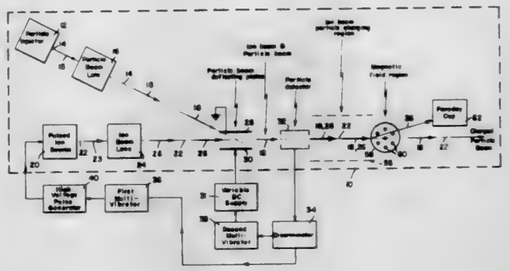
3,435,207
APPARATUS FOR MEASURING VELOCITY OF LOW ENERGY ELECTRONS
George C. Baldwin, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 6, 1966, Ser. No. 519,024
Int. Cl. B01d *59/44*
U.S. Cl. 250—41.9 **12 Claims**



Apparatus and method for measuring velocity of electrons in the low energy range down to a few millivolts comprising an electron spectrometer having a photoemitter and detector separated by a long, shielded, field-free drift tube. Electrons from the photoemitter are caused to enter the drift tube singularly and then pass therethrough. The time-of-flight of the singular electron through the drift tube is determined and recorded to provide measurement of the electron velocity.

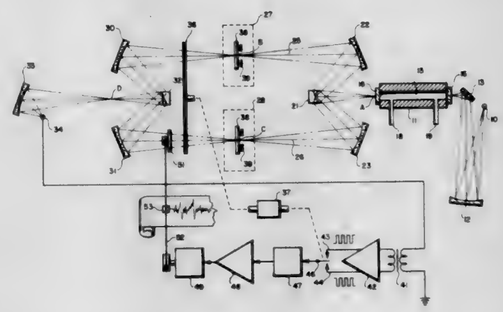
3,435,208
ARRANGEMENT FOR ELECTRICALLY CHARGING A BEAM OF MICROPARTICLES WITH AN ION BEAM
David O. Hansen, Westminster, Joseph F. Frichtenicht, San Pedro, and Neal L. Roy, Redondo Beach, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Dec. 5, 1966, Ser. No. 599,242
Int. Cl. H01j *39/34*; B01d *59/44*
U.S. Cl. 250—41.9 **6 Claims**

1. Particle charging apparatus, comprising:
means for producing and accelerating a beam of microparticles along an axis;
means for producing an ion beam that intercepts said microparticles in the same direction along said axis so as to impart surface charge to said microparticles;



and means for separating said ion beam from said charged microparticles.

3,435,209
TWO WAVELENGTH INFRARED ANALYZER HAVING A PAIR OF VARIABLE INTERFERENCE FILTERS FOR DETERMINING THE RESPECTIVE WAVELENGTHS
Gerald Thomas Keahl, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 10, 1966, Ser. No. 533,213
Int. Cl. G01n *21/26*
U.S. Cl. 250—43.5 **4 Claims**

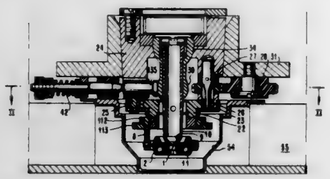


There is disclosed a radiant energy analyzer in which radiation from a source is directed alternately along first and second radiant energy beam paths in which are located separate, independently operated wavelength selectors such that radiant energy of differing wavelengths may be selected in each beam path. The beams are recombined and focused onto a detector which is connected to an optical null servo loop. A sample cell, which may be a flow cell if desired, is placed in the common beam path between the source and the beam spreader.

3,435,210
DEVICE FOR HEATING, ROTATING AND TILTING A SPECIMEN IN AN ELECTRON MICROSCOPE
Ugo Valdré, Via Mascarella 77/2, Bologna, Italy
Filed Mar. 4, 1966, Ser. No. 531,709
Claims priority, application Italy, Mar. 6, 1965, 5,103/65
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **14 Claims**

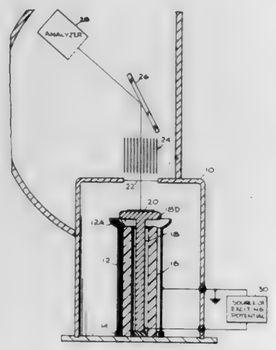
An electron microscope or the like has a device for heating, rotating and tilting a specimen. A specimen cartridge

body having a rotatably mounted supporting structure is removably connected to the microscope. A specimen carrier and heater form part of the inner gimbal ring of a cardanic joint, the latter being pivotally mounted on the



supporting structure. The rotative position of the specimen carrier is adjusted by transmitting a rotative motion to the supporting structure. An independent adjustment of the tilt axis is made by deflecting a tubular member articulately joined to the inner gimbal ring.

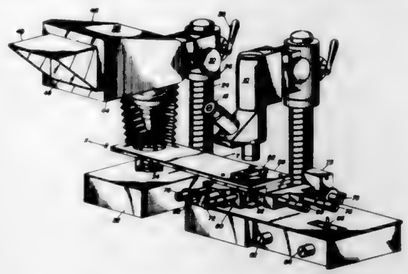
3,435,211
GASEOUS GLOW DISCHARGE TUBE WITH CATHODE MEANS SURROUNDING ANODE MEANS
Sheldon D. Softky, Menlo Park, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Jan. 4, 1966, Ser. No. 518,595
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **7 Claims**



A sample to be analyzed is placed on the anode of a cold cathode gaseous glow discharge tube. The cathode effectively surrounds the anode and bombards the sample with electrons whereby X-ray fluorescence is excited, which is then used for analysis.

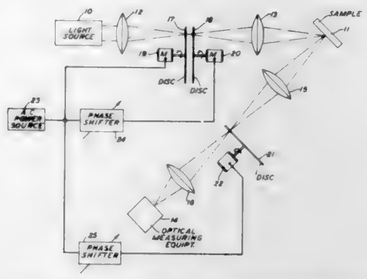
3,435,212
RADIOMETRIC MICROSCOPE WITH MEANS TO PRODUCE A VISUAL IMAGE
John R. Yoder, Westport, and Robert B. McIntosh, Jr., Greenwich, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 486,315
Int. Cl. G01n *23/20;* **G01t** *1/16*
U.S. Cl. 250—65 **2 Claims**

A radiometric microscope has a scanning substage on which samples to be examined are positioned and moved in a predetermined scan pattern. At the same time a light source which is modulated by the output of the radiometric microscope is directed on a light sensitive surface and moved in synchronism with the scanning substage to trace the same scan pattern on the light sensitive surface thereby producing a visual image of



the thermal patterns existing on samples as viewed by the microscope.

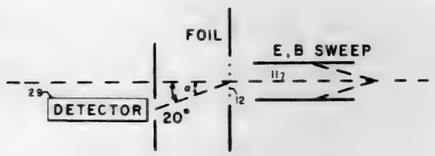
3,435,213
LIGHT MODULATOR USING LIGHT CHOPPERS
Konrad Colbow, Madison, Charles G. B. Garrett, Morristown, and Donald E. Thomas, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 19, 1965, Ser. No. 473,042
Int. Cl. G01n *21/38;* **G02f** *1/30;* **H02p** *5/46*
U.S. Cl. 250—71 **2 Claims**



Light pulses of controlled time duration and waveshape are obtained by directing the light beam through two light choppers, synchronously driven from a common alternating current source. The relative position of the two chopper discs is controlled by means of a precision phase shifter connected to one of the chopper motors.

A third phase controlled choper is used to study light emission from test samples at controlled times after photoexcitation.

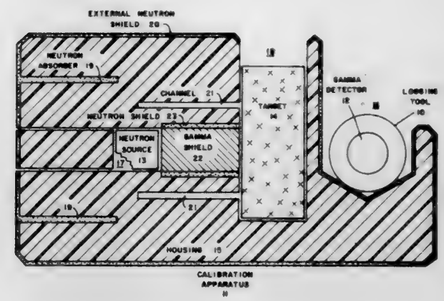
3,435,214
NEUTRAL-ATOM DETECTOR
William Bernstein, Los Angeles, and Robert L. Wax, Manhattan Beach, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Apr. 25, 1967, Ser. No. 633,627
Int. Cl. G01t *1/20*
U.S. Cl. 250—71.5 **5 Claims**



There is disclosed an apparatus for detecting an incident beam or flux of neutral atoms, such as hydrogen atoms, in the energy range from 1 to 20 kev. using a fixed

geometry and yet obtaining both ultraviolet insensitivity and energy independence within the range of energies for which the apparatus is designed. By this is meant that where two incident fluxes are of equal intensity, they will be registered by the detector apparatus as equal irrespective of whether or not they have the same energy value. This is achieved by passing the incoming beam through a deflection system to remove charged particles, causing the remaining beam of neutral particles to be scattered by a thin foil, and positioning a detector for the scatered particles at a critical angle such that for that angle the relative scatter for particles of different energies within the design energy range is the same.

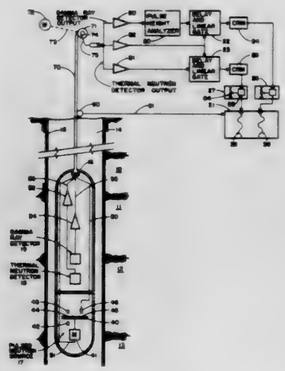
3,435,215
CALIBRATION OF GAMMA RAY RADIOACTIVE BOREHOLE LOGGING TOOLS
William C. Pritchett, Dallas, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 6, 1967, Ser. No. 643,934
Int. Cl. G01v *3/18, 13/00*
U.S. Cl. 250—83 **6 Claims**



Calibration of borehole logging tools having a gamma detector. The calibration apparatus includes a neutron source; a target composed of neutron capture material; a housing composed of neutron moderating material; connecting means for attaching the housing to the logging tool; a chamber formed in the housing for the source; and a cavity formed between the connecting means and the chamber for the target. Neutrons generated by the source are moderated in the housing to thermal energies and bombard the target. Gammas emitted by the target responsive to the thermalized neutrons are detected by the gamma detector in the tool.

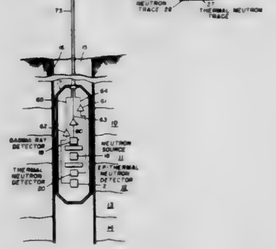
3,435,216
PULSED NEUTRON WELL LOGGING TECHNIQUE AND SYSTEM
Wyatt W. Givens, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 15, 1965, Ser. No. 487,524
Int. Cl. H01j *39/32;* **G01t** *3/00, 1/18*
U.S. Cl. 250—83.1 **1 Claim**

The specification discloses a pulsed neutron well logging technique and system for simultaneously producing continuous logs of thermal neutrons and thermal neutron capture gamma rays, each detected within a time window occurring at a time following each neutron burst whereby the thermal neutrons and thermal neutron capture gamma rays detected are indicative predominantly of formation characteristics. By recording only the higher energy gamma rays detected, the gamma-ray log is made selectively sensitive to chlorine but insensitive to elements in shale, such as boron. The thermal neutron log obtained is sensitive to the total absorption cross section. Preferably, a



source is employed which produces a substantially constant number of fast neutrons per burst.

3,435,217
PRODUCTION OF CHEMISTRY-DEPENDENT GAMMA RAY AND THERMAL NEUTRON LOGS CORRECTED FOR POROSITY
Wyatt W. Givens, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 28, 1965, Ser. No. 467,411
Int. Cl. G01t *1/18;* **H01j** *39/18, 39/30*
U.S. Cl. 250—83.1 **9 Claims**

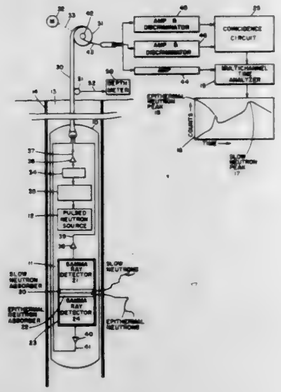


The specification discloses a method and system for producing chemistry-dependent logs corrected for porosity from measured borehole count rates of thermal neutrons, gamma rays, and epithermal neutrons obtained with a thermal neutron detector, a gamma ray detector, and an epithermal neutron detector, all employed in combination with a fast neutron source. In carrying out the process, the observed epithermal neutron count rate is modified to obtain porosity-dependent measurements representative of that component of the measured thermal neutron and gamma ray count rates observed and due primarily to the effect of porosity. The measured thermal neutron and gamma ray count rates are combined with the porosity-dependent measurements to obtain chemistry-dependent thermal neutron and gamma ray measurements corrected for porosity.

3,435,218
SLOW NEUTRON DETECTOR OF AMERICIUM-243

Linus S. Allen, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed June 30, 1965, Ser. No. 468,521
Int. Cl. G01t *3/02*
U.S. Cl. 250—83.1 **4 Claims**

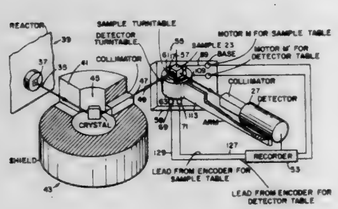


The specification discloses a slow neutron detector for use in pulsed neutron logging operations. The detector comprises a slow neutron absorber of americium-243 and a gamma ray detector positioned in close proximity to the absorber to detect gamma rays emitted by the absorber upon the capture of neutrons. In addition, an epithermal neutron absorber of indium is disclosed as positioned in close proximity to the gamma ray detector whereby slow neutrons and epithermal neutrons may be detected and distinguished on a time basis. In the embodiment discolsed, the two absorbers are sandwiched between two gamma ray detectors. These detectors are coupled to a common coincident circuit whereby gamma rays emitted from the absorbers may be distinguished from extraneous gamma rays.

3,435,219
NEUTRON SPECTROMETER FOR HIGH NEUTRON FLUX

Andrew Kevey, Setauket, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 30, 1967, Ser. No. 613,078
Int. Cl. G01t *3/00*
U.S. Cl. 250—83.1 **5 Claims**

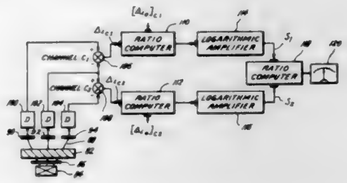


A neutron spectrometer having a crystal sample, a detector, coaxial, independently rotatable turntables for the crystal and the detector, and precision encoders independently, directly and coaxially connected to each turntable on a common axis for directly, continuously and precisely determining the respective angles between the incident neutrons and the crystal on the one hand and the detector on the other.

3,435,220
DUAL CHANNEL RADIATION GAUGE FOR IDENTIFYING MATERIAL COMPONENTS

Albert F. Hanken, Columbus, Ohio, assignor to the Industrial Nucleonics Corporation, a corporation of Ohio

Continuation-in-part of application Ser. No. 143,497, Oct. 6, 1961. This application Feb. 26, 1965, Ser. No. 435,434
Int. Cl. G01t *1/16;* **G01n** *23/20;* **H01j** *39/00*
U.S. Cl. 250—83.3 **20 Claims**

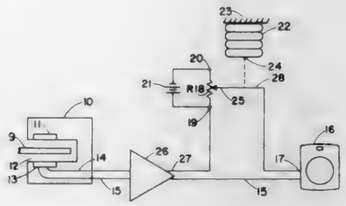


A gauge for determining the presence and the weight of an element in a mixture by measuring the radiation transmitted through the material from a bremsstrahlung source in two energy bands. An energy band is established on either side of the K-edge energy of the element to be identified by two pairs of Ross filters. A pair of detectors provide signals proportional to the amount of radiation transmitted in the energy bands. The ratio of one signal to the other is computed to compare the relative absorption in each of the two energy bands.

3,435,221
BAROMETRIC COMPENSATION FOR GAUGING APPARATUS

Willard Everett Swift, Sharon, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed Feb. 10, 1966, Ser. No. 526,585
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **3 Claims**

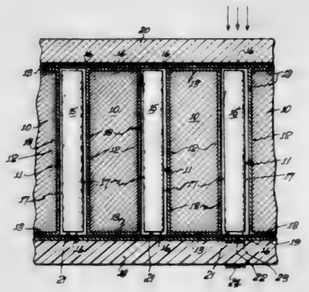


Appearing for barometric compensation of beta gauges employs means for sensing the barometirc pressure in the general region of the beta gauge coupled to means for providing a compensatory electrical signal; the compensatory electrical signal, which is related to the barometric pressure, is employed to qualify the electrical signal output of the beta gauge receiver in a manner to cancel error appearing therein as a consequence of barometric pressure change.

3,435,222
INFRARED SENSITIVE PHOTOCONDUCTIVE MATRIX

William Hotine, Albion, Calif., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Mar. 25, 1966, Ser. No. 537,541
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **7 Claims**

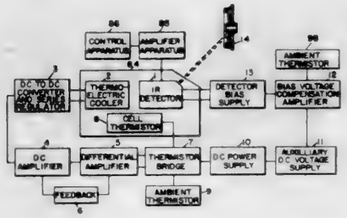


An infrared sensitive photoconductive matrix using a honeycomb base having holes filled with infrared transmitting and side-radiating fibers.

3,435,223
STABILIZATION OF AN INFRARED DETECTOR CELL AS USED IN THERMAL WHEEL SCANNER SYSTEMS

Robert B. Haner, Jr., Scottsville, Henry C. Sibley, Adams Basin, and Paul C. Sutton and Walter G. Pettitt, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 11, 1966, Ser. No. 541,769
Int. Cl. G01t *1/16;* **G12b** *7/00*
U.S. Cl. 250—83.3 **11 Claims**



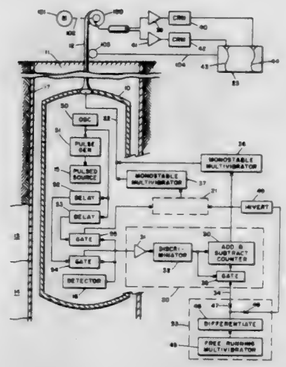
Improved apparatus for the detection of defective bearings in which an infrared detector cell compensated relative to changes in ambient temperature provides an output signal at a substantially constant level for bearing temperatures, a fixed differential magnitude above ambient temperature.

3,435,224
DOWNHOLE SYSTEM FOR STORING AND READING OUT DETECTOR SIGNALS FOR TRANSMISSION TO THE SURFACE AT RELATIVELY LOW FREQUENCY

Joseph Zemanek, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed June 23, 1965, Ser. No. 466,181
Int. Cl. G01t *1/18*
U.S. Cl. 250—83.6 **16 Claims**

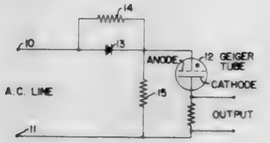
The specification discloses a well logging signal storage and read out system in a pulsed neutron logging tool having a pulsed neutron source and a radiation detector. The storage system comprises two storage circuits for storing detector pulses produced by the detector upon detection of radiation during two time periods within each cycle of operation. Means is coupled to each storage circuit for generating timing pulses at a relatively low frequency for reading out, at the low frequency, pulses stored in each storage circuit for application to a transmission line for transmission to the surface.



3,435,225
ULTRAVIOLET SENSITIVE GEIGER TUBE OPERATING CIRCUIT WITH REVERSE QUENCH VOLTAGE

Robert O. Engh, Hopkins, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,585
Int. Cl. G01t *1/18*
U.S. Cl. 250—83.6 **6 Claims**



An AC operating circuit in combination with an ultraviolet sensitive Geiger tube is disclosed. The AC circuit includes a diode and two resistors arranged to provide an operating voltage to the Geiger tube during first half cycles and a relatively low quenching voltage to it during opposite half cycles, which quenching voltage provides a clearing field within the tube for de-ionizing the gas fill.

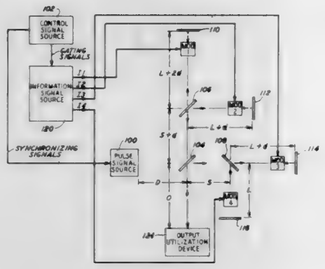
3,435,226
OPTICAL PULSE GENERATOR

Alois J. Rack, Martinsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 20, 1965, Ser. No. 498,505
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **6 Claims**

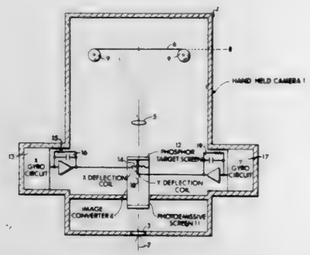
An optical pulse generator responds to each of a set of widely-spaced pulses to generate a series of equal-amplitude spaced-apart pulses suitable for efficient use in an information processing system. The generator comprises an array of identical reflecting-transmitting mirrors combined with fully-reflecting mirrors. Positioned before each fully-reflecting mirror is a modulator whose state is controlled

by signals applied thereto from an information source. An incident input pulse is directed by the reflecting-transmitting mirrors along multiple paths to the modulators. Pulses that are propagated through the modulators are



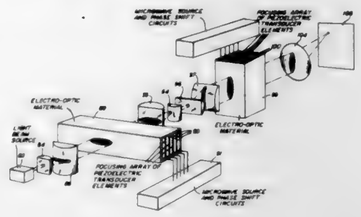
reflected back through the assemblage and selectively recombined to form a train of equal-amplitude pulses that respectively occur in spaced time periods in the interpulse interval that is characteristic of the widely-spaced incident input pulses.

3,435,227
STABILIZATION SYSTEM FOR A LASER RANGEFINDER
Efraim R. Arazi, Cambridge, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,960
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **12 Claims**



1. In combination:
(a) a rangefinder including a light beam generator having a longitudinal axis for directing a beam of light at a target along a given target line and further including means for measuring the time interval between the time of generation of a light beam portion and the time of arrival of the resulting target echo;
(b) viewing means for viewing the image of said target;
(c) photosensitive imaging means for presenting an image of said target to said viewing means;
(d) indicating means for producing signals indicative of the degree of displacement of the longitudinal axis of said light beam generator away from said given target line;
(e) deflection means for deflecting the image produced by said photosensitive imaging means in response to said signals indicative of said degree of displacement produced by said indicating means in a direction to cancel components of image motion which would otherwise be caused by the aforesaid displacement; and
(f) means responsive to the lack of displacement of the longitudinal axis of said light beam generator from said given target line for causing said light beam generator to generate said beam of light.

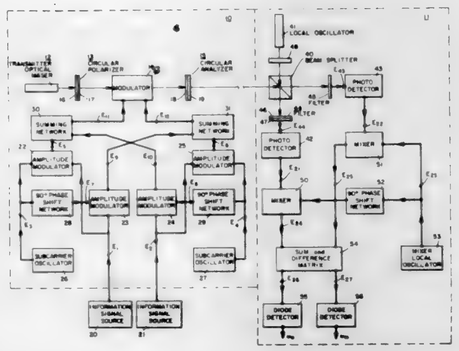
3,435,228
LIGHT BEAM CONTROLLING SYSTEM
Eugene I. Gordon, Convent Station, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 1, 1966, Ser. No. 530,893
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **3 Claims**



Light beam deflection apparatuses of the acousto-optical diffraction-grating type are disclosed. In order to increase the acoustic modulation bandwidth, a focused acoustic beam is launched into an electro-optic medium in which the acousto-optical interaction occurs.

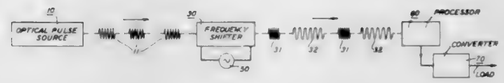
The focused acoustical beam is launched either by a cylindrically curved piezoelectric thin film transducer deposited on a cylindrically curved surface of the electro-optic medium, by an array of transducers driven in the appropriate phases to produce the focused beam, or by focused microwaves in a waveguide.

3,435,229
SIGNAL TRANSMISSION SYSTEMS
Carl F. Buhrer, Oyster Bay, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,753
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **17 Claims**



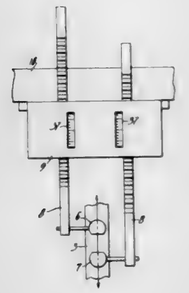
An optical carrier is single-sideband modulated whereby independent signals appear as upper and lower sidebands. To increase the bandwidth of the signal transmission system, individual subcarriers are provided with a 90° relative phase shift before they are modulated by the corresponding information signal. As a result, a wideband transmission system is provided in which the phase shift networks employed at the transmitter and at the receiver need only be designed for operation at a discrete subcarrier frequency.

3,435,230
OPTICAL INFORMATION TRANSMISSION SYSTEM
Jeofry S. Courtney-Pratt, Springfield, and Logan E. Hargrove, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 8, 1966, Ser. No. 600,150
Int. Cl. H01s *3/10;* **H04b** *9/00*
U.S. Cl. 250—199 **8 Claims**



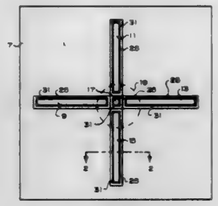
The frequency spectrum (Fourier components) of a train of suitable optical pulses having a more or less constant repetition rate can be shifted substantially up or down without affecting the repetition rate. The amount of shift can be made to depend linearly upon an information-bearing signal. This invention teaches the upshifting of odd pulses and the downshifting of even pulses, and their transmission in different time slots to a detecting site. There, a suitable path length difference is inserted so that adjacent upshifted and downshifted pulses coincide in time and space to produce a beat frequency from which the desired information is extracted.

3,435,231
OPTICAL MEANS FOR FOLLOWING THE RELATIVE MOVEMENT OF TWO MARKS ON A SPECIMEN DURING TENSILE TESTING
John H. Griffiths, Bledlow, and Barrie K. Poulson, High Wycombe, England, assignors to Instron Limited, High Wycombe, England, a company of Great Britain
Filed Aug. 10, 1965, Ser. No. 478,705
Int. Cl. G01j *1/20;* **G01n** *3/28, 21/00*
U.S. Cl. 250—201 **7 Claims**



An optical extensometer for use in the tensile testing of a specimen having two marks inscribed thereon and including two optical heads for scanning the surface of the specimen and producing an output signal, servo mechanisms for receiving the signals and locking one of the heads on each of the marks, and searching apparatus for enabling each of the heads to be set opposite one of the marks prior to testing.

3,435,232
BEAM POSITION DETECTOR
Hans O. Sorensen, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 3, 1966, Ser. No. 531,618
Int. Cl. G01j *1/20*
U.S. Cl. 250—203 **2 Claims**



A target includes an array of detectors of electromagnetic radiation and which provides signal outputs related to the rectangular coordinates of the position of a radiation beam on a target.

3,435,233
GAIN CONTROL SYSTEM FOR PHOTOMULTIPLIER SYSTEMS
Robert P. Farnsworth, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,106
Int. Cl. H01j *39/12*
U.S. Cl. 250—207 **12 Claims**



This gain control system, utilizing photomultiplier tubes, maintains a constant overall dynode divided voltage but selectively varies the voltage on alternate dynodes. By changing the voltage differential between alternate dynodes or alternate groups of dynodes, the voltage increases and decreases or decreases and increases between adjacent electron paths so that the overall current multiplication is relatively constant. The gain change is pro-

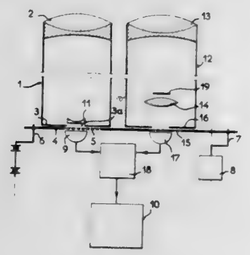
vided by electrostatic deflection control rather than by varying the electron multiplication factor so that the sensitivity is many times greater than in prior arrangements. The invention includes DC, AC and time programmed gain control systems.

3,435,234
SOLID STATE IMAGE TRANSLATOR
Richard T. Denton, South Plainfield, and Lawrence J. Varnerin, Jr., Watchung, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1965, Ser. No. 517,335
Int. Cl. H01j *39/12*
U.S. Cl. 250—209 **7 Claims**



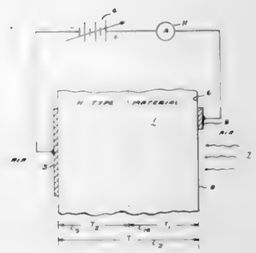
The specification describes a device which is based on the recognition that an image can be translated into electrical output signals responsive to discrete points thereof by associating a set of photosensitive elements responsive to the incident image with a second set of photosensitive elements that provide optically scannable series switches for each of the image-responsive elements. By preventing charge leakage when darkened, the switching elements permit charge to be accumulated by the image-responsive elements throughout an entire scanning cycle. The capacitances of the image-responsive elements are preferably much larger than the switching element capacitances, and switching element electron-hole-pair lifetimes are preferably as short as possible to permit efficient transfer of the stored charge of the image-responsive elements to the output. The apparatus can be made as an integrated beam-lead structure.

3,435,235
MEANS FOR REDUCING INTERFERENCE EFFECTS ON ELECTRO-OPTICAL DIRECTION FINDERS
Jean Pierre Bezerie, Villa d'Avary, France, assignor to Societe Anonyme de Telecommunications, Paris, France, a company of France
Filed July 25, 1966, Ser. No. 567,591
Claims priority, application France, Aug. 6, 1965, 27,525
Int. Cl. H01j *39/12*
U.S. Cl. 250—209 **8 Claims**



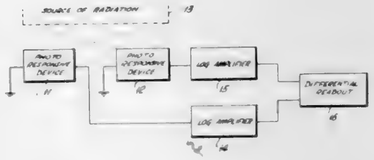
Two separate optical systems are used to produce two distinct signals representative of the target, these signals being combined in a differential amplifier to effect a reduction of background interference.

3,435,236
HIGH OHMIC SEMICONDUCTOR TUNED NARROW BANDPASS BARRIER PHOTODIODE
John A. Love III, and John R. Sizelove, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 21, 1967, Ser. No. 625,564
Int. Cl. H01j *39/12*; **H01l** *15/00*
U.S. Cl. 250—211 **5 Claims**



A high ohmic semiconductor barrier photodiode with a geometrical configuration wherein light enters the diode opposite the rectifying contact and through bulk absorption-recombination action the photodiode has a narrow bandpass spectral response.

3,435,237
RADIATION DISCRIMINATOR MEANS
Frank C. Collins, Brooklyn, N.Y., assignor to PRD Electronics, Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 21, 1965, Ser. No. 426,732
Int. Cl. H01j *39/12*; **G01k** *11/00*
U.S. Cl. 250—214 **2 Claims**

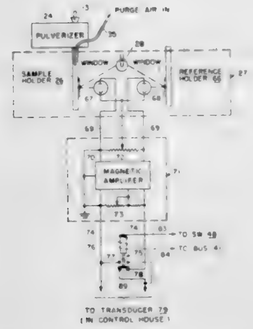


A device for sensing radiation from a body which device includes a pair of photo sensors having different optical characteristics and circuit means for developing a ratio of the output of the photo sensors. The circuit means includes a pair of logarithmic amplifiers and a differential readout device coupled to the output of each of the amplifiers.

3,435,238
CATALYST ANALYSIS APPARATUS
Lawrence J. Hall, Sarnia, Ontario, Canada, and Robert Mayer, Ardmore, and Einar T. Young, Newtown Square, Pa. assignors to Sun Oil Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 28, 1965, Ser. No. 428,800
Int. Cl. G01n *21/26*; **H01j** *39/12*; **B01j** *9/00*
U.S. Cl. 250—218 **16 Claims**

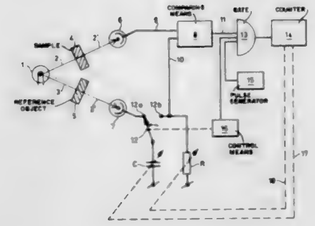
A sample of catalyst is taken from a catalyst flowline and the color of the sample is compared with the color

of a standard, to produce on a chart a record indicative of the amount of coke on the catalyst sample. This proce-



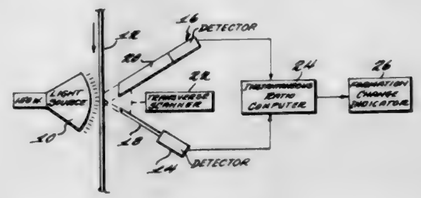
dure is repeated automatically, in a cyclic and periodic manner.

3,435,239
RADIATION ABSORPTION TESTER USING RC NETWORK TO SIMULATE ABSORPTION FUNCTION
Nils G. Stålberg, Jakobsberg, Sweden, assignor to L.K.B.-Produkter Aktiebolag, Stockholm, Sweden, a company of Sweden
Filed Oct. 13, 1965, Ser. No. 495,407
Claims priority, application Sweden, Oct. 17, 1964, 12,544/64
Int. Cl. G01n *21/26*; **H01j** *39/12*; **G06g** *7/48*
U.S. Cl. 250—218 **14 Claims**



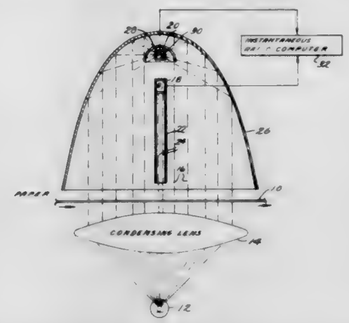
There is disclosed a method of and an apparatus for measuring absorption of radiation passing through a test body containing radiation-absorbing material. The method and the apparatus are based on the utilization of the equation: $I=I_0 e^{-kc}$ where I is the intensity of the radiation passing through a test body; I_0 the intensity of the incident radiation; k a known constant and c the concentration of radiation-absorbing material to be measured. To measure the radiation-absorption, a first electric magnitude proportional to I and a second electrical magnitude proportional to I_0 are generated. Electric energy related to the second electric magnitude is accumulated in a reactive element and the reactive element is caused to discharge through a resistor. The value of the reactive element and/or the resistor are so selected that the time interval between the beginning of the discharge and the moment at which the amplitude of the energy stored in the reactive element decays to a value equal to the value of the electrical magnitude proportional to I, is directly proportional to the concentration c of the radiation-absorbing material.

3,435,240
RADIATION SENSITIVE STRUCTURE DETERMINING APPARATUS
Donald C. Brunton, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 335,030
Int. Cl. G01n *21/30*; **G01l** *5/04*
U.S. Cl. 250—219 **10 Claims**



Disclosed herein is apparatus for determining variations in formation structure of energy transparent material, such as paper, by taking the instantaneous quotient of first and second signals resulting from energy transmitted simultaneously through relatively small and large associated areas of the material preferably while the material and energy transmitters are relatively moved.

3,435,241
STRUCTURE INSPECTION EQUIPMENT
William P. Hickey, Hillard, and Philip T. Martin, Columbus, Ohio, assignors to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Jan. 7, 1964, Ser. No. 336,232
Int. Cl. G01n *21/30*; **G01l** *5/04*
U.S. Cl. 250—219 **11 Claims**



An apparatus for determining the structural formation of paper material. By taking into account a large background area and a comparably smaller area through two coaxially placed detectors which sense the instantaneous variations of light intensities emanating from the two areas, the apparatus derives an indication of the material structure such as the arrangement of fibers in paper. The output signal is attained by an instantaneous ratio computation of the two sensed signals.

3,435,242
FORMATION INSPECTING ARRANGEMENT
Robert W. Kinne, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Feb. 5, 1964, Ser. No. 342,642
Int. Cl. G01n *21/30*; **G01l** *5/04*
U.S. Cl. 250—219 **5 Claims**

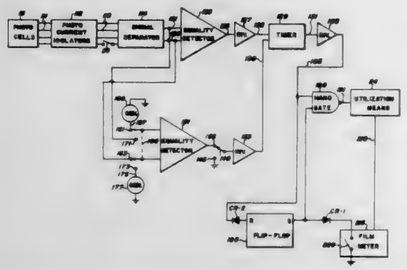
An apparatus for detecting the structure of material by sensing through a plurality of photodiodes, radiant energy signals being transmitted through the material. The photodiodes are placed in a concentric formation,

wherein the narrow beam photodiode is in close proximity to the material being tested and the plurality of wide beam energy detectors are removed at a further distance from the material relative to the narrow beam detector.



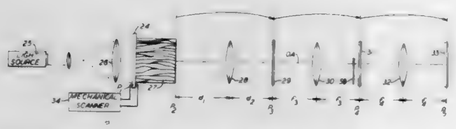
The signals from these plurality of detectors are transmitted to an instantaneous ratio computer, the output of which is a signal representing the structural formation of material.

3,435,243
FILM FRAME DETECTION SYSTEM
Douglas E. Webb, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,334
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **16 Claims**



An automatic detection system for identifying the location of frame information on strip film in which apparatus is provided for sampling the transmission characteristics across an incremental film width and supplying the data to an electronic circuit designed to produce a signal only when a true frame boundary is accurately detected on the moving film strip. The output signal is then used to enable a utilization device.

3,435,244
PATTERN RECOGNITION APPARATUS UTILIZING COMPLEX SPATIAL FILTERING
Christoph B. Burckhardt, Berkeley Heights, and Keith S. Pennington, Basking Ridge, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed May 5, 1966, Ser. No. 547,831
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **6 Claims**



1. Apparatus for recognizing a specific pattern on an object comprising:

means for causing coherent light to be projected from the object;

means for transmitting and redistributing the light such that in an output plane the light amplitude varies in the vertical direction as a function of φ and in the horizontal direction as a function of

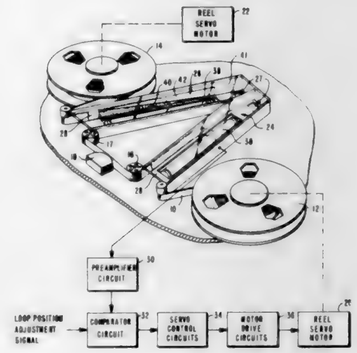
$$\log\left(\frac{\rho}{\rho_0}\right)$$

where φ and ρ are the polar coordinates of the light projected from the object and ρ_0 is a constant, thereby forming a redistributed representation of the object;

a reference hologram recording of the Fourier transform of the redistributed representation of the specific pattern;

means for projecting to the hologram a Fourier transform of the redistributed representation of the object, whereby light intensity exceeding a predetermined threshold may be transmitted through the hologram if the object includes thereon the specific pattern, regardless of the magnification or rotational orientation of the pattern and additional means for forming a Fourier transform of the light transmitted through the hologram.

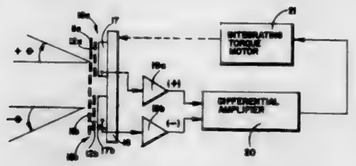
3,435,245
PHOTOCELL POSITION SENSOR HAVING MASKS FOR LINEARIZING PHOTOCELL
Lester H. Lee, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed July 25, 1966, Ser. No. 567,761
Int. Cl. H01j *1/56;* **G01d** *5/34*
U.S. Cl. 250—219 **8 Claims**



A photosense arrangement for position sensing devices to continuously sense the position of a variable position element. A planar photosense element is placed along one side of the path of the element and a parallel light source is positioned such that the variable position element interrupts the light path between the source and the photosense means to a variable extent dependent upon its position. The signal generated from the photocell is made linear by further interposing a mask of predetermined shape along the length of the photocell.

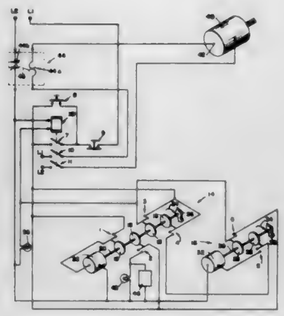
3,435,246
LIGHT RADIATION DIRECTION INDICATOR WITH A BAFFLE OF TWO PARALLEL GRIDS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of James W. Mildice, San Diego, Calif.
Filed Feb. 9, 1966, Ser. No. 526,665
Int. Cl. H01j *3/14*
U.S. Cl. 250—237 **4 Claims**

A light radiation direction sensor, comprising a photoelectric sensitive cell or sensor, in front of which a light baffle is positioned, to limit the light which may impinge upon the sensor only to light radiating towards the sensor from directions in a unipolar direction component, with respect to a perpendicular direction in a plane perpendicular to the sensor and tranversely of coplanar arrays of mutually parallel, regularly spaced longitudinal light interceptors. In the baffle's two coplanar arrays the mutually



parallel, regularly spaced longitudinal light interceptors are positioned, so that an opposite edge of a corresponding longitudinal interceptor of each of the arrays is in juxtaposition in a spaced apart side-by-side relationship, thereby limiting the direction from which light may impinge on the sensor to directions on one side of a direction perpendicular to the coplanar arrays.

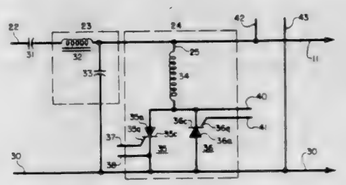
3,435,247
BATCH TIMER
William E. Pfeiffer, Indianapolis, Ind., assignor to Farm Fans, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Dec. 7, 1967, Ser. No. 688,790
Int. Cl. H02j *1/00, 3/00, 3/14*
U.S. Cl. 307—38 **11 Claims**



A control system comprising first and second control means and first and second timer means, the first timer means being arranged to energize the first and second control means for a predetermined time and, then, to energize the second timer means, the second timer means being arranged to maintain the second control means energized for a second predetermined period of time. A switch is operatively connected to the second control means and arranged to energize and advance the timer means when said second control means is energized.

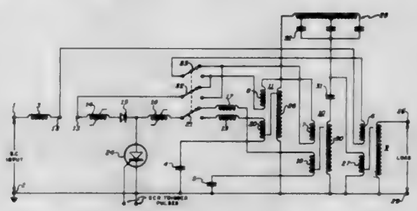
3,435,248
A-C VOLTAGE REGULATOR
Everett R. Geis, Orange, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1966, Ser. No. 604,937
Int. Cl. H02j *3/32*
U.S. Cl. 307—46 **6 Claims**

An A-C voltage regulator includes a first inductor connected between an inverter and an A-C output line, and a capacitor connected between the A-C output line and ground. The capacitor and inductor have approximately the same impedance magnitude at the A-C operating frequency. A second inductor has one end connected to the A-C output line and the other end connected, through a pair of oppositely connected SCR's, to ground. A signal related to the amplitude of the A-C output voltage regulates the conduction times of the SCR's to place the second inductor in the circuit on a time-sharing basis, thus modifying the composite tuning characteristic of the first and second inductors and the capacitor. The complete



non-interruptible power supply system includes a regulator, as jet described and: a battery, coupled to the input side of the inverter; a charger, coupled between an A-C supply line and the input side of the inverter; a primary energization path, including a third inductor coupled between the A-C supply line and the A-C output line; and a synchronizing unit, connected to receive input signals from the A-C supply line and the A-C output line, and to apply a synchronizing signal to the inverter.

3,435,249
SELECTABLE PULSE WIDTH MODULATOR USING BIASED SATURABLE TRANSFORMER
Edward A. Farrell, Uniondale, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,989
Int. Cl. H03k *1/18*
U.S. Cl. 307—88 **5 Claims**



5. A selectable pulse width modulator comprising,

first and second energy storage means each having an input terminal and an output terminal,

a saturable output transformer,

the output terminals of said storage means being coupled to a common load through said saturable output transformer,

each said storage means comprising a low level energy storage element and a high level energy storage element connected in cascade through a respective interstage saturable transformer,

each transformer having a bias winding for driving the respective transformer in saturation,

a source of charging current,

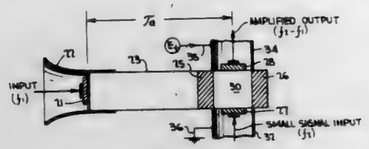
first and second synchronously operable switching means,

said first switching means selectively coupling the input terminal of one of said storage means to a circuit point,

said second switching means connecting the bias winding of the selected interstage transformer and the bias winding of said output transformer and in opposite sense with the bias winding of the unselected transformer in a series circuit between said source and said circuit point, and

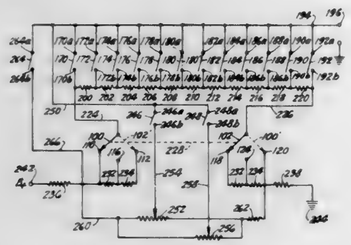
means connected to the selected storage means for discharging the low level energy storage element into the high level energy storage element through the respective saturable transformer and for discharging the high level energy storage element into said load through said saturable output transformer.

3,435,250
SOLID STATE MICROWAVE ACOUSTIC DELAY LINE AND FREQUENCY CONVERTER
Frank Reggia, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 18, 1967, Ser. No. 661,728
Int. Cl. H02m *5/04, 5/16*
U.S. Cl. 307—88.3 **4 Claims**



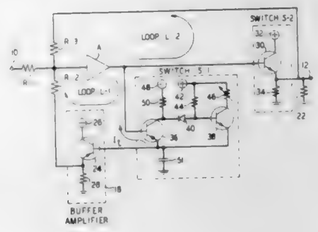
A microwave acoustic delay line and frequency converter as might be used in radar systems in which the signal, such as might be available from the transmitter, is introduced into a delay medium, and this delayed signal is coupled to a piezoelectric crystal medium into which is also coupled a small signal input which might be the target return signal. In this latter crystal medium the delayed signal and the small signal (amplified) are heterodyned producing a difference frequency output. In one embodiment the delay medium and the non-linear amplifier medium are of different crystal materials but in an alternate embodiment the delay medium and the non-linear amplifier medium are of the same material and are a unitary structure.

3,435,251
CONTROL PANEL
Edwin Ellner, Oxford, Conn., assignor, by mesne assignments, to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,305
Int. Cl. H02b *1/24*
U.S. Cl. 307—115 **14 Claims**



A control panel for operating an electrically controlled device is provided. The panel comprises a plurality of control switches with associated circuitry, a range changing switch with associated circuitry which controls the range of electrical signals provided by actuation of the control switches, a movable scale member having a plurality of groupings of graphical symbols which are positioned adjacent to the control switches such that the symbols indicate the effect of actuating each switch. The scale member is movable between various positions simultaneous with movement of the range changing switch such that the graphical symbols grouping adjacent to the control switches in any position of the scale member corresponds to the range over which the control switches can provide electrical control signals. Independent actuation switches and random switches positioned in parallel with the foregoing described switches and circuitry provide electrical control signals independent of the said foregoing described switches and circuitry.

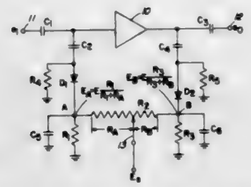
3,435,252
D.C. RESTORER
John M. Eubanks, Greensboro, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 26, 1964, Ser. No. 392,332
Int. Cl. H03k *5/08, 5/18, 5/20*
U.S. Cl. 307—237 **7 Claims**



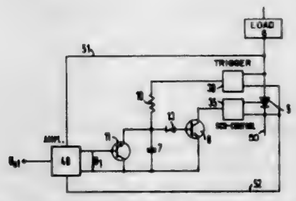
A D.C. level is restored to voltage pulses in an input signal by connecting the signal to the input of a high gain phase-reversal amplifier, the output of which is connected through a normally open transistor switch to an output circuit. A first feedback loop connected between the amplifier output and input maintains the amplifier output at voltage levels which are lower than that required to operate the transistor switch. A switching means within the feedback loop opens the loop in response to a rate of rise of voltage at the amplifier output which exceeds a predetermined threshold value, thereby permitting the amplifier output to achieve a voltage at which the transistor switch operates and connects the amplifier output to the output circuit. A second feedback loop is provided between the output circuit and amplifier input in order to maintain signal levels at the output circuit within bounds. When the input signal returns to a voltage slightly lower than that at which the transistor switch was operated, the transistor switch is again open-circuited and the first feedback loop is reestablished thereby confining the output voltage of the amplifier to a range of voltage levels within which the transistor switch remains inoperative.

3,435,253
SYMMETRICAL CLIPPER
Eugene A. Robinson, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 19, 1966, Ser. No. 521,743
Int. Cl. H03k *5/08*
U.S. Cl. 307—237 **5 Claims**

A clipping circuit for use with a phase reversing circuit, that may also be an amplifier, that uses a pair of diodes with like electrodes signal circuit connected to the input and output of the phase reversing circuit and with the other electrodes of the pair of diodes interconnected by a potentiometer having a slidable wiper connected to a single reference voltage source whereby adjustment of the wiper is such that clipping adjustment of one-half of the signal cycles into the phase reversing circuit is varied simultaneously with opposite adjustment varying of clipping of the other half of the signal cycle at the output of the phase reversing circuit and with this adjustment including a symmetrical clipping position and a range of adjustment in both directions from operational symmetry relative to the clipped output signal.

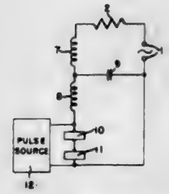


3,435,254
SYSTEM FOR CONTROLLING THYRISTORS BY PERIODICALLY RECURRING FIRING PULSES
Werner Volkmann, Erie, Pa., assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Aug. 6, 1965, Ser. No. 477,903
Claims priority, application Germany, Aug. 6, 1964, S 92,496
Int. Cl. H03k *17/54*
U.S. Cl. 307—252 **3 Claims**



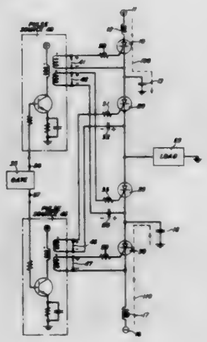
In a system for controlling a thyristor by periodically recurring firing pulses, an amplifier circuit has an input connected to a variable control voltage supply for controlling the charging of a capacitor. The amplifier circuit includes a control device for abruptly increasing the output voltage of the amplifier circuit to a value above a maximum capacitor voltage. The control device is connected to the thyristor for controlling the output voltage in dependence upon the blocking voltage of the thyristor.

3,435,255
PULSE CONTROLLED SWITCH HAVING SOLID STATE SWITCHING ELEMENTS ISOLATED FROM TRANSIENT VOLTAGES
Arne Jensen, Havnberg, Als, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Mar. 9, 1965, Ser. No. 438,255
Claims priority, application Germany, Mar. 19, 1964, D 43,927
Int. Cl. H03k *17/00, 3/26*
U.S. Cl. 307—258 **4 Claims**



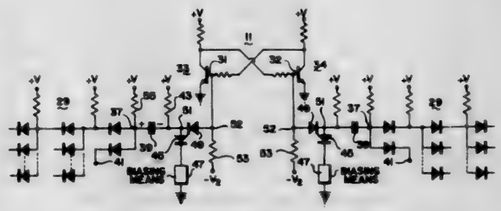
An electrically controlled switch in which junctionless, non-rectifying, solid state semiconductor switching elements, having a symmetrical current-voltage characteristic, switch from a high resistance condition to a low resistance condition when a threshold value of a voltage thereacross is exceeded by pulses applied from a control pulse source to switch them to their low resistance condition in each half cycle of the voltage of an alternating current source applying current to a load through the switching elements. The switches are isolated from short time transient voltages from the circuit to which the switch is connected to avoid spurious switching.

3,435,256
ALTERNATING POLARITY CURRENT DRIVER USING CASCADED ACTIVE SWITCHING ELEMENTS
Frederick C. Young, New Vernon, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 17, 1966, Ser. No. 521,117
Int. Cl. H03k *1/14*
U.S. Cl. 307—262 **8 Claims**



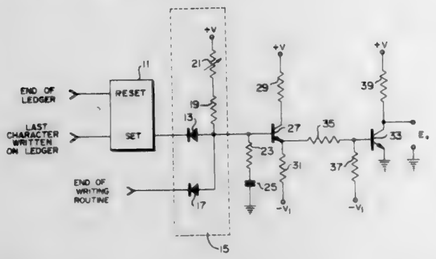
A bipolar driver circuit is developed for producing alternate polarity current pulses from a circuit in which four cascaded silicon-controlled rectifiers resonantly charge two capacitors and alternately discharge the capacitors in an opposite polarity relationship through a ferrite load connected to a central junction in the cascade of rectifiers.

3,435,257
THRESHOLD BIASED CONTROL CIRCUIT FOR TRAILING EDGE TRIGGERED FLIP-FLOPS
William N. Lawrie, Jr., Southfield, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 17, 1965, Ser. No. 456,069
Int. Cl. H03k *17/00, 3/26, 19/00*
U.S. Cl. 307—289 **7 Claims**



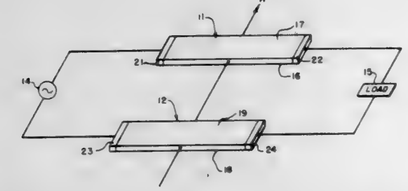
Threshold biased coupling means for eliminating the effects of noise on the clocked input circuit of a trailing edge triggered flip-flop. The coupling means is independent of the conduction state of the flip-flop and is normally back-biased to isolate the flip-flop from input noise.

3,435,258
TIME RESPONSIVE ERROR SIGNAL GENERATOR
John A. McAvoy, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 31, 1966, Ser. No. 539,109
Int. Cl. H03k 17/28
U.S. Cl. 307—293 1 Claim



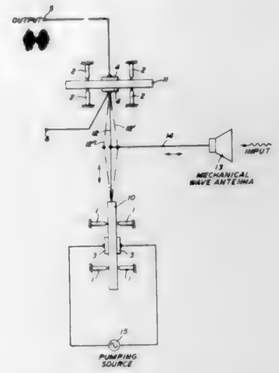
This invention relates generally to circuits for checking the speed at which a ledger passes by a writing member of the printout portion of an accounting or data processing machine, and more particularly to timing circuits which produce an output if there is too long a time between the last character written on the ledger and the passage of the edge of the ledger, the distance between the last character and the edge of a ledger being known.

3,435,259
FILTER CIRCUIT
Herbert L. Mette, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed May 13, 1965, Ser. No. 455,660
Int. Cl. H01e 15/00; H03c 1/48; H03j 3/16
U.S. Cl. 307—309 7 Claims



This invention relates to filter circuits using magneto-electric rectifying elements which are ohmic above a certain frequency and rectifying at lower frequencies. A typical magneto-electric rectifying element may comprise a slab of semiconductor material prepared with a pair of ohmic contacts at the ends and having one major surface roughened to allow a high surface recombination velocity of carriers traversing the material and the opposite major surface etched smooth to provide a low surface recombination velocity. If a potential is applied to the ohmic contacts of the element during application of a magnetic field parallel to the major surfaces, the carriers are deflected either to the high recombination velocity surface or to the low recombination velocity surface, depending upon the direction of the applied magnetic field. At frequencies below the transition frequency, current is substantially blocked in the magneto-electric rectifier during each half cycle of the input voltage, since most of the carriers are deflected by the magnetic field to the high recombination velocity surface of said magneto-electric rectifier during that half cycle. For higher frequencies, the magneto-electric rectifier is ohmic and the current can pass without restriction. In one embodiment, two magneto-resistor elements are connected in reverse rectification direction in series with a load and an alternating current source, to provide a high pass filter. In another embodiment, a low pass filter is obtained by connecting a magneto-electric rectifier in each of two arms of a bridge circuit.

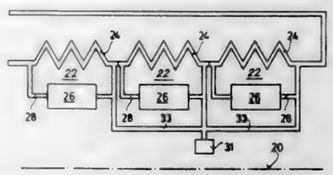
3,435,260
VIBRATION SENSOR
Harold Seidel, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 30, 1966, Ser. No. 562,018
Int. Cl. H01v 7/00
U.S. Cl. 310—8.3 7 Claims



A vibration sensor comprising a balanced mechanical reactive bridge in which the incident vibrational signal unbalances the bridge with respect to a high frequency mechanical pumping source to produce a double sideband, suppressed carrier output signal. The mechanical pumping source is mechanically coupled to a second elastic medium in a manner to produce no electrical output from the second medium in the absence of a signal. However, in the presence of a vibrational signal, the coupling is unbalanced, thereby producing an output at the second medium.

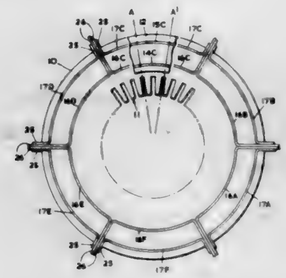
The vibration sensor described has no inherent bandwidth limitations; is a high impedance device; and has a signal-to-noise ratio which increases with decreasing frequency.

3,435,261
ELECTRIC MACHINE HAVING A LIQUID-COOLED ROTOR
Hans Spiess, Rapperswil, Saint Gall, Switzerland, assignor to Oerlikon Engineering Company, a corporation of Switzerland
Filed Apr. 28, 1966, Ser. No. 545,983
Int. Cl. H02k 9/00, 9/19
U.S. Cl. 310—54 8 Claims



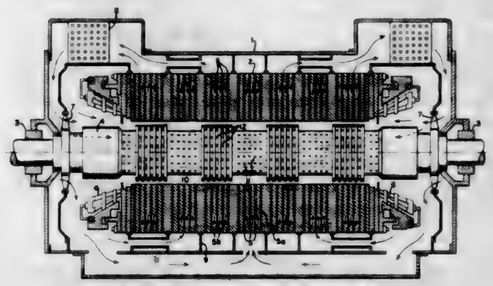
Rotor of electric machine carries closed liquid circulation system for cooling windings. System includes a cooler and conduits for conducting liquid between cooler and windings. Rotor carries a liquid-containing expansion vessel for applying a static pressure to the cooling liquid in the system, the vessel being located closer to the rotor axis of rotation than any part of the cooling system.

3,435,262
COOLING ARRANGEMENT FOR STATOR END PLATES AND EDDY CURRENT SHIELDS OF ALTERNATING CURRENT GENERATORS
Roy Brian Bennett and William Carmichael Blair, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed June 6, 1967, Ser. No. 643,956
Claims priority, application Great Britain, June 7, 1966, 25,252/66
Int. Cl. H02k 9/20
U.S. Cl. 310—54 7 Claims



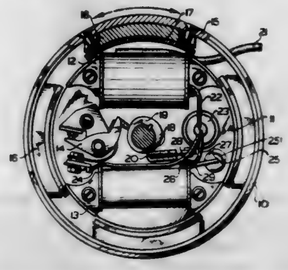
In alternating current generators it is necessary to place a copper screen over each stator core end plate to prevent axial leakage flux from entering the stator core and this invention is concerned with the cooling of the stator core end plates and associated screens. The invention, which is primarily intended for use with large turbo-alternators, provides separate arrangements of cooling ducts for the flow of a cooling fluid for cooling the screens, the end plates and also the teeth of the end plates.

3,435,263
GAP PICKUP ROTOR WITH RADIALLY EXTENDED OUTLETS
David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 4, 1966, Ser. No. 547,526
Int. Cl. H02k 9/06
U.S. Cl. 310—61 5 Claims



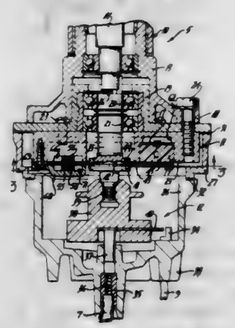
A gas cooled dynamoelectric machine rotor arranged to circulate cooling gas between the windings and the air gap by self-pumping action employs extension members held by rings on the rotor. The extension members have gas outlet holes terminating at a greater diameter than the gas inlet holes so as to augment the gas pumping action.

3,435,264
MAGNETO FLYWHEEL IGNITION
Guenter Brand, Stuttgart-Steckfeld, and Gustav Pfrommer, Stuttgart-Obertuerkheim, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany
Filed Aug. 1, 1966, Ser. No. 569,357
Claims priority, application Germany, Aug. 13, 1965, B 83,250
Int. Cl. H02k 7/00, 21/22
U.S. Cl. 310—70 9 Claims



An ignition system for a combustion engine of the flywheel magneto type. The system including an interrupter connected in series with the primary winding in such a manner that a spark will only be generated when the magneto is operated in the desired direction.

3,435,265
HOUSING AND MOUNTING FOR IGNITION TRIGGER CIRCUIT
Floyd M. Minks, Kissimmee, Fla., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,609
Int. Cl. H02k 11/00
U.S. Cl. 310—70 13 Claims

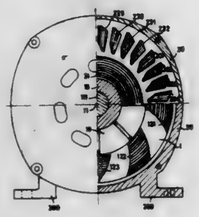


This invention relates to a breaker-less ignition system for an automobile. The distributor has a vane that includes a plurality of circumferentially distributed apertures that control the pulse forming trigger circuit for the spark plugs.

3,435,266
VARIABLE SPEED ELECTRIC MOTOR
Jean Jarret, La Champanelle Chemin du Clos Baron, Fourqueux, and Jacques Jarret, 35 bis Ave. de Belloy, Le Vesinet, France
Filed May 16, 1966, Ser. No. 550,440
Claims priority, application France, May 19, 1965, 17,569
Int. Cl. H02k 1/16
U.S. Cl. 310—164 3 Claims

A variable-reluctance electric motor comprising a ring-shaped stator having at least one group of four consecutive independent magnetic elements regularly distrib-

uted around its axis and each including at least one switchable winding, and a rotor having for each said group a ferromagnetic tooth made of magnetically insulated laminations, in which said elements and teeth are



so shaped that the alternating voltage induced in said windings is of trapezoidal wave-shape, said windings being wound in opposite directions for any two alternate magnetic elements, whereby the magnetic flux in each tooth keeps a constant value for a given rotor speed.

3,435,267

DISCOIDAL ELECTRICAL MACHINES

Hartwig Beyersdorf, Bremen-Arbergen, and Gerhard Bering, Bremen, Germany, assignors to Lloyd Dynamowerke G.m.b.H., Bremen, Germany

Filed Jan. 21, 1966, Ser. No. 522,231
Claims priority, application Germany, Jan. 21, 1965, L 49,770; July 31, 1965, L 51,277
Int. Cl. H02k *17/42*
U.S. Cl. 310—168 32 Claims



A rotary electrical machine composed of at least one stator disc and at least one rotor disc, there being a total of three discs, the discs being separated from one another and spaced axially from each other to define two axially extending air gaps at least one of which has a varying reluctance around the circumference of the machine, the machine further including an A.C. winding whose radial conductors are disposed in radial grooves formed in the surface of one of the discs which faces the one air gap, the machine further including an annular D.C. excitation winding carried by the other disc which is adjacent the one air gap, one of the discs adjacent the air gap being composed of an inner disc portion and a concentric outer ring portion and the D.C. excitation winding being axially aligned with the boundary between the two portions so that the flux produced by the excitation winding traverses the inner portion in one axial direction and the outer portion in the opposite axial direction.

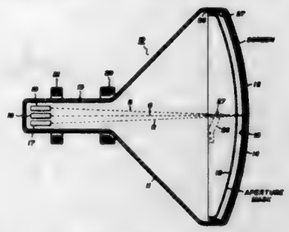
3,435,268

IN-LINE PLURAL BEAM CATHODE RAY TUBE WITH AN ASPHERICAL APERTURE MASK

Wilfred D. Rublack, De Witt, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 19, 1966, Ser. No. 573,604
Int. Cl. H01j *29/50, 29/02*
U.S. Cl. 313—70 7 Claims

A plural beam cathode ray tube comprising a spherical screen including a plurality of phosphor dots arranged in rows, an aspherical mask adjacent the spherical screen and comprising a plurality of apertures arranged in rows, and a plurality of electron guns arranged in an in-line



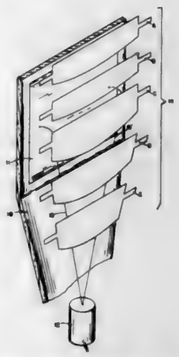
configuration parallel with the rows of the screen and the rows of the mask.

3,435,269

THIN CATHODE RAY TUBE WITH ARRAY OF PLANAR VERTICAL DEFLECTION ELEMENTS

Leo A. Shanafelt, 5823 Keokuk Ave., Woodland Hills, Calif. 91364, and Abraham Banks, 18710 Paseo Nuevo Drive, Tarzana, Calif. 91356

Filed Oct. 23, 1965, Ser. No. 503,264
Int. Cl. H01j *29/74*
U.S. Cl. 313—78 4 Claims



1. In a cathode ray tube having an envelope, a target screen in said envelope and an array of planar vertical deflection elements disposed substantially adjacent to a surface spaced from and opposite to said target screen to control vertical sweep of an electron beam in the provision of a raster on said target screen, an electron gun in a symmetrical position with respect to the ends of said vertical deflection elements, below said elements, for injecting an electron beam between said elements and said target screen, means for scanning said beam in a fan-shaped pattern between said array and said target screen, said pattern being in a plane if voltages on said elements and said screen are equal, each of said vertical deflection elements having an upper and lower edge and having at least one of said edges curved for altering the electrostatic field between said vertical deflection array and said target screen to straighten the horizontal lines of said raster.

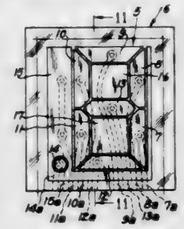
3,435,270

ELECTROLUMINESCENT DISPLAY DEVICE WITH INDICIA ELECTRODES AND CIRCUIT LEADS OF METAL FOIL

Vincent Vodicka, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York

Filed Apr. 4, 1966, Ser. No. 546,114
Int. Cl. H05b *33/26*
U.S. Cl. 313—108 8 Claims

An electroluminescent display device has its segmented patterned back electrode and its circuit leads constituted by the residue of metal foil sheets laminated to the opposite sides of an apertured plastic insulator sheet and



directly to each other through the apertures therein and respectively etched in the patterns of the segmented electrode and the circuit leads.

3,435,271

DISCHARGE LAMP INCORPORATING PHOSPHOR WHICH IS NORMALLY SENSITIVE TO LEHRING AND METHOD

Frank M. Vodoklys, Wayne, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 12, 1966, Ser. No. 572,095
Int. Cl. H01j *1/63, 63/04*
U.S. Cl. 313—109 11 Claims



Discharge device incorporates finely divided phosphor which has been initially prepared by firing in a nonoxidizing atmosphere. There is provided over the phosphor a thin layer of one or more of potassium bromide, strontium bromide, potassium chloride, or sodium chloride in order to improve the performance of the discharge device. The thin layer is applied by dissolving the specified material in a vehicle in which the finely divided phosphor is slurried, and thereafter evaporating the vehicle.

3,435,272

TUBULAR HALOGEN CYCLE INCANDESCENT LAMP WITH INNER CYLINDER FOR UNIVERSAL OPERATION

David H. Green, Chesterland, Ohio, assignor to General Electric Company, a corporation of New York

Filed July 15, 1966, Ser. No. 565,457
Int. Cl. H01k *5/02, 1/28, 1/34*
U.S. Cl. 313—222 5 Claims



In an elongated tubular incandescent lamp of the halogen cycle type, with an axial filament and containing an inert fill gas and a halogen getter, thermal separation of the halogen and the fill gas in vertical operation of the lamp, is effectively minimized by a transparent cylinder concentrically arranged between the filament and the lamp envelope.

3,435,273

SLOW-WAVE STRUCTURE ENCASING ENVELOPE WITH MATCHING THERMAL EXPANSION PROPERTIES

Joseph B. Kennedy, Palos Verdes Peninsula, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 23, 1966, Ser. No. 529,517
Int. Cl. H01j *1/96*
U.S. Cl. 313—283 11 Claims



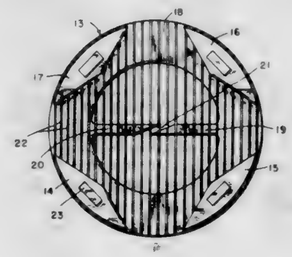
In the disclosed enveloping barrel for a slow-wave structure-support rod assembly, a predetermined width tape of selected material is wound about the assembly in a helix-like configuration leaving a preselected spacing between successive windings of the tape. A filler material is disposed between the tape windings and is sealed to the tape and to the slow-wave structure support rods. The filler material has a thermal coefficient of expansion related to that of the tape material and to the tape width and spacing so as to provide a net thermal coefficient of expansion essentially equal to that of the support rods.

3,435,274

PLURALITY OF CERAMIC SPACERS FOR SEPARATING PLANAR GRIDS

Harold D. Miller, Owensboro, Ky., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Apr. 29, 1966, Ser. No. 547,078
Int. Cl. H01j *1/46*
U.S. Cl. 313—348 2 Claims



This invention relates to a grid separator for use in electric discharge device. Essentially the device consists of a plurality of separators that are positioned between a pair of planar grid assemblies. The separators are triangular in shape and are constructed of a ceramic material.

3,435,275

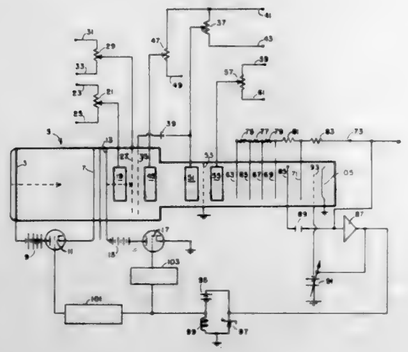
ORTHICON PROTECTIVE CIRCUIT

Ronald M. Bauman, 415 Saratoga Drive. Cherry Hill, N.J. 08034

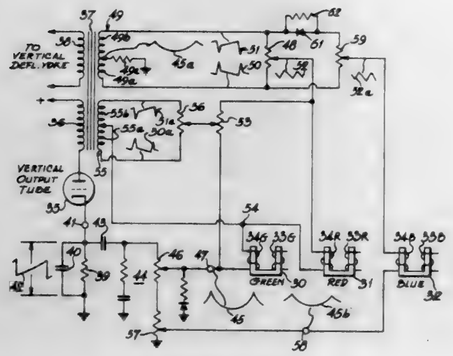
Filed Nov. 24, 1965, Ser. No. 510,145
Int. Cl. H01j *29/41*
U.S. Cl. 315—12 4 Claims

The disclosed circuit protects a conventional image orthicon from excessive illumination intensity damage by removing the photocathode accelerating potentials in re-

sponse to illumination exceeding a predetermined level. A normally conducting triode is connected in series with each photocathode power supply. When the illumination intensity exceeds a predetermined level, the automatic beam control circuit output exceeds a predetermined voltage, thereby energizing a threshold circuit connected to the beam control circuit output. Energization of the threshold circuit renders the triode non-conducting so that the photocathode accelerating potentials are removed, thereby preventing damage to the tube structure.

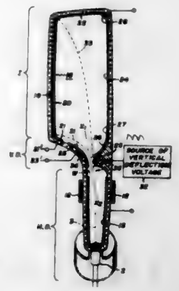


3,435,276
CONVERGENCE APPARATUS FOR NULLIFYING UNWANTED INDUCED DEFLECTION CURRENTS
Gene Karl Sendelweck, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 526,989
Int. Cl. H01j *29/50*
U.S. Cl. 315—13 **7 Claims**



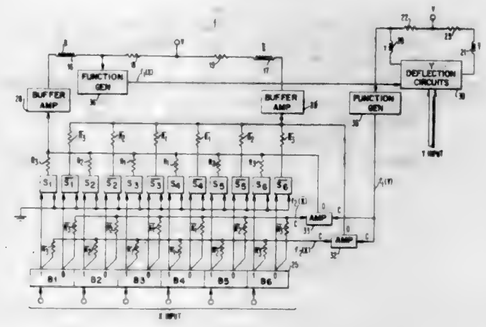
Selected portions of two voltage waveforms of opposite polarity including pulses are combined so as to apply a correcting voltage to the beam convergence coils of a multiple beam color television display system. The correction voltage results in production of a current in the convergence coils which nullifies the unwanted induced current from the deflection yoke of the display system.

3,435,277
DEFLECTION SYSTEM FOR A FLAT TUBE DISPLAY
Svend E. Havn, Liverpool, and Mooshi R. Namordi, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 27, 1967, Ser. No. 626,272
Int. Cl. H01j *29/70*
U.S. Cl. 315—18 **6 Claims**



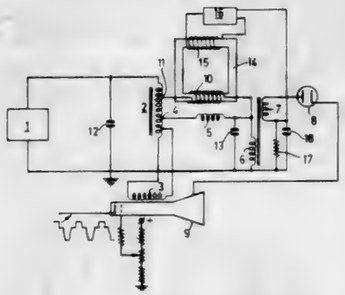
A shallow cathode ray tube having improved vertical deflection sensitivity is disclosed. The tube includes an electron gun, magnetic horizontal deflection plates, vertical deflection electrodes, and a phosphor target parallel to the axis of the electron gun. A portion of the vertical deflection electrodes define a narrow gap with an axis displaced from and/or inclined with respect to the electron gun so that the beam passes nearest the electrode remote from the phosphor target.

3,435,278
PINCUSHION CORRECTED DEFLECTION SYSTEM FOR FLAT FACED CATHODE RAY TUBE
Frank R. Carlock and B. William Kippenhan, Hyde Park, William R. Lamoureux, Kingston, and Nicholas Lazarchick, Jr., Hyde Park, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1966, Ser. No. 561,891
Int. Cl. H01j *29/70*
U.S. Cl. 315—24 **6 Claims**



A pincushion corrected deflection system for a cathode ray tube having first and second orthogonal deflection windings. First and second means are responsive respectively to first and second input signals defining the coordinates to which the beam of the cathode ray tube is to be deflected, and provide deflection currents corrected for the centerlines of the tube surface. First and second function generators, also responsive to the first and second input signals, provide a correction signal component accounting for maximum deviation from said centerlines. Third and fourth function generators connected to the first and second windings, respectively, provide attenuation control signals which are a function of the deflection current in the connected windings. The output of the first function generator is passed to the first winding in accordance with the output of the fourth function generator for correcting the current supplied to the first winding, and the output of the second function generator is passed to the second winding in accordance with the output of the third function generator for correcting the current supplied to the second winding, to eliminate pincushion distortion in the resultant image.

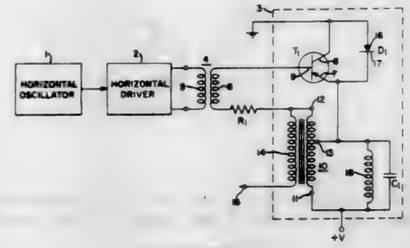
3,435,279
CIRCUIT ARRANGEMENT FOR PRODUCING A SAWTOOTH CURRENT THROUGH A DEFLECTION COIL AND A HIGH VOLTAGE
Antonius Boekhorst, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,097
Claims priority, application Netherlands, June 18, 1964, 6406921
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **12 Claims**



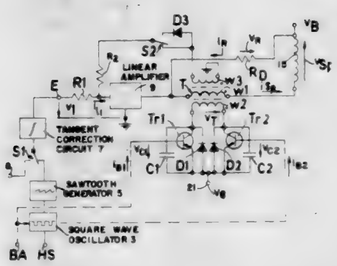
A circuit for regulating the final anode voltage of a cathode ray tube includes a transformer having a primary winding in which a sawtooth current is produced and a secondary winding for supplying said anode voltage. Reactive coupling means comprising a variable inductor in series with a tertiary winding couple the primary and secondary windings. The inductance of the variable inductor is varied as a function of the high voltage load current so as to maintain the current through the inductor and the voltage across it at a zero value at the beginning and at the end of the flyback period.

3,435,280
DEFLECTION CIRCUIT
Svend E. Havn, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 28, 1965, Ser. No. 467,776
Int. Cl. H01j *29/76*
U.S. Cl. 315—27 **5 Claims**

A transistorized horizontal deflection circuit for a television receiver includes a flyback transformer which has a tapped primary winding. A first portion of that winding is connected across the horizontal deflection coils of the receiver's cathode ray tube; the tap of the primary is connected to an emitter of a switching transistor; and a second portion of the primary is coupled through a horizontal buffer transformer to the transistor's base. When the transistor is placed in a conducting condition at the beginning of a trace interval by a pulse from a horizontal driver stage coupled to the buffer transformer, regenerative feedback from the second portion of the flyback transformer keeps the transistor conducting throughout that interval.



3,435,281
ELECTRON BEAM DEFLECTION CIRCUITS
Rainer Mallebrein, Constance, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Aug. 26, 1966, Ser. No. 575,292
Claims priority, application Germany, Aug. 28, 1965, T 29,296
Int. Cl. H01j *29/70, 29/74*
U.S. Cl. 315—27 **11 Claims**

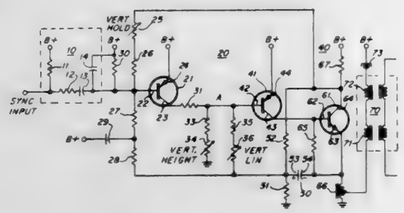


In an electron beam deflection circuit for causing the periodic deflection and rapid retrace of an electron beam, a circuit arrangement for permitting information to be written on the associated picture tube face, which arrangement includes a linear amplifier and an auxiliary circuit connected with the deflection circuit coil for producing, in cooperation with the coil, a compensation of the retrace voltages at the output of the amplifier, and means electrically connected in the circuit for selectively disconnecting the auxiliary circuit. The auxiliary circuit includes at least one capacitor, and one line switch and one booster diode connected to the capacitor for effectively isolating the linear amplifier from the high retrace voltages appearing across the deflection coil.

3,435,282
SELF-OSCILLATING DEFLECTION GENERATOR
Donald J. Barchok, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,120
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **16 Claims**

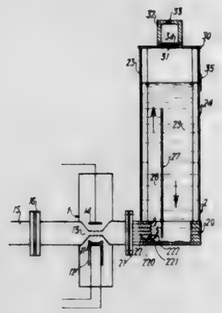
A vertical sawtooth deflection generator having its ramp

voltage developed by the discharge of a capacitor. The



effective discharge time of the capacitor is lengthened by feeding back a portion of the output voltage thereto.

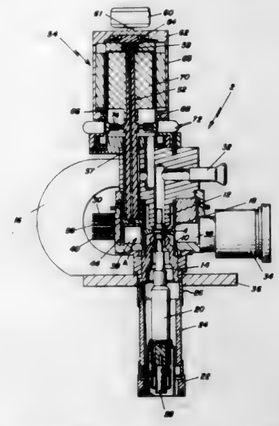
3,435,283
THERMOSYPHONIC HEAT EXCHANGE DEVICE FOR STABILIZING THE FREQUENCY OF CAVITY RESONATORS
Charles A. Beurtheret and Jacques G. Boissiere, Paris, France; said Beurtheret assignor to Compagnie Francaise Thomson-Houston Hotchkiss-Brandt, and said Boissiere assignor to Society Thomson-Varian, both of Paris, France, both companies of France
Filed Apr. 28, 1966, Ser. No. 545,947
Int. Cl. H01j *23/16*
U.S. Cl. 315—32 **3 Claims**



The frequency of an electron tube having a cavity resonator is stabilized by a sealed container at least partially filled with cooling liquid. One wall portion of the container is in thermal contact with the cavity resonator. Another wall portion of the container has a flexible diaphragm separating the inside of the container from the ambient atmosphere. A vertical partition is located in the container to provide a thermo-siphon circulation path. A second and smaller partition is located closely adjacent the wall portion of the container which is in thermal contact with the cavity resonator. The electron tube is enveloped in insulating material.

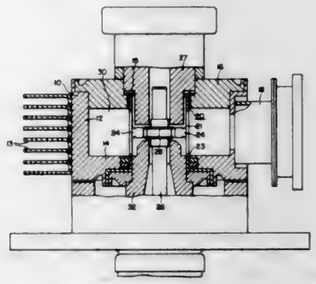
3,435,284
TURNABLE COAXIAL CAVITY MAGNETRON
Edward T. Downing, Winchester, and Robert F. Plumridge, Lexington, Mass., assignors to Rayethon Company, Lexington, Mass., a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,901
Int. Cl. H01j *25/50*
U.S. Cl. 315—39.61 **6 Claims**

A microwave oscillator device having means for rapid cyclical variation of the operating frequency over the tuning range including dielectric tuning rods disposed off-axis. Upon rotation or angular displacement parallel to the axis of the device the tuning member traverses the



maximum and minimum electric field regions in the resonant cavity to result in capacitive tuning of the device.

3,435,285
COAXIAL MAGNETRON HAVING ANODE VANES WITH NOTCHES THEREON FOR REDUCING THE FREQUENCY OF OPERATION
William A. Gerard, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 1, 1966, Ser. No. 539,578
Int. Cl. H01j *25/50, 25/34, 25/58*
U.S. Cl. 315—39.77 **6 Claims**

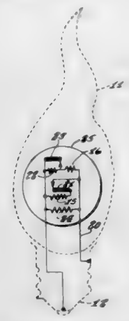


A coaxial magnetron in which the anode vanes are provided with rectangular notches on the edge portions of the anode vanes to reduce the necessary length of the anode vane over conventional unnotched anode vanes for a given frequency and thereby make the magnetron more compact in size without effecting the electrical or thermal characteristics of the magnetron.

3,435,286
PLURAL LAMPS FOR SIMULATING A CANDLE FLAME
Philip J. Kayatt, Bronx, N.Y., assignor to Duro-Test Corporation, North Bergen, N.J., a corporation of New York
Filed Sept. 17, 1965, Ser. No. 488,117
Int. Cl. H01j *1/00;* **H01k** *1/14*
U.S. Cl. 315—47 **8 Claims**

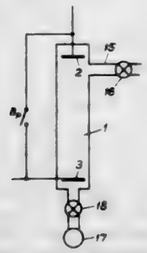
Illumination means for simulating the visual flame like effect of a candle having a steady state light source and

at least one intermittently operated light source. Both the steady state and intermittent light sources are connected in parallel to a source of voltage and are mounted in close



proximity for simultaneous viewing so that the operation of the intermittent light source produces a visual flame-like effect.

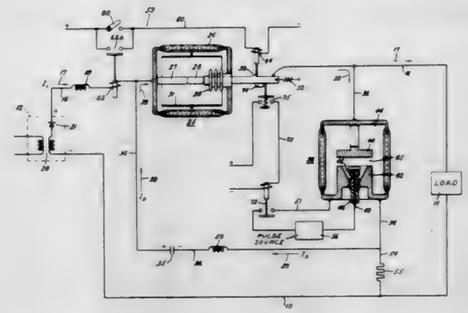
3,435,287
DEIONIZATION OF A GAS DISCHARGE DEVICE BY VARYING THE TUBE PARAMETERS
Clas Jacobsen, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Apr. 14, 1966, Ser. No. 542,680
Claims priority, application Sweden, Apr. 15, 1965, 5,006/65; May 24, 1965, 6,735/65
Int. Cl. H01j *17/22*
U.S. Cl. 315—110 **7 Claims**



An electric circuit making device comprises a series connection of a circuit breaker or isolating switch and a current regulating gaseous discharge valve. In this valve a normal low voltage arc can be maintained only if the relationship $R \cdot n > A$ exists, where R is proportional to the effective area of discharge, n is the density of neutral atoms in the gas, and A is a parameter which depends on the type of neutral atoms in the gas. The gas discharge valve is provided for means for regulating at least one of the parameters in the inequality in such a direction that the discharge in the valve changes over from plasma condition with low arc voltage drops to space charge condition with higher arc voltage drop, and the circuit breaker or isolating switch is provided with means for opening it as soon as the current through the discharge valve is depressed due to the high voltage drop in the valve.

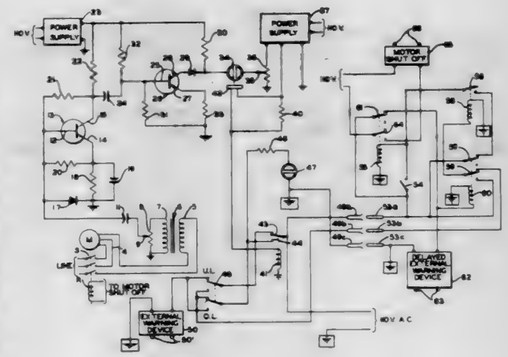
3,435,288
CIRCUIT INTERRUPTING MEANS FOR A HIGH VOLTAGE D-C CIRCUIT
Allan N. Greenwood, Media, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 10, 1966, Ser. No. 533,366
Int. Cl. H02h *3/20*
U.S. Cl. 317—11 **6 Claims**

Discloses a high voltage D.C. circuit breaker in which a current zero is created by discharging a commutating capacitor through a circuit interrupting device. The capacitor and normally-open circuit-making means are connected in series across the interrupting device, with the capacitor connected to the D.C. circuit at the source side of the interrupting device even when the circuit-making



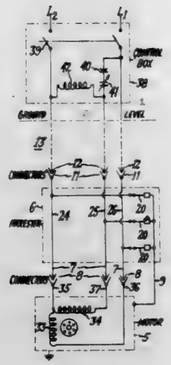
means is open. The capacitor is charged directly from the source of the D.C. circuit through a charging circuit comprising a resistor connected between a terminal of the source and the juncture of the commutating capacitor and the circuitmaking means.

3,435,289
CONTROL APPARATUS FOR AN ELECTRICALLY OPERABLE DEVICE
Edward C. Aselman, Jr., Jefferson County, Mo., assignor to T.N.E. Incorporated, a corporation of Missouri
Filed Dec. 7, 1965, Ser. No. 516,206
Int. Cl. H02h *7/06, 7/08, 7/10*
U.S. Cl. 317—13 **32 Claims**



An electrical current sensor for operative connection to an electrical device such as a motor powered pump for sensing current input to the motor. The sensor includes a transformer to detect current input and an amplifier to increase the measured change in current level. The sensor produces an error signal when the current either falls below or exceeds a pre-established level, and a reference voltage signal for comparison with the error signal, in a summating circuit. A switch is connected to the summating circuit and causes energization of an alarm when the current input to the pump exceeds or falls below the pre-established value. An automatic disconnect device is optionally connected to the sensor and motor for automatically de-energizing the motor upon sensing of the undesirable current level.

3,435,290
VOLTAGE SURGE PROTECTOR FOR SUBMERGED DEEP WELL PUMP MOTORS
Arthur T. Lyman, North Canton, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 15, 1966, Ser. No. 602,088
Int. Cl. H02h 7/08, 3/22
U.S. Cl. 317—13 11 Claims



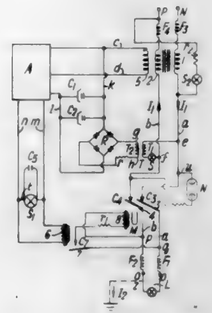
A submersible lightning arrester for deep well pump motors having an elongated sealed housing containing a plurality of duplicate valve type arrester elements extending crosswise of the housing and equally spaced lengthwise of the housing with integral leads extending from opposite ends of the housing terminating in complementary detachable waterproof electrical connectors for mating respectively with a connector on the pump motor and on the end of the motor supply line.

3,435,291
TRANSFORMER FUSE MOUNTING
Jerry Lee Paulus, Zanesville, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed July 28, 1966, Ser. No. 568,660
Int. Cl. H02h 7/04
U.S. Cl. 317—15 8 Claims



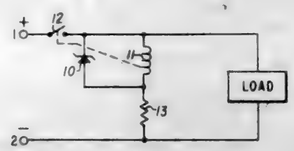
This disclosure relates to a fuse mounting for distribution transformers. An insulating mounting board is secured within the transformer and a tubular fuse is mounted to the board at the lower end by a suitable releasable clip such as a U-shaped clip. A quick disconnect slip connector is secured to the lower end of the fuse. A fuse mounting pin is secured to the top end of the mounting board and interconnected to and within a downwardly opening U-shaped spring. The fuse link includes an apertured tab to mate with the pin with the lower end of the fuse held within the U-shaped spring. The upper spring overlies the outer face of the pin and resiliently holds the fuse tab in electrical and physical support to the fuse pin.

3,435,292
ELECTRIC SHOCK CONTROL DEVICE
Arulanandasami Joseph Stephen and Sinnappa Adaikalam Arulanandasami, both of 35–C, Vathukara St., Tiruchirapalli 3, Madras State, India
Filed July 29, 1966, Ser. No. 568,930
Int. Cl. H02h 1/02, 3/14
U.S. Cl. 317—18 14 Claims



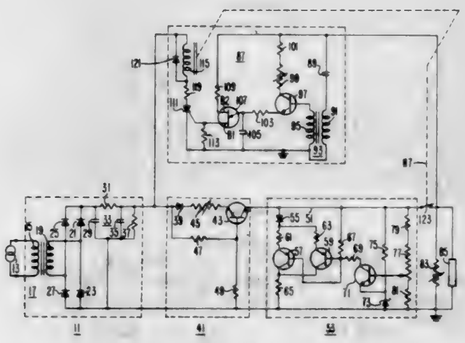
An electric shock control device includes an input circuit and a load circuit interconnected by normally closed relay operated contacts. The input circuit includes two primary windings in inductively coupled opposition to each other. A secondary winding is inductively coupled to the primary windings and has a current induced therein only upon an imbalance of the currents in the primary windings. A normally non-conductive amplifier has its input connected to the secondary winding and provides an output current only responsive to a current flow in the secondary winding. Normally deenergized contact operating relay means are connected to the output of the amplifier. Upon grounding of the load circuit, the currents in the primary windings are unbalanced and the amplifier energizes the relay means to open the normally closed contacts to disconnect the input circuit from the load circuit. Manually controlled means are provided to effect reclosing of the normally closed contacts.

3,435,293
APPARATUS FOR PROVIDING INSTANTANEOUS OVERLOAD PROTECTION ESPECIALLY USEFUL IN PROTECTING SEMICONDUCTIVE DEVICES
Clifford A. Bodge, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,633
Int. Cl. H02h 3/28
U.S. Cl. 317—31 7 Claims



Current and voltage overload protection apparatus for load circuits having semiconductors therein including a conventional magnetic circuit breaker used in conjunction with means providing instantaneous protection including the following embodiments, the first employs a voltage diode in parallel with the circuit breaker coil resulting in a constant time delay breaker, the second employs a negative coefficient thermistor in series with the circuit breaker coil to provide compensation for changes in coil resistance due to heating, and a third uses a semiconductor rectifier (SCR) in parallel with the load. A magneto resistor may be used in the embodiment to reduce power consumption and excessive voltage drop.

3,435,294
VOLTAGE REGULATOR CIRCUIT HAVING CONSTANT INPUT IMPEDANCE AND MEANS FOR PROTECTING AGAINST LOAD VOLTAGE RIPPLE
Robert H. Lemma, Garden City, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 18, 1966, Ser. No. 521,293
Int. Cl. H02h 3/28
U.S. Cl. 317—31 4 Claims

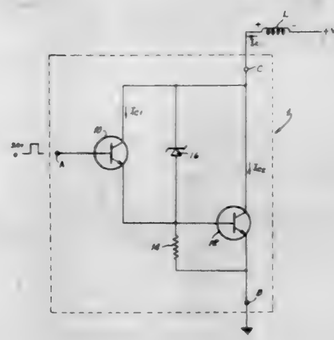


A voltage regulator including a variable impedance shunt regulator and a series decoupling circuit, both of which are connected between a power supply and a load. The shunt regulator compensates for a changing load impedance as long as the latter is above a predetermined minimum value. When the load impedance falls below this minimum value, the series decoupling circuit inserts a high impedance between the power supply and the load to effectively isolate them from one another. The impedance reflected back to the power supply remains constant. A fail-safe switching device is provided for disconnecting the load from the power supply if the ripple component of the load voltage exceeds a predetermined value.

3,435,295
INTEGRATED POWER DRIVER CIRCUIT
Frederick F. Ladd, Jr., Newbury, and Lynn W. Marsh, Jr., Melrose, Mass., and John E. Muschinske, Sunnyvale, Calif., assignors, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Sept. 28, 1966, Ser. No. 582,616
Int. Cl. H02h 7/20; H01h 47/32
U.S. Cl. 317—33 7 Claims

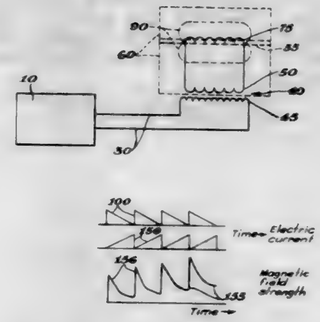
1. A power driver circuit for driving heavy current into an inductive load comprising a first transistor and a second transistor, connected such that substantially the entire load current of the first transistor flows through the emitter-base junction of said second transistor when said circuit is in the on state;

a load comprising an inductive component and a supply voltage connected to the output terminals of said circuit;



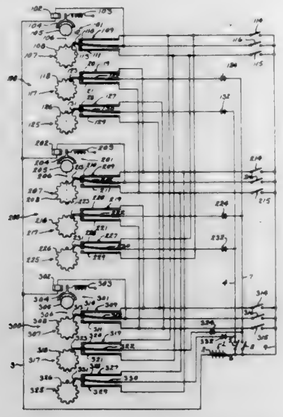
a protective means for protecting said transistors upon turnoff of said power driver circuit, said means comprising an avalanche regulator connected between the collector and the base terminals of said second transistor and to said supply voltage such that when said circuit is turned on a high impedance is provided, and when said circuit is turned off, the breakdown voltage of said avalanche regulator is exceeded and the stored energy of said inductive load is absorbed by said second transistor.

3,435,296
INCREMENTAL MAGNET
Wilhelm E. Walles, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,865
Int. Cl. H01h 47/00; H01f 7/22, 1/00
U.S. Cl. 317—123 3 Claims



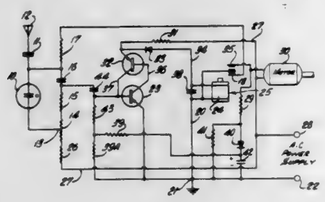
A magnetic coil operated at a superconductive temperature, superconductively connected with an also superconductive secondary winding of a transformer, the primary of said transformer being, optionally, outside the superconductive temperature zone and energized in shaped pulses; said magnetic coil and said secondary being magnetically decoupled; energized in pulses which rise rapidly or instantaneously to a peak value and decline slowly; deenergized by pulses of reverse shape. The device permits operation of superconductive magnetic coils at any magnetic field value up to their critical value.

3,435,297
CAM-OPERATED RELAY SHIFT REGISTER
James N. Pearse, Menomonee Falls, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 10, 1965, Ser. No. 478,669
Int. Cl. H01h 47/14
U.S. Cl. 317—139 8 Claims



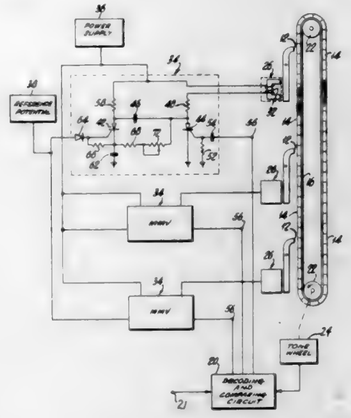
The recirculating bidirectional shift register has three identical stages connected to an electrical source through an input switch, and set, reset and complement switches. Each stage employs a stepping, cam-operated relay in which a solenoid operated ratchet turns three cams on the trailing edge of an input signal. Each relay has three cams and each cam actuates the movable contact of a single-pole-double-throw contact. One set of contacts controls the input signal to its own relay solenoid. The other two sets of contacts transfer the signal in opposite directions to the control contacts of adjacent relays.

3,435,298
CONDITION RESPONSIVE CIRCUIT
Carl E. Atkins, Montclair, and Robert L. Ziolkowski, South Plainfield, N.J., assignors, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,821
Int. Cl. H01h 47/12, 47/32
U.S. Cl. 317—146 9 Claims



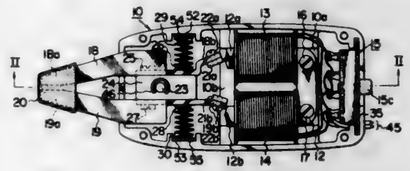
Two condition-responsive circuits are disclosed which are operative to energize a load for a predetermined length of time after sensing both the presence and subsequent absence of an input signal of a predetermined magnitude. The condition responsive circuits each comprise a low-frequency relaxation oscillator, an electromagnetic relay, a controlled shunt path for the winding of the relay, and an RC timing circuit.

3,435,299
CIRCUIT FOR ENERGIZING AN ELECTROMAGNET
Harold S. Schwartz, White Plains, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed May 20, 1966, Ser. No. 551,796
Int. Cl. H01h 47/32; H03k 1/14, 3/26
U.S. Cl. 317—148.5 3 Claims



A single-shot multivibrator circuit employing a silicon control rectifier for actuating an electromagnet in which a potentiometer is used to vary the time constant in the circuit.

3,435,300
ERASER AND CLEANER SET
Keisuke Sato, Tokyo, Japan, assignor to Akai Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Dec. 28, 1966, Ser. No. 605,481
Int. Cl. H01f 13/00
U.S. Cl. 317—157.5 4 Claims



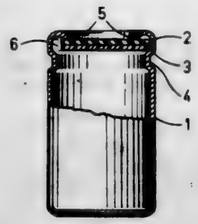
1. In a magnetic eraser for magnetic head, comprising an A.C.-current reception means adapted for electrical connection with an A.C.-current source; electromagnetic means electrically connected with said current reception means for generating alternatively fluctuating magnetic fluxes and an elongated magnetism-transmitting bar adapted for transmitting said fluxes to said magnetic head to erase its residual magnetism, the improvement wherein said transmitting bar is magnetically coupled with said electromagnetic means for transmitting said fluxes as well as electromagnetically oscillating movement emanated from said electromagnetic means to said magnetic head and that said bar is fitted at its tip end with a cleaner element made of a frictional material.

2. The improvement as set forth in claim 1, wherein said bar comprises two vibrator elements fixed to a common pivotable piece which is mounted pivotably on the bottom wall of a casing of said eraser.

3. The improvement as set forth in claim 3, wherein said vibrator elements are urged by a pair of compression springs acting in the opposite directions to each other.

4. The improvement as set forth in claim 1, wherein a transfer switch means is provided as the said current-reception means for transfer to separate and different voltage sources.

3,435,301
PRESSURE RELEASE VALVE FOR A CONTAINER
Frank Oehme, Kogevej 175, Taastrup, Denmark
Filed May 25, 1964, Ser. No. 370,133
Claims priority, application Denmark, June 26, 1963, 3,030/63
Int. Cl. H01g 9/00, 9/12; B65d 3/10
U.S. Cl. 317—230 2 Claims



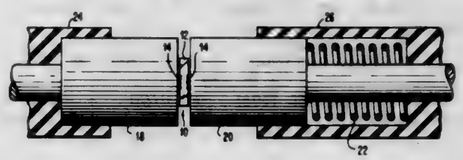
A container being closed by rolling over a cap of rubber-laminated hardpaper with a recess at its periphery. At overpressure the cap will flex and a leak will be sprung between the recess and the rolled-over edge. A successively overlapping punching out of caps by which the periphery of one cap shapes the recess of the following cap.

3,435,302
CONSTANT CURRENT SEMICONDUCTOR DEVICE
Takashi Suzuki, Ibaraki, and Takahide Watanabe, Nishinomiya, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a Japanese company
Filed Nov. 24, 1965, Ser. No. 509,533
Claims priority, application Japan, Nov. 26, 1964, 39/66,777
Int. Cl. H01l 5/06
U.S. Cl. 317—234 7 Claims



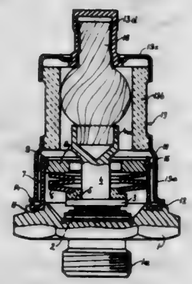
A constant current semiconductor device having a constant current effect within a range of applied voltages comprising a semiconductor substrate of one conductivity type upon a surface portion of which there is diffused therein a region having an opposite conductivity type. The surface of this region is provided with an oxide layer, such as, silicon dioxide, under which there is formed an inversion layer of the same conductivity type as the semiconductor substrate to isolate the diffused region within the substrate. For terminal connection, an opening is prepared through the oxide layer to expose the diffused region and the inversion layer which are coupled together upon fusion of the terminal in the provided opening. The desired geometrics of the inversion layer are controlled by the impurity concentration of the diffused region and the thickness and oxidizing conditions of the oxide layer. Such semiconductor devices may be of the polar or nonpolar variety.

3,435,303
SEMICONDUCTOR BULK EFFECT MICROWAVE OSCILLATOR
Norman Braslau, Katonah, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 19, 1965, Ser. No. 473,015
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 3 Claims



The oscillator employs a crystal of single conductivity type gallium arsenide in which the application of an electric field above a given threshold intensity produces an unstable region of high electric field in the body. This high electric field region is produced by the response of the electric charge carriers in the semiconductor body and can be controlled to produce high frequency oscillations. High power microwave outputs are obtained, without breaking down the gallium arsenide at the edges using registered symmetrical contacts on opposite surfaces of the gallium arsenide crystal. Each of these contacts covers only a portion of the surface and does not extend to the edges of the body. The edges of the crystal are cleaved to avoid edge contamination. With this arrangement the high intensity electric field applied by the contacts is a homogeneous field which is more intense in the portion of the gallium arsenide directly between the contacts than at the edges of the crystal.

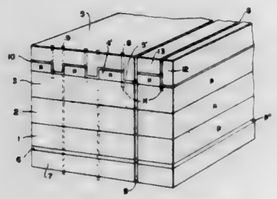
3,435,304
SEMICONDUCTOR ASSEMBLY WITH SEMICONDUCTOR ELEMENT IN AREA CONTACT UNDER PRESSURE WITH CONDUCTIVE TERMINAL ELEMENTS
Vlastimil Bezoudka Prubonice, Josef Skvor, Uvaly, and Frantisek Pajisek, Zdenek Zavazal, and Oldrich Pokorny, Prague, Czechoslovakia, assignors to CKD Praha, oborovy podnik, Prague, Czechoslovakia
Filed Dec. 20, 1965, Ser. No. 515,123
Claims priority, application Czechoslovakia, Dec. 22, 1964, 7,263/64
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 6 Claims

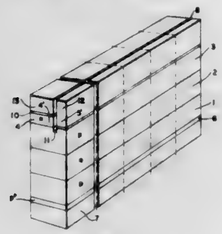


In semiconductor assemblies, a plate-shaped semiconductor element is interposed between contact faces of two contact elements and is held in contact with said contact

faces by compression spring means with a precisely determined contact pressure. One of the contact elements is movable in relation to the other contact element, and the compression spring means act upon the movable contact element.

3,435,305
METHOD AND ARTICLE FOR MAKING SWITCHABLE SEMICONDUCTOR ELEMENTS
Edgar Lutz, Pliezhausen, Germany, assignor to Semikron Gesellschaft fur Gleichrichterbau und Elektronik m.b.H., Nuremberg, Germany
Filed Sept. 21, 1966, Ser. No. 581,034
Claims priority, application Germany, Sept. 21, 1965, S 99,549
Int. Cl. H01l *7/00, 9/00*
U.S. Cl. 317—235 **11 Claims**

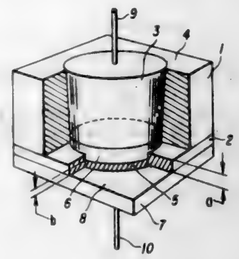




A method for making a plurality of switchable semiconductor elements from a single wafer of semiconductor material having a p-n-p series of layers and an article which is produced at an intermediate step of the method. The method includes the steps of contacting one side of the semiconductor wafer with a p+-doped metal foil, contacting the metal foil with a first contact plate, contacting the other side of the semiconductor wafer with a second contact plate having a plurality of grooves filled with cathode material, slicing the second contact plate along lines defined by one edge of the grooves to separate cathode zones from control electrode zones and slicing the semiconductor packet so formed along lines defined by the other edge of the grooves to divide the packet into the plurality of switchable semiconductor elements.

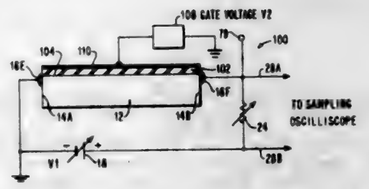
3,435,306
STRUCTURE AND FABRICATION OF MICROWAVE OSCILLATORS
David D. Martin, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 23, 1966, Ser. No. 596,485
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—237 **4 Claims**

Disclosed is a Gunn effect microwave oscillator comprising a block of high-resistivity gallium arsenide having an epitaxial layer of N-type gallium arsenide formed on one surface thereof, and a cavity formed through the block to contact the gallium arsenide layer. Two ohmic contacts are formed to the device one at the base of the cavity to the gallium arsenide layer and the other to the outside, or opposite side of the gallium arsenide layer. A thermally and electrically conducting material is formed



in the cavity, and electrodes are connected to the thermally conducting material and to the outside ohmic electrode.

3,435,307
ELECTRICAL SHOCK WAVE DEVICES AND CONTROL THEREOF
Rolf W. Landauer, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 17, 1966, Ser. No. 521,192
Int. Cl. H01l *11/04*
U.S. Cl. 317—235 **10 Claims**

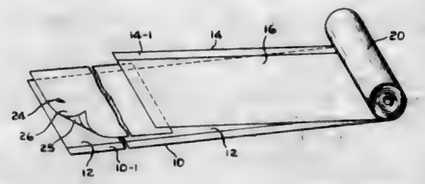


An electrical shock wave device of the "Gunn-effect" type is described as comprising a semiconductive body, e.g., GaAs, having a density of conduction carriers less than a particular density required to initiate and support electrical shock wave propagation in the presence of an applied electric field of particular intensity. The density of conduction carriers along a surface channel of the semiconductive body is increased, for example, by irradiation with electromagnetic energy or by an electric field effect, in excess of such particular density to initiate electrical shock wave propagation. Electrical shock wave propagation is supported only along the surface channel of the semiconductive body having the increased density of conduction carriers. Also, an electric field effect is employed to deplete conduction carriers from the surface channel of a semiconductive body having a normal density of conduction electrons sufficient to support electrical shock wave propagation in the presence of applied electric fields of a particular intensity.

3,435,308
METALLIZED CAPACITOR WITH MOISTURE BARRIER
William J. Fanning, Melrose Park, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 26, 1967, Ser. No. 641,515
Int. Cl. H01g *1/10, 3/215*
U.S. Cl. 317—260 **5 Claims**

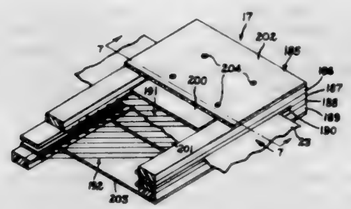
A self-healing capacitor is wound from a pair of elongated metallized webs during which an insert consisting

of a dielectric web and a layer of metal on one surface thereof is interposed between the trailing end portions of



the metallized webs and wound therewith through at least one convolution, the metal layer serving to resist the penetration of moisture into the capacitor.

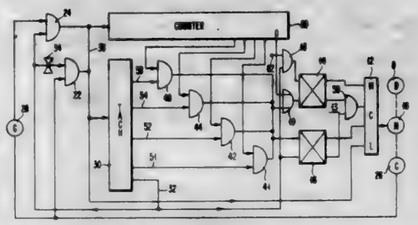
3,435,309
CORONA CHARGING UNIT
Edwin R. Kolb, University Heights, James I. Richardson, Warrensville Heights, and Francis Hunstiger, Parma Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Original application Nov. 27, 1962, Ser. No. 240,253, now Patent No. 3,299,787. Divided and this application Apr. 27, 1966, Ser. No. 545,629
Int. Cl. H01g *3/02*
U.S. Cl. 317—262 **10 Claims**



An electrophotographic printer for single or multicolor prints includes a web feeding and alignment mechanism, a charger, a developing unit, a register mark detection and control system, a toner concentration control system, and a sheeter mechanism. The charger includes a plurality of wires shorter in length than the width of the web and arranged diagonally with respect to the path of web travel thus enabling an increase in current per lineal inch of wire. The developer unit is of the drum type for use with liquid developers and includes a squeegee roller and a squeegee roll cleaner to prevent offsetting onto the web being processed. A counterelectrode system is also described.

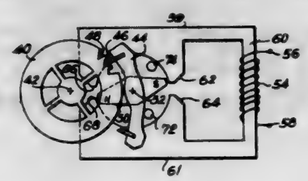
3,435,310
ELECTRONIC HIGH SPEED STRIP RECORD ACCESSING CONTROL CIRCUITRY
Edward Franklin Bradley, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,967
Int. Cl. H02p *5/46*
U.S. Cl. 318—18 **10 Claims**

A strip record (magnetic tape) is transported at variable speed by a motor powered in response to prerecorded data on the record. The number of steps the record is to be incremented is entered in a difference-address register to which driving pulses are also applied for decrementing the number to zero at which time the record is stepped and held in position or transported at a data rate producing speed. An electronic tachometer, delivering energy levels indicative of predetermined rates, is connected to decelerating control and AND gates also connected to the lower order stages of the register. The final register stage, indicative of zero count, is connected to



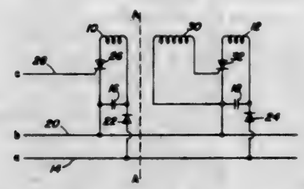
drive control logic circuitry for stopping and/or holding the record on the final increment after the device is slowed in response to the successive opening of the AND gates and subsequent switching of the driving means to the decelerating mode.

3,435,311
OSCILLATORY ELECTROMECHANICAL CONVERTER
Masanao Matsuzawa, Suwa-shi, Issei Imahashi, Nagano-ken, and Koichi Nakamura, Suwa-shi, Japan, assignors to Kabushiki Kaisha Suwa Seikosha, Tokyo, Japan, a corporation of Japan
Filed Dec. 22, 1965, Ser. No. 515,547
Claims priority, application Japan, Feb. 8, 1965, 40/6,739
Int. Cl. H02k *47/08;* **G04c** *3/00*
U.S. Cl. 318—129 **8 Claims**



An oscillating electromechanical converter comprising an electromagnet having two pairs of poles at its extremities to thereby provide air gaps between each pair of poles. The electromagnet is pulsed alternately with pulses of positive and negative polarity causing oscillatory movement of a permanent magnet armature.

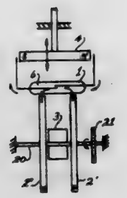
3,435,312
LINEAR MOTOR CONTROL SYSTEM
Frank A. De Coster, Cedar Rapids, Iowa, assignor to Douk's Experiment, Linn County, Iowa, a joint venture
Filed Feb. 14, 1966, Ser. No. 527,257
Int. Cl. H02k *33/18, 41/02*
U.S. Cl. 318—130 **14 Claims**



Electromagnetic means for accelerating a paramagnetic projectile comprising at least first and second aligned

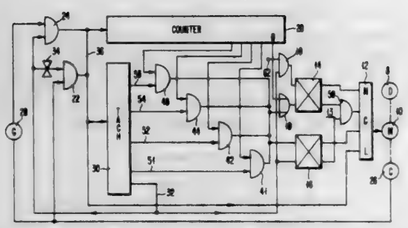
coils. Movement of the paramagnetic object is operable to discharge a storage device through the second coil, thereby further accelerating the projectile.

3,435,313
MAGNETIC TIMING IMPULSE SWITCH
Roland Siefert and Rolf Charrier, Bad Durrheim, Germany, assignors to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany
Filed Sept. 7, 1965, Ser. No. 485,475
Int. Cl. H02k *33/00;* **H01h** *3/54, 9/00*
U.S. Cl. 318—138 **3 Claims**



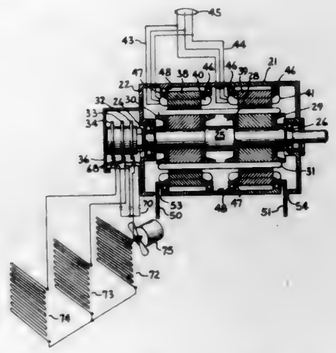
A motor having permanently magnetized rotor wherein the rotor controls current to a stator coil via a magnetic reed switch. An auxiliary movable magnet varies the effect of the rotor on the switch. In an intermediately spring driven clockwork the amount of deformation of its spring governs the position of the auxiliary magnet.

3,435,314
ELECTRONIC HIGH SPEED DEVICE INCREMENTING CONTROL CIRCUITRY
Edward Franklin Bradley and Herman Anthony Ferrier, Jr., San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,966
Int. Cl. H02k *29/00*
U.S. Cl. 318—138 **12 Claims**



A high speed device is incremented at variable speed by a motor powered in response to driving pulses selected from a commutator coupled to the motor and from a source external to the commutator. The number of steps the device is to be incremented is entered in a difference-address register to which the driving pulses are also applied for decrementing the number to zero at which time the device is stopped and held in position. An electronic tachometer, delivering energy levels indicative of predetermined rates, is connected to decelerating control AND gates also connected to the lower order stages of the register. The final register stage, indicative of zero count, is connected to drive control logic circuitry for stopping and/or holding the device on the final increment after the device is slowed in response to the successive opening of the AND gates and subsequent switching of the motor to the external pulse source in the decelerating mode.

3,435,315
APPARATUS FOR CONTROL OF ADJUSTABLE SPEED A-C MOTORS
Kenneth S. Kordik, Ernst W. Shannhake, and Dean R. Zaumseil, Rockford, Ill., assignors, by mesne assignments, to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,035
Int. Cl. H02p *1/26, 3/18, 7/40*
U.S. Cl. 318—239 **5 Claims**

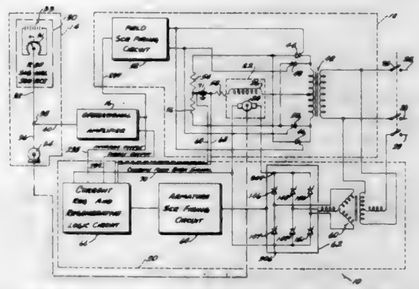


1. Apparatus for controlling an adjustable speed A-C induction motor having a stator assembly with two substantially equal stator windings that are relatively adjustable with respect to one another to control the torque of said A-C induction motor from a null phase substantially zero torque condition to maximum torque condition, the combination comprising:

a rotor rotatably mounted inside said stator assembly and having a plurality of conductors on it;

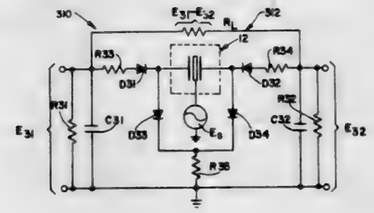
a high positive temperature coefficient resistor connected in series with said conductors on said rotor to adapt the resistance in said rotor to each relative rotatable adjustment setting of said stator windings and to each load condition.

3,435,316
STATIC REGENERATIVE DIRECT CURRENT MOTOR CONTROL
Alan W. Wilkerson, Thiensville, Wis., assignor, by mesne assignments, to Web Press Engineering, Inc., Addison, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 499,409
Int. Cl. H02p *5/06, 7/06*
U.S. Cl. 318—302 **36 Claims**



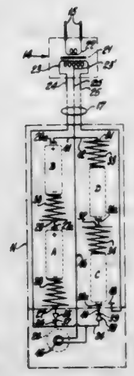
A static, regenerative direct current motor control regenerates power from the motor armature to an alternating current power supply during braking by reversing the voltage applied to the armature while maintaining the direction of current flow through the armature constant. Reversal of the applied armature voltage is obtained by reversing the motor field. A current regulating means is provided to regulate the armature current during the transition from motoring to regenerative operation and during other operative sequences of the control.

3,435,317
DIFFERENTIAL OUTPUT CIRCUIT FOR CAPACITIVE PICKOFFS AND THE LIKE
Fredrick W. Osborn, Rockford, Mich., assignor to Lear Siegler, Inc.
Filed May 5, 1965, Ser. No. 453,420
Int. Cl. H02j; G01r *1/00;* **G08c**
U.S. Cl. 320—1 **8 Claims**



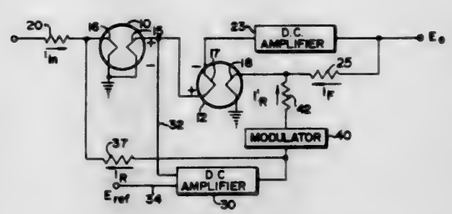
The present invention relates generally to capacitive pickoff circuits and more particularly to a capacitive pickoff circuit wherein the output is a DC voltage which is proportional to the displacement of the AC excited pickoff.

3,435,318
SAFETY BATTERY CHARGER
Joseph A. Mas, Woodbury, N.Y., assignor to Dynamic Instrument Corporation, Plainview, N.Y., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 531,137
Int. Cl. H02j *7/16;* **H01m** *45/04*
U.S. Cl. 320—15 **5 Claims**



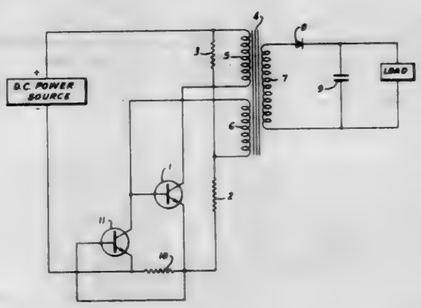
An improved battery charger wherein the peak no-load voltage of the charger is equal to the maximum no-load voltage of the battery and wherein the impedance of the charger is low in comparison to the battery impedance so that the battery impedance will determine the maximum charging current.

3,435,319
THERMAL RMS CONVERTER WITH FEEDBACK TO CONTROL OPERATING POINT
Peter L. Richman, Lexington, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,733
Int. Cl. H02m *7/04;* **G01r** *5/22*
U.S. Cl. 321—1.5 **30 Claims**



First and second thermoelements have their outputs connected differentially. The first thermoelement receives an input signal and the other receives a feedback signal. The difference signal drives an amplifier which provides the feedback signal and the system output. An auxiliary feedback loop compares the output variation with a reference and provides a correction signal to both thermoelements to maintain both elements at a preselected operating point, resulting in true isothermal operation.

3,435,320
DC TO DC CONVERTER
Robert H. Lee, 2820 Terraza Place, Fullerton, Calif. 92632, and Dick E. Stearns, 3103 Iberville, Shreveport, La. 71109
Filed Feb. 10, 1967, Ser. No. 615,268
Int. Cl. H02m *3/32*
U.S. Cl. 321—2 **3 Claims**



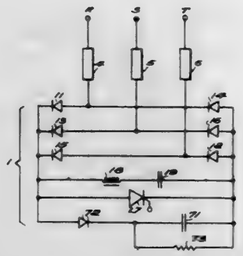
DC to DC converter system, in which by a positive feedback connection to an electronic switch, energy is alternately charged into a magnetic field, and after abrupt turn off of said electronic switch, magnetic energy is converted to current and passed through a diode and utilized to charge a capacitor, the alternate energy charging and discharging actions being sustained in their sequence by said positive feedback operation on the gate of said electronic switch. The turn-off action of the electronic switch is initiated by the potential drop across a resistor proportional to input current to the converter.

3,435,321

ELECTRICAL CONVERTER CIRCUIT FOR SUPPLYING A LOAD WITH VARIABLE FREQUENCY ALTERNATING CURRENT FROM AN ALTERNATING CURRENT SOURCE OF CONSTANT FREQUENCY

Armand Brandt, Lucerne, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland

Filed Nov. 17, 1966, Ser. No. 595,160
Claims priority, application Switzerland, Nov. 18, 1965, 15,925/65
Int. Cl. H02m 5/14, 5/16, 5/30
U.S. Cl. 321—7 4 Claims



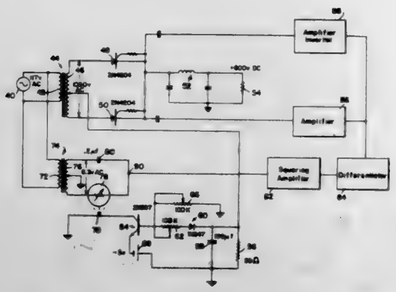
An electrical converter circuit for supplying a load with a variable frequency alternating current from an alternating current supply source of constant frequency. One side of the load is connected directly to one side of the A.C. supply source and the other side of the load is connected indirectly to the other side of the A.C. supply source through a rectifier bridge. The bridge includes uncontrolled rectifiers in those various bridge arms which are correlated respectively to the various phases of said load and a controllable rectifier such as a thyristor connected in the so-called direct current arm of the bridge common to current flow in all phases and which is supplied with control pulses at the desired load frequency so that the bridge functions only at such frequency.

3,435,322

DC VOLTAGE REGULATOR UTILIZING PHASE CONTROLLED RECTIFYING MEANS

Homer E. Hunley, Hawthorne, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Dec. 23, 1966, Ser. No. 604,334
Int. Cl. H02m 1/08
U.S. Cl. 321—18 6 Claims



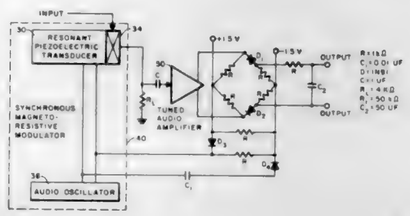
A phase shift control circuit includes a reference alternating voltage connected to the primary of a transformer. The secondary of the transformer has a center tap. One half of the transformer secondary is connected in series with a photoresistor and the other half is connected in series with a reactive impedance. The reactive impedance and photoresistor are connected at a junction. A lamp is connected in a direct current circuit so that small fluctuations in the direct current produce fluctuations in the light emitted by the lamp. The lamp is optically coupled to the photoresistor so that the light fluctuations cause variations in the resistance of the photoresistor. The resistance of the photoresistor can be varied in a range between 1/100 to 100 times the reactive impedance. Over the range of resistance variations the phase of the alternating voltage between the secondary transformer center tap and the junction of the photoresistor and reactive impedance, relative to the phase of the reference voltage, varies between 0° and 180°.

3,435,323

MAGNETORESISTIVE MODULATOR

Harry H. Wieder, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 29, 1967, Ser. No. 664,222
Int. Cl. H02m 7/44
U.S. Cl. 321—44 10 Claims



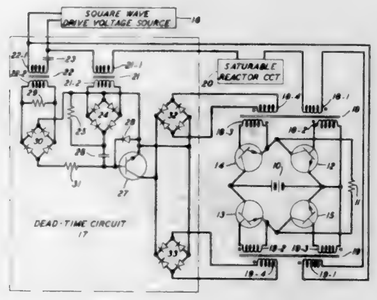
A device for converting low-level DC signals into an essentially pure sine wave whose peak-to-peak amplitude is a linear function of the DC input signal by driving a thin film semiconductor magnetoresistive element in the gradient magnetic field of a permanent magnet; the magnetoresistor is mounted on a piezoelectric bimorph which is driven in its mechanical resonance mode.

3,435,324

DRIVEN INVERTER DEAD-TIME CIRCUIT

John D. Bishop, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed Nov. 1, 1967, Ser. No. 679,733
Int. Cl. H02m 7/44, 7/68
U.S. Cl. 321—45 6 Claims



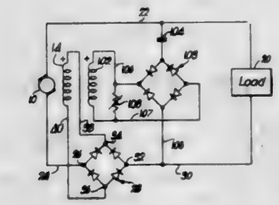
In a driven inverter the square-wave drive signal is monitored to generate a shorting pulse whenever the drive current switches from one polarity to an opposite polarity. The shorting pulse, which is of very short duration in comparison to the duration of the square-wave drive signal, is applied to the switching transistor drive transformers to effectively short-out all drive signals during the duration of each of the shorting pulses, thereby generating a positive dead-time between the turnoff and turnon of consecutively conducting transistors. In order to prevent the generation of false dead-time pulses as a result of voltage polarity changes of the drive signal, the shorting pulse circuit is disabled during such voltage polarity changes.

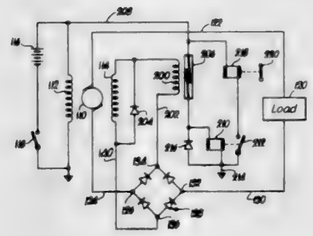
3,435,325

ELECTRIC GENERATOR AND SPEED CONTROL SYSTEM THEREFOR

Arthur Laudel, Jr., Kansas City, Mo., assignor, by mesne assignments, to Alternac, Prairie Village, Kans., a partnership

Filed Dec. 8, 1965, Ser. No. 512,502
Int. Cl. H02p 9/04, 9/10; H02h 7/06
U.S. Cl. 322—15 9 Claims





Voltage regulating circuit for an alternator having both a series and shunt field winding. In a self-excited embodiment a pulsating, unfiltered current is provided through the shunt winding which is in substantial phase with the current in the series winding so as to synchronously oppose the demagnetizing magnetomotive force developed by the armature. A throttle control system is provided having an electromagnet in series with the series winding to activate a reed switch, a relay coil, and a throttle solenoid.

3,435,326

STATIC EXCITER REGULATOR FOR GENERATORS

Richard Zechlin, Beloit, Wis., assignor to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware

Filed July 8, 1966, Ser. No. 563,907
Int. Cl. H02p 9/10
U.S. Cl. 322—25 12 Claims

The static exciter regulator provides generator regulation throughout each operative voltage or current cycle of the generator by employing a firing circuit for advancing or retracting the firing angle of a master switching circuit in response to variations in the generator output. A slave switching circuit triggered by the master causes slave switches to fire at a set phase differential from the master to provide rapid field corrections to the control field of the generator during both voltage and current operating conditions thereof.

3,435,327

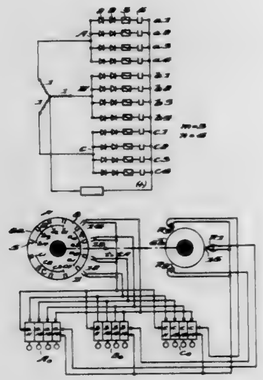
APPARATUS FOR MONITORING RECTIFIER COMPONENT OF ROTOR MOUNTED EXCITER SYSTEM FOR SYNCHRONOUS MACHINE

Wilfried Merhof, Baden, and Bruno Stadler, Wettingen, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Aug. 23, 1966, Ser. No. 574,360
Claims priority, application Switzerland, Aug. 26, 1965, 12,020/65
Int. Cl. H02p 9/30; H02k 11/00
U.S. Cl. 322—99 7 Claims

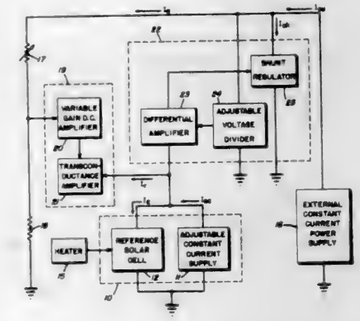
1. In a slip ring-free exciter arrangement for supplying the rotor winding of a synchronous electrical machine with direct current which includes a polyphase alternating current generator having an *m* number of phases mounted on said rotor, and a rectifier group also mounted on said rotor individual to each said phase and fed therefrom, each said rectifier group being comprised of an *n* number of paralleled rectifier paths each of which includes a rectifier element and a fuse connected in series therewith for feeding said rotor winding with direct current, an arrangement for monitoring the current flow in each

said rectifier path which comprises a rotatable magnetizable core having a magnetizing winding thereon individual to each said rectifier path and connected in series therewith, said rotatable cores being mounted on said rotor in circumferential equal spaced relation and in a group sequence corresponding to the different phases of said polyphase generator whereby all of said rotatable cores in each group are magnetized simultaneously and in group succession when all rectifier current paths of all groups are operational, a first arcuate array of *n* number of stationary equally circumferentially spaced tapping coils having the same spacing as said rotatable cores and which are located so as to be simultaneously opposite each group of said rotatable cores and in group succession thereby to induce voltage pulses simultaneously into said tapping coils, a magnetic field producing member mounted on the periphery of said rotor, an *m* number of other stationary equally circumferentially spaced tapping coils having the same spacing as the different phases of said polyphase generator and which are located so as to be opposite said magnetic field producing member in succession thereby to induce voltage pulses therein in a sequential manner, an *m* number of groups of plotting channels each of which contains an *n* number of different channels, each said channel containing a dual input AND gate and signal means connected to the output of said gate, circuit means connecting said *n* number of tapping coils to one of the AND gate inputs of a corresponding plotting channel of each group, and circuit means connecting said *m* number of tapping coils respectively to the other inputs of the AND gates of each group of channels, whereby each of said AND gates will open to its corresponding signal means only when both inputs thereto receive voltage impulses from the corresponding tapping coils.

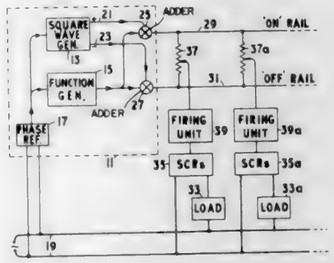


3,435,328
ELECTRONIC SOLAR CELL ARRAY SIMULATOR
Walter E. Allen, Beltsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 9, 1967, Ser. No. 608,222
Int. Cl. G05f *1/60;* **H02p** *13/16;* **G01r** *7/02*
U.S. Cl. 323—8 **10 Claims**

Method and apparatus for accurately simulating, electronically, the electrical characteristics of any size solar cell array at any desired array temperature and solar incidence angle. A darkened, temperature controlled solar cell is employed as a control element and is effectively illuminated by a shunt connected programmable constant current supply, such that the basic current-voltage characteristics of an illuminated solar cell are produced. Circuitry is provided for taking into account the number of solar cells that are connected in series and parallel in the array being simulated.



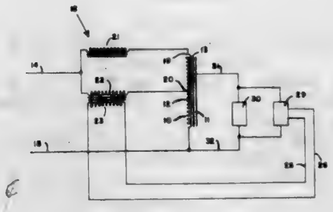
3,435,329
SCR TYPE ALTERNATING CURRENT ELECTRIC POWER CONTROL
Colin Edward Hunter, Luton, England, assignor to National Research Development Corporation, London, England
Filed Mar. 15, 1966, Ser. No. 534,445
Claims priority, application Great Britain, Mar. 16, 1965, 11,061/65
Int. Cl. G05f *1/40, 1/52, 1/60*
U.S. Cl. 323—22 **3 Claims**



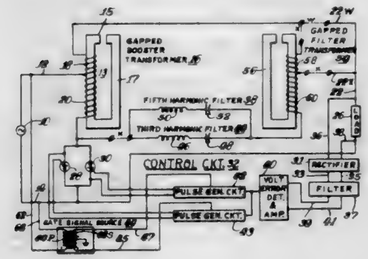
An A.C. controlled rectifier system to control the application of power to light dimmers or plural loads or to control the speed of a motor. The outputs of a square wave generator and a function generator are added and the resultant compared with a reference to control the firing of the controlled rectifiers.

3,435,330
INDUCTIVE VOLTAGE DIVIDER-AUTOTRANSFORMER AUTOMATIC VOLTAGE REGULATING SYSTEM
Joseph G. Sola, River Forest, Ill., assignor to Sola Basic Industries, Inc., a corporation of Wisconsin
Filed Dec. 8, 1965, Ser. No. 513,902
Int. Cl. H02p *13/06;* **H02m** *5/12*
U.S. Cl. 323—43.5 **2 Claims**

An automatic voltage regulating system wherein the load voltage across a portion of an autotransformer winding is sensed and utilized to provide a direct current control signal to the control winding of a saturable reactor in parallel with a linear reactor connected to a portion of the autotransformer winding on the input side.



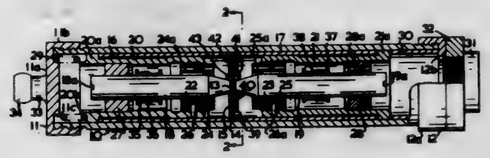
3,435,331
FILTERED ALTERNATING CURRENT VOLTAGE REGULATOR
William H. Bixby, Columbus, Ohio, assignor, by mesne assignments, to New North Electric Company, Galion, Ohio, a corporation of Ohio
Filed June 20, 1966, Ser. No. 558,749
Int. Cl. H02p *13/06, 13/10;* **H02m** *5/12*
U.S. Cl. 323—45 **5 Claims**



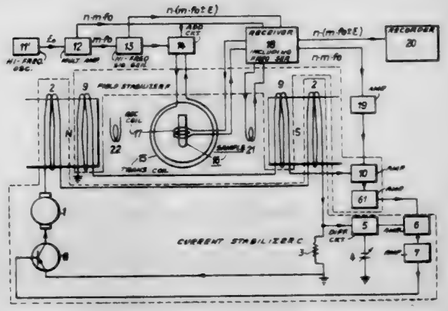
An AC voltage regulator for regulating the voltage of power supplied from a source to a load to maintain a substantially constant voltage across the load comprising a gapped booster transformer and a gapped filter transformer, each having a winding comprised of a first and a second portion, the first portion of the respective windings of the two transformers being connected in series with the source and the load, the first and second winding of the gapped filter winding being connected in series with a harmonic filter circuit across the turns of the booster transformer.

3,435,332
TEMPERATURE COMPENSATING MECHANISM FOR HALL EFFECT DEVICE
Nicholas Kurdyla, Pierrefonds, Quebec, Canada, assignor to Canadair Limited, Quebec, Quebec, Canada, a corporation of Canada
Filed July 5, 1966, Ser. No. 562,790
Claims priority, application Canada, Apr. 27, 1966, 958,964
Int. Cl. H02m *3/06, 5/06;* **H01c** *1/16*
U.S. Cl. 323—94 **14 Claims**

A Hall effect device including a Hall plate mounted in an air gap between adjacent ends of a pair of high permeability axially aligned rods which lie in a magnetic path passing through the Hall plate and which serve to concentrate a component of a magnetic field on the latter. The high permeability rods are mounted in a specialized structure designed such that a temperature increase or decrease affecting the Hall plate output causes expansion and contraction of the structure thereby varying the air gap between the high permeability rods and hence varying the effective permeability of the above mentioned magnetic path. The structure referred to above is designed such that the effective permeability variation effectively opposes the effects of the temperature variation on the Hall plate output.



3,435,333
NUCLEAR RESONANCE SPECTROGRAPH
Lienhard Wegmann, Wallisellen, and Mario Gallo, Zurich, Switzerland, assignors to Spectrospin A.G., Zurich, Switzerland
Filed Aug. 4, 1965, Ser. No. 477,108
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **3 Claims**

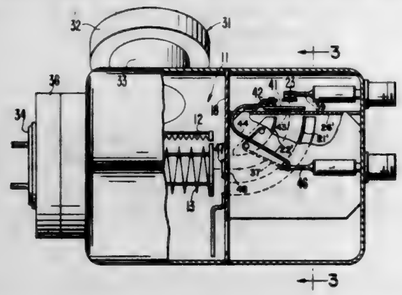


A nuclear magnetic resonance spectograph, which works simultaneously with two different frequencies transmitted into a specimen, a field stabilization frequency and a signal frequency, both generated by multiplication of one basic frequency by different multiples and separated one from the other by a frequency selector within the receiver. The invention relates further to a method to produce a variable signal frequency and a calibrating device for this signal frequency.

3,435,334
METHOD AND APPARATUS FOR MEASURING HIGH VACUUMS
John C. Helmer, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 539,951
Int. Cl. G01n *27/62*
U.S. Cl. 324—33 **14 Claims**

A reduction in the X-ray limit with a concomitant increase in ionization pressure gauge sensitivity to at least 10^{-14} torr is achieved by locating the ion collector out of line-of-sight of the source of X-rays, the ion beam source. The use of an ion source deriving ions of substantially equal energy followed by electrostatic deflection of the ions to the collector by means of a pair of

mesh arcuate electrodes results in substantially equal paths for all deflected ions regardless of their respective



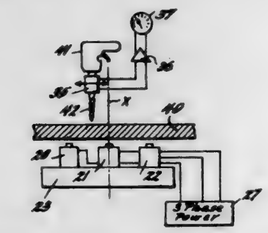
charge-to-mass ratio and a reduction of X-ray reflection, respectively.

3,435,335

METHOD OF AND AN APPARATUS FOR DETERMINING A SPECIFIC POINT OR LINE

Frank H. Blitchington, Jr., Greensboro, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 12, 1966, Ser. No. 520,211
Int. Cl. G01r *33/02*
U.S. Cl. 324—34 **10 Claims**



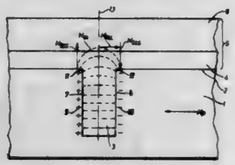
The invention concerns a system for determining a line or point in three-dimensional space. A polyphase power source is used to apply out-of-phase electrical signals to a plurality of magnetic coils. The coils may be arranged in a configuration which produces a magnetic field having zero magnitude along a predetermined line or point in the field. A sensing device, movable in and responsive to the magnetic field, may be used to determine the line or point of zero magnitude.

3,435,336

MAGNETOGRAPHIC TESTING WITH RECORDING LAYER HAVING ORIENTED MAGNETIZABLE CRYSTALS

Joachim Greiner and Friedrich Krones, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Dec. 3, 1965, Ser. No. 511,889
Claims priority, application Germany, Dec. 8, 1964, A 47,812
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **2 Claims**



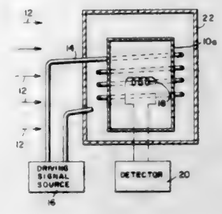
This invention relates to an improvement in the known magnetographic process by using a magnetizable foil, e.g. in the form of a tape, which contains magnetizable pigments having a preferential magnetic axis perpendicular to the surface of the magnetizable foil.

3,435,337

SUPERCONDUCTIVE FLUXGATE MAGNETOMETER

George T. Inouye, Gardena, and Darrell L. Judge, Los Angeles, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Dec. 11, 1964, Ser. No. 417,584
Int. Cl. G01r *33/02*
U.S. Cl. 324—43 **4 Claims**



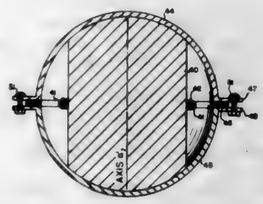
This invention relates to a fluxgate-type of magnetometer, and more particularly to a magnetometer employing a superconductive element as a fluxgate. Various embodiments are shown in each of which there is provided a superconductive surface between an ambient magnetic field to be measured, such as the earth's magnetic field, and a pickup means oriented to respond to the component of ambient magnetic field normal to the superconductive surface. The superconductive surface extends a sufficient distance beyond the extremities of the pickup means to exclude an appreciable number of flux lines of the ambient magnetic field from the pickup means when the surface is in its superconductive state. Means are also provided for switching the superconductive surface in and out of the superconductive state at a given frequency so as to alternately expose and shield the pickup means from the magnetic field. In this way, the ambient magnetic field is chopped by the periodic changes in state of the superconductive surface. The chopping frequency is detected by a detector tuned to a harmonic of the chopping frequency to derive an output signal representative of the normal component of ambient magnetic field.

3,435,338

LINE INTEGRAL MAGNETOMETER FOR MEASURING CURRENT FLOW THROUGH AN ELECTROLYTE

George F. Hinton, Severna Park, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 30, 1965, Ser. No. 491,846
Int. Cl. G01r *33/02*
U.S. Cl. 324—43 **4 Claims**



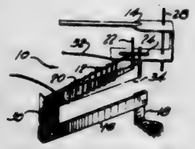
An instrument for measuring small currents in electrolytes. The device includes an electrically conductive core, a toroid of magnetically permeable material encircling the core to be saturated by the magnetic field produced by current flow through the core, a magnetic field responsive means coupled to the toroid, and magnetic shielding means surrounding the core, toroid and responsive means. The shielding means is in electrical contact with opposed ends of the core to permit current to flow through the core when the instrument is placed in an electrolyte.

3,435,339

BIMETALLIC THERMOSTATIC DEVICE HAVING AMBIENT TEMPERATURE COMPENSATION BY MEANS OF A U-SHAPED BIMETAL ELEMENT WITH A PERMANENTLY SET LEG

Gene H. Josephsen and Frank C. Weaver, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Feb. 23, 1966, Ser. No. 529,575
Int. Cl. G01r *5/22*
U.S. Cl. 324—105 **4 Claims**



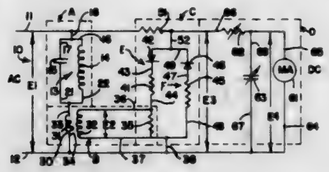
A bimetallic thermostatic device having a U-shaped bimetallic element with its actuating leg permanently deflected towards the cold side so as to reduce scale errors due to extreme changes in ambient temperature conditions.

3,435,340

PLURAL INPUT ELECTRICAL SYSTEM FOR MEASURING ALTERNATING-CURRENT POWER

David W. Schlicher, Minneapolis, Minn., assignor to Electric Machinery Mfg. Company, Minneapolis, Minn., a corporation of Minnesota

Filed Feb. 12, 1965, Ser. No. 432,196
Int. Cl. G01r *11/32*
U.S. Cl. 324—142 **3 Claims**



A system for measuring power in alternating-current circuits utilizing two parallel voltage circuits across the line, each containing a resistor and a rectifier and a current circuit including a current transformer in the line, said current circuit modifying the voltage in one of the voltage circuits and an output circuit connected to the voltage circuits for measuring the electric power.

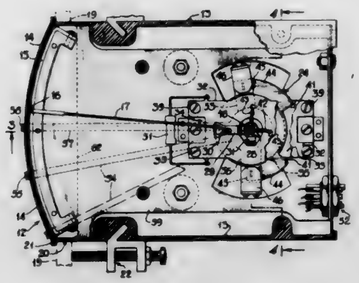
3,435,341

ELECTRICAL CONTROL METER HAVING A ROTOR DISK WITH AN ARCUATE SEGMENT FOR INTERRUPTING LIGHT BETWEEN A LIGHT SOURCE AND SENSOR

Albert A. Baron, West Redding, and Francis G. Nagy, Ridgefield, Conn., assignors to Parker Instrument Corporation, Stamford, Conn.

Filed May 6, 1965, Ser. No. 453,649
Int. Cl. G01r *1/20, 5/20, 31/00*
U.S. Cl. 324—150 **11 Claims**

An electrical indicating and control meter is disclosed wherein the meter movement comprises a pivotally mounted thin aluminum disk bearing a printed circuit coil on at least one insulated surface; a pair of integral coplanar arcuate segments of the disk extending radially beyond the printed circuit portion, from the periphery of the disk; and a pair of arcuately adjustable photoelectric detectors each mounted to pivot about the axis of the printed circuit disk into preselected positions whereby the radially extending arcuate segments of the disk may interrupt light to one or the other of the detectors as the motor disk rotates in response to current flowing through the printed circuit coil. A needle pointer mounted on the rotor disk and extending over a calibrated scale provides visual indication of the parameter value being metered, while a pair of manually adjustable pointers adjacent the scale face are connected to the arcuately adjustable photoelectric detectors whereby maximum and minimum control values may be selectively set.

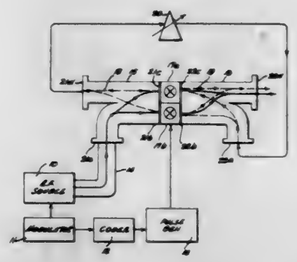


3,435,342

POWER SPLITTING HIGH LEVEL RF MODULATOR

Joseph Burnsweig, Jr., and Larry H. O'Brien, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Sept. 22, 1965, Ser. No. 489,262
Int. Cl. H04b *1/04;* **H01p** *5/12*
U.S. Cl. 325—126 **12 Claims**

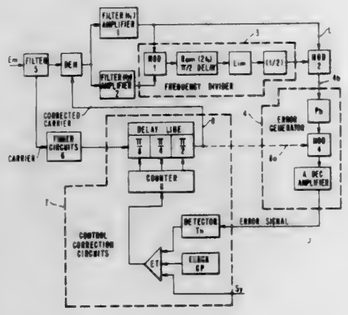


This disclosure relates to a system for modulating high level electromagnetic energy. The desired modulation is accomplished by applying the electromagnetic energy to a waveguide structure including a high speed switching device which is responsive to coded control signals applied thereto and which serves to either allow said electromagnetic energy to be propagated directly through the waveguide structure or be directed through a phase shifting device.

3,435,343
APPARATUS FOR CARRIER PHASE CORRECTION

Jean-Marc Pierret, Falicon, France, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 15, 1965, Ser. No. 496,443
Claims priority, application France, Oct. 16, 1964, 7,484
Int. Cl. H04b *1/12*
U.S. Cl. 325—389 7 Claims

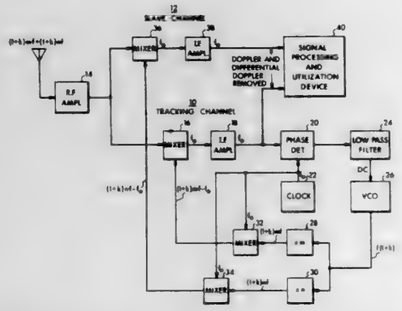


Apparatus for correcting phase distortion of a transmitted carrier. Readjustment signals which are functions of carrier phase distortion are generated in the receiver by successively mixing selected signals, preferably harmonically related, to determine a phase correction voltage. This voltage causes a counter to select a delay which is used to correct carrier phase errors. Phase error is corrected to a value equivalent to carrier phase delay in a linear equivalent channel. Input means isolates the carrier from the harmonically related signals and control signal generation means is responsive to the harmonically related signals to provide a composite signal to control phase distortion.

3,435,344
RADIO COMMUNICATION SYSTEMS

David J. Blair, Snyder, N.Y., and Carl D. Herold, Jr., Sunnyvale, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 29, 1965, Ser. No. 491,091
Int. Cl. H04b *1/06*
U.S. Cl. 325—421 7 Claims

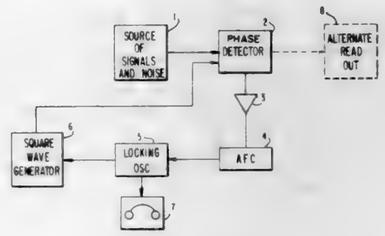


In a multichannel receiver a single phase-lock loop is employed to track one of the two or more received signal tones and the associated voltage controlled oscillator and multipliers are used to derive Doppler compensating local oscillator signals which are respectively applied to a mixer in each receiver channel.

3,435,345
SYSTEM FOR DETECTING COHERENT ENERGY IN THE PRESENCE OF SATURATING NOISE

Willis L. Ashby, Box 97, Pluckemin, N.J. 07978

Filed June 24, 1965, Ser. No. 466,666
Int. Cl. H04b *1/10, 1/16;* H03d *13/00*
U.S. Cl. 325—423 7 Claims

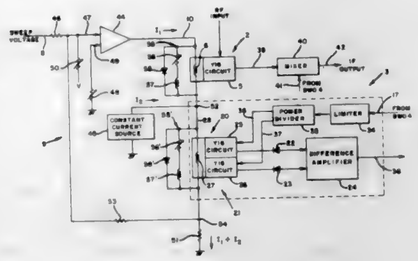


In a system for detecting the presence of coherent energy when it is buried within saturating noise, a source of coherent energy is coupled to an input of a phase detector circuit, and a reference oscillator driven over the entire frequency range of system is connected to the output of the phase detector circuit. The output of the reference oscillator is connected to another input of the phase detector so that given the presence of coherent energy the reference oscillator will correlate with the coherent energy to indicate the presence of such energy.

3,435,346
ELECTRONICALLY TUNABLE RECEIVER

James S. Allen, Saratoga, and Edward Hirshfield, San Jose, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 31, 1966, Ser. No. 553,743
Int. Cl. H04b *1/16, 1/36*
U.S. Cl. 325—423 10 Claims

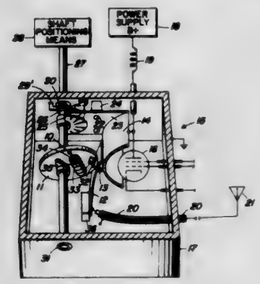


An electrically tuned receiver employing a voltage tunable filter, having an yttrium iron garnet element, as a preselector; a backward wave oscillator to generate a local oscillator signal; a discriminator comprising a pair of yttrium iron garnet element filters; and a pair of magnetization coils which are individually and separately associated with the preselector and discriminator filters. A sweep current energizes said magnetization coils so that the discriminator response characteristic tracks the preselector response characteristic. A constant current signal passes only through the coil of the discriminator filters so that the filter characteristics are always offset by a constant amount from the preselector response characteristic.

3,435,347
CAM MOUNTED SERIES RESONANT TRAP FOR TUNABLE RF POWER AMPLIFIER TO ANTENNA COUPLING CIRCUIT

David L. Decker and Morgan F. Hamer, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 6, 1966, Ser. No. 584,906
Int. Cl. H04b *1/18;* H03j *3/22*
U.S. Cl. 325—452 7 Claims

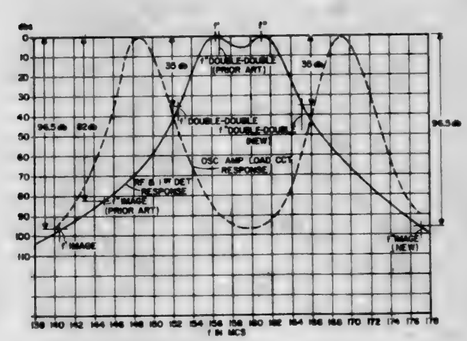


An insulating material cam mounted series resonant trap for a tunable RF power amplifier to antenna coupling circuit with the cam resiliently deflecting a plate of a signal coupling capacitor. This is with also, a capacitor plate, of the series resonant trap circuit, in the form of a tab plate mounted on the cam brought into and out of close operationally effective proximity to the resiliently cam deflected capacitor plate.

3,435,348
DUAL RANGE VHF RECEIVER

Norman Broadbent, St. Dorothee, Quebec, and Kenneth G. Read, Montreal, Quebec, Canada, assignors to Canadian Marconi Company, Montreal, Quebec, Canada

Filed Sept. 29, 1965, Ser. No. 491,234
Claims priority, application Canada, June 11, 1965, 933,094
Int. Cl. H04b *1/16, 1/06*
U.S. Cl. 325—453 2 Claims

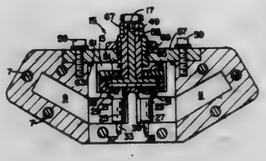


In a duel range VHF receiver, a local oscillator which provides a frequency equal to the RF less the IF for the the low RF bands and a frequency equal to the RF plus the IF for the high RF bands, the load of said local oscillator comprising overcoupled resonant circuits.

3,435,349
DUO-CRYSTAL MIXER

Kenneth H. Pascoe, Lexington, and Calvin R. Salter, Tewksbury, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 28, 1966, Ser. No. 562,431
Int. Cl. H04b *1/26;* H03k *3/00;* H03d *9/02*
U.S. Cl. 325—449 6 Claims

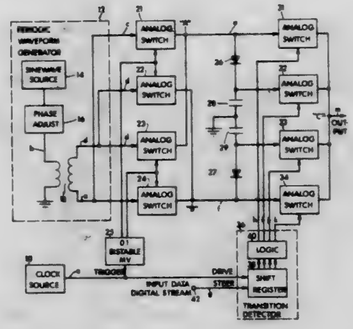


A duo-crystal mixer microwave assembly that is easily removed from the accompanying waveguide structure, which has two crystal diodes that are easily replaceable, and that increases the reduction of microphonics. The two crystals are held by their flanges by an insulated housing so that each crystal is positioned in an input port of the microwave assembly and the pins of the crystals are grounded to the microwave assembly housing by set screws. An insulated electric lead makes contact with the flanges of both crystals and acts as the output of the assembly.

3,435,350
DIGITAL WAVEFORM TRANSITION SYNTHESIZER

Martin V. Powers, Williamsville, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 21, 1966, Ser. No. 544,307
Int. Cl. H03b *19/14*
U.S. Cl. 328—14 11 Claims

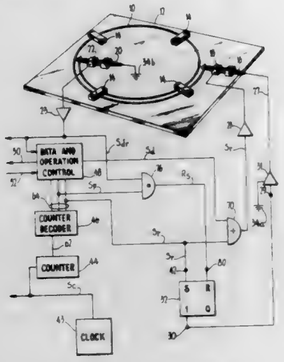


A pulse shaping circuit comprising a periodic waveform generator and a set of analog switches controlled by a timing source for deriving components of the generated waveforms. A second set of switches is arranged to assemble the derived waveform components in response to control signals from a transition detector which correspond to waveform components recognized in a digital stream applied to the transition detector. The resulting assembled output waveform is a facsimile of the received digital stream except that components derived from the periodic waveform generator are substituted for corresponding waveform components of the received digital stream.

3,435,351
DELAY LINE TRANSIT TIME CONTROL SYSTEM

Robert A. Ragen, Hayward, Calif., assignor to Friden, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 457,584, May 21, 1965. This application May 1, 1967, Ser. No. 635,202
Int. Cl. H03k 5/159
U.S. Cl. 328—56 8 Claims

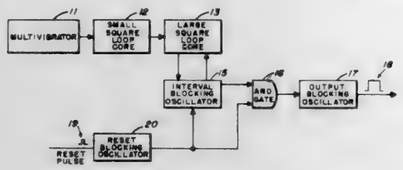


The transit time of pulses through an ultrasonic delay line is adjusted so as to be synchronized with recurring reference pulses. The reference pulses are applied to a control means for turning on a source of heat to the delay line. Periodic pulses in phase with the reference pulse are applied to the input of the delay line. The output of the delay line is applied to the control means to turn off the current to the delay line. Means for inhibiting turn off of the control means during transit of data signals through the delay line is included to render the system operative with an electronic data processing and handling system.

3,435,352
NO-SCAN DETECTOR

Leo C. Miller, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 18, 1966, Ser. No. 544,355
Int. Cl. H03k 5/18
U.S. Cl. 328—120 10 Claims



1. A no-scan detector for monitoring a continuous memory system having a digital memory matrix comprising:

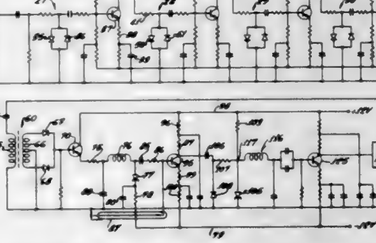
interval counting means for establishing a specified interval of time for monitoring a digital memory matrix for output digital data, said interval counting means after the duration of the specified interval of time establishing a triggering pulse for activating a restart pulse for initiating the rescanning of the memory matrix of a continuous memory system;

reset means connected to said interval counting means receiving digital data from a memory matrix, said reset means being actuated by a positive bit of said digital data establishing a reset trigger pulse for resetting said interval counting means to begin again said specified interval of time and inhibiting said triggering pulse of said interval counting means preventing the activating of a restart pulse.

3,435,353
AMPLIFIER-DETECTOR HAVING WIDE DYNAMIC RANGE

James W. Sauber, Winchester, Mass., assignor to Hewlett-Packard Company, a corporation of California

Filed Feb. 4, 1966, Ser. No. 525,171
Int. Cl. G06g 7/24
U.S. Cl. 328—145 8 Claims



1. A logarithmic amplifier-detector comprising:

a plurality of modifying means connected in series for modifying the amplitude of an electrical signal by substantially the same factor,

means for applying a signal to be amplified and detected as the input signal to the first one of said modifying means,

detecting means coupled to each of said modifying means for rectifying the signal derived therefrom,

shaping means coupled to each of said detecting means for logarithmically varying the amplitude of the rectified output signal of each of said detecting means, and

combining means to combine the shaped and rectified output signals of all of said modifying means whereby the output of said combining means is proportional in amplitude to the logarithm of said input signal.

3,435,354
PULSE TYPE DEMODULATOR SYSTEM FOR ANGLE MODULATED SIGNALS UTILIZING THE CHARACTERISTICS OF A TUNNEL DIODE FOR FORMING THE PULSE TRAIN

Alan G. Grace, San Carlos, Calif., assignor, by mesne assignments, to Allan R. Fowler, Orange, Calif., trustee

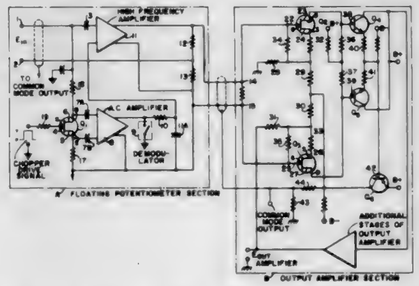
Filed Mar. 24, 1966, Ser. No. 537,223
Int. Cl. H03d 3/04, 1/10
U.S. Cl. 329—126 7 Claims

A demodulator for angle modulated signals in which a first tunnel diode is triggered to apply a pulse input to a shorted delay line and a second tunnel diode is triggered to one state by the incident pulse and to its opposite state by the reflected pulse from the delay line for producing a train of pulses occurring at a rate which varies in accordance with the instantaneous frequency rate of the input frequency modulated waveform. This train of pulses is filtered for removing the carrier energy from the demodulated output.

3,435,355
LOW LEVEL DIRECT CURRENT AMPLIFIER

Robert H. Luppold, Jr., West Newton, and Joseph Gill, Upper St. Clair Township, Bridgeville, Pa., assignors, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 15, 1965, Ser. No. 487,360
Int. Cl. H03f 3/14, 3/26, 1/02
U.S. Cl. 330—9 8 Claims

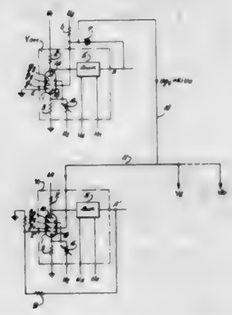


A low level direct current amplifier includes an input floating potentiometer section which is coupled to an output amplifier section. A field effect transistor chopper in the potentiometer section is provided with substantially balanced time constants in the drain and source circuits with the gate to produce substantially balanced chopper spiking which is substantially cancelled through differential amplification of the chopper output. In the output amplifier section, a differential field effect transistor amplifier produces an output from which common mode correction signals are derived and selectively applied and from which an amplified ground reference output is generated.

3,435,356
DRIFT FREE STABILIZED OPERATIONAL AMPLIFIER

Horst Prochnow, Berlin-Lichtenberg, Germany, assignor to Institut fur Regelungstechnik, Berlin, Germany

Filed Nov. 15, 1965, Ser. No. 507,955
Int. Cl. H03f 1/02
U.S. Cl. 330—9 8 Claims

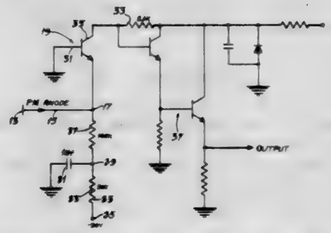


A plurality of individual operational amplifier means are placed under similar environmental conditions such as having a common power supply and being exposed to the same ambient temperature. A fluctuation of such conditions produces a similar drift voltage in the output of each individual amplifier. One of the amplifiers is used as a corrective amplifier in which the output is fed back to its own second input and similarly to a second input of all the other individual amplifiers thereby reducing the zero point drift in each in proportion to the feedback factor.

3,435,357
TRANSISTOR AMPLIFIER FOR PHOTOMULTIPLIER TUBE OUTPUT

Michael V. Lamasney, Palo Alto, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 23, 1965, Ser. No. 510,156
Int. Cl. H03f 3/68
U.S. Cl. 330—20 1 Claim

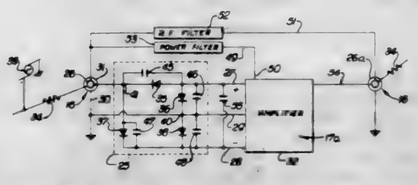


A transistorized amplifier for the output from a photomultiplier tube anode, the amplifier characterized by a grounded or common base amplifier stage having the emitter connected directly to the photomultiplier anode, and one or more transistor amplifier output stages of emitter follower configuration.

3,435,358
CABLE TELEVISION AMPLIFIER POWERING

William A. Rheinfelder, South Laguna, Calif., assignor to Anaconda Electronics Company, Anaheim, Calif., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,162
Int. Cl. H03f 3/04, 3/68
U.S. Cl. 330—22 9 Claims



A system for energizing repeater amplifiers spaced at remote locations along a television signal distribution cable. AC power is transmitted together with the signal over the cable, and at each remote location a portion of the AC power is converted to DC by a bridge rectifier to provide a floating power supply for a corresponding amplifier.

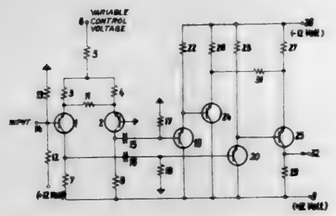
3,435,359
VIDEO SIGNAL LEVEL CONTROL CIRCUIT

Emil Sennhenn, Darmstadt-Arheilgen, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed June 8, 1966, Ser. No. 556,174
Claims priority, application Germany, July 13, 1965, F 46,583
Int. Cl. H03f 3/04, 3/68; H03g 3/20
U.S. Cl. 330—22 9 Claims

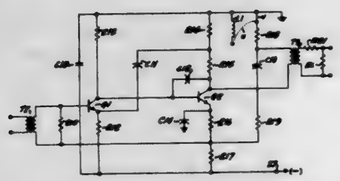
A variable control voltage is applied, by way of balanced resistors, to the emitters of a first pair of emitter-

coupled transistors. Video input signals are applied to one base and the other base is grounded. The collectors are capacitively coupled to the bases of a second pair of emitter-coupled transistors. The video output signal



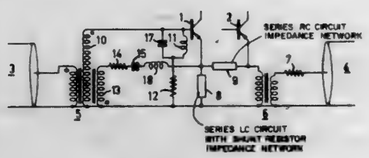
derived at one collector of the second pair of transistors varies in level as the control voltage is varied, but no alteration of the direct current component of the video signal takes place.

3,435,360
ZERO OUTPUT IMPEDANCE AMPLIFIER
James C. Carroll, Raleigh, N.C., assignor to International Telephone and Telegraph Corporation
Filed Apr. 5, 1966, Ser. No. 540,383
Int. Cl. H03g *3/30;* **H03f** *1/34, 1/38*
U.S. Cl. 330—25 **10 Claims**



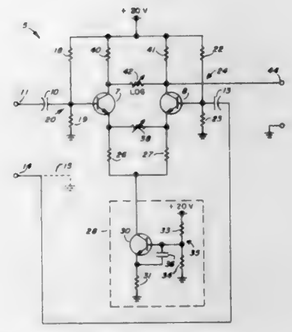
The invention provides an amplifier having a combination of positive and negative gain feedback circuits. The signals in these circuits vary as a function of load current to enable a compensation of amplifier gain losses due to load changes. Thus, the output impedance remains constant despite variations in the loading.

3,435,361
CABLE TERMINATION AMPLIFIER HAVING A NEGATIVE FEEDBACK CIRCUIT PROVIDING HIGH FREQUENCY CABLE TERMINATION IMPEDANCE
Willem van Doorn, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,809
Claims priority, application Netherlands, Mar. 20, 1965, 6503572
Int. Cl. H03f *1/08, 1/34*
U.S. Cl. 330—28 **4 Claims**



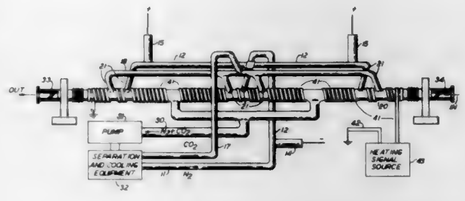
A circuit for connecting an amplifier to a cable to provide proper termination impedance with a minimum of resistor produced noise. The amplifier input circuit includes a shunt resistor-inductor branch which provides the cable termination at low frequencies, but the inductor isolates the resistor at high frequencies. A negative feedback circuit is transformer coupled to the input circuit and includes a resistor-capacitor circuit, so that the resistor of the feedback circuit provides proper cable termination at high frequencies. The turns ratio of the transformer permits the resistor of the feedback circuit to be low, to minimize noise.

3,435,362
WIDEBAND DIFFERENTIAL AMPLIFIER HAVING IMPROVED GAIN CONTROL
George L. Pamlenyi, St. Paul, Minn., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Dec. 29, 1967, Ser. No. 694,535
Int. Cl. H03g *3/30*
U.S. Cl. 330—29 **7 Claims**



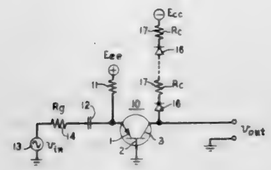
A wideband differential amplifier having gain control provided by a potentiometer connected between the emitters and a potentiometer connected between the collectors of the transistors of the amplifier with the resistance of the potentiometer connected between the collectors varying as a logarithmic function and the potentiometer connected between the emitters being connected to a constant current generator.

3,435,363
SELF-FOCUSING LASER
Chandra K. N. Patel, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 23, 1965, Ser. No. 442,022
Int. Cl. H01s *3/00;* **G02b** *3/12, 1/06*
U.S. Cl. 330—4.3 **9 Claims**



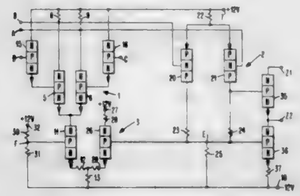
In the gas laser disclosed, simultaneous amplification and refocusing of the transmitted radiation is obtained. The refocusing is achieved by heat applied from an external energy source through the laser side walls to establish a suitable temperature gradient for focusing action. The resonance of the lasing gas compensates for its extremely low pressure, as compared to prior art thermal gas lenses.

3,435,364
ULTRALINEAR TRANSISTOR AMPLIFIER
Robert V. Goordman, Hackettstown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 20, 1965, Ser. No. 514,939
Int. Cl. H03f *3/04, 3/18, 3/68*
U.S. Cl. 330—24 **2 Claims**



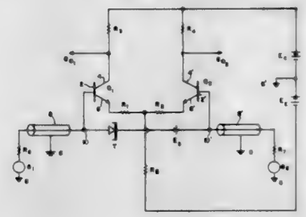
The distortion produced in a transistor amplifier by the nonlinearity of its input impedance, is compensated for by means of an equivalent nonlinearity introduced in the collector circuit of the transistor amplifier. In the illustrative embodiments described, the amplifier collector circuit includes both nonlinear and linear resistive means connected in series. The nonlinear resistance is typically provided by at least one diode, poled in the forward direction. The linear resistance is typically provided by a resistor whose resistance is a function of the impedance of the signal source connected between the emitter and the base of the transistor, and the number of diodes.

3,435,365
MONOLITHICALLY FABRICATED OPERATIONAL AMPLIFIER DEVICE WITH SELF-DRIVE
James C. Greeson, Jr., Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 491,962
Int. Cl. H03f *3/68, 1/08, 1/34*
U.S. Cl. 330—30 **6 Claims**



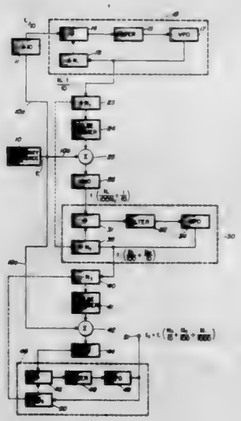
A monolithically fabricated operational amplifier is characterized by self-drive at high speeds and is operable alternatively as a current summing amplifier, a differential amplifier or a comparator. The amplifier includes first and second cascade-connected differential amplifying stages. A third differential amplifier responds to a voltage which is a function of the total collector current of the second stage to provide total emitter current to the first stage as an inverse function of said total collector current, thereby providing a closed loop with degenerative feedback which stabilizes the total current flow in the first and second stages.

3,435,366
TUNNEL DIODE-TRANSISTOR BISTABLE AMPLIFIER CIRCUIT
James K. Skilling, Harvard, Mass., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts
Filed June 30, 1965, Ser. No. 468,255
Int. Cl. H03f *21/00*
U.S. Cl. 330—69 **10 Claims**



The present disclosure deals with a pair of differentially connected transistor amplifiers having no feed-through path from the input to the output, but in the common input of which a tunnel diode is connected and is alternately switched between its high and low voltage states in response to successive input pulses, thereby causing the amplifiers to generate alternate bistable pulses in their respective outputs for such uses as high-speed switching at high repetition rates.

3,435,367
DIGITALLY CONTROLLED FREQUENCY SYNTHESIZER
Knowles G. Little, Jr., Baltimore, Md., assignor to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 662,992
Int. Cl. H03b *3/06*
U.S. Cl. 331—2 **11 Claims**



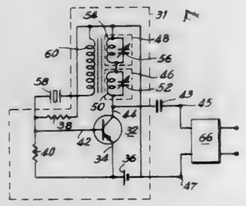
A frequency synthesizer for generating coherent frequencies using a plurality of serially cascaded stages. Each stage includes a digitally controlled phase locked loop utilizing a frequency generation by analysis system, with the output of a preceding loop being connected to the input of a succeeding loop sucessively through a variable frequency divider, a mixer and a fixed frequency divider. Reference frequencies are applied to the input of the first loop and to the various mixers.

3,435,368

LOW FREQUENCY PIEZOELECTRIC CRYSTAL OSCILLATOR HAVING A SINGLE DRIVING CIRCUIT

Hitohiro Fukuyo, Tokyo, and Norio Tabuchi, Chiba-shi, Chiba-ken, Japan, assignors to Kabushiki Kaisha Hattori Tokeiten, Tokyo, Japan, a corporation of Japan

Filed Oct. 22, 1965, Ser. No. 501,111
Claims priority, application Japan, Mar. 6, 1965, 40/12,868
Int. Cl. H03b 21/02
U.S. Cl. 331—37 10 Claims



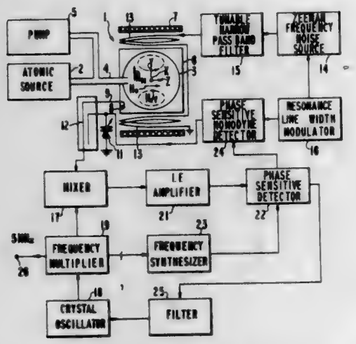
A stable low-frequency crystal oscillator signal generator having a piezoelectric crystal, an oscillator circuit adapted to generate a plurality of characteristic frequencies in said crystal, said oscillator circuit including two selectively tuneable resonant circuits tuned to select two of said crystal characteristic frequencies, and detector means connected across the output of said oscillator circuit to derive the beat frequency signal of said selected crystal resonant frequency signals.

3,435,369

TUNING OF ATOMIC MASERS BY MAGNETIC QUENCHING USING TRANSVERSE MAGNETIC FIELDS

Jacques P. Vanier, Beverly, Mass., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Mar. 4, 1966, Ser. No. 531,984
Int. Cl. G01r 33/08; H01s 1/06
U.S. Cl. 331—94 6 Claims



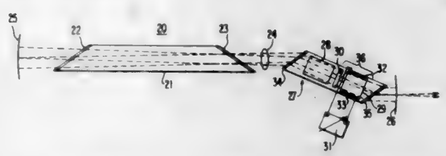
An atomic maser is slightly detuned by a modulated signal produced by a pair of coils adjacent to the maser bounce box or by a conductor wire disposed in the center of the bounce box. The modulated signal is applied transversely to the low intensity polarizing field and is generated by a noise source which induces random Zeeman transitions.

3,435,370

HIGH SPEED LASER FREQUENCY SELECTOR

Thomas J. Harris, Poughkeepsie, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 16, 1965, Ser. No. 514,216
Int. Cl. H01s 3/05
U.S. Cl. 331—94.5 8 Claims



1. In a laser cavity including a chamber containing a negative temperature medium, means for linearly polarizing light in a first direction, and a pair of spaced mirrors for reflecting the coherent linearly polarized light beam emitted from the medium along a path between the mirrors and through the medium and the polarizing means, said medium being capable of lasing at several characteristic wavelengths, a laser frequency selector comprising:

(a) a first frequency dependent dispersion means in the light beam path for imparting a different polarization change to each wavelength of laser light, and

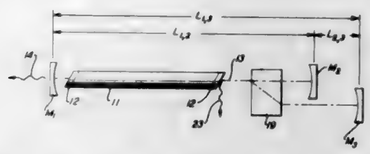
(b) an adjustable means in the light beam path imparting to each wavelength of light a polarization change substantially independent of the wavelength, said adjustable means being adjustable to impart a polarization change to a first selected wavelength so that the resultant polarization change of said first selected wavelength is zero, thereby permitting lasing of the first selected wavelength but preventing lasing of the non-selected wavelengths.

3,435,371

LASER MODE SELECTION APPARATUS

Alan D. White, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 17, 1965, Ser. No. 514,488
Int. Cl. H01s 3/09, 3/00
U.S. Cl. 331—94.5 9 Claims



1. Laser apparatus comprising:

a laser medium for radiating coherent light within a predetermined frequency band;

first and second mirrors defining a primary optical cavity for repeatedly directing the light through the laser medium for cumulative gain;

a third mirror;

means comprising a birefringent medium located in the primary optical cavity for directing light of a first linear polarization to the second mirror and for directing light of a second linear polarization to the third mirror;

the first and third mirrors defining an auxiliary optical cavity which is an integral number of half wavelengths longer than the primary optical cavity at a desired frequency within the predetermined frequency band of the laser medium;

and means comprising a Brewster angle window located between said first mirror and said birefringent medium for attenuating light energy at frequencies other than those at which both the primary and auxiliary cavities are resonant.

8. Laser apparatus comprising a laser medium for generating a coherent light beam within a predetermined frequency band and along a central axis;

first and second mirrors defining a primary optical cavity for repeatedly directing light through the laser medium for cumulative gain;

a third mirror;

an aperture plate between the first and second mirrors having an aperture of the same size as that of a higher order odd symmetrical transverse mode at a desired frequency within said frequency band width;

the second mirror intercepting half of the light beam along a diametrical line of the light beam;

the third mirror intercepting the remainder of the light beam;

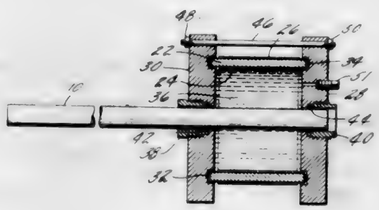
the first and third mirrors defining an auxiliary optical cavity which is an integral number of half wavelengths longer than the primary cavity.

3,435,372

ULTRASONIC MODULATOR HAVING A CYLINDRICAL TRANSDUCER

Herbert G. Aas, East Hartford, Conn., and George E. Danielson, Jr., Rochester, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 19, 1966, Ser. No. 521,658
Int. Cl. H01s 3/08
U.S. Cl 331—94.5 8 Claims



1. Apparatus for modulating or gating the output of a laser comprising:

a laser rod,

a transducer,

an acoustic medium interposed between said transducer and said laser rod,

means for actuating said transducer to generate an acoustic wave, and

focusing means for propagating said acoustic wave through said medium to focus said wave internally within said laser rod.

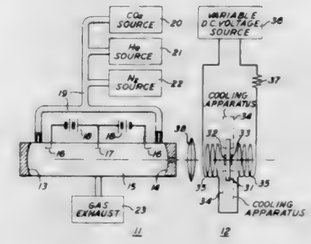
3,435,373

TUNABLE RAMAN LASER

Peter A. Wolff, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 21, 1966, Ser. No. 522,174
Int. Cl. H01s 3/10; H03f 7/00
U.S. Cl. 331—94.5 5 Claims

1. A laser comprising a crystal of semiconductive material in which an electron has an effective mass less than the mass of a free electron, means forming an optical resonator disposed about said crystal, means for applying a magnetic field to said crystal, and means for applying to said crystal coherent pumping radiation in a direction substantially collinear with the axis of said resonator, said coherent radiation having a photon energy less than the bandgap energy of said crystal and having a power



level sufficient for the stimulation of an output Raman radiation of a frequency

$$\nu_0=\nu_p-2\nu_c$$

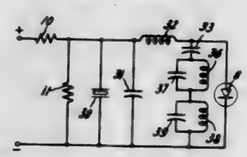
where ν_p is the pumping frequency and ν_c is the cyclotron frequency of an electron in said magnetic field, said coherent pumping radiation having a substantial electric field component orthogonal to the magnetic field direction.

3,435,374

NEGATIVE RESISTANCE DEVICE OSCILLATOR CIRCUITS HAVING HARMONIC IMPEDANCE MEANS FOR MODIFYING THE OSCILLATOR FREQUENCY

James R. Whitten, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 31, 1967, Ser. No. 664,749
Int. Cl. H03b 7/14, 11/10, 19/14
U.S. Cl. 331—107 13 Claims



A family of oscillator circuits each includes an active negative resistance device and at least one additional resonant network tuned to a particular harmonic of the oscillator fundamental frequency for modifying the fundamental frequency output of the oscillator. The additional resonant networks are connected in direct circuit relationship with the negative resistance device for either increasing or decreasing the frequency deviation of the oscillator with changes in the bias voltage of the negative resistance device. The direction of the frequency deviation is determined by the particular interconnection of the additional resonant networks and their types, series, or parallel resonant. The frequency of the oscillator may also be controlled, without bias voltage change, by constructing the additional resonant networks from adjustable impedance elements.

3,435,375

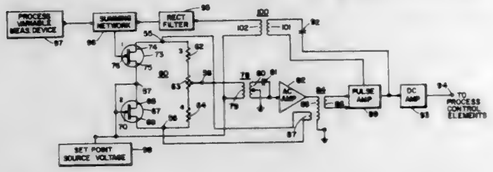
CONTROLLER HAVING FET BRIDGE CIRCUIT

Edward J. Miller, Jr., Tempe, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Sept. 20, 1965, Ser. No. 488,457
Int. Cl. H03b 5/14, 5/42, 5/08
U.S. Cl. 331—110 7 Claims

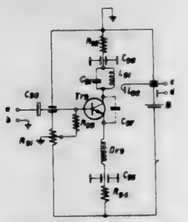
A pair of field-effect transistors are utilized in a bridge

circuit as a control element in a process controller. The FET's are biased to operate in the low triode region such



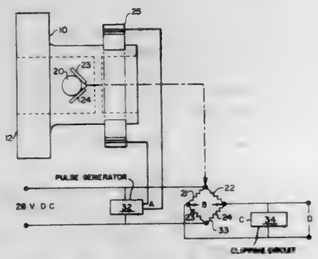
that input signals set high resistances and operation is linear.

3,435,376
DISTORTION-FREE FREQUENCY MODULATOR CIRCUIT
Herbert Weber, Gunter Lange, Hubert Muller, Michael Von Fellner, and Roland Heer, Backnang, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed June 9, 1965, Ser. No. 462,597
Claims priority, application Germany, June 9, 1964, T 26,332; Dec. 1, 1964, T 27,517
Int. Cl. H03c *3/08*
U.S. Cl. 332—18 **8 Claims**



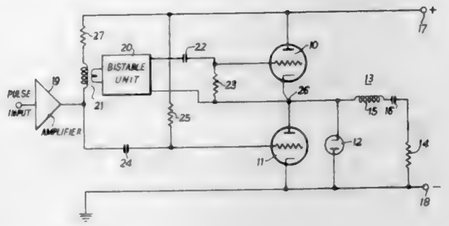
A frequency modulator circuit with a self-excited transistor connected to have feedback. The circuit includes means for modulating the base voltage of the transistor so as to vary the transistor's collector current dependent transconductance phase and means for simultaneously controlling the transistor base-collector capacitance. The means for controlling the base-collector capacitance is adjusted so that the second and third order modulation distortions due to changes in the base-collector capacitance compensate for the second and third order modulation distortions caused by changes in the transconductance phase.

3,435,377
FORCE-TO-FREQUENCY TRANSDUCER
Richard N. Franklin, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,900
Int. Cl. H03c *3/28;* **H03b** *5/38*
U.S. Cl. 332—26 **15 Claims**



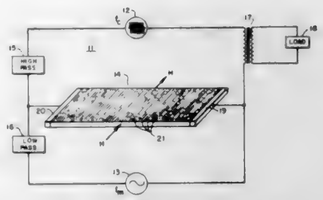
A transducer which produces variations in its output frequency in response to the variations of an applied force by loading a sensing element and thereby varying the natural frequency at which it is vibrating.

3,435,378
APPARATUS FOR GENERATING MODULATED WAVES FROM PULSE-TYPE MODULATING SIGNAL
David Robin Birt, Oxted, England, assignor to Communications Patents Limited
Filed Mar. 25, 1966, Ser. No. 537,349
Int. Cl. H03c *1/02;* **H03k** *7/02*
U.S. Cl. 332—41 **10 Claims**



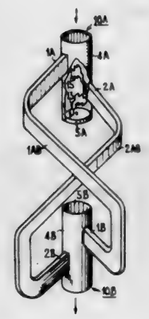
An amplitude modulation arrangement wherein a modulated output signal is provided by an output stage including two or more electronic switching devices. Switching of these devices is controlled by a train of pulses the widths of individual pulses of which are varied in accordance with a modulating signal such as to produce an output signal whose amplitude varies directly with the amplitude of the modulating signal. The switching devices are operated by low level pulse signals and thus the overall efficiency of the system is high.

3,435,379
SOLID-STATE MAGNETOELECTRIC MODULATOR AND SWITCH
Herbert L. Mette, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 9, 1965, Ser. No. 523,483
Int. Cl. H03c *1/36*
U.S. Cl. 332—52 **4 Claims**



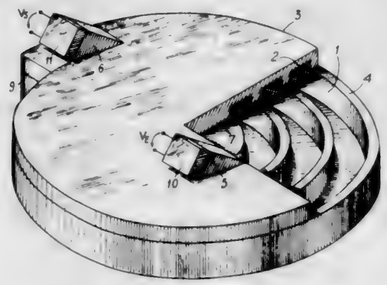
An amplitude modulator comprising a slab of semiconductive material having a pair of ohmic contacts mounted on opposite ends and having one major surface etched smooth and the other major surface ground rough to produce low and high surface recombination velocities. A first signal generator is connected across the ohmic contacts and produces the modulating signal of a frequency below a predetermined value. A second signal generator is also connected across the ohmic contacts and produces the modulated signal which is of a frequency above the predetermined value. A magnetic field is applied to the semiconductor to deflect carriers towards the major surfaces in accordance with the strength of the lower frequency signal.

3,435,380
POLARIZATION ROTATOR FOR MICROWAVES
Guy M. Billon, Brunoy, and Bernard J. Daveau, Orsay, France, assignors to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Filed Mar. 8, 1966, Ser. No. 532,811
Claims priority, application France, Mar. 9, 1965, 8,405
Int. Cl. H01p *1/16*
U.S. Cl. 333—21 **7 Claims**



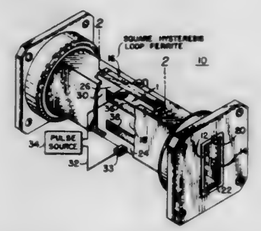
A polarization rotator comprising wave guide sections exhibiting rotational symmetry and transfer wave guides of rectangular cross section, each transfer wave guide having substantially the same electrical length. The transfer guides are coupled to the wave guide sections by means such as apertures arranged either in the lateral or end walls of the wave guide sections. The coupling is such that the outgoing wave has its polarization planes rotated with respect to those of the incoming wave.

3,435,381
DISPERSIVE ACOUSTIC LINE USING TWO-LAYER FLUID MEDIA
Pierre Tournois, Paris, France, assignor to CSF Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Apr. 25, 1966, Ser. No. 544,785
Claims priority, application France, May 3, 1965, 15,518
Int. Cl. H03k *7/30;* **H01p** *3/06*
U.S. Cl. 333—30 **10 Claims**



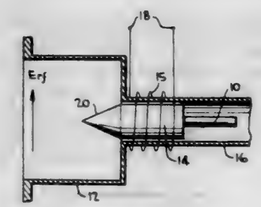
1. A dispersive acoustic line for compressing electrical signals, frequency modulated on a carrier wave, comprising: a hollow acoustic waveguide having two ends; first and second fluid media filling said guide; said media forming a first and a second superimposed layer extending from one of said ends to the other; said first fluid medium propagating acoustic waves with a higher phase velocity than said second fluid medium; first electroacoustic transducer means coupled to said second layer at one of said ends for generating in said first and second media an acoustic compressional wave in response to said electrical signals and second electroacoustic transducer means coupled to said second layer at said other end for receiving said compressional wave.

3,435,382
RECIPROCAL MICROWAVE FERRITE PHASE SHIFTER
John P. Agrios, Long Branch, and Elmer Freibergs, West Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 5, 1966, Ser. No. 599,687
Int. Cl. H03h *7/30, 5/12*
U.S. Cl. 333—31 **1 Claim**



A microwave phase shifter includes a double window ferrite toroid centrally positioned within a rectangular waveguide section in a plane along the longitudinal axis of the waveguide. The ferrite material has a square hysteresis loop characteristic. A current pulse applied to the ferrite toroid determines the amount of phase shift. When the current pulse is removed the degree of phase shift is a function of the saturation magnetization at remanence.

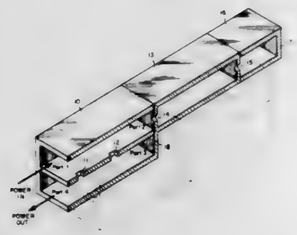
3,435,383
NONDISPERSIVE ELECTRICALLY VARIABLE MICROWAVE ACOUSTIC DELAY LINE COMPRISING A FERRITE FARADAY ROTATOR COUPLED TO AN ANISOTROPIC PIEZOELECTRIC CRYSTAL
Frank Reggia, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 27, 1967, Ser. No. 619,539
Int. Cl. H03h *7/30*
U.S. Cl. 333—31 **2 Claims**



This disclosure describes a nondispersive electrically variable acoustic delay line for microwave energy. The delay line disclosed comprises a ferrite Faraday rotator coupled to a piezoelectric single crystal having anisotropic properties. The Faraday rotator changes the polarization direction of a microwave signal by an amount proportional to the current flowing in the rotator solenoid from an external source. The velocity of propagation of an acoustic wave induced in the piezoelectric delay medium by the microwave energy incident thereon is determined

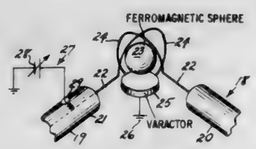
by a polarization direction of the microwave energy. Therefore, by changing the amount of current flowing in the control winding of the Faraday rotator the velocity of propagation through the piezoelectric medium will be altered.

3,435,384
WAVEGUIDE FILTER
Donald Renkowitz, Whitestone, N.Y., assignor to General Telephone & Electronics Laboratories, Inc., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,848
Int. Cl. H03h *7/10*
U.S. Cl. 333—73 **6 Claims**



A microwave band reject filter is described wherein a four port directional coupler is provided with a bandpass filter and a quarter-wave stub at one port and short-circuiting end wall at another port. In operation, the band pass characteristic of the filter is in effect inverted to provide band rejection.

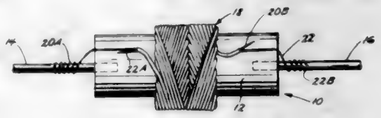
3,435,385
ELECTRONICALLY TUNABLE YIG FILTER HAVING AN ELECTRONICALLY VARIABLE BANDWIDTH
Morris Cohen, Oceanside, N.Y., assignor to Loral Corporation, Bronx, N.Y., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,660
Int. Cl. H03h *7/10, 7/44*
U.S. Cl. 333—73 **3 Claims**



Improved electronically tunable microwave filter construction having each of the inner conductor members of first and second coaxial conductors looping about a sphere of ferromagnetic material and lying in intersecting planes passing therethrough. A grounded varactor is connected to each of the loops and a variable D.C. current source is connected to the varactor for altering its bias.

3,435,386
SERIES RESONANT TRAP AND METHOD OF MAKING SAME
Marvin H. Jacob, Volin, S. Dak., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed Nov. 30, 1964, Ser. No. 414,605
Int. Cl. H01h *7/00*
U.S. Cl. 333—76 **4 Claims**

A resonant trap device including an elongated insulative core with terminal means on opposite ends of the core. A coil of wire material is wound on the core and is comprised of two strands of electro-conducting wire having opposite ends. One end of one strand of wire is secured to one of the terminal means and the opposite



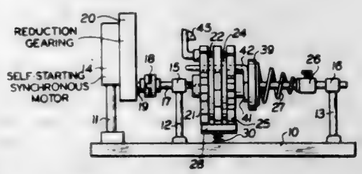
end of the other strand of wire is secured to the other terminal means. The coil of wire material also includes an insulative coating which maintains the strands together in a spaced relation.

3,435,387
SOLDERLESS MOUNTING FILTER CONNECTION
John F. Reinke, Heinz M. Schlicke, and Floyd A. Blomdahl, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 1, 1965, Ser. No. 484,483
Int. Cl. H01r *7/02*
U.S. Cl. 333—79 **6 Claims**



A feed-through connector assembly having one or more filter components which surround and are axially removable, e.g., for purposes of replacement, from a feed-through conductor. The electrical connection between the filter, the conductor and a housing of the connector is provided by conductive gaskets which engage the conductor and one electrode of the filter as well as engage a second electrode of the filter and the housing.

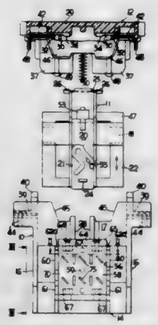
3,435,388
ROTARY ELECTRIC CURRENT INTERRUPTER
Frank R. Hormann, 12 Davison Lane W., West Islip, N.Y. 11795
Filed Dec. 22, 1966, Ser. No. 603,913
Int. Cl. H01h *3/26, 3/42*
U.S. Cl. 335—68 **7 Claims**



A device for providing electrical impulses of various lengths at various time intervals and for varying the lengths and intervals of said impulses by having a plural-

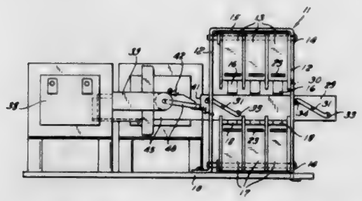
ity of disc cams with random circumferentially spaced high spots, one cam being fixed on a rotatable shaft and at least one cam being loose on said shaft and adapted to be frictionally driven by said fixed cam, means for varying angularly in an unpredictable manner the relationship of the high spots on the cams to one another and an electrical instrumentality operable by said cams.

3,435,389
ELECTROMAGNETIC CONTACTOR HAVING CAM MEANS FOR OPERATING AUXILIARY SWITCH
Charles R. Mikolic, Milwaukee, and Lawrence A. Burton, Oconomowoc, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 19, 1967, Ser. No. 631,935
Int. Cl. H01h *67/02, 51/00*
U.S. Cl. 335—121 **34 Claims**



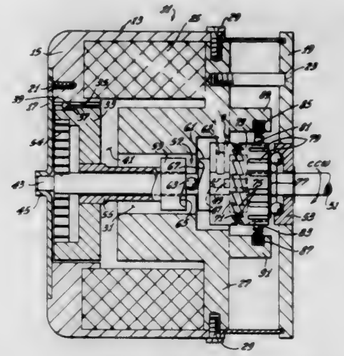
An electromagneitc contactor having a contact carrier provided with an inclined plane camming slot and an auxiliary switch having floating contacts operated by a cam follower movable perpendicular to the operating direction of the contact carrier to eliminate the reaction force of the auxiliary switch on the electromagnet in the operated position.

3,435,390
ACTUATOR HAVING RELEASABLE LATCH
Frank P. Spinelli, Brookside, and Dominik M. Wiktor, Cranford, N.J., assignors to Automatic Switch Company, a corporation of New York
Filed Oct. 26, 1967, Ser. No. 678,261
Int. Cl. H01h *9/20*
U.S. Cl. 335—161 **10 Claims**



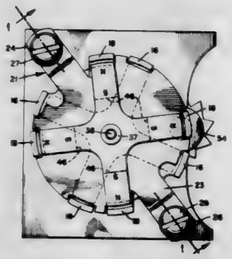
Bar, which may be used to actuate relay switches, is moved in one direction via latch carried by an activating operator, which may be a solenoid armature. Trip operator, which may be another solenoid armature, arranged to rotate a member pivoted to the bar causing release of the latch and movement of bar in other direction. Bar moves transversely as well as longitudinally, and spring pressure on its lateral edges holds bar in its extreme positions. Springs may be part of switches.

3,435,391
ELECTROMAGNETIC LINEAR-TO-ROTARY MOTION STEPPING MECHANISM
Joseph E. Straub, Manhattan Beach, Calif., assignor to Solenoid Devices, Inc., Redondo Beach, Calif., a corporation of California
Filed Sept. 28, 1966, Ser. No. 582,685
Int. Cl. H01f *7/08, 7/18;* **H02k** *7/06*
U.S. Cl. 335—228 **14 Claims**



1. In a stepping mechanism, the combination of:
a movable member;
coil means for moving said movable member along a path;
an output shaft; and
drive means for drivingly interconnecting said movable member and said output shaft, said drive means including converter means for driving said output shaft in rotation in response to movement of said movable member along the path, driving and driven ratchets engageable with each other to allow said movable member to drive said output shaft and disengageable to prevent said movable member from driving said output shaft, and means for substantially preventing operation of said converter means when said ratchets are disengaged.

3,435,392
ALTERNATING CURRENT ROTARY SOLENOID HAVING A ROTOR WITH PERMANENT MAGNET POLES
Chester V. Ouellette, Manchester, and William A. Knecht, New Hartford, Conn., assignors to Consolidated Electronics Industries Corp., New York, N.Y., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,796
Int. Cl. H01f *7/00, 7/08*
U.S. Cl. 335—230 **9 Claims**



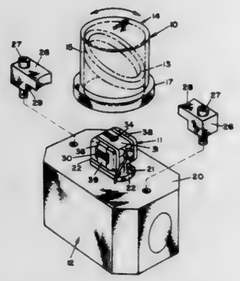
A rotary solenoid having a coil and a set of stator poles energized thereby and extending parallel to each other with a rotor having permanent magnetic poles pivotally mounted coaxially with respect to the stator poles. The

rotor poles are close to the stator poles and in the absence of any magnetic field produced by the coil are attracted to one or the other of the sets of stator poles to pivot the rotor to one of two permissible positions. Indicia may be placed on the rotor to cooperate with fixed indicia to indicate the position of the rotor or the rotor may be connected by a ratchet to a gear mechanism to operate as a prime mover.

3,435,393
NULL ADJUSTOR FOR MAGNETICALLY OPERATED TORQUE MOTORS

William H. Meisel, Columbus, Ohio, assignor to Abex Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 26, 1967, Ser. No. 611,990
Int. Cl. H01h 7/00, 7/08
U.S. Cl. 335—237 10 Claims

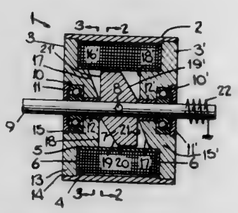


A device for adjusting the null point of a magnetically operated torque motor, including an annulus or loop of magetically permeable material angularly surrounding the torque motor, and a support mounting the loop for adjustably rotating the loop about an axis substantially perpendicular to the axis of the armature.

3,435,394
ELECTROMAGNETIC CONTROL DEVICE

Linus Egger, Uerikon, Seeblick, Switzerland, assignor to Heberlein & Co. A.G., Wattwil, Switzerland, a corporation of Switzerland

Filed May 4, 1966, Ser. No. 547,666
Claims priority, application Switzerland, June 16, 1965, 8,434/65
Int. Cl. H01f 7/08, 7/14; H01h 67/06
U.S. Cl. 335—272 6 Claims

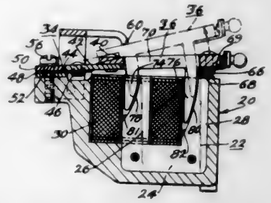


Electromagnetic control effecting angular positioning. Electromagnetic includes coil, ferromagnetic core having sleeve surrounding coil and end caps closing the same and rotatable shaft positioned in core. An armature is fixed to shaft and has surfaces opposed each end cap; opposing surfaces of caps and armature are shaped to provide air gap configuration which produce upon constant excitation of coil constant torque over extended range of shaft movement. Spring is provided to bias shaft to prevent rotation; stop means is also provided for positioning shaft in mentioned torque range and for holding against spring. Upon excitation shaft will assume angular position corresponding where torque of shaft equals force of spring.

3,435,395
ROTARY ELECTROMAGNETIC ACTUATOR HAVING LINEAR RESPONSE CHARACTERISTICS

Merton I. Rosenberg, Springfield, Mass., and John A. Kimberley, Granby, Conn., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York

Filed Aug. 8, 1966, Ser. No. 570,802
Int. Cl. H01f 7/08, 3/00
U.S. Cl. 335—276 20 Claims

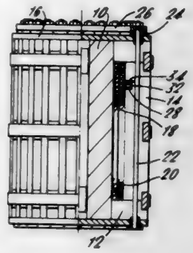


A rotary solenoid actuator combining high force capability with linear response characteristics, using a low-reluctance magnetic stator and a rotating magnetic armature having a curved surface coaxial with an adjacent curved surface of the stator and in partially overlapping relation thereto, the armature rotating about the axis of the two surfaces to change the extent of overlap. The non-fringing flux between the two curved surfaces exerts substantially only a radial force on the armature (i.e. no sideways force and no appreciable torque), and rotation of the armature is due to fringing flux between armature and stator, which flux is caused to remain substantially constant with changes in angle of the rotor for a given current to the actuator, over a wide range of angle of the armature.

3,435,396
VARIABLE CONTACT ARRANGEMENT FOR ELECTRIC COILS

George W. Poulton, George St., Industrial Estate, Bridgend, Glamorganshire, Wales

Filed Apr. 28, 1966, Ser. No. 546,070
Int. Cl. H01f 29/06; H01c 5/00
U.S. Cl. 336—139 12 Claims

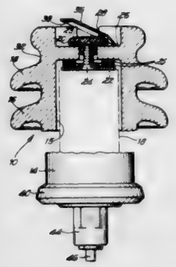


An electric coil assembly including a continuous magnetic circuit on the center limb of which a coil is wound. A contact arrangement is mounted within the space between the coil and the outer limbs of the core, the contact arrangement being movable so as to follow the turns of the coil whilst remaining in continuous electrical contact therewith. External electrical connection is made to the coil by way of the contact arrangement.

3,435,397
COMBINATION OVERVOLTAGE PROTECTIVE DEVICE AND CONDUCTOR SUPPORT

Edward L. Sankey, New Berlin, and Herman O. Stoelting, Cudahy, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,216
Int. Cl. H01h 39/00
U.S. Cl. 337—34 5 Claims

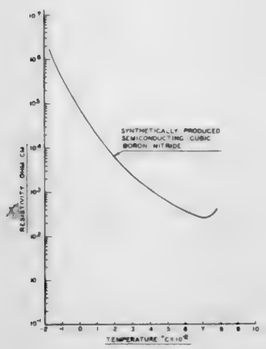


A hollow insulator supported intermediate its end and having means at one end for supporting a line conductor and means for supporting a ground conductor at its other end. Overvoltage protective means is disposed within the insulator for interrupting voltage surges, and means are provided at the other insulator end for disconnecting the ground conductor in the event the overvoltage protective device fails wherein the insulation level of the conductor support is not impaired.

3,435,398
THERMISTOR DEVICE AND METHOD OF PRODUCING SAID DEVICE

Peter J. Gielisse, Bloomfield Hills, and Manfred Doser, Edmore, Mich., assignors to General Electric Company, a corporation of New York

Filed Apr. 19, 1966, Ser. No. 543,588
Int. Cl. H01c 7/04, 17/00; H01b 1/02
U.S. Cl. 338—22 11 Claims

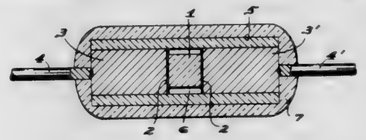


A thermistor device in which the resistance material is single crystal cubic boron nitride. The thermistor has a coefficient of restivity in excess of 0.05 over a continuous temperature range including room temperature in excess of 500° C. The semiconducting cubic boron nitride crystal is doped with beryllium, sulfur, selenium, boron, silicon or germanium homogeneously distributed throughout the crystal and is bonded by ohmic contact to two electrically conductive leads.

3,435,399
THERMISTOR DEVICE AND METHOD OF PRODUCING SAID DEVICE

Peter J. Gielisse, Bloomfield Hills, and Manfred Doser, Edmore, Mich., assignors to General Electric Company, a corporation of New York

Filed Apr. 19, 1966, Ser. No. 543,649
Int. Cl. H01c 7/04
U.S. Cl. 338—22 16 Claims

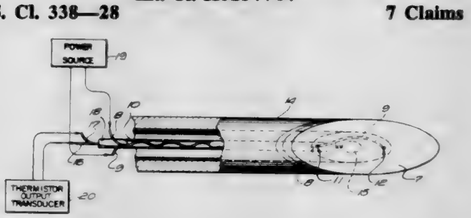


A thermistor device in which the resistance material is a semiconducting single crystal diamond. The thermistor has a coefficient of resistivity in excess of 0.05 over a continuous temperature range including room temperature in excess of 500° C. The semiconducting diamond crystal is doped with boron, aluminum or beryllium, homogeneously distributed throughout the crystal, and is bonded by ohmic contact to two electrically conductive leads.

3,435,400
THERMAL PROBE

Paul Beckman, 944 Henrietta Ave., Huntingdon Valley, Pa. 19006

Filed Jan. 26, 1966, Ser. No. 523,196
Int. Cl. H01c 7/04
U.S. Cl. 338—28 7 Claims

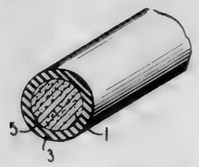


A miniature thermal probe is formed by a small-diameter tube having its tip closed by an electrically and thermally isolated metallic membrane which develops localized I^2R heating effects as the result of currents forced across it via spaced internal electrical contacts; a minute thermistor is disposed within the tube in close proximity with the heater membrane and is connected in an independent electrical output circuit.

3,435,401
INSULATED ELECTRICAL CONDUCTORS

Henry David Epstein, Cambridge, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 5, 1966, Ser. No. 584,386
Int. Cl. H01c 3/04, 7/02
U.S. Cl. 338—214 1 Claim



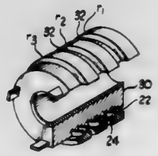
An insulated self-protective electrical conductor is made by bringing into interfacial engagement a conductive polymer and an insulating polymer, each of which is cross-linkable. Conductivity in the conductive polymer is effected by the inclusion therein of conductive particles

such as carbon black or a metal so as to provide a nonlinear positive temperature coefficient of resistance. The conductive polymer is the sole current-carrying member between terminal points of the conductor. Engagement between the conductive and insulating polymers is performed by extrusion to form elongate conductors, or in a press to form planar devices such as heating tiles, circuit boards and the like. In either case, upon or shortly after said engagement, cross-linking of the polymers is induced by a suitable catalyst, irradiation or the like. The cross-linking occurs in each polymer to improve it and also occurs across the interfacial contact between the polymers to produce a tough strongly bonded insulated conductor which protects itself and electrical apparatus which it serves from excessive currents and any destructive temperatures which might otherwise result.

3,435,402
SLIP RING ASSEMBLY AND PROCESS OF MANUFACTURING SAME

Herman E. Smith, Park Forest, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Mar. 30, 1966, Ser. No. 538,769
Int. Cl. H01r *39/00, 9/08, 43/00*
U.S. Cl. 339—5 **2 Claims**

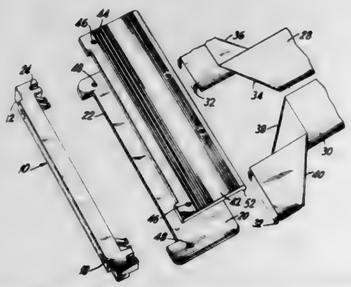


A slip ring assembly and its method of manufacture whereby a slip ring is produced from an elongated, generally rectangular, flat strip of conductive material molded to a central non-conductive core member, the resultant slip ring comprising a cylindrical insulating core member, a plurality of spaced-apart conductive rings disposed on the periphery of the core member and a plurality of leads, each lead integral with a conductive ring, the lead extending radially inwardly and axially through the core member.

3,435,403
MULTICONDUCTOR CABLE CONNECTOR ASSEMBLY

John J. Churla, Raritan, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey

Filed Aug. 29, 1966, Ser. No. 575,684
Int. Cl. H01r *23/44;* **H05k** *1/07*
U.S. Cl. 339—17 **7 Claims**

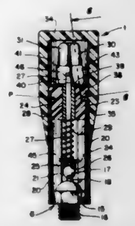


A multiconductor cable connector assembly which comprises a connector having a plurality of terminal pins with rearwardly extending downwardly angled terminal portions. Multiconductor flat cable having a plurality of insulated conductors stripped of insulation at the ends thereof are abutted against the downwardly angled portions of the pins of the connector and electrically connected thereto. A rigid lower member and an upper strain relief member are provided, the lower member being affixed to the connector and the strain relief member being affixed to the lower member. The multiconductor flat cable is sandwiched between the lower and strain relief members.

3,435,404
GLOW PLUG CONNECTOR

Jumpei Kato, Toyonaka, Japan, assignor to Royal Products Incorporated, Denver, Colo., a corporation of Colorado

Filed Sept. 28, 1967, Ser. No. 671,292
Int. Cl. H01r *13/44, 13/50;* **F02b** *43/08*
U.S. Cl. 339—26 **6 Claims**

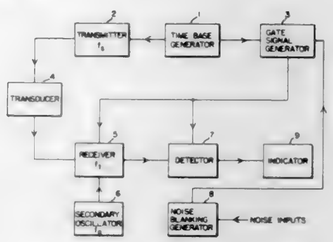


A glow plug connector removably mounted in a model airplane engine or the like having a spring pressed movable contact for engaging the central terminal of the glow plug and a hexagonal leaf spring arrangement for gripping the hex body of the glow plug, so that the connector may be merely snapped onto or off the glow plug.

3,435,405
ULTRASONIC VEHICLE PRESENCE DETECTOR

Sten I. Persson, Naples, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed May 22, 1967, Ser. No. 640,022
Int. Cl. G01s *9/66*
U.S. Cl. 340—1 **5 Claims**



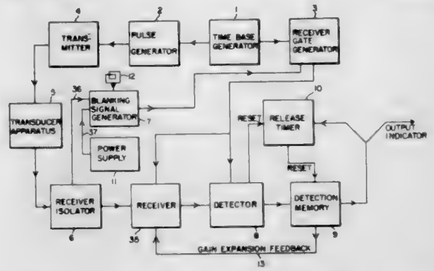
Apparatus for indicating the presence of objects, where ultrasonic energy is emitted by an electroacoustical transducer in a direction intercepting the predetermined path of moving objects and energy reflected from the surface of the objects produces responding signals in the transducer. The electrical signals generated in response to the reflected energy are conducted to a receiver sharply tuned to the sum frequency of the transmitted ultrasonic pulse and a secondary oscillator signal. The received electrical signals, of essentially single ultrasonic frequency content, are mixed in the receiver with the signal of the secondary oscillator thus producing a frequency summation signal. The receiver is rendered responsive for gated periods encompassing only the anticipated time for receipt of electrical signals relative to the energy reflected from

the object surface and is rendered unresponsive by a blanking signal generated in response to electrical noise transients. The receiver, when not rendered unresponsive by the blanking signal produces a manifestation of object presence in response to reflected signals received during the gated periods.

3,435,406
SONIC VEHICLE DETECTOR USING NOISE BLANKING

Donald R. McCauley, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 17, 1967, Ser. No. 631,525
Int. Cl. G01s *9/66*
U.S. Cl. 340—1 **3 Claims**

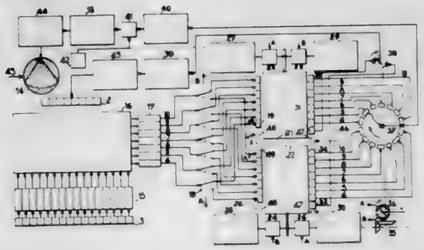


An apparatus for detecting the presence of a vehicle where reflected sonic energy from the surface of the vehicle is recognized and false signals due to electrical noise are rejected. An acoustical transducer emits sonic energy toward the predetermined path of moving vehicles and responds to energy reflected from the vehicle surfaces. A receiver detects the transducer signals and indicates the presence of the vehicle. A noise blanking signal generator senses radiated and conducted electrical noise and suppresses the receiver response for a period contemporaneous with the presence of the electrical noise signals thus rendering the detector apparatus immune to false indications of vehicle presence.

3,435,407
HIGH SPEED SYSTEM FOR PROCESSING LONG RANGE SONAR PULSES

Jean Bertheas, Paris, France, assignor to CSF Compagnie Generale de Telegraphie, a corporation of France

Filed June 24, 1966, Ser. No. 560,340
Claims priority, application France, June 29, 1965, 22,670
Int. Cl. G01s *9/66*
U.S. Cl. 340—3 **8 Claims**

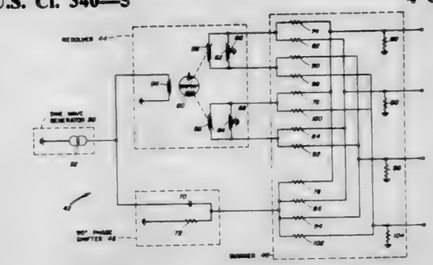


The present invention relates to long range sonar systems comprising a plurality of receiving channels wherein frequency modulated pulses are simultaneously available. The information processing system according to the invention comprises multitrack recording and reproducing means which transform N simultaneously received information items into a sequence of N similar items having a reduced duration. Dispersive means are provided for further reducing the duration of said items.

3,435,408
MULTIMODE HYDROPHONE TRANSDUCER SIMULATOR

Roy C. Moore, Bristol, R.I., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 19, 1967, Ser. No. 668,970
Int. Cl. H04b *13/02*
U.S. Cl. 340—5 **4 Claims**



An electrical circuit for simulating the output of a multimode hydrophone transducer as the transducer is exposed to any plane acoustic wave. The output of a signal generator, which represents the plane acoustic wave, is simultaneously applied to both a resolver, which multiplies the signal by $\pm\sin\phi$ and $\pm\cos\phi$, where ϕ is any preset azimuthal arrival angle of the wave, and to a 90° phase shifter. The outputs of the resolver, as well as that of the phase shifter, are combined in a summer which yields four resultant outputs of $(\sin\phi+\cos\phi+j1)$, $(\sin\phi-\cos\phi+j1)$, $(-\sin\phi-\cos\phi+j1)$ and

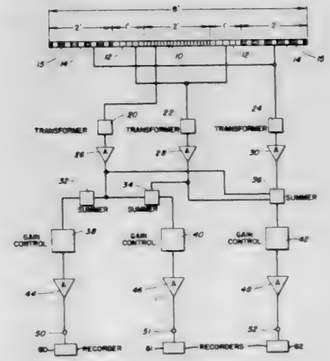
$$(-\sin\phi+\cos\phi+j1)$$

each multiplied by the output signal from the signal generator, thereby simulating the transducer output in response to such signal.

3,435,409
LINE ARRAY HYDROPHONE AND SYSTEM

Joseph M. Bringman, James M. Lawther, and Paul M. Kendig, Centre County, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 26, 1967, Ser. No. 678,247
Int. Cl. H04b *13/02*
U.S. Cl. 340—6 **8 Claims**



A line array hydrophone utilizing lead titante zirconate low Q cylinders divided into three sections. All

three sections are used for low frequency detection, two for intermediate frequencies, and one for upper range frequencies.

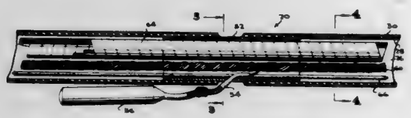
A hydrophone system which provides reception at constant directivity over a band three octaves wide having three channels of receiving electronics servicing a line array. In addition, a system having portions of the array feeding electronic receivers which are selectively filtered and combined to provide extended bandwidth capability with a single receiver channel.

3,435,410

SHALLOW WATER SEISMIC PROSPECTING CABLE

John J. Babb, Jackson, Miss., assignor to Delta Exploration Company, Inc., Jackson, Miss., a corporation of Mississippi

Filed May 20, 1968, Ser. No. 730,503
Int. Cl. H04b 13/02
U.S. Cl. 340—7 10 Claims



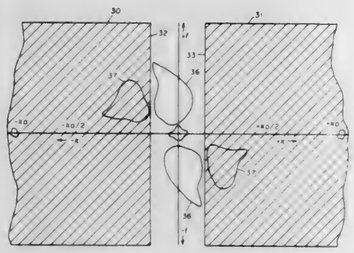
A shallow-water seismic cable having an elongated flexible enclosing tube which is inflatable and deflatable by an increase and decrease in internal pressure for causing the cable to float or sink with a hollow radially rigid tubular member having an outer diameter less than the inner diameter of the flexible tube located within the flexible tube and a multi-conductor wire cable also within the flexible tube exteriorly of the rigid tubular member so that the radially rigid tubular member prevents complete collapse of the enclosing tube upon reduction of pressure within the enclosing tube.

3,435,411

SEISMIC WAVELENGTH FILTERING IN OPTICAL DATA PROCESSING

Philip L. Lawrence, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Aug. 29, 1967, Ser. No. 664,116
Int. Cl. G01v 1/00
U.S. Cl. 340—15.5 2 Claims



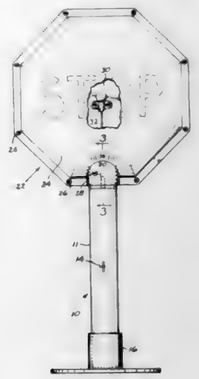
The specification discloses an optical data processing technique for filtering apparent wavelengths on a multitrace seismic section. In low-pass operations this frequency plane process can be interpreted in terms of weighted trace compositing.

3,435,412

TRAFFIC CONTROL SIGNAL

Albert H. Bohrer, Sr., 11104 NE. Wygant, Portland, Oreg. 97220

Filed Nov. 26, 1965, Ser. No. 510,003
Int. Cl. B60q 1/00
U.S. Cl. 340—107 5 Claims



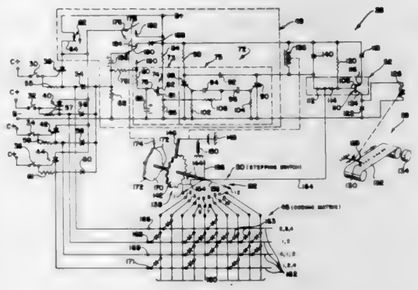
A hollow, transparent triffic signal head is divided into two compartments by an electrically conductive shield which mounts a light in each compartment and forms a common electrical conductor for both lights, each of which also has a separate conductor. A hollow handle contains at least one dry cell battery which is connected through electrical conductors and a three-position switch to two pairs of electrical contacts detachable engageable with the conductors in the signal head, the switch functioning selectively to complete the circuit of each light.

3,435,413

APPARATUS AND METHOD FOR TRANSLATING A NONDESCRIPT SIGNAL INTO A DISTINCTIVE RECORDABLE SIGNAL

Foster E. Weld, Newton Highlands, Mass., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed June 7, 1965, Ser. No. 462,028
Int. Cl. G11b 5/78; G08b 25/00
U.S. Cl. 340—147 12 Claims



Apparatus and method are as disclosed herein for use in translating a nondescript signal representative that a predetermined condition has occurred at a local station into a descriptive pattern of coded recordable pulses. The apparatus includes means, such as a signal generator, for purposes of providing a steady state output signal. A pulse generator serves to provide a train of time spaced pulses. A coding matrix serves to receive the output signal and provide a characteristic pattern of signal pulses

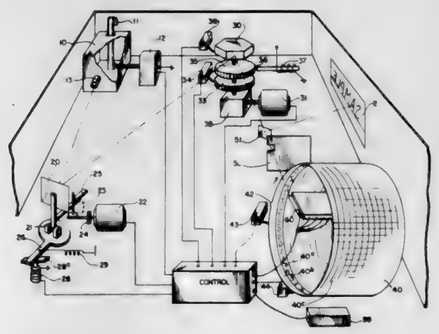
at a plurality of output circuits which are representative of a particular local station. A stepping mechanism responds to the generated pulses for purposes of sequentially stepping one step at a time for each generated pulse and from one of the output circuits to the next. A gating circuit responds to the signal pulses and the generated pulses for developing a recordable pulse only upon occurrence in time of a generated pulse in the absence of a signal pulse. This gating circuit is adapted to be connected to a recording mechanism for recording an indication for each recordable pulse.

3,435,414

PRINT READING SYSTEMS

James G. Hamrick, Rockville, Milton O. Lee, Bethesda, and Ariadne L. Loewenthal and Rudolf Loewenthal, Rockville, Md., assignors, by mesne assignments, to Numo-Trans Data Corporation, Bethesda, Md., a corporation of Maryland

Filed Jan. 5, 1965, Ser. No. 423,541
Int. Cl. G06k 9/08; G06f 11/04
U.S. Cl. 340—146.3 20 Claims



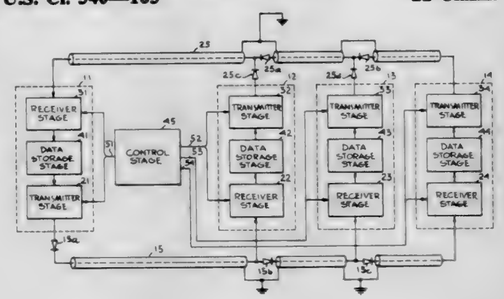
A compact machine for automatically reading documents printed with particular font styles, samples of which have been pre-recorded on a cyclically repeating member so that each character in the document can be compared with the pre-recorded series of characters to obtain an exact match. When a match is obtained, the machine reads out a signal uniquely representing the matched character and comprising a "machine" language, such as a binary code, which is suitable for use with computers, printing machines, etc., and can be readily recorded for storage. The illustrative embodiment reads and advances microfilmed documents, and includes means for presetting the maximum width of the lines of print, the maximum number of lines per page, and means for rapidly scanning blank areas on a page to save time in the reading process. Additionally, a further time saving feature includes means for noting the set-width of each character identified, and means for advancing the scan along that line of print by exactly that set-width as soon as an exact match occurs so that the matched symbol is promptly moved just out of the matching zone to make way for the next. Those characters having strong mutually-similar characteristics are arranged on the pre-recorded member in such a sequence that the simplest character becomes a candidate for matching before the next more complicated similar character, this sequence avoiding ambiguities of matching. Since the criterion is substantially a "perfect" match, the present system adjusts its matching sensitivity according to the area of each pre-recorded character as it arrives in the matching zone so that for very large characters the system is less sensitive to minor mismatches than for very small characters whose total area is not much greater than the possible mismatch area of a very large character. Provision is made for attempting each match in plural displaced positions designed to take account of possible minor misalignments of characters on a printed page, but after several such attempts if the machine encounters a character it cannot match, it stops and indicates a failure, and an operator can then manually enter a suitable character from a keyboard supplied for this, and other, purposes.

3,435,415

COMMON CABLE COMMUNICATION SYSTEM INCORPORATING ISOLATION DIODES

Sung Pal Chur, Inglewood, Calif., assignor to Data Products Corporation, Culver City, Calif., a corporation of Delaware

Filed Aug. 2, 1965, Ser. No. 476,468
Int. Cl. H04g 1/18
U.S. Cl. 340—163 22 Claims



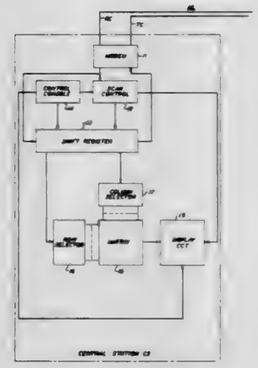
A common cable communication system in which a low characteristic impedance coaxial cable connects a master unit with a plurality of secondary units. The cable incorporates a plurality of diodes which isolate all the secondary diodes, except the one with which the master unit communicates. At any time, only the portion of the cable between the master unit and the secondary unit, which is communicated with, is activated, with the rest of the cable being deactivated by the diodes.

3,435,416

MONITORING AND CONTROL SYSTEM

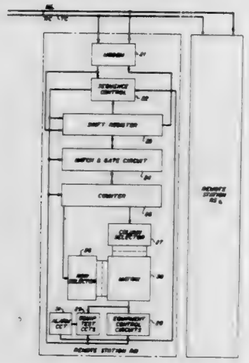
Kenneth P. Kretsch, Middletown, and Edward F. Lyons, Franklin Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 29, 1964, Ser. No. 407,340
Int. Cl. H04q 9/02
U.S. Cl. 340—163 15 Claims



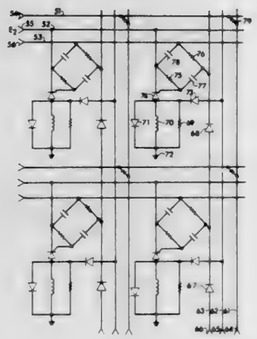
In a condition monitoring and control system, a plurality of remote stations are individually selected for monitoring or control by a central station. Upon receipt of a com-

mand from the central station, scanning circuitry at a selected remote station monitors the status of a plurality of test points, and alarm circuitry signals the location of



any malfunctions back to the central station. To effect control, the same remote station scanning circuitry is used to direct a control instruction to the test point where corrective action is desired.

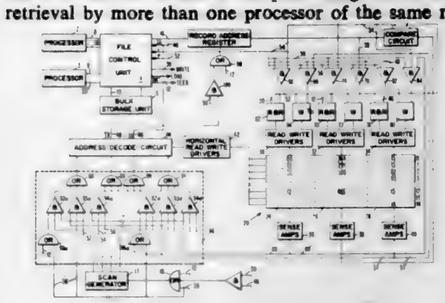
3,435,417
ELECTRONIC SWITCHING SYSTEM
Ernest F. Haselton, Jr., West Concord, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 4, 1965, Ser. No. 477,166
Int. Cl. H04q *3/00*
U.S. Cl. 340—166 **10 Claims**



A parallel hold technique is employed to maintain the closure of relay crosspoints while retaining the series control aspect of existing switching networks. The parallel hold connection through the network is provided by employing diodes connected between the relay control coils and the switching system hold lines and by connecting each relay control coil between a selected control line and a point of reference potential.

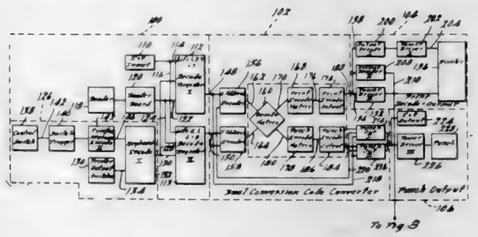
3,435,418
RECORD RETRIEVAL AND RECORD HOLD SYSTEM
James R. Evans, Endicott, and Thomas H. Rowe, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,400
Int. Cl. G11b *13/00, 5/00;* **G11c** *15/00*
U.S. Cl. 340—172.5 **3 Claims**

The present invention pertains to a record retrieval circuit for use in a data processing system comprising a bulk storage unit for storing a plurality of records operating in a response to a plurality of central processing units. Means are included for preventing the concurrent retrieval by more than one processor of the same record



held in the bulk storage unit. A first processing unit must finish its operation within a respective record prior to releasing that record for additional processing by a second processing unit.

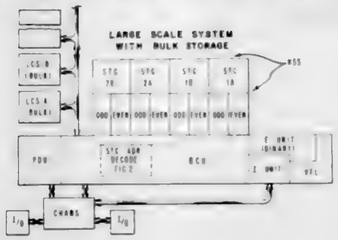
3,435,419
INPUT/OUTPUT SYSTEM
Donald R. Bernier, Detroit, Mich., assignor, by mesne assignments, to Intercontinental Systems, Inc., Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 503,861, Oct. 23, 1965. This application Oct. 31, 1966, Ser. No. 590,761
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **7 Claims**



There is herein disclosed an automatic data processing system for transferring data information from a data input device to a data utilizing device wherein portions of columns of bits are divided into X address digital pulses and a second portion of each of the columns is divided into Y address digital pulses.

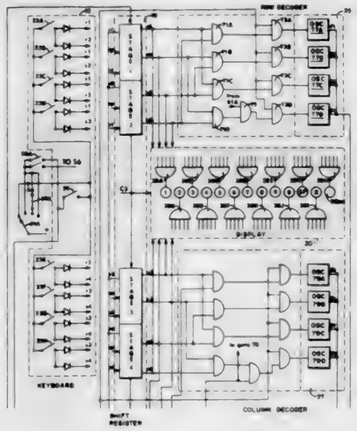
3,435,420
CONTIGUOUS BULK STORAGE ADDRESSING
William P. Wissick, Ferncliff, Rhinebeck, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,149
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **12 Claims**

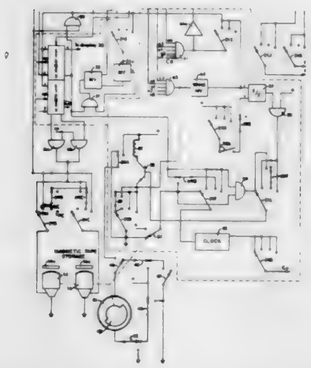
Disclosed, in the environment of one or more data processing systems, is an apparatus for contiguously addressing bulk stores and working or primary stores where the bulk stores are characterized as large but relatively slow speed and the working stores are characterized as small but relatively high speed. Contiguous addressing is achieved by providing address wrap-around on a storage unit basis. Each bulk store is addressed so that its higher-ordered storage locations are accessed with an address which is shifted by an amount equal to the address field size of the working store. Addresses exceeding those in the highest-ordered storage locations within a bulk store are utilized to reach the storage locations at the lower-ordered end of that bulk store. Addresses in excess of those used to reach the lowest-ordered location of the first bulk store are utilized to reach the higher-ordered



end of a next bulk store, and so on. Addressing is thereby contiguous and is transposed on a wrap-around fashion on a store-by-store basis.

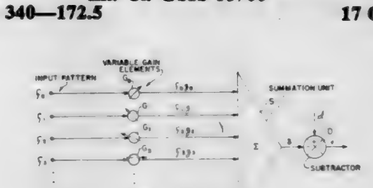
3,435,421
APPARATUS FOR COMPOSING MESSAGES FOR TELEPHONIC TRANSMISSION
Kenneth R. Sharples, Braintree, Mass., assignor, by mesne assignments, to DASA Corporation, Andover, Mass., a corporation of Massachusetts
Filed Apr. 7, 1966, Ser. No. 540,866
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **4 Claims**





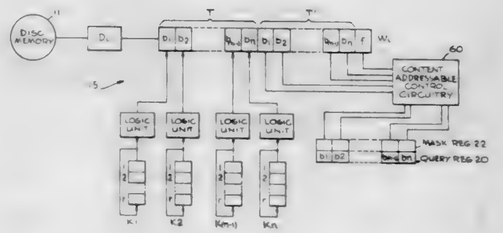
Apparatus for encoding a message to be transmitted in which means are provided for visually verifying the message before transmission. First and second magnetic recorders are provided, the first being operative to store coded data representing a message being compiled and the second being operative to store a verified message which is selectively stored in the second recorder from the first recorder and from a manually operable keyboard.

3,435,422
SELF-ORGANIZING SYSTEM
Lester A. Gerhardt, Tonawanda, Johannes G. Goerner, Buffalo, and Frederic D. Powell, Niagara Falls, N.Y., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed June 27, 1966, Ser. No. 560,561
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **17 Claims**



Self-organizing devices which are of distributed parameter form, i.e., all computations being distributed over a number of independent computing elements. These computing elements are variable gain elements which are adjusted as to their individual gains in accord with an algorithm employing the partial derivative of the square of an error signal with respect to the individual gains. The self-organizing devices may be employed in various systems in combination with entities having some established transfer function or intrinsic response to model the transfer function of the entity, to form the inverse of the transfer function of the entity, or to provide some desired transfer function in combination with the entity.

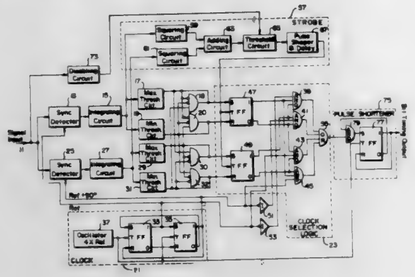
3,435,423
DATA PROCESSING SYSTEM
Richard H. Fuller, Sherman Oaks, Ju C. Tu, Sylmar, and Robert M. Worthy, Hollywood, Calif., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,604
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **16 Claims**



A digital data storage and retrieval system using associative memory techniques to simultaneously search in parallel the bit streams serially read from the tracks of a disk memory. The bits are compared, bit by bit, with the bits of a plurality of key registers. During each bit comparison, one bit from each of a plurality of records is compared with a bit of each of a plurality of characters in the key registers, resulting in a multi-record, multi-character, simultaneous search. The determination of the

presence of positive comparison between records and the characters in the registers is stored in the records as a flag. After searching the entire memory, the flag records are read out in accordance with the requestor's desired purpose.

3,435,424
SYNCHRONIZING SYSTEM
John J. Schira, Westland, William R. Saddler, Detroit, and Thomas J. Dragon, Southfield, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 3, 1967, Ser. No. 620,492
Int. Cl. H03k *5/20*
U.S. Cl. 340—172.5 **15 Claims**



A data bit timing system for synchronizing local clock pulses with the data bits of a digital information signal received at random phase and under adverse environmental conditions. The phase of a periodically received synchronization preamble signal is detected relative to several local reference signals by synchronous detectors, the outputs of which are integrated to produce an analog signal. The analog signal is digitalized by threshold circuits and logic gates to quantize the phase of the preamble signal into one of four 90° phase intervals. The digitalized outputs drive flip-flop and logic gate circuitry which selects and holds in memory one of the local reference signals as a clock signal for sampling subsequently received data bits near their centers. The particular reference signal selected as a clock depends on the detected phase of the received preamble signal. Strobe circuitry triggers the clock selection logic into a new memory-hold configuration each time a preamble signal is received, so that continuous optimum synchronization is maintained between the clock signal and the data bits of a message.

3,435,425
STORAGE DEVICE WITH READOUT SYSTEM AND HAVING PHOTOCONDUCTORS AND FERROELECTRIC DEVICES
Charles W. Hastings, Lauderdale, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,786
Int. Cl. G11b *9/02*
U.S. Cl. 340—173.2 **10 Claims**

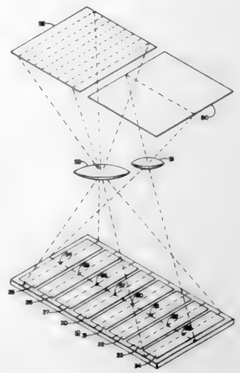
2. Information storage apparatus comprising, in combination:

a load means;

a first photoconductive medium positioned adjacent said storage medium, said first photoconductive medium becoming conductive in response to electromagnetic radiation within a first wavelength range;

a second photoconductive medium positioned adjacent said first photoconductive medium, said second photoconductive medium becoming conductive in response to electromagnetic radiation within a second wavelength range;

means for supplying a signal connected across said load means and said first and second photoconductive mediums;

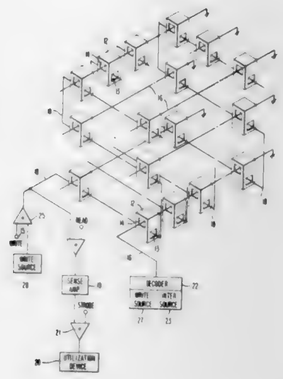


means for supplying electromagnetic radiation of wavelengths within said first wavelength range;

means for supplying electromagnetic radiation of wavelengths within said second wavelength range; and

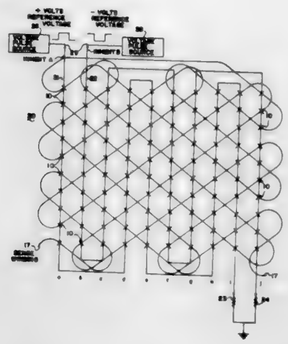
means for focusing the electromagnetic radiation in crossed beams of radiation on said first and second photoconductive mediums.

3,435,426
METHOD AND APPARATUS FOR NONDESTRUCTIVE MEMORY DEVICES
George H. Barnes, West Chester, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 3, 1963, Ser. No. 270,230
Int. Cl. G11c *11/08*
U.S. Cl. 340—174 **19 Claims**



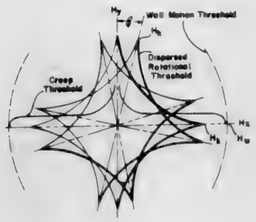
The present disclosure describes a method and apparatus for writing information into magnetic memory elements having nonintersecting multiple apertures, and in which said writing uses only first and second electrical conductors threaded respectively through separate apertures of the memory element in an orthogonal direction. The orthogonal write operation is performed by applying in at least partial coincidence, a single bidirectional pulse doublet and an information pulse to respective ones of said first and second electrical conductors.

3,435,427
MAGNETIC MEMORY SYSTEM FOR THE STORAGE OF DIGITAL INFORMATION
Orville L. Schaefer, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,219
Int. Cl. G11b *5/62;* **G11c** *11/48*
U.S. Cl. 340—174 **12 Claims**



A coincident current memory system is disclosed which includes an inhibit winding comprising a plurality of parallel segments. Voltage pulses of relatively opposite polarity are provided to alternate segments to cancel or to prevent capacitive coupling in the sense winding.

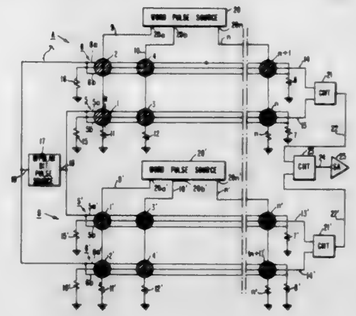
3,435,428
DISPERSION LOCKED MEMORY
Bruce I. Bertelsen, Hans G. Hottenrott, and Herbert J. Kump, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,858
Int. Cl. G11b *5/00;* **H01f** *7/06*
U.S. Cl. 340—174 **26 Claims**



Interaction of two or more regions of uniform magnetization having non-parallel easy axes for stabilizing the magnetization in the vicinity of respective hard axes of the regions, and methods and apparatus for using the interaction for recording and reading signals in the easy and hard directions are described herein.

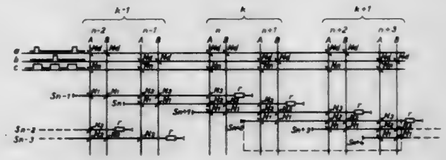
3,435,429
MAGNETIC FILM STORAGE SYSTEMS PROVIDING CANCELLATION OF SPURIOUS NOISE SIGNALS
Quinton W. Simkins, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1964, Ser. No. 379,165
Int. Cl. G11b *5/06*
U.S. Cl. 340—174 **16 Claims**

A magnetic film storage system in which spurious noise signals, arising from capacitive coupling between word lines and sense lines and, also, from inductive coupling



between bit and sense lines, are effectively cancelled by utilizing half bit lines.

3,435,430
MULTISTAGE MAGNETIC SHIFT REGISTER WITH EACH STAGE HAVING FOUR CORES
Hans Georg Bengtsson, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 13, 1964, Ser. No. 410,958
Claims priority, application Sweden, Dec. 19, 1963, 14,196/63
Int. Cl. G11b *5/00,* **H01f** *35/00;* **H03k**
U.S. Cl. 340—174 **1 Claim**

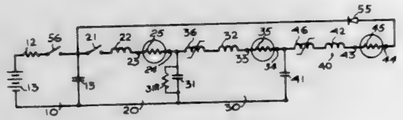


A magnetic shift register comprises a plurality of stages, each stage having a first and a second substage and each substage having two magnetic cores with a plurality of windings. The windings are arranged such that when the two cores of the one substage are in a "1"-state and the two cores of the preceding substage and the two cores of the succeeding substage are in a "0"-state and a predetermined sequence of pulses is fed to certain ones of the core windings, the first core in the "1"-state will be switched to the "0"-state and then the second core initially in the "1"-state will be switched to the "0"-state, whereupon the two cores in the succeeding substage will be switched to the "1"-state.

3,435,431
MULTIPULSE CURRENT DRIVER COMPRISED OF A PLURALITY OF STAGES, EACH OF WHICH HAS A HIGH Q AT RESONANCE
Clarence H. Heckler, Palo Alto, and James A. Baer, Menlo Park, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Feb. 8, 1965, Ser. No. 430,949
Int. Cl. G11b *5/44;* **G11c** *11/02;* **H03k** *3/28*
U.S. Cl. 340—174 **14 Claims**

A multipulse driver, for sequentially providing driving current pulses to a plurality of magnetic circuits, is

disclosed. The driver comprises a plurality of driving stages arranged in a sequence, each stage used to be coupled to supply driving pulses to a different one of the magnetic circuits. Each stage includes an inductor and a capacitor, which together have a high Q at resonance to provide a high impedance in order not to affect



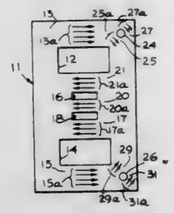
the driving pulse supplied to the magnetic circuit despite variation thereof. Each stage is further provided with a switching circuit in the form of a pulsactor, arranged so that each stage absorbs only the energy necessary to produce the driving pulse, supplying the excessive energy for use by succeeding stages in the sequence.

3,435,432

MULTIAPERTURE MAGNETIC CORE

David Ralph Bennion and William Kirk English, Menlo Park, Calif., assignors to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey

Filed Feb. 9, 1965, Ser. No. 431,337
Int. Cl. G11b 5/74
U.S. Cl. 340—174 **18 Claims**



A multiaperture magnetic core of the type used in logic circuits, such as shift registers, is disclosed. Each core is provided with a flux source branch, disposed between several of the apertures of the core. The flux source branch is inductively coupled to a driving winding so that the branch may be driven from a clear state of magnetic remanence to a set state when information is to be stored in the core. The change in state of magnetic remanence produces a change in magnetic flux distribution within the core, so that a current in a loop interconnecting the receiving core to a preceding core from which information is transferred, need only steer the magnetic flux in the receiving core to casue the distribution thereof to represent the information to be stored therein.

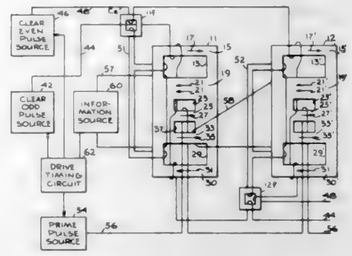
3,435,433

MAGNETIC CORE SHIFT REGISTER

David Ralph Bennion and William Kirk English, Menlo Park, Calif., assignors to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey

Filed Feb. 9, 1965, Ser. No. 431,341
Int. Cl. G11b 5/74
U.S. Cl. 340—174 **12 Claims**

A magnetic core shift register, comprising a plurality of multiaperture magnetic cores, is provided, in which currents of lower amplitudes than those required in prior art arrangements are employed to transfer desired information between succeeding cores. Each core includes two, substantially equally shaped, peripheral major apertures, between which is interposed at least one rectangularly shaped central aperture, with the center of all the



apertures being aligned on a straight line. The dimension of the central aperture along said line is not greater than the dimension of either of the peripheral major apertures along the same line.

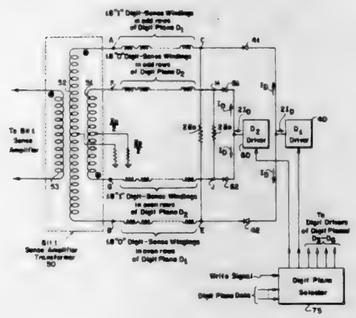
3,435,434

TWO-MAGNETIC ELEMENT MEMORY PER BIT

Donal A. Meier, Inglewood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Continuation-in-part of application Ser. No. 347,184, Feb. 25, 1964. This application Mar. 31, 1965, Ser. No. 444,349

Int. Cl. G11b 5/64, 25/00
U.S. Cl. 340—174 **16 Claims**



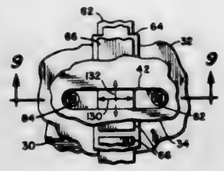
A digit-sense winding arrangement for a two-element per bit memory which provides delta noise cancellation in addition to noise cancellation provided by connecting the windings on the elements to form first and second common mode strings which are coupled to a sense amplifier transformer. The delta noise is substantially eliminated by taking advantage of the complementary nature of information stored in the respective common mode connected strings. This is accomplished by providing complementary digit currents for the two-element per bit memory which cancel out any noise signal resulting from an unbalance in the stored data pattern in one of the common mode connected strings by an equal and opposite noise signal produced by an identical stored data pattern unbalance in the other common mode connected strings.

3,435,435

SOLID STACK MEMORY

Robert J. Bergman, St. Paul, and Le Roy A. Probofsky, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,543
Int. Cl. G11b 5/00
U.S. Cl. 340—174 **12 Claims**



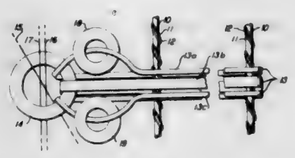
An electrically-alterable, random-access memory system that uses mated-film elements as the memory cells with orthogonally oriented drive fields.

3,435,436

DRIVE CIRCUIT UTILIZING LINEAR CORES TO CONTROL SWITCHING

Jules R. Conrath, Salisbury Township, Lehigh County, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 28, 1965, Ser. No. 505,485
Int. Cl. G11b 5/12, 5/00
U.S. Cl. 340—174 **13 Claims**



1. An access circuit for magnetic information storage devices comprising an access magnetic core, solenoid winding means having two outer and an inner parallel sections, each section being coupled to said access core and to said storage devices, means for applying switching drives to said access core for selectively inducing access currents in said winding means for a first time period and for a second, longer time period, and saturable core means coupled to said two outer sections of said winding means to inhibit said access currents in said last-mentioned sections during said first time period.

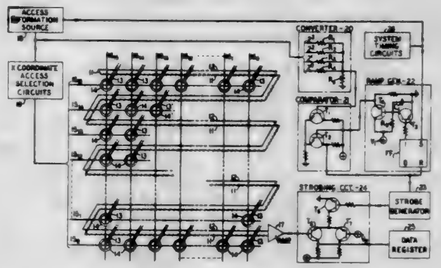
3,435,437

PULSE DELAY CONTROL CIRCUIT

Carl W. Green, Emmaus, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 17, 1965, Ser. No. 514,506
Int. Cl. G11b 5/00
U.S. Cl. 340—174 **14 Claims**

6. An information storage circuit comprising a plurality of information addresses lying in rows of a coordinate array, a continuous sensing conductor coupled to said plurality of addresses having output signal detection means connected thereto at one end, access means for each of said plurality of information addresses of said rows energized at a predetermined time responsive to binary coded signals individual to said rows for generating information output signals on said sensing conductor at particular locations in said rows, said output signals arriving at said detection means at times as determined by the row of origin of said output signals, converter means energized responsive to said binary coded signals for generating corresponding analog signals, means for generating a linearly increasing constant slope ramp signal initiated at said predetermined time, comparator circuit means energized responsive to the coincidence in amplitude of said analog signal and said ramp signal for generating a trigger signal, strobe generator means energized responsive to said trigger signal for generating a strobe signal, and circuit means energized responsive to the coincidence of an output signal from said detection means and said strobe signal for generating an information output signal.

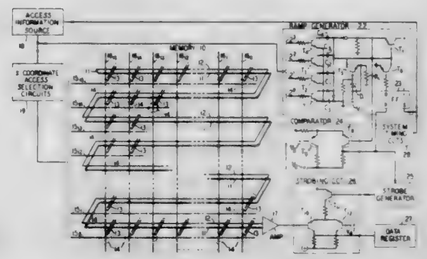


3,435,438

PULSE DELAY CONTROL CIRCUIT

William M. Regitz, Colonia, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

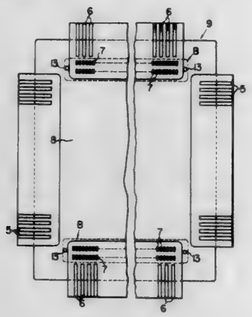
Filed Dec. 17, 1965, Ser. No. 514,585
Int. Cl. G11b 5/86
U.S. Cl. 340—174 **13 Claims**



6. An information storage circuit comprising a plurality of information addresses lying in rows of a coordinate array, a continuous sensing conductor coupled to said plurality of addresses having output signal detection means connected thereto at one end, access means for each of said plurality of information addresses of said rows energized at a predetermined time responsive to binary coded signals individual to said rows for generating information output signals on said sensing conductor at particular locations in said rows, said output signals arriving at said detection means at times as determined by the row of origin of said output signals, converter means energized responsive to said binary coded signals for generating corresponding analog signals, means including said converter means for generating a linearly increasing ramp signal initiated at said predetermined time and including means for controlling the slope of said ramp signal in accordance with said analog signal, comparator circuit means energized responsive to the coincidence in amplitude of a predetermined signal and said ramp signal for generating a trigger signal, strobe generator means energized responsive

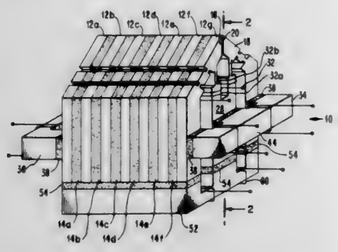
to said trigger signal for generating a strobe signal, and circuit means energized responsive to the coincidence of an output signal from said detection means and said strobe signal for generating an information output signal.

3,435,439
WOVEN TYPE, MAGNETIC MEMORY DEVICE EMPLOYING SHIELDING TERMINAL PLATES
Katsuro Nakamura, Tokyo-to, Japan, assignor to Toko Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed June 10, 1966, Ser. No. 556,773
Claims priority, application Japan, July 17, 1965, 40/43,103
Int. Cl. G11b *5/12*
U.S. Cl. 340—174 **1 Claim**



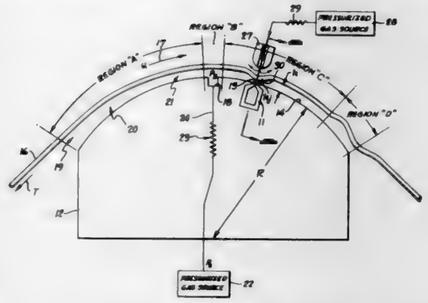
1. In a woven type memory device of the type wherein numerous magnetic thin film wires used as information lines are woven as weft members with numerous warp members consisting of conductor wires used as word lines into a fabric structure, and the ends of adjacent pairs of warp conductor wires are commonly connected to respective terminals for internal wiring connections on a supporting base plate to form word lines each consisting of coils with a selected number of turns, means to reduce noise in the information lines comprising shielding conductor plates covering parts of the base plate at and in the neighbourhood of said terminals and electrically connected to a ground plate bonded onto the base plate.

3,435,440
NULL SWEEPING HEAD
Eugene J. Nallin, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 4, 1965, Ser. No. 423,103
Int. Cl. G11b *5/24;* **G01d** *15/12*
U.S. Cl. 340—174.1 **9 Claims**



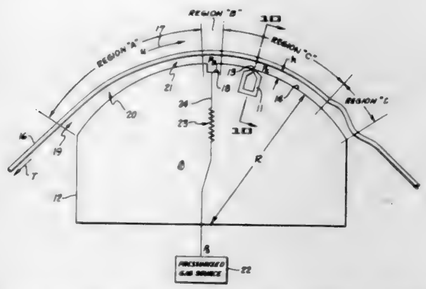
The specification discloses a magnetic recording head having a non-magnetic gap and a coil which are magnetically linked through arms of magnetic material. Pole pieces extend out from between the arms and the gap on both sides of the gap for the application of magnetic fields to saturate the magnetic arms and thus isolate the gap from the coil. These pole pieces are configured so as to go into saturation when the strength of the saturating fields exceed the strength necessary to saturate the arms. This automatically controls the magnitude of any magnetic differential across the gaps due to imbalances in the applied magnetic fields.

3,435,441
FLUID LUBRICATED MAGNETIC TAPE TRANSDUCER
Alfred F. Stahler, San Jose, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 29, 1965, Ser. No. 443,190
Int. Cl. G11b *5/72, 5/78;* **G11c** *11/02*
U. S. Cl. 340—174.1 **11 Claims**



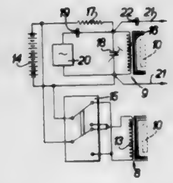
An air bearing is provided for magnetic tape moving across a magnetic transducing head. The bearing may be self-acting or externally-pressurized, and is adjustable to a relatively large head-to-tape spacing, which is reduced locally at the head gaps by means of pressurized air jets directed at the tape from the side thereof opposite the head. Besides preserving the adjustability of the head-to-tape spacing, this arrangement of jets provides a spacing that, once adjusted, remains constant despite changes in tape tension or changes in type and physical characteristics of the tape used.

3,435,442
FLUID LUBRICATED MAGNETIC TAPE TRANSDUCER
Joseph T. Ma, Los Gatos, and Roy T. Nakai, Mountain View, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 26, 1965, Ser. No. 442,860
Int. Cl. G11b *9/02*
U.S. Cl. 340—174.1 **8 Claims**



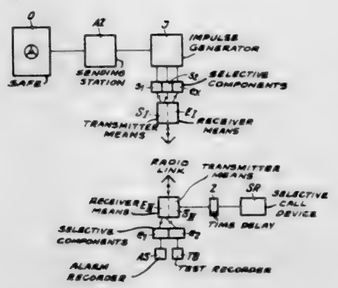
An air bearing is provided for magnetic tape moving across a magnetic transducing head. The head-to-tape spacing or air-film thickness is a function of the tape tension and radius of curvature of the head bearing surface, and is rendered adjustable by means of a recess formed in the surface upstream from the transducing gap, the recess being coupled to a variable pressure source for controlling the pressure in the groove such that this pressure, though variable, is always greater than the pressure downstream from the groove. Pressurized grooves paralleling the edges of the tape are also provided to counteract lateral leakage of air.

3,435,443
FLUX SENSITIVE TRANSDUCER WITH TUNED RESONANT CIRCUIT
Douglas William Ballantyne Muir, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Continuation of application Ser. No. 377,951, June 25, 1964. This application Mar. 22, 1968, Ser. No. 715,466
Int. Cl. G11b *5/30*
U.S. Cl. 340—174.1 **9 Claims**



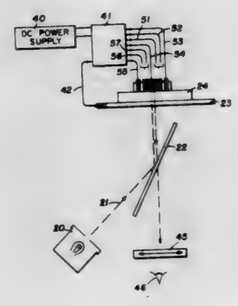
A reading head for magnetic data storage devices comprises a gapped core carrying a winding serving as part of a tuned circuit and is also supplied with a D.C. induced biasing flux in the core at such a level that when a magnetized storage element is in the gap the sense of magnetization thereof determines whether the core is saturated and hence whether the tuned circuit is in resonance with an applied A.C. signal, a substantial A.C. voltage appearing across said winding at resonance.

3,435,444
WIRELESS ALARM TRANSMISSION INSTALLATION
Hans Kuhn, Zollikofen, Bern, Switzerland, assignor to Securiton A.G., Zollikofen, Bern, Switzerland, a corporation of Switzerland
Filed Sept. 24, 1965, Ser. No. 489,846
Claims priority, application Switzerland, Sept. 28, 1964, 12,572/64
Int. Cl. G08b *29/00, 1/08*
U.S. Cl. 340—214 **7 Claims**



An alarm transmission installation is disclosed for transmitting an alarm from a place which is being protected or supervised to a central command station. The alarm transmission installation has provisions for carrying out a checking operation to determine the preparedness of each protected or supervised place from the central command station. In this regard, the central command station is provided with means for transmitting a selective call to the supervised or subscriber stations, the selective call being received at a selected subscriber station whereby an impulse generator and a selective transmitter located thereat is switched-in and test signals are transmitted from the subscriber station to the central location as a function of the preparedness of the subscriber station.

3,435,445
INTEGRATED ELECTRO-OPTIC PASSIVE REFLECTIVE DISPLAY DEVICE
William R. Clendinning and Dayton D. Eden, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 530,173
Int. Cl. G08b *21/00;* **G02f** *1/26*
U.S. Cl. 340—324 **10 Claims**



Disclosed is an electro-optic, passive, reflective, display system in which an array of islands of an electro-optic material, which change the polarization of light incident upon and passing through them in response to electrical or thermal stimuli, are used to present a visible display when viewed through a polarizing sheet. In one embodiment, the electro-optic islands are formed over a plurality of integrated circuits, each of which causes a current to flow through its corresponding electro-optic island thereby changing the polarization of the light traveling through it. In a second embodiment, the electro-optic islands are formed over a plurality of integrated circuits, each of a resistor and transistor, formed in a semiconductor base. Upon application of an electric signal to a selected circuit, a current flows through the resistor of the circuit causing it to increase the temperature of its corresponding electro-optic island and change the polarization of the light passing through it.

3,435,446
DIGITAL ENCODER
David H. Margolien, Los Angeles, Woodland Hills, and Walter N. Kanawyer, Ventura, Thousand Oaks, Calif., assignors to Litton Precision Products, Inc., Beverly Hills, Calif.
Filed Jan. 4, 1965, Ser. No. 423,077
Int. Cl. G08c *9/08*
U.S. Cl. 340—347 **10 Claims**

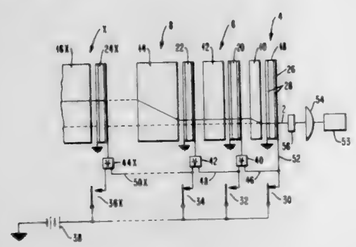
A triply redundant contact digital encoder is disclosed. The encoder comprises a commutator and a plurality of contacts. The commutator is in the form of a disc substrate having a pattern of discrete conducting segments positioned in a plurality of annular zones on the disc, each zone representing a digit of a digital number. To achieve redundancy capability, preselected zones are divided into three annular tracks of about the same width

with the respective patterns angularly displaced from one another. Each track is in engagement with a contact and



a contact of each track in a zone is electrically connected to contacts of the other tracks in the zone.

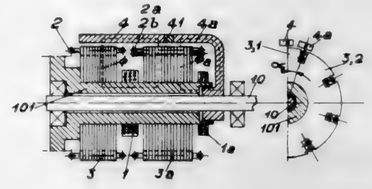
3,435,447
LIGHT DEFLECTING MECHANISMS
William L. Duda, Wappingers Falls, Harold Fleisher and Werner W. Kulcke, Poughkeepsie, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 1, 1965, Ser. No. 436,109
Int. Cl. H04l *3/00;* **G08c** *9/00, 11/00*
U.S. Cl. 340—347 **8 Claims**



Light deflecting apparatus including control circuits for light deflectors which perform the Exclusive-OR logical function on a given stage of the deflector and the next succeeding stage in activating the polarization rotators of the deflector. Thus, if the control circuits are energized at locations representative of different values, light deflection takes place through the deflector to positions representative of the sum of the values.

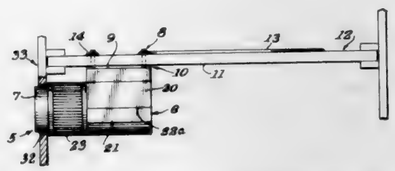
3,435,448
MAGNETIC CODER FOR TRANSMITTING THE ANGULAR POSITION OF A SHAFT
Jean Girault and Jean Pandelle, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie sans Fil, a corporation of France
Filed Apr. 13, 1965, Ser. No. 447,682
Claims priority, application France, Apr. 15, 1964, 970,982
Int. Cl. G08c *21/00;* **H03k** *13/00*
U.S. Cl. 340—347 **3 Claims**

A magnetic coder for transmitting the angular position of a shaft comprising a stator and a rotor. The stator comprises at least one inducing winding and two cores having peripheral teeth. Induced windings are wound about the teeth. The stator cores have respective teeth in register. The rotor is solid with the shaft and comprises two parts,



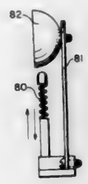
magnetically coupled respectively with the teeth of the first and the second core. The parts of said rotor are angularly shifted.

3,435,449
INDICATOR LIGHT AND LIGHT HOUSING FOR PRINTED-CIRCUIT BOARDS
Charles S. Sloan, Burbank, Calif. (7704 San Fernando Road, Sun Valley, Calif. 91353)
Filed Jan. 16, 1967, Ser. No. 609,409
Int. Cl. G09f *7/06, 9/30*
U.S. Cl. 340—381 **4 Claims**



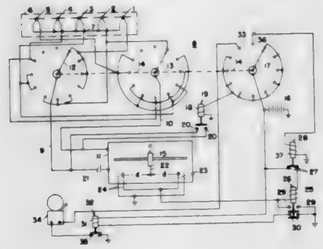
An indicator light with at least one dummy and two or more light-terminal pins which, when extended through holes in a circuit board and soldered to printed elements on the opposite side of the board, fixedly hold the light in operative position. Small protuberances on a dielectric part of the light are operatively associated with said pins and engage the board to space the light therefrom.

3,435,450
PIEZOELECTRIC SIGNALING DEVICE
Pascual J. Peña, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,958
Int. Cl. G08b *3/10;* **G10k** *3/00*
U.S. Cl. 340—392 **2 Claims**



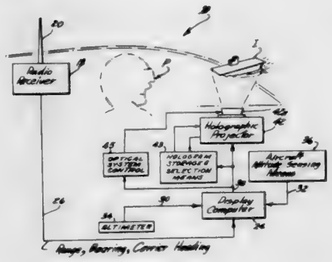
A gong-type telephone ringer employs a piezoelectric element which is clamped at one end and carries a clapper at the other end for actuating the gong. Upon energization by an A.C. voltage, the element vibrates and the clapper strikes the gong. The piezoelectric element, which may be mounted within the gong, is a coil-shaped ceramic strip.

3,435,451
TEMPERATURE DIFFERENCE DETECTOR
Eric A. Weiss, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 17, 1964, Ser. No. 390,073
Int. Cl. G08b *21/00;* **G01k** *1/02*
U.S. Cl. 340—413 **4 Claims**



The outputs of a plurality of sensing devices (e.g., thermocouples) are automatically monitored, and an alarm is given whenever the spread between the maximum and minimum values of these outputs is less than (or, alternatively, greater than) a preset value.

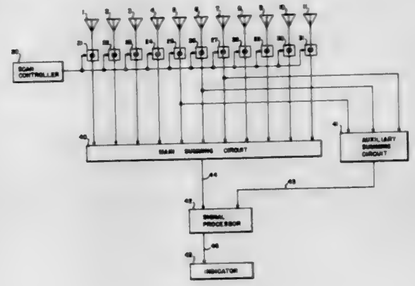
3,435,452
SURROGATE VIEWING SYSTEM
David D. Kilpatrick, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 25, 1967, Ser. No. 663,450
Int. Cl. H04b *13/00*
U.S. Cl. 343—6 **2 Claims**



A surrogate viewing system for presenting a reconstructed visible wave front view of portions of a real world field of view for use in control of vehicles. The system comprises a display computer for combining range and attitude data of the vehicle and the real world objects and a holographic projector and storage apparatus responsive to the computer to project reconstructed wave front images corresponding to the real world object or field of view for which surrogate viewing is desired.

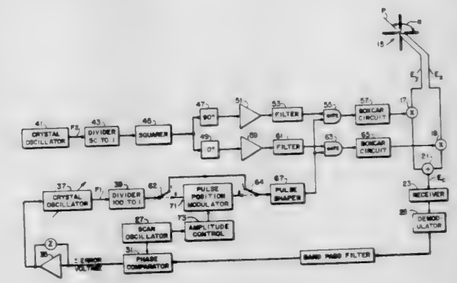
3,435,453
SIDELOBE CANCELLING SYSTEM FOR ARRAY TYPE TARGET DETECTORS
Dean D. Howard, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 6, 1967, Ser. No. 680,685
Int. Cl. H04b *7/06*
U.S. Cl. 343—100 **19 Claims**

Sidelobe cancelling in electronically scanned arrays is obtained by using a small portion of the array aperture to form a broad auxiliary beam pattern which scans along with the main narrow beam pattern. The output from the auxiliary pattern is compared with the output from the



main pattern so that signals originating in the sidelobe regions can be eliminated. The system may also be used with reflector arrays and feed-through arrays.

3,435,454
ELECTRONIC SERVO SYSTEM
Gottfried F. Vogt, Lincroft, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 1, 1968, Ser. No. 702,422
Int. Cl. H04b *7/16*
U.S. Cl. 343—100 **7 Claims**



An electronic servo system adapted for use in a polarization follower system. An error voltage is generated when the incident phase system angle of a target differs from the polarization angle. The error signal is applied as a control voltage to a variable oscillator whose output frequency is controlled thereby. A standard oscillator is also provided whose frequency is fixed such that at zero error signal the frequency outputs of the variable oscillator and the standard oscillator are equal. The standard crystal oscillator frequency is divided 50:1 and further divided by 2 to 1 in a manner such that there is produced two digital signals at the same frequency but differing in phase by 90°. The two digital signals are converted to two sine wave signals 90° out of phase to effectively provide a sine and cosine signal. The variable oscillator output is divided 100:1 and digitized so that this submultiple frequency differs from that derived from the standard oscillator by a relatively low frequency which is a function of the magnitude of the error signal. The submultiple sine and cosine signals are applied to respective gating circuits which are activated at prescribed times by the digitized submultiple frequency output of the variable oscillator. This signal is modulated by a reference signal which also

is the reference signal to which the demodulated output of the system receiver is phase compared to produce the error signal. The instantaneous amplitude of the respective gated sine and cosine signals allowed to pass through the gating circuits are converted to respective DC voltages which are combined in a manner at the receiver of the system to decrease the error signal towards zero.

3,435,455

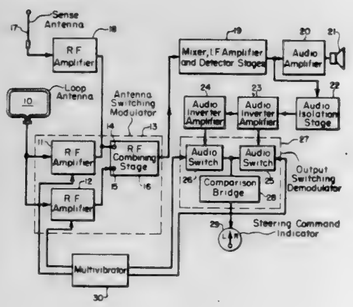
RADIO DIRECTION FINDER HAVING INDUCTORLESS DEMODULATOR

Joseph F. Yello, Wood Dale, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed May 29, 1967, Ser. No. 642,033

Int. Cl. G01s *5/04*

U.S. Cl. 343—120 **4 Claims**



A direction-finder navigation receiver comprises an antenna modulator for combining alternately in-phase and out-of-phase, in response to an applied switching control signal, the RF signals from an omni-directional sense antenna with those from a directional loop antenna to produce overlapping cardioid antenna response patterns. The system further comprises conventional radio receiver circuits and a transformerless output switching demodulator for comparing the magnitudes of the in-phase and out-of-phase signals to determine the relative bearing of a received transmission. A pair of audio switch stages contained in the demodulator alternately translate oppositely-phased detector output signals from the receiver circuits in synchronism with the alternation of antenna patterns to form a full-wave DC signal. This DC signal is applied to a comparison bridge wherein it is compared with a reference signal to provide steering commands. The switching circuitry requires no additional audio transformers and therefore is ideally suited for economical manufacture in integrated circuit form.

3,435,456

ADJUSTABLE WHIP ANTENNA FOR PORTABLE RECEIVER

Winfred Edward Robb, Jr., Acton, Mass., assignor, by mesne assignments, to Kel Corporation, Belmont, Mass., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,193

Int. Cl. H01q *1/24*

U.S. Cl. 343—702 **13 Claims**

An electrical mounting arrangement, especially suited for use on portable radio equipment, holds a whip antenna or other electrical connection in a groove on an edge of the housing. The mounting arrangement includes an eye on a shaft which is rotatable in a bore in the housing, and is spring loaded so that the eye is pulled toward the



housing. The antenna is inserted in the eye and can be rotated about the shaft into any position, including a stowed position in the groove.

3,435,457

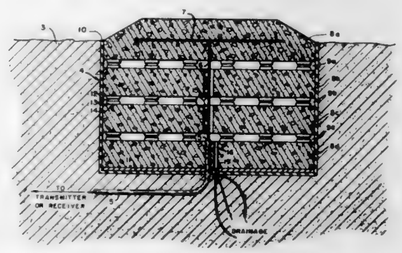
UNDERGROUND ANTENNA

Helmut Brueckmann, Little Silver, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 7, 1965, Ser. No. 523,480

Int. Cl. H01q *1/04*

U.S. Cl. 343—719 **2 Claims**



An underground antenna is formed in an excavation with a central upstanding monopole and a top-loading horizontal plate at the top thereof. In order to render the antenna blast-proof, the cavity is hardened with concrete. The hardening material is ordinary concrete with a relative permittivity of two or more with one or more horizontal air gaps. This structure results in a low loss factor and low effective permittivity compared to solid concrete while maintaining the required structural strength. The same principle can be utilized to provide a low-loss dielectric for large capacitors, the air gaps being perpendicular to the electric field-lines.

3,435,458

STEPPED DIELECTRIC CONSTANT END FIRE ANTENNA

Bernard L. Lewis, Satellite Beach, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

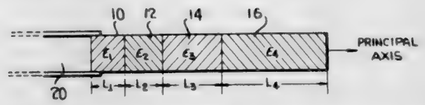
Filed Dec. 7, 1965, Ser. No. 512,056

Int. Cl. H01q *19/06*

U.S. Cl. 343—753 **7 Claims**

An end fire antenna includes an electromagnetic wave launcher including an open ended wave guide for feeding

a series of colinear dielectric members, the dielectric members cascaded in axial alignment relative to the principal axis of radiation of the wave guide and having distinct and different dielectric constants greater than one (i.e., 1) and distinct and different lengths, the dielectric constants progressively decreasing with successive positions of the dielectric members in the direction of radiation of waves along the principal axis of the launcher and the lengths of the dielectric members progressively increasing with successive positions of the dielectric members in the aforementioned direction. The dielectric constant of each member is selected to provide a critical



angle for total internal reflection of components of the waves incident on the longitudinal boundaries of the respective member at least approximately equal to the angle between the peak and the half power points of the radiation pattern produced by the launcher and by the preceding dielectric members relative to the aforementioned direction of radiation and the dielectric member under consideration. The length of each dielectric member is selected to be of such magnitude that a null is created at the half power point of the radiation pattern produced by the preceding section, including the wave launcher and the preceding dielectric members.

3,435,459

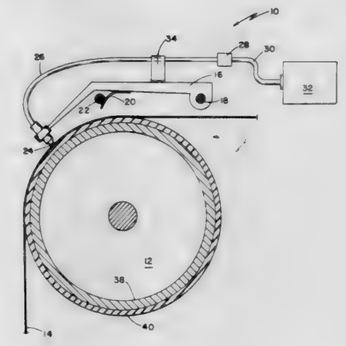
RECORDER USING PRESSURIZED BALLPOINT PEN

Joseph Peter De Nicola, Hingham, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts

Filed Nov. 16, 1966, Ser. No. 594,769

Int. Cl. G01d *15/16*

U.S. Cl. 346—140 **1 Claim**



In a chart recorder, a roller having elastomeric material at its periphery and ballpoint pen having the ink therein at a pressure in excess of atmospheric biased against the roller periphery.

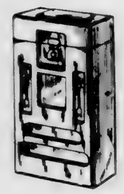
DESIGNS

MARCH 25, 1969

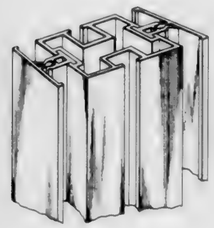
213,611
BOTTLE
Philip Allan Hodge, Warwick, R.I., assignor to Anson, Inc., Providence, R.I., a corporation of Rhode Island
Filed Aug. 26, 1966, Ser. No. 3,598
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—54



213,612
SHIPPING CONTAINER
William H. Bath, 123—60 83rd Ave., Kew Gardens, N.Y. 11415
Filed June 26, 1967, Ser. No. 7,589
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—224



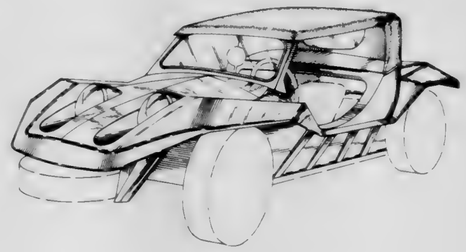
213,613
HETEROGENEOUS EXTRUDED SANDWICH SECTION
Madeleine Poulain-Van Lautem, 80 Rue J. W. Wilson, Brussels 4, Belgium
Filed Apr. 24, 1967, Ser. No. 6,794
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—1



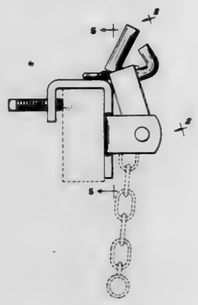
213,614
FIREPLACE MANTEL
Samuel Kemp Gorman, Chicago, Ill., assignor to Dalton-Gorman Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed July 22, 1968, Ser. No. 12,838
Term of patent 7 years
Int. Cl. D23—*03*; D25—*01*
U.S. Cl. D13—5



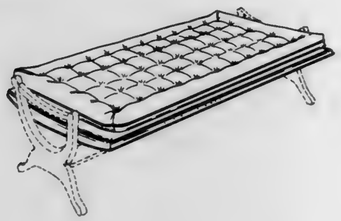
213,615
AUTOMOBILE BODY
Thomas L. Tyrrell, 6424 N. 40th St., Milwaukee, Wis. 53209
Filed Mar. 4, 1968, Ser. No. 10,849
Term of patent 7 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



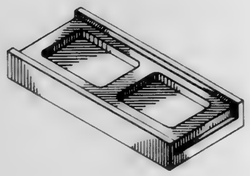
213,616
TRAILER HITCH FRAME BRACKET
Gerald L. Bock and Charles Weber, both of 2132 S. Main St., Elkhart, Ind. 62634
Filed Apr. 3, 1967, Ser. No. 6,502
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



213,617
COUCH OR SIMILAR ARTICLE
George H. Sanderson, 98 Walworth Ave., Scarsdale, N.Y. 10583
Filed Dec. 29, 1967, Ser. No. 9,984
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



213,618
CAP FOR WALL CONSTRUCTION OR THE LIKE
Loring Pickering, Washington, D.C., assignor to Universal Building Products Corporation, Washington, D.C.
Filed Jan. 18, 1968, Ser. No. 10,206
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D18—2



213,619
PUSH-BUTTON FOR A REEL
Carl J. Velte, Jr., Parchment, Mich., assignor to Shakespeare Company, Kalamazoo, Mich., a corporation of Michigan
Filed Oct. 24, 1967, Ser. No. 9,134
Term of patent 14 years
Int. Cl. D22—*06*
U.S. Cl. D22—25



213,620
PUSH-BUTTON SPIN CASTING REEL
Carl J. Velte, Jr., Parchment, Mich., assignor to Shakespeare Company, Kalamazoo, Mich., a corporation of Michigan
Filed Oct. 24, 1967, Ser. No. 9,135
Term of patent 14 years
Int. Cl. D22—*06*
U.S. Cl. D22—25



213,621
PUSH-BUTTON SPIN CASTING REEL
Carl J. Velte, Jr., Parchment, Mich., assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed Oct. 24, 1967, Ser. No. 9,136
Term of patent 14 years
Int. Cl. D22—*06*
U.S. Cl. D22—25

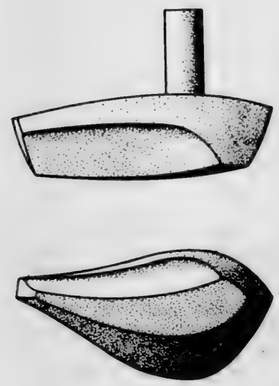




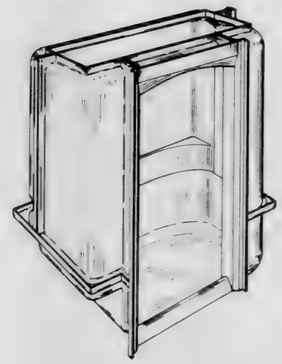
213,622
PUSH-BUTTON FOR A REEL
Carl J. Velte, Jr., Parchment, Mich., assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed Oct. 24, 1967, Ser. No. 9,137
Term of patent 14 years
Int. Cl. D22—*06*
U.S. Cl. D22—25



213,623
HANDLE FOR A FLUSH TANK TRIP LEVER
Marilyn Kay Austin, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 10,744
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—29



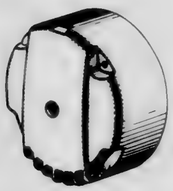
213,624
SHOWER STALL
Merritt W. Seymour, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 31, 1968, Ser. No. 12,171
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—49



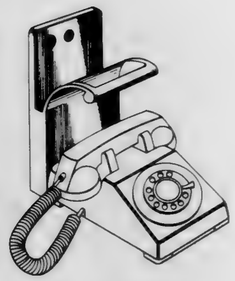
213,625
PORTABLE CHALK BOARD OR THE LIKE
Donald E. Jensen, San Jose, Calif., assignor to Porter-Jensen & Associates, San Jose, Calif., a corporation of California
Filed Jan. 23, 1968, Ser. No. 10,274
Term of patent 14 years
Int. Cl. D19—*08*
U.S. Cl. D25—1



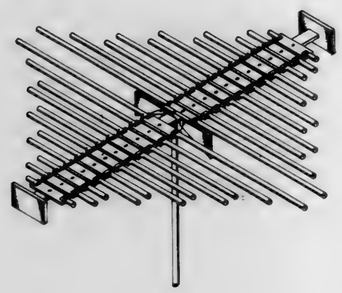
213,626
DYNAMOELECTRIC MACHINE END FRAME
Stanley E. Tomkinson, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Oct. 11, 1967, Ser. No. 8,957
Term of patent 14 years
The portion of the term of the patent subsequent to February 20, 1982, has been disclaimed
Int. Cl. D13—*02*
U.S. Cl. D26—5



213,627
PORTABLE ONE WAY COIN OPERATED TELEPHONE FOR INSTITUTIONS AND HOSPITALS
Susan M. Peoples, 701 Portland St., Baltimore City, Md. 21230
Filed Jan. 31, 1968, Ser. No. 10,382
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



213,628
COMBINED UHF, VHF AND COLOR TELEVISION RECEIVING ANTENNA
James F. Lawrence, 602 W. 45th St., Los Angeles, Calif. 90037
Filed Aug. 1, 1968, Ser. No. 12,999
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



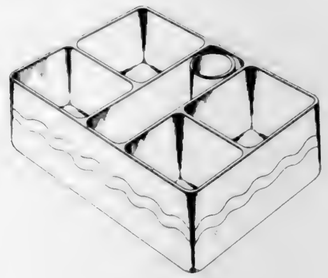
213,629
WALL-MOUNTED SUPPORT RACK FOR A SOUSAPHONE
Gilbert I. Roper and Joseph C. Grantham, both of 136 N. 5th St., Grand Junction, Colo. 81501
Filed Jan. 3, 1968, Ser. No. 10,043
Term of patent 14 years
Int. Cl. D6—*01*; D8—*03*
U.S. Cl. D33—3



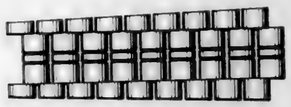
213,630
BLADE FOR A SNOW SHOVEL
Orville D. Hoxie and John MacDonald, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 8, 1966, Ser. No. 3,391
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D39—1



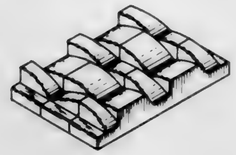
213,631
TRAY
Thomas E. Scott, Rte. 7, Gyddie Drive, Winston-Salem, N.C. 27105
Filed Mar. 1, 1968, Ser. No. 10,809
Term of patent 3½ years
Int. Cl. D7—*01*
U.S. Cl. D44—10



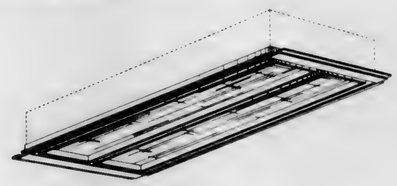
213,632
LINK CHAIN FOR A BRACELET OR THE LIKE
Salvatore Bello, Cliffside Park, N.J., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Continuation of design applications Ser. No. 7,996, and Ser. No. 7,998, July 26 1967. This application Mar. 6, 1968, Ser. No. 11,221
Term of patent 7 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



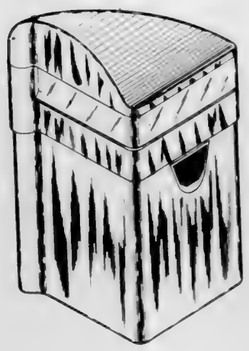
213,633
WATCH BRACELET OR SIMILAR ARTICLE
Yuen Sang Poon, Hong Kong, assignor to Baldwin Bracelet Corporation, New York, N.Y., a corporation of New York
Filed June 12, 1968, Ser. No. 12,317
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



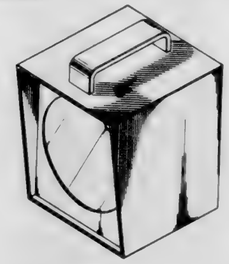
213,634
LIGHTING FIXTURE
Gerard Edmund Mulvey, 36 Castle Frank Road, and George Elliott Boake, 6 Maple Ave., both of Toronto, Ontario, Canada
Filed Jan. 16, 1968, Ser. No. 10,186
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—23



213,635
PORTABLE ELECTRIC LANTERN
Robert E. Brindley, New York, and David O. Chase, Camillus, N.Y., and William W. Sammons, Pittsfield, Mass., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 1, 1968, Ser. No. 10,801
Term of patent 14 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



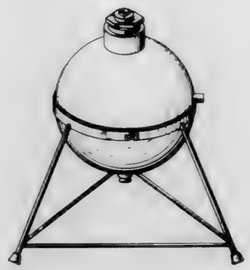
213,636
PORTABLE LANTERN
William E. Burch, Post Office Drawer BU, College Station, Tex. 77840
Filed Apr. 25, 1968, Ser. No. 11,628
Term of patent 14 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



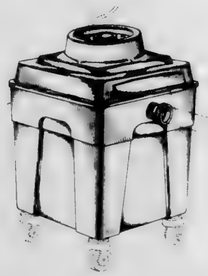
213,637
PORTABLE DISHWASHER
John Ross, 57 Whitley Ave., Downsview, Ontario, Canada
Filed Dec. 15, 1967, Ser. No. 9,791
Term of patent 7 years
Int. Cl. D7—*06*
U.S. Cl. D49—1



213,638
CONTAINER FOR MICROSCOPIC GLASS BEADS USED FOR CLEANING AND DEBURRING
Richard R. Compton, Rte. 2, Washington, Mo. 63090
Filed Apr. 29, 1968, Ser. No. 11,648
Term of patent 14 years
Int. Cl. D15—*06*
U.S. Cl. D49—1



213,639
VACUUM CLEANER HOUSING OR SIMILAR ARTICLE
Richard M. Fegan, Taylors, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 14, 1968, Ser. No. 10,579
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—14.1



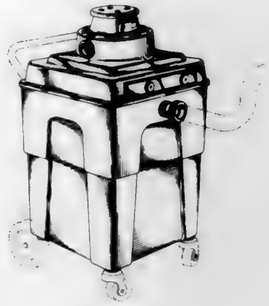
213,640
VACUUM CLEANER
James F. Mariol, Cincinnati, Ohio, assignor to Vernco Corporation, Columbus, Ind., a corporation of Indiana
Filed Apr. 16, 1968, Ser. No. 11,481
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—14.1



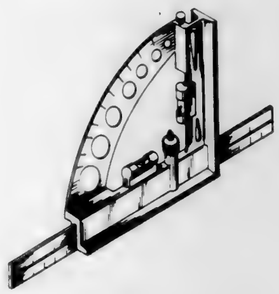
213,641
VACUUM SWEEPER
James F. Mariol, Cincinnati, Ohio, assignor to Vernco Corporation, Columbus, Ind., a corporation of Indiana
Filed Apr. 16, 1968, Ser. No. 11,483
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—14.1



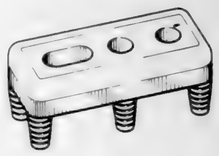
213,642
VACUUM CLEANER HOUSING OR SIMILAR ARTICLE
Richard M. Fegan, Taylors, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 14, 1968, Ser. No. 10,571
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—14.1



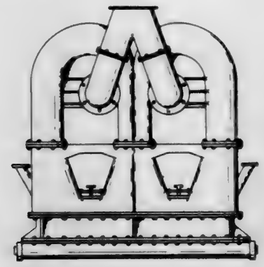
213,643
MEASURING TOOL FOR CARPENTRY AND THE LIKE
Wojciech Stanley Gutowski, Southington, Frank Joseph Kuchta, New Britain, and Robert Ferguson West, Simsbury, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Nov. 7, 1967, Ser. No. 9,304
Term of patent 14 years
Int. Cl. D8—*02;* D10—*08*
U.S. Cl. D52—6



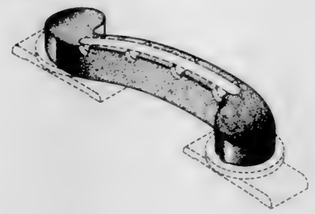
213,644
MOUNT FOR FOLDING DOORS
Charles S. Winn, 720 South 850 East, Bountiful, Utah 84010
Filed Nov. 22, 1967, Ser. No. 9,502
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D54—1



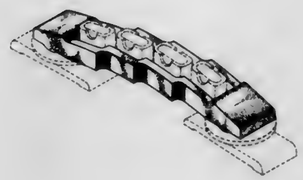
213,645
DOUBLE FLUID ENERGY MILL
Nicholas N. Stephanoff, Haverford, Pa., assignor to Fluid Energy Processing & Equipment Co., Hatfield, Pa., a corporation of Pennsylvania
Filed Jan. 22, 1968, Ser. No. 10,247
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D55—1



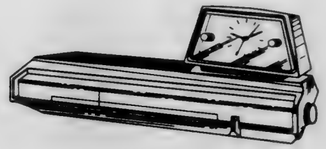
213,646
BRIDGE FOR GUITARS
Grover G. Fields, Stanton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 29, 1967, Ser. No. 9,990
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



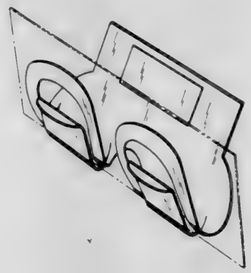
213,647
BRIDGE FOR GUITARS
Grover G. Fields, Stanton, and Paul B. Spranger, Fullerton, Calif., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 29, 1967, Ser. No. 9,991
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



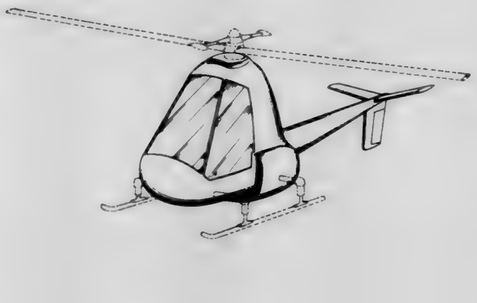
213,648
CLOCK RADIO
Maxime Ducharme, Toronto, Ontario, Canada, assignor to North American Philips Co., Inc.
Filed July 27, 1967, Ser. No. 8,038
Claims priority, application Switzerland Jan. 30, 1967
Term of patent 14 years
Int. Cl. D10—*03;* D14—*03*
U.S. Cl. D56—4



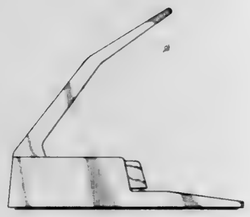
213,649
HOLDER FOR GLASSES OR TICKETS
Lyon D. Evans, 13 Stoneman Ave., Lakewood, N.Y. 14750
Filed Feb. 20, 1968, Ser. No. 10,649
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D57—1



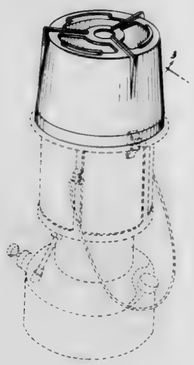
213,650
HELICOPTER
Marc A. Cardoso, Bronx, N.Y., assignor to Samuel Chayes, Bronx, N.Y.
Filed Oct. 3, 1967, Ser. No. 8,844
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D71—1



213,651
PAPER FASTENER OR THE LIKE
Renato Crotti, % Silan S.a.S., Via Provinciale 45, Carpi, Modena, and Aurelio La Viola, Via General Fara 20, Milan, Italy
Filed Mar. 8, 1967, Ser. No. 6,131
Claims priority, application Italy, Oct. 29, 1966
Term of patent 14 years
Int. Cl. D8—*02;* D19—*02*
U.S. Cl. D74—1



213,652
LANTERN STOVE ATTACHMENT
Salvatore Brancato, 13—39 146th Place, Whitestone, N.Y. 11357, and Salvatore Gambelunghi, 23—40 130th St., College Point, N.Y. 11356
Filed Mar. 8, 1968, Ser. No. 10,891
Term of patent 14 years
Int. Cl. D7—*04;* D23—*03*
U.S. Cl. D81—10



213,653
COMPACT
Walter Stern, New Rochelle, N.Y., assignor to Thierry Suzanne Parfums, Inc., Miami, Fla.
Filed Jan. 4, 1968, Ser. No. 10,051
Term of patent 14 years
Int. Cl. D3—*02;* D28—*02*
U.S. Cl. D86—10



213,654
HANDBAG SNAP LOCK
David Damast, 522 Shore Road, Long Beach, N.Y. 11561
Filed May 7, 1968, Ser. No. 11,810
Term of patent 3½ years
Int. Cl. D8—*03*
U.S. Cl. D87—2



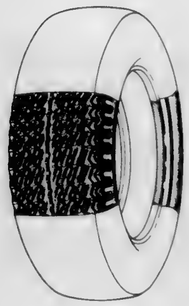
213,655
GEAR SHIFTING CONSOLE FOR A BICYCLE
Keizo Shimano, 81 Midorigaoka, Minamicho, 3-cho, Sakai, and Norio Sato, 414 Takesono-cho, Suita, both of Osaka Prefecture, Japan
Filed Dec. 6, 1967, Ser. No. 9,666
Claims priority, application Japan Aug. 11, 1967
Term of patent 7 years
Int. Cl. D12—*14*
U.S. Cl. D90—1



213,656
BICYCLE SEAT
Dick Lee Brown and Nora Deloris Brown, both of 1906 Chapman Ave., Olivehurst, Calif. 95961, and Ernest R. Comstock, 5304 Sandstone St., Carmichael, Calif. 95608
Filed May 29, 1968, Ser. No. 12,124
Term of patent 14 years
Int. Cl. D12—*11, 14*
U.S. Cl. D90—16



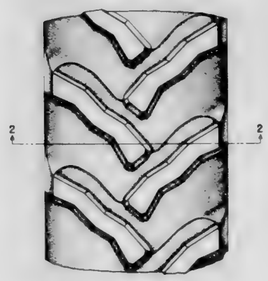
213,657
TIRE
Frank Bernard Jones, Sutton Coldfield, England (% Fort Dunlop, Erdington, Birmingham 24, England)
Filed Jan. 4, 1968, Ser. No. 10,054
Claims priority, application Great Britain Aug. 16, 1967
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



213,658
TIRE
Grahame John Barton, Curdworth, Sutton Coldfield, England, assignor to The Dunlop Company Limited, Birmingham, England, a British corporation
Filed Jan. 4, 1968, Ser. No. 10,056
Claims priority, application Great Britain Aug. 8, 1967
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



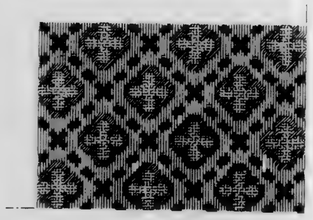
213,659
TIRE
Ronald P. Petroff, Barberton, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 21, 1968, Ser. No. 10,667
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



213,660
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London, SW. 3, England
Filed May 2, 1968, Ser. No. 11,754
Term of patent 14 years
Int. Cl. D5—*02*
U.S. Cl. D92—4



213,661
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London, SW. 3, England
Filed May 2, 1968, Ser. No. 11,756
Term of patent 14 years
Int. Cl. D5—*02*
U.S. Cl. D92—4



213,662
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London, SW. 3, England
Filed May 2, 1968, Ser. No. 11,753
Term of patent 14 years
Int. Cl. D5—*02*
U.S. Cl. D92—4



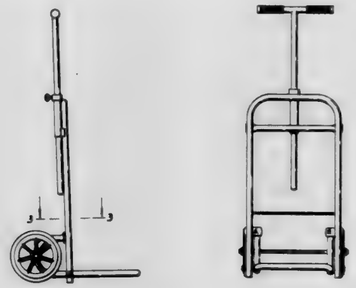
213,663
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London, SW. 3, England
Filed May 2, 1968, Ser. No. 11,749
Term of patent 14 years
Int. Cl. D5—*02*
U.S. Cl. D92—4



213,664
ELECTRIC SHAVER
Henricus Franciscue Theresia Schellens, Drachten, Netherlands, assignor to North American Philips Co., Inc.
Filed June 22, 1967, Ser. No. 7,556
Claims priority, application Switzerland Dec. 30, 1966
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D95—3



213,665
WHEELED HAND TROLLEY
Ernest A. H. Deavin, Marston Green, Birmingham, England, assignor to Deavin-Irvine Products Limited, Birmingham, England, a British company
Filed June 30, 1967, Ser. No. 7,663
Claims priority, application Great Britain Feb. 7, 1967
Term of patent 14 years
Int. Cl. D12—*02*
U.S. Cl. D14—3



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 25TH DAY OF MARCH, 1969

"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

Anderson, Robert F. Reservoir tray. 695,195, 3–25–69, Cl. 229—2.5.
Brunson, Marion O. Aqueous wax dispersions. 772,435, 3–25–69, Cl. 260—27.
Church, Franklin W. Method of reducing noise and air pollution. 629,025, 3–25–69, Cl. 55—75.
Collins, John F. : *See*—
Peters, Theodore J., and Collins. 695,830.
Collins, Muriel A. : *See*—
Peters, Theodore J., and Collins. 695,830.
Du Pont de Nemours, E. I., and Co. : *See*—
Fridrichsen, Anton F. 618,431.
Eastman Kodak Co. : *See*—
Hawkins, Roy E., and Ritchie. 775,576.
Fridrichsen, Anton F., to E. I. du Pont de Nemours and Co. Conveyor belt fabric made from poly(m-phenyleneisophthalamide). 618,431, 3–25–69, Cl. 117—138.8.
Hawkins, Roy E., and T. B. Ritchie, to Eastman Kodak Co. Application of additives as cores in cigarette filters. 775,576, 3–25–69, Cl. 156—180.
Imperial Chemical Industries, Ltd. : *See*—
Jennings, Brian E., and McGowan. 768,931.
Jennings, Brian E., and J. C. McGowan, to Imperial Chemical Industries, Ltd. Oxymethylene polymers. 768,931, 3–25–69, Cl. 260—53.
Kalenda, Norman W. Sensitizers for fine grain photographic silver halide emulsions, e.g., a Lippmann type emulsion. 768,921, 3–25–69, Cl. 96—107.
Kenaga, Duane L. Aziridinyl phosphine oxide or sulfide-sulfur dioxide treatment. 613,735, 3–25–69, Cl. 117—62.1.
Massey-Ferguson, Inc. : *See*—
Richey, Clarence B. 702,899.
McDaniel, Edgar L., and H. S. Young. Synthesis of acrylonitrile from propylene, ammonia and oxygen. 764,023, 3–25–69, Cl. 252—437.
McGowan, John C. : *See*—
Jennings, Brian E., and McGowan. 768,931.
Peters, Theodore J., and J. F. Collins, deceased (by M. A. Collins, executrix). Stabilized ester lubricants. 695,830, 3–25–69, Cl. 252—56.
Richey, Clarence B., to Massey-Ferguson, Inc. Scarifying tooth attachment. 702,899, 3–25–69, Cl. 172—197.
Ritchie, Tom B. : *See*—
Hawkins, Roy E., and Ritchie. 775,576.
Tor, Sadun S. Preparation of metal composites having an encapsulated inner layer and composite metals produced thereby. 689,485, 3–25–69, Cl. 29—194.
Young, Howard S. : *See*—
McDaniel, Edgar L., and Young. 764,023.

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Allgaier, Oskar, and O. Micko, to Allgaier Werke G.m.b.H. Separator for grain and the like. Re 26,555, 3–25–69, Cl. 74—600.
Allgaier Werke G.m.b.H. : *See*—
Allgaier, Oskar, and Micko. Re. 26,555.
Amerline Corp. : *See*—
Hultgren, Arnold P. Re. 26,556.
Baker, Alan G., and J. S. Kamborian. Adhesive dispensing apparatus for shoe machines. Re. 26,559, 3–25–69, Cl. 118—2.
Bartelt Engineering Co., Inc. : *See*—
Nutting, Robert G., Wagner, and Christensen. Re. 26,553.
Beatenbough, Paul K., and R. W. Bishop, to General Motors Corp. Crossflow radiators. Re. 26,550, 3–25–69, Cl. 165—111.
Bishop, Robert W. : *See*—
Beatenbough, Paul K., and Bishop. Re. 26,550.
Bletz, Howard W., to Therm-O-Disc, Inc. Narrow temperature differential thermostatic control. Re. 26,554, 3–25–69, Cl. 337—347.
Block, Aleck, and J. W. Purcell, to Merit Products, Inc. Abrasive device. Re. 26,552, 3–25–69, Cl. 51—358.
Candela, Giovan B., to The Formsprag Co. Self-neutralizing manual override clutch. Re. 26,558, 3–25–69, Cl. 192—48.3.
Cary, Howard B., to Hobart Bros. Co. Arc welding with A.C. power and cored electrode. Re. 26,549, 3–25–69, Cl. 219—74.
Christensen, Kenneth K. : *See*—
Nutting, Robert G., Wagner, and Christensen. Re. 26,553.
Denison-Johnson, Inc. : *See*—
Fowler, Alvin W. Re. 26,551.
Forbes, Sydney, to PPG Industries, Inc. Electrolytic bipolar alkali chlorate cell. Re. 26,547, 3–25–69, Cl. 204—268.
Formsprag Co., The : *See*—
Candela, Giovan B. Re. 26,558.
Fowler, Alvin W., to Denison-Johnson, Inc. Line control means for a spinning reel. Re. 26,551, 3–25–69, Cl. 242—84.2.
General Motors Corp. : *See*—
Beatenbough, Paul K., and Bishop. Re. 26,550.
Hobart Bros. Co. : *See*—
Cary, Howard B. Re. 26,549.
Houston, Lewis C., to St. Joe Paper Co. Container. Re. 26,557, 3–25–69, Cl. 229—15.
Hultgren, Arnold P., to Amerline Corp. Plastic reel with aluminum insert hub. Re. 26,556, 3–25–69, Cl. 242—71.8.
Kamborian, Jacob S. : *See*—
Baker, Alan G., and Kamborian. Re. 26,559.
Merit Products, Inc. : *See*—
Block, Aleck, and Purcell. Re. 26,552.
Micko, Oswald : *See*—
Allgaier, Oskar, and Micko. Re. 26,555.
National Aeronautics and Space Administration : *See*—
Thomas, Numa E. Re. 26,548.
Nutting, Robert G., R. C. Wagner, and K. K. Christensen, to Bartelt Engineering Co., Inc. Packaging machine. Re. 26,553, 3–25–69, Cl. 53—180.
PPG Industries, Inc. : *See*—
Forbes, Sydney. Re. 26,547.
Purcell, Joseph W. : *See*—
Block, Aleck, and Purcell. Re. 26,552.
Quadramics, Inc. : *See*—
Rasmussen, Reed. Re. 26,546.
Rasmussen, Reed, to Quadramics, Inc. Loading and unloading winch system for traction vehicles. Re. 26,546, 3–25–69, Cl. 214—517.
St. Joe Paper Co. : *See*—
Houston, Lewis C. Re. 26,557.
Therm-O-Disc, Inc. : *See*—
Bletz, Howard W. Re. 26,554.
Thomas, Numa E., deceased, by the National Aeronautics and Space Administration. Optical communications system. Re. 26,548, 3–25–69, Cl. 250—199.
Wagner, Richard C. : *See*—
Nutting, Robert G., Wagner, and Christensen. Re. 26,553.

LIST OF PLANT PATENTEES

Asper, James H., to Monrovia Nursery Co. Camellia plant. 2,873, 3–25–69, Cl. 61.
Asper, James H., to Monrovia Nursery Co. Camellia plant. 2,874, 3–25–69, Cl. 61.
Asper, James H., to Monrovia Nursery Co. Camellia plant. 2,875, 3–25–69, Cl. 61.
Monrovia Nursery Co. : *See*—
Asper, James H. 2,873–5.
Yoshimura, Raymond. Azalea plant. 2,872, 3–25–69, Cl. 57.

LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

American Standard, Inc.: *See*—
Austin, Marilyn K. 213,623.
Anson, Inc.: *See*—
Hodge, Philip A. 213,611.
Austin, Marilyn K., to American Standard, Inc. Handle for a flush tank trip lever. 213,623, 3–25–69, Cl. D23—29.
Baldwin Bracelet Corp.: *See*—
Poon, Yuen S. 213,633.
Barton, Grahame J., to The Dunlop Co. Ltd. Tire. 213,658, 3–25–69, Cl. D90—20.
Bath, William H. Container shipping. 213,612, 3–25–69, Cl. D9—224.
Bello, Salvatore, to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 213,632, 3–25–69, Cl. D45—4.
Bissell, Inc.: *See*—
Hoxie, Orville D., and MacDonald. 213,630.
Boake, George E.: *See*—
Mulvey, Gerard E., and Boake. 213,634.
Bock, Gerald L., and C. Weber. Trailer hitch frame bracket. 213,616, 3–25–69, Cl. D14—6.
Brancato, Salvatore, and S. Gambelunghi. Lantern stove attachment. 213,652, 3–25–69, Cl. D81—10.
Brindley, Robert E., D. O. Chase, and W. W. Sammons, to Union Carbide Corp. Portable electric lantern. 213,635, 3–25–69, Cl. D48—24.
Brown, Dick L. and N. D., and E. R. Comstock. Bicycle seat. 213,656, 3–25–69, Cl. D90—16.
Brown, Nora D.: *See*—
Brown, Dick L. and N. D., and Comstock. 213,656.
Burch, William E. Portable lantern. 213,636, 3–25–69, Cl. D48—24.
Cardoso, Marc A., to S. Chayes. Helicopter. 213,650, 3–25–69, Cl. D71—1.
Chase, David O.: *See*—
Brindley, Robert E., Chase, and Sammons. 213,635.
Chayes, Samuel: *See*—
Cardoso, Marc A. 213,650.
Columbia Broadcasting System, Inc.: *See*—
Fields, Grover G. 213,646.
Fields, Grover G., and Spranger. 213,647.
Compton, Richard R. Container for microscopic glass beads used for cleaning and deburring. 213,638, 3–25–69, Cl. D49—1.
Comstock, Ernest R.: *See*—
Brown, Dick L. and N. D., and Comstock. 213,656.
Dalton-Gorman Industries, Inc.: *See*—
Gorman, Samuel K. 213,614.
Damast, David. Handbag snap lock. 213,654, 3–25–69, Cl. D87—2.
Deavin, Ernest A. H., to Deavin-Irvine Products, Ltd. Wheeled hand trolley. 213,665, 3–25–69, Cl. D14—3.
Deavin-Irvine Products, Ltd.: *See*—
Deavin, Ernest A. H. 213,665.
Ducharme, Maxime, to North American Philips Co., Inc. Clock radio. 213,648, 3–25–69, Cl. D56—4.
Dunlop Co. Ltd., The: *See*—
Barton, Grahame J. 213,658.
Evans, Lyon D. Holder for glasses or tickets. 213,649, 3–25–69, Cl. D57—1.
Fegan, Richard M., to The Singer Co. Vacuum cleaner housing or similar article. 213,639, 3–25–69, Cl. D49—14.1.
Fegan, Richard M., to The Singer Co. Vacuum cleaner housing or similar article. 213,642, 3–25–69, Cl. D49—14.1.
Fields, Grover G., to Columbia Broadcasting System, Inc. Bridge for guitars. 213,646, 3–25–69, Cl. D56—1.
Fields, Grover G., and P. B. Spranger, to Columbia Broadcasting System, Inc. Bridge for guitars. 213,647, 3–25–69, Cl. D56—1.
Fluid Energy Processing & Equipment Co.: *See*—
Stephanoff, Nicholas N. 213,645.
Gambelunghi, Salvatore: *See*—
Brancato, Salvatore, and Gambelunghi. 213,652.
General Electric Co.: *See*—
Tomkinson, Stanley E. 213,626.
Goodyear Tire & Rubber Co., The: *See*—
Petroff, Ronald P. 213,659.
Gorman, Samuel K., to Dalton-Gorman Industries, Inc. Fireplace mantel. 213,614, 3–25–69, Cl. D13—5.
Grantham, Joseph C.: *See*—
Roper, Gilbert I., and Grantham. 213,629.
Grotti, Renato, and A. La Viola. Paper fastener or the like. 213,651, 3–25–69, Cl. D74—1.
Gutowski, Wojciech S., F. J. Kuchta, and R. F. West, to The Stanley Works. Measuring tool for carpentry and the like. 213,643, 3–25–69, Cl. D52—6.
Hicks, David N. Carpet or similar article. 213,661, 3–25–69, Cl. D92—4.
Hicks, David N. Carpet or similar article. 213,660, 3–25–69, Cl. D92—4.
Hicks, David N. Carpet or similar article. 213,662, 3–25–69, Cl. D92—4.
Hicks, David N. Carpet or similar article. 213,663, 3–25–69, Cl. D92—4.
Hodge, Philip A., to Anson, Inc. Bottle. 213,611, 3–25–69, Cl. D9—54.
Hoxie, Orville D., and J. MacDonald, to Bissell, Inc. Blade for a snow shovel. 213,630, 3–25–69, Cl. D39—1.
Jacoby-Bender, Inc.: *See*—
Bello, Salvatore. 213,632.
Jensen, Donald E., to Porter-Jensen & Associates. Portable chalk board or the like. 213,625, 3–25–69, Cl. D25—1.
Jones, Frank B. Tire. 213,657, 3–25–69, Cl. D90—20.
Kuchta, Frank J.: *See*—
Gutowski, Wojciech S., Kuchta, and West. 213,643.
La Viola, Aurelio: *See*—
Crotti, Renato, and La Viola. 213,651.
Lawrence, James F. Combined UHF, VHF and color television receiving antenna. 213,628, 3–25–69, Cl. D26—14.
MacDonald, John: *See*—
Hoxie, Orville D., and MacDonald. 213,630.
Mariol, James F., to Vernco Corp. Vacuum cleaner. 213,640, 3–25–69, Cl. D49—14.1.
Mariol, James F., to Vernco Corp. Vacuum sweeper. 213,641, 3–25–69, Cl. D49—14.1.
Mulvey, Gerard E., and G. E. Boake. Lighting fixture. 213,634, 3–25–69, Cl. D48—23.
North American Philips Co., Inc.: *See*—
Ducharme, Maxime. 213,648.
Schellens, Henricus F. T. 213,664.
Owens-Corning Fiberglas Corp.: *See*—
Seymour, Merritt W. 213,624.
Peoples, Susan M. Portable one way coin operated telephone for institutions and hospitals. 213,627, 3–25–69, Cl. D26—14.
Petroff, Ronald P., to The Goodyear Tire & Rubber Co. Tire. 213,659, 3–25–69, Cl. D90—20.
Pflueger Corp.: *See*—
Velte, Carl J., Jr. 213,621.
Velte, Carl J., Jr. 213,622.
Pickering, Loring, to Universal Building Products Corp. Cap for wall construction or the like. 213,618, 3–25–69, Cl. D18—2.
Poon, Yuen S., to Baldwin Bracelet Corp. Watch bracelet or similar article. 213,633, 3–25–69, Cl. D45—4.
Porter-Jensen & Associates: *See*—
Jensen, Donald E. 213,625.
Poulain-Van Lautem, Madeleine. Heterogeneous extruded sandwich section. 213,613, 3–25–69, Cl. D13—1.
Roper, Gilbert I., and J. C. Grantham. Wall-mounted support rack for a sousaphone. 213,629, 3–25–69, Cl. D33—3.
Ross, John. Portable dish washer. 213,637, 3–25–69, Cl. D49—1.
Sammons, William W.: *See*—
Brindley, Robert E., Chase, and Sammons. 213,635.
Sanderson, George H. Couch or similar article. 213,617, 3–25–69, Cl. D15—11.
Sato, Norio: *See*—
Shimano, Keizo, and Sato. 213,655.
Schellens, Henricus F. T., to North American Philips Co., Inc. Electric shaver. 213,664, 3–25–69, Cl. D95—3.
Scott, Thomas E. Tray. 213,631, 3–25–69, Cl. D44—10.
Seymour, Merritt W., to Owens-Corning Fiberglas Corp. Shower stall. 213,624, 3–25–69, Cl. D23—49.
Shakespeare Co.: *See*—
Velte, Carl J., Jr. 213,619.
Velte, Carl J., Jr. 213,620.
Shimano, Keizo, and N. Sato. Gear shifting console for a bicycle. 213,655, 3–25–69, Cl. D90—1.
Singer Co., The: *See*—
Fegan, Richard M. 213,639.
Fegan, Richard M. 213,642.
Spranger, Paul B.: *See*—
Fields, Grover G., and Spranger. 213,647.
Stanley Works, The: *See*—
Gutowski, Wojciech S., Kuchta, and West. 213,643.
Stephanoff, Nicholas N., to Fluid Energy Processing & Equipment Co. Double fluid energy mill. 213,645, 3–25–69, Cl. D55—1.
Stern, Walter, to Thierry Suzanne Parfums, Inc. Compact. 213,653, 3–25–69, Cl. D86—10.
Thierry Suzanne Parfums, Inc.: *See*—
Stern, Walter. 213,653.
Tomkinson, Stanley E., to General Electric Co. Dynamo-electric machine end frame. 213,626, 3–25–69, Cl. D26—5.
Tyrrell, Thomas L. Automobile body. 213,615, 3–25–69, Cl. D14—3.
Union Carbide Corp.: *See*—
Brindley, Robert E., Chase, and Sammons. 213,635.
Universal Building Products Corp.: *See*—
Pickering, Loring. 213,618.
Velte, Carl J., Jr., to Shakespeare Co. Push-button for a reel. 213,619, 3–25–69, Cl. D22—25.
Velte, Carl J., Jr., to Shapespeare Co. Push-button spin casting reel. 213,620, 3–25–69, Cl. D22—25.
Velte, Carl J., Jr., to Pflueger Corp. Push-button spin casting reel. 213,621, 3–25–69, Cl. D22—25.
Velte, Carl J., Jr., to Pflueger Corp. Push-button for a reel. 213,622, 3–25–69, Cl. D22—25.
Vernco Corp.: *See*—
Mariol, James F. 213,640.
Mariol, James F. 213,641.
Weber, Charles: *See*—
Bock, Gerald L., and Weber. 213,616.
West, Robert F.: *See*—
Gutowski, Wojciech S., Kuchta, and West. 213,643.
Winn, Charles S. Mount for folding doors. 213,644, 3–25–69, Cl. D54—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF MARCH, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AAI Corporation: *See*—
Critcher, John L., 3,434,425.
Schaller, John W., 3,434,226.
Aas, Herbert G., and Danielson, George E., Jr., to United Aircraft Corporation. Ultrasonic modulator having a cylindrical transducer. 3,435,372, 03-25-69, Cl. 331-094.5
AB Autokemi: *See*—
Smith, Kai Robert, 3,435,170.
Abbey, Anthony: *See*—
Klothen, Irving, Fortenbaugh, Robert Berendt, and Abbey, Anthony 3,434,844.
Abbott, James J., Jr. Pre-register apparatus for printing press. 3,434,217, 03-25-69, Cl. 033-184.5
Abbott Laboratories.: *See*—
Barr, Courtland H., Sr., Barr, Courtland H., Jr., Barr, John W., and Lucas, James W., 3,434,468.
Abel, Martin L., to Permawick Company, Inc. Lubricated bearing assembly and method of making same. 3,434,765, 03-25-69, Cl. 308-132.
Abell, Joseph B., Jr., Fannin, Loyd W., and Roth, James F., to Monsanto Company. Calcination of platinum-alumina catalyst for alkane dehydrogenation. 3,435,090, 03-25-69, Cl. 260-683.3
Abex Corporation: *See*—
Meisel, William H., 3,435,393.
ACF Industries, Incorporated: *See*—
Rollins, Dallas W., 3,434,683.
Achermann, Franz: *See*—
Achermann, Werner, and Achermann, Franz 3,434,435.
Achermann, Werner, and Achermann, Franz. Propping means for packing and transporting requisites. 3,434,435, 03-25-69, Cl. 108-056.
Acme-Danneman Company, Inc.: *See*—
Wendler, John C., 3,434,760.
Adamec, Alfred, to Wiener Schwachstromwerke Gesellschaft m.b.H. Method for degassing metallic melts by sonic vibrations. 3,434,823, 03-25-69, Cl. 075-010.
Adams, Cecil L.: *See*—
Balogh, Stephen, and Adams, Cecil L. 3,434,597.
Adicoff, Arnold, and Yukelson, Arnold A., to United States of America, Navy. Accelerating the cure rate of carboxylated polybutadiene-aziridinyl compound mixtures with lithium oleate. 3,434,990, 03-25-69, Cl. 260-023.7
Adlaf, William J., to Esterline, Corporation. Power driven tool-positioning mechanism. 3,434,246, 03-25-69, Cl. 051-165.
Adler, Richard H. Process for the treatment of certain chest and lung disorders. 3,434,475, 03-25-69, Cl. 128-260.
Admiral Corporation: *See*—
Barchok, Donald J., 3,435,282.
Adolph, Horst G., and Kamlet, Mortimer J., to United States of America, Navy. Fluorodinitromethane and preparation of halodinitromethanes. 3,435,079, 03-25-69, Cl. 260-644.
Aeronca, Inc.: *See*—
Voss, Wendell G., 3,434,854.
Aftreth, Owren J., to Brown, D. S., Company, The. Panel-type form system with gasket strips. 3,434,689, 03-25-69, Cl. 249-193.
Ager, John W., Jr., to FMC Corporation. Preparation of fluorocarbons by reacting carbon tetrachloride or hexachloroethane with carbonyl fluoride. 3,435,082, 03-25-69, Cl. 260-653.8
Agfa-Gevaert Aktiengesellschaft: *See*—
Biedermann, Friedrich, and Bestenreiner, Friedrich, 3,434,403.
Greiner, Joachim, and Krones, Friedrich, 3,435,336.
Huckstadt, Harald, Saleck, Wilhelm, Ulrich, Hans, Randolph, August, and Grabhofer, Herbert, 3,434,842.
Agrios, John P., and Freibergs, Elmer, to United States of America, Army. Reciprocal microwave ferrite phase shifter. 3,435,382, 03-25-69, Cl. 333-031.
Agway, Inc.: *See*—
Groschke, Albert C., 3,434,845.
Aitchison, Don E., to Honeywell Inc. Analog-digital hybrid divider apparatus. 3,435,193, 03-25-69, Cl. 235-150.52
Akai Electric Company, Limited: *See*—
Sato, Keisuke, 3,435,300.
Akers, George J.: *See*—
Sexton, Robert W., and Akers, George J. 3,434,700.
Akin, Jerome E.: *See*—
Elliott, George A., Akin, Jerome E., and Mac Gregor, Rob R. 3,434,937.
Aktiebolaget Svenska Flaktfabriken: *See*—
Blomgren, Lars, and Johansson, Ake, 3,434,224.
Malmquist, Lars, 3,434,222.
Aktiengesellschaft Brown, Boveri & Cie: *See*—
Brandt, Armand, 3,435,321.
Merhof, Wilfried, and Stadler, Bruno, 3,435,327.
Albrecht, Erwin H., to Bell Telephone Laboratories, Incorporated. Private branch exchange system having data trans- mission lines and means for preventing application of tones thereto. 3,435,150, 03-25-69, Cl. 179-027.
Aldrich, F William, and Deane, Theodore E., to Bendix Corporation, The. Modified organic base friction material. 3,434,998, 03-25-69, Cl. 260-038.
Alexander Wilhelm Stoeckicht: *See*—
Barwig, Hans A., and Heidrich, Gunther R., 3,434,374.
Allegheny Ludlum Steel Corporation: *See*—
Jackson, Harold S., 3,435,121.
Allen-Bradley Company: *See*—
Pearse, James N., 3,435,297.
Reinke, John F., Schlicke, Heinz M., and Blomdahl, Floyd A., 3,435,387.
Allen, Gilbert D., and Grove, Gene A., to Weyerhaeuser Company. Vented caulk. 3,434,411, 03-25-69, Cl. 100-090.
Allen, James S., and Hirshfield, Edward, to Sylvania Electric Products, Inc. Electronically tunable receiver. 3,435,346, 03-25-69, Cl. 325-423.
Allen, John F. Collapsible self-powered vehicle structure. 3,434,558, 03-25-69, Cl. 180-026.
Allen, Linus S., Jr., to Mobil Oil Corporation. Slow neutron detector of americium-243. 3,435,218, 03-25-69, Cl. 250-083.1
Allen, Walter E., to United States of America, Navy. Electronic solar cell array simulator. 3,435,328, 03-25-69, Cl. 323-008.
Allen, William A.: *See*—
Hart, William E., Allen, William A., and Cunningham, Leslie L. 3,434,211.
Allied Chemical Corporation: *See*—
Cheng, Chao-Shing, 3,435,070.
Elliott, George A., Akin, Jerome E., and Mac Gregor, Rob R., 3,434,937.
Allied Chemical Corporation, : *See*—
Mirabile, Frank A., and Rubel, Steven T., 3,434,993.
Allied Chemical Corporation: *See*—
Moore, William P., Jr., and Mosier, Jack W., 3,435,089.
Nychka, Henry R., and Anello, Louis G., 3,435,078.
Salatiello, Peter P., and Doilman, Stephen C., 3,434,996.
Allis-Chalmers Manufacturing Company: *See*—
Bedell, Edward L., 3,434,527.
Feller, Thomas R., 3,434,654.
Keough, Thomas H., and Haglund, Norman E., 3,435,125.
Mikolic, Charles R., and Burton, Lawrence A., 3,435,389.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Jacobsen, Clas, 3,435,287.
Alloy Steel Products Co.: *See*—
Britton, Harrison J., 3,434,693.
Alterman, Daniel S., and Williams, Lester, to Prodesco, Inc. Apparatus for weaving stiff filamentray material. 3,434,508, 03-25-69, Cl. 139-130.
Alternac, Paririe Village, : *See*—
Laudel, Arthur, Jr., 3,435,325.
Altshuler, Thomas L., Harr, Thomas E., and Ledges, George E., to United States of America, Navy,. Infrared camera tube utilizing a superconductor material detector. 3,435,137, 03-25-69, Cl. 178-007.1
Alvarez, Luis W., to Bell & Howell Company,. Gyroscopic lens. 3,434,771, 03-25-69, Cl. 350-016.
Ambros, Richard. Pulley transmissions and installations which include pulley transmissions. 3,434,641, 03-25-69, Cl. 226-188.
American Air Filter Company, Inc.: *See*—
Hyatt, Philip L., 3,434,269.
Sexton, Robert W., and Akers, George J., 3,434,700.
American Bosch Arma Corporation: *See*—
Chmura, Theodore S., 3,434,667.
Jewell, Wendell D., Nevala, Lloyd A., and Korn, Frederick, 3,434,352.
Rosenberg, Merton I., and Kimberley, John A., 3,435,395.
American Bosch Arma Corporation, : *See*—
Weiss, Paul C., 3,434,390.
American Cyanamid Company: *See*—
Buck, Francis Fremonte, and De Renzo, Edward Clarence, 3,434,929.
Bullock, Milon W., and Rohrbacher, George H., Jr., 3,435,100.
Highley, Derek Rowland, and Ellenbogen, Leon, 3,434,927.
Klothen, Irving, Fortenbaugh, Robert Berendt, and Abbey, Anthony, 3,434,844.
Lewis, Charles Edward, 3,434,792.
Schmitt, Edward Emil, Epstein, Martin, and Polistina, Rocco Albert, 3,435,008.
Siegele, Frederick Herman, Ondera, Emil Vincent, and Liberatore, Michael Angelo, 3,434,970.
Starer, Ira, and Lindaw, Arthur Clarence, 3,435,010.
American Fiber-Velope Mfg., Co.: *See*—
Hochfeld, Henry J., 3,434,400.
American Flange & Manufacturing Co., Inc.: *See*—
Laurizio, Jeremiah, 3,434,620.
Wolf, Edward M., and Koll, Stanley J., 3,434,266.
American Optical Company: *See*—
Davis, John K., Fernald, Henry G., and Rayner, Arline W., 3,434,781.
American Standard, Inc.: *See*—
Boorman, John K., 3,435,101.
Brunner, Richard, 3,434,344.
American Standard Inc.: *See*—
Forbes, Norman A., 3,434,164.
Amiet, Bernard Paul Louis, to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Deferred action, gas-activated cells or batteries. 3,434,884, 03-25-69, Cl. 136-086.
AMP Incorporated: *See*—
Bennion, David Ralph, and English, William Kirk, 3,435,432.
Bennion, David Ralph, and English, William Kirk, 3,435,433.
Watts, William Sewell, 3,434,746.
AMP, Incorporated: *See*—
Mixon, James Lenhart, Jr., 3,434,511.
Ampex Corporation: *See*—
Lee, Lester H., 3,435,245.
Mu, Joseph T., and Nakai, Roy T., 3,435,442.
Stahler, Alfred F., 3,435,441.
Anaconda Electronics Company: *See*—
Rheinfelder, William A., 3,435,358.

Anderson, Donald R., and Ballinger, Edwin R., to United States of America, Air Force. Implantable radiation assembly for circulating systems. 3,434,467, 03-25-69, Cl. 128-001.1

Andreassen, Donald.*See*—
Herman, Irving, and Andreassen, Donald 3,434,422.

Anello, Louis G.*See*—
Nychka, Henry R., and Anello, Louis G. 3,435,078.

Angelucci, George V., Kurtz, Richard J., and O'Fallon, Richard G., to Motorola, Inc. Reduction of arcing between the parts of a cathode ray tube. 3,434,770, 03-25-69, Cl. 316-001.

Anton, Nicholas T., and Daughetee, Lew H., to Wen Products, Inc. Vibratory tool. 3,434,247, 03-25-69, Cl. 051-170.

Anusauckas, Anthony V.:*See*—
Smith, Millard F., and Anusauckas, Anthony V. 3,434,698.

Aoe, Seigo, and Hashimoto, Kiyoji, to Kurashiki Rayon Co., Ltd. Doffing arrangement for centrifugal spinning system. 3,434,272, 03-25-69, Cl. 057-034.

Aoi, Yoshizaburo. Suspender for thin objects. 3,434,686, 03-25-69, Cl. 248-316.

Aozuka, Noriyoshi:*See*—
Kitabatake, Michitoshi, Ito, Masatomo, Ikeda, Takashi, Aozuka, Noriyoshi, and Noguchi, Yoshitaka 3,435,067.

A&R Meats, Inc.:*See*—
Carlson, Arthur W., and Carlson, Ralph J., 3,434,697.

Arazi, Efraim R., to Itek Corporation. Stabilization system for a laser range finder. 3,435,227, 03-25-69, Cl. 250-199.

Arkansas Company, Inc.:*See*—
Cook, Alton A., and Sapers, Ira, 3,434,795.

Armstrong, Richard L.:*See*—
Russell, Fred J., Armstrong, Richard L., and Spinuzzi, Sam J. 3,434,752.

Arneklev, Duane R.:*See*—
Brokke, Mervin E., Lukes, George E., and Arneklev, Duane R. 3,435,043.

Aron, Erwin, to Technical Processing, Inc. Rubber dispersing agents comprising fatty acid salts, alcohol and hydrocarbon. 3,434,991, 03-25-69, Cl. 260-023.7.

Aronberg, Lester, to Lake Chemical Co. Composition and process for forming putina. 3,434,890, 03-25-69, Cl. 148-006.14

Arregui Fernandez, Vicente:*See*—
Sitges Menendez, Francisco Javier, and Arregui Fernandez, Vicente 3,434,798.

Arthur, James C., and Thieman, Graham F., to Arvin Industries, Inc. Method of fabricating pipes. 3,434,199, 03-25-69, Cl. 029-476.

Arulanandasami, Sinnappa Adaikalam:*See*—
Stephen, Arulanandasami Joseph, and Arulanandasami, Sinnappa Adaikalam 3,435,292.

Arvin Industries, Inc.:*See*—
Arthur, James C., and Thieman, Graham F., 3,434,199.

Asamura, Shunzo, to Yawata Iron & Steel Co., Ltd. Apparatus for carrying a converter or a container similar thereto. 3,434,606, 03-25-69, Cl. 214-038.

Aselman, Edward C., Jr., to T.N.E., Incorporated. Control apparatus for an electrically operable device. 3,435,289, 03-25-69, Cl. 317-013.

Ashby, Willis L. System for detecting coherent energy in the presence of saturating noise. 3,435,345, 03-25-69, Cl. 325-423.

Ashdee Corp.:*See*—
Bass, Raymond H., 3,434,457.

Ashland Oil & Refining Company, :*See*—
Graver, Richard B., and Sedgwick, Grant O., 3,434,988.

Ashland Oil & Refining Company:*See*—
Miller, Charles R., 3,434,851.

Ashpole, Raymond Sidney, and Davidson, Thomas William, to English Electric Company, Limited, The. Glass fabric reinforced mica tape and process for production thereof. 3,434,872, 03-25-69, Cl. 117-126.

Ashton, G Elmo. Maintenance meter. 3,434,454, 03-25-69, Cl. 116-133.

Atkins, Bobby L., to Dow Chemical Company, The. Composition and method for acidizing wells. 3,434,971, 03-25-69, Cl. 252-008.55

Atkins, Carl E., and Ziolkowski, Robert L., to Wagner Electric Corporation. Condition responsive circuit. 3,435,298, 03-25-69, Cl. 317-146.

Atkinson, Wallace E., to Long Manufacturing Co., Inc. Drawbolt latching device with combination locking mechanism. 3,434,314, 03-25-69, Cl. 070-076.

Atlantic Richfield Company:*See*—
Pritchett, William C., 3,435,215.
Sheng, Ming Nan, and Zajacek, John G., 3,434,975.

Atwood Vacuum Machine Company:*See*—
Marchione, Joseph H., 3,434,179.

Aumuller, Walter:*See*—
Weber, Helmut, Aumuller, Walter, Weyer, Rudi, and Muth, Karl 3,435,116.

Aune, Edward S., and Brown, Lyle Robert. Camera mounting device. 3,434,406, 03-25-69, Cl. 095-086.

Austin, Amory Earl, and Lee, Preston Pope, to Colgate-Palmolive Company. Continuous manufacture of detergent laundry bars. 3,434,974, 03-25-69, Cl. 252-138.

Automatic Electric Laboratories, Inc.:*See*—
Hartz, Joseph M., Miknaitis, Sigitas, and Vogel, Carl W., 3,435,160.
Pena, Pascual J., 3,435,450.

Automatic Electric Laboratories Inc.:*See*—
Longwell, Thomas F., 3,435,157.

Automatic Switch Company:*See*—
Spinelli, Frank P., and Wiktor, Dominik M., 3,435,390.

Automation Industries, Inc.:*See*—
Maley, Dale R., 3,434,332.

Automobiles Peugeot:*See*—
Lombard, Claude, 3,435,165.

Auville, Calvin, and Gross, Johann, to Celanese Corporation of America. Warp knit terry fabrics. 3,434,306, 03-25-69, Cl. 066-086.

B & S Machinery Company:*See*—
Barbee, Walter J., 3,434,308.

Baader, Herbert, Sennewald, Kurt, and Reis, Helmut, to Knapsack Aktiengesellschaft. Process for the joint manufacture of 2-chloro- butadiene-(1,3) and 1-chlorobutadiene-(1,3). 3,435,083, 03-25-69, Cl. 260-655.

Babb, John J., to Delta Exploration Company, Inc. Shallow water seismic prospecting cable. 3,435,410, 03-25-69, Cl. 340-007.

Babcock, Edward V.:*See*—
Colombo, Francesco, and Babcock, Edward V. 3,434,796.

Babusci, Louis D., Cretella, Biagio A., Feder, David O., and Koontz, Donald E., to Bell Telephone Laboratories, Incorporated. Cylindrical lead acid cell. 3,434,883, 03-25-69, Cl. 136-014.

Bachmann, Horst, Schneider, Hans-Dieter, and Sennhenn, Emil, to Fernseh GmbH. Arrangements for indicating the state of adjustment of optical components in a television camera. 3,435,136, 03-25-69, Cl. 178-006.8

Backer, Stanley, and Popper, Peter. Alternate twist yarns and method of forming same. 3,434,275, 03-25-69, Cl. 057-139.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft:*See*—
Kranz, Joachim, Maier, Karl, and Polster, Rudolf, 3,435,054.
Stastny, Fritz, Gaeth, Rudolf, Schmitt, Bernhard, and Haardt, Udo, 3,434,980.

Badische Anilin-& Soda-Fabrik Aktiengesellschaft:*See*—
Martin, Wolfgang, Linge, Hermann, Hendus, Hans, and Wenger, Friedrich, 3,434,278.

Baer, James A.:*See*—
Heckler, Clarence H., and Baer, James A. 3,435,431.

Bailey, Alfred J., and Greig, James D., to Massey-Ferguson Services N.V. Tractor hitch. 3,434,737, 03-25-69, Cl. 280-461.

Bailey, James R., and Lutzenberger, Kurt, to Switchcraft Inc. Phone jack having a hollow housing with contact elements interfittingly secured therein. 3,435,163, 03-25-69, Cl. 200-051.1

Baker, William F., to Instruments Displays, Inc. Instrument display case. 3,434,624, 03-25-69, Cl. 220-059.

Baldwin, George C., to General Electric Company. Apparatus for measuring velocity of low energy electrons. 3,435,207, 03-25-69, Cl. 250-041.9

Bale, Alton G., Jr., to Wisconsin Electrical Mfg., Co., Inc. Batching control system. 3,434,556, 03-25-69, Cl. 177-070.

Ball Brothers Research Corporation:*See*—
Nestlerode, William A., Sr., 3,434,682.
Pamlenyi, George L., 3,435,362.

Ballinger, Edwin R.:*See*—
Anderson, Donald R., and Ballinger, Edwin R. 3,434,467.

Balogh, Stephen, and Adams, Cecil L., to Parker-Hannifin Corporation. Receiver-dehydrator. 3,434,597, 03-25-69, Cl. 210-095.

Banks, Abraham:*See*—
Shanafelt, Leo A., and Banks, Abraham 3,435,269.

Banning, Thomas A., Jr. Television systems and operations. 3,435,130, 03-25-69, Cl. 178-005.2

Bar, Karl, to Schaum Chemie, Wilhelm Baner K.-G. Apparatus for continuously producing a plastic foam. 3,434,805, 03-25-69, Cl. 023-285.

Baranauckas, Charles F., and Gordon, Irving, to Hooker Chemical Corporation. Fire-retardant polymers containing hydroxy- phosphorus polymers. 3,434,981, 03-25-69, Cl. 260-002.5

Barbee, Walter J., to B & S Machinery Company. Method of knitting hosiery blanks. 3,434,308, 03-25-69, Cl. 066-149.

Barber, Ronald B., to Neptune Meter Company. Oscillating piston-type flow meter. 3,434,345, 03-25-69, Cl. 073-257.

Barchok, Donald J., to Admiral Corporation. Self-oscillating deflection generator. 3,435,282, 03-25-69, Cl. 315-027.

Barcus, Samuel W., Jr.:*See*—
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S. 3,434,828.

Barkan, Philip, to General Electric Company. Gas blast circuit breaker with improved resistor switch. 3,435,166, 03-25-69, Cl. 200-148.

Barletta, Anthony J., to International Equipment Company. Centrifuge bottle and closure therefor. 3,434,615, 03-25-69, Cl. 215-047.

Barlow, Thos., and Sons, Limited:*See*—
Thomas, William J., and Botha, Louis B., 3,434,548.

Barmag Barmer Maschinenfabrik AG:*See*—
Lohest, Hans, 3,435,171.

Barnes Egineering Company:*See*—
Yoder, John R., and McIntosh, Robert B., Jr., 3,435,212.

Barnes, George H., to Burroughs Corporation. Method and apparatus for nondestructive memory devices. 3,435,426, 03-25-69, Cl. 340-174.

Barnett, Claude D., to Calico Cottage Candies, Inc. Method of making buttercream candy. 3,434,847, 03-25-69, Cl. 099-134.

Barnett, William J., to Pansteel, Inc. Nckel-base dispersion hardened alloy. 3,434,810, 03-25-69, Cl. 029-182.5

Baron, Albert A., and Nagy, Francis G., to Parker Instrument Corporation. Electrical control meter having a rotor disk with an arcuate segment for interrupting light between a light source and sensor. 3,435,341, 03-25-69, Cl. 324-150.

Barone, Philip, to Bendix Corporation, The. Automatic brake adjuster mechanism. 3,434,574, 03-25-69, Cl. 188-196.

Barr, Courtland H., Jr.:*See*—
Barr, Courtland H., Sr., Barr, Courtland H., Jr., Barr, John W., and Lucas, James W. 3,434,468.

Barr, Courtland H., Sr., Barr, Courtland H., Jr., Barr, John W., and Lucas, James W., to Abbott Laboratories. Blood sampling device with cannula holder. 3,434,468, 03-25-69, Cl. 128-002.

Barr, John W.:*See*—
Barr, Courtland H., Sr., Barr, Courtland H., Jr., Barr, John W., and Lucas, James W. 3,434,468.

Bartch, Herbert. Transistorized ignition system. 3,434,463, 03-25-69, Cl. 123-148.

Bartels, Helmut:*See*—
Haldimann, Hans Rudolph, and Bartels, Helmut 3,434,604.

Barth, Alfred, Beck, Karl, and Wiedmann, Walter, to Messrs. Filterwerk Mann & Hummel G.m.b.H. Filter for fluids. 3,434,601, 03-25-69, Cl. 210-440.

Barwig, Hans A., and Heidrich, Gunther R., to Alexander Wilhelm Stoeckicht. Planetary gearing with a supporting device for the outer center gear. 3,434,374, 03-25-69, Cl. 074-801.

Basile, Norman K.:*See*—
Yearwood, Donald R., Basile, Norman K., and Bridges, Thomas F. 3,434,492.

Bass, Raymond H., to Ashdee Corp. Coating equipment accessory. 3,434,457, 03-25-69, Cl. 118-301.

Batrow, John A. Liquid dispensing apparatus. 3,434,632, 03-25-69, Cl. 222-400.5

Bauer, Peter, to Bowles Engineering Corporation. High frequency proportional fluid amplifier. 3,434,487, 03-25-69, Cl. 137-081.5

Bauer, Robert D., to Phillips Petroleum Company. Vapor-liquid contacting apparatus. 3,434,701, 03-25-69, Cl. 261-114.

Bauman, Ronald M. Orthicon protective circuit. 3,435,275, 03-25-69, Cl. 315-012.

Beal, Philip F., III, Lincoln, Frank H., Jr., and Pike, John E., to Upjohn Company, The. Cyclopenta[β] pyrans. 3,435,053, 03-25-69, Cl. 260-345.2

Bear Archery Company:*See*—
Stewart, William R., 3,434,465.

Beaver, Emil R., Jr., to Monsanto Research Corporation. Incused graphite segmented thermoelement. 3,434,888, 03-25-69, Cl. 136-203.

Beck, Karl:*See*—
Barth, Alfred, Beck, Karl, and Wiedmann, Walter 3,434,601.

Beckenhauer, William H.:*See*—
Kuhns, Charles R., and Beckenhauer, William H. 3,435,112.

Becker, Wilhelm, to Reichhold Chemicals, Inc. Baking varnish on the basis of alkyd resins and etherified aminotriazine resins free of formaldehyde. 3,434,985, 03-25-69, Cl. 260-021.

Beckman Instruments, Inc.:*See*—
Keahl, Gerald Thomas, 3,435,209.
Porter, Joe A., and Waters, Ronald F., 3,434,953.

Beckman, Melvin H., Unter, Robert K., and Wald, Samuel K., to Keystone Consolidated Industrie, Inc. Shear link and method of using same. 3,434,263, 03-25-69, Cl. 052-715.

Beckman, Paul. Thermal probe. 3,435,400, 03-25-69, Cl. 338-028.

Becton, Dickinson and Company:*See*—
Ciampa, Lincoln L., 3,434,587.

Bedell, Edward L., to Allis-Chalmers Manufacturing Company. Method for ultra-high purity precision casting. 3,434,527, 03-25-69, Cl. 164-069.

Bedford, William A., Jr., to Vare Corporation. Dished washer lock for threaded element. 3,434,520, 03-25-69, Cl. 151-038.

Beekman, Bruce E.:*See*—
Bratingham, Charles R., Beekman, Bruce E., and Eames, Loren W. 3,434,715.

Beesch, Otto, to Bosch, Robert, G.m.b.H. Sealing arrangement. 3,434,461, 03-25-69, Cl. 123-032.

Belk, Wilber C., to FMC Corporation. Article aligning device and method. 3,434,583, 03-25-69, Cl. 198-033.

Bell & Howell Company, :*See*—
Alvarez, Luis W., 3,434,771.

Bell Aerospace Corporation:*See*—
Gerhardt, Lester A., Goerner, Johannes G., and Powell, Frederic D., 3,435,422.
Rodriguez, George L., and Pitt, Richard W., 3,434,546.

Bell Telephone Laboratories, Incorporated:*See*—
Albrecht, Erwin H., 3,435,150.
Babusci, Louis D., Cretella, Biagio A., Feder, David O., and Koontz, Donald E., 3,434,883.
Bishop, John D., 3,435,324.
Brooks, Chester E., Henry, James L., and Meyerle, John A., 3,435,159.
Burckhardt, Christoph B., and Pennington, Keith S., 3,435,244.
Busala, Alessandro, Stokes, Rembert R., and Strommen, Lawrence A., 3,435,146.
Colbow, Konrad, Garrett, Charles G. B., and Thomas, Donald E., 3,435,213.
Conrath, Jules R., 3,435,436.
Courtney-Pratt, Jeofry S., and Hargrove, Logan E., 3,435,230.
Crowson, Fred B., and Groth, George S., 3,435,142.
Damen, Theodoor C., Leite, Rogerio C. C., and Porto, Sergio P. S., 3,434,779.
Denton, Richard T., and Varnerin, Lawrence J., Jr., 3,435,234.
Eubanks, John M., 3,435,252.
Goordman, Robert V., 3,435,364.
Gordon, Eugene I., 3,435,228.
Green, Carl W., 3,435,437.
Gretter, Ralph W., Spollen, Francis J., and Voigt, Gottfried O., 3,434,297.
Gunter, Ernest M., and Simon, James L., 3,435,152.
Inose, Hiroshi, and Koono, Zenya, 3,435,149.
Kretsch, Kenneth P., and Lyons, Edward F., 3,435,416.
Miller, Stewart E., 3,434,774.
Patel, Chandra K. N., 3,435,363.
Rack, Alois J., 3,435,226.
Regitz, William M., 3,435,438.
Seidel, Harold, 3,435,260.
White, Alan D., 3,435,371.
Wolfe, Peter A., 3,435,373.
Young, Frederick C., 3,435,256.

Bell, Tommy O.:*See*—
Phelps, Morton E., and Bell, Tommy O. 3,434,496.

Bellmer, Friedrich O., to Worthington Corporation. Rotary compressor. 3,434,655, 03-25-69, Cl. 230-152.

Bellmer, Friedrich O., to Worthington Corporation. Lubrication system for rotary vane compressors. 3,434,656, 03-25-69, Cl. 230-207.

Bellmer, Friedrich O.:*See*—
Caldemeyer, Daniel F., Caldemeyer, Lloyd O., Gates, John T., and Bellmer, Friedrich O. 3,434,755.

Bellot, Jacques, to Societe de Tricolage Aube et Marne. Knitted collar for a knitted article of wear. 3,434,309, 03-25-69, Cl. 066-172.

Belot Corporation:*See*—
Dennis, Louis E., 3,434,923.
Ely, Donald A., 3,434,396.
Ely, Donald A., 3,434,922.

Bemberg S.p.A.:*See*—
Cerutti, Giacomo, and Lanza, Alberto, 3,434,180.

Bender, Ilan. Method for making bonded pipe joints. 3,434,900, 03-25-69, Cl. 156-182.

Bender, Werner K.:*See*—
Schwartz, Morris, and Bender, Werner K. 3,435,156.

Bendix Corporation, The:*See*—
Aldrich, F William, and Deane, Theodore E., 3,434,998.
Barone, Philip, 3,434,574.
Delker, Thomas C., 3,434,372.
Ditlinger, Richard J., 3,434,373.

Bendix Corporation, The, :*See*—
Dorwald, Rudolf, 3,435,128.

Bendix Corporation, The:*See*—
Hager, Robert R., 3,434,285.
Julow, Thomas M., and French, Charlie N., 3,434,388.
Julow, Thomas M., 3,434,759.
Kasten, Walter, 3,434,486.
Kinney, John F., 3,434,350.
Lavengood, Thomas H., 3,434,196.
Little, Knowles G., Jr., 3,435,367.
Pauwels, Edward M., 3,434,489.
Raizes, Sheldon F., 3,434,286.
Ritsema, Irving R., 3,434,195.
Runkle, Dean E., 3,434,368.
Runkle, Dean E., 3,434,369.
Smith, Donald F., Furyear, David B., and Smith, Donald W., 3,434,427.
Tankersley, James A., 3,434,899.
Weiss, Ernest, 3,434,356.

Bengtsson, Hans Georg, to Telefonaktiebolaget L.M. Ericsson. Multistage magnetic shift register with each stage having four cores. 3,435,430, 03-25-69, Cl. 340-174.

Benigno, James:*See*—
Weidner, Ralph J., and Benigno, James 3,434,236.

Benjamin, Harry, to Harshaw Chemicals Limited. Method for depositing a coating on the internal walls of capillary or smallbore tubes. 3,434,859, 03-25-69, Cl. 117-017.

Benjamin, Milton L., Walker, David D., and Miles, Wilbur N., to Erickson Tool Company. Boring bar insert. 3,434,376, 03-25-69, Cl. 077-058.

Bennett, Roy Brian, and Blair, William Carmichael, to English Electric Company, Limited, The. Cooling arrangement for stator end plates and eddy current shields of alternating current generators. 3,435,262, 03-25-69, Cl. 310-054.

Bennion, David Ralph, and English, William Kirk, to AMP Incorporated. Multiaperture magnetic core. 3,435,432, 03-25-69, Cl. 340-174.

Bennion, David Ralph, and English, William Kirk, to AMP Incorporated. Magnetic core shift register. 3,435,433, 03-25-69, Cl. 340-174.

Bentley, William, and Blood, Raymond, to Cotton, William, Limited. Knitting machines. 3,434,305, 03-25-69, Cl. 066-005.

Benzies, George Y., to Vicker Aircraft Holdings Limited. Apparatus for tensioning sheet materials. 3,434,181, 03-25-69, Cl. 018-019.

Bereziat, Andre:*See*—
Podesta, Armando, Vignati, Carlo, and Bereziat, Andre 3,434,325.

Bergantini, Attilio R., to Kaiser Steel Corporation. Beam fabricating method. 3,434,198, 03-25-69, Cl. 029-472.3

Berger, Richard F.:*See*—
Cabbage, John T., Blaker, David G., and Berger, Richard F. 3,435,084.

Bergman, Robert J., and Prohofsky, Le Roy A., to Sperry Rand Corporation. Solid stack memory. 3,435,435, 03-25-69, Cl. 340-174.

Bergmann, Horst Sigurd Max:*See*—
Toischer, Karl Engelbert Ludwig, and Bergmann, Horst Sigurd Max 3,434,802.

Bering, Gerhard:*See*—
Beyersdorf, Hartwig, and Bering, Gerhard 3,435,267.

Berlin, A Samuel, Little, Vincent C., Leadore, Toney E., and Reid, Edwin J., Jr., to United States of America, Army. Safety latch for bouchon grenade fuze. 3,434,421, 03-25-69, Cl. 102-064.

Berman, Merril, and Slaughter, John, to Worthington Corporation. Self-priming pump system with external actuating means. 3,434,430, 03-25-69, Cl. 103-113.

Bernard, Herbert J. Trailer hitch. 3,434,735, 03-25-69, Cl. 280-406.

Bernardin, Leo J., to Kimberly-Clark Corporation. Process of forming absorbent paper from a mixture of cellulosic fibers and partially crosslinked cellulosic fibers and paper thereof. 3,434,918, 03-25-69, Cl. 162-111.

Bernier, Donald R., to Intercontinental Systems, Inc.,. Input/output system. 3,435,419, 03-25-69, Cl. 340-172.5

Bernstein, William, and Wax, Robert L., to TRW Inc. Neutral-atom detector. 3,435,214, 03-25-69, Cl. 250-071.5

Bertelsen, Bruce I., Hottenrott, Hans G., and Kump, Herbert J., to International Business Machines Corporation. Dispersion locked memory. 3,435,428, 03-25-69, Cl. 340-174.

Bertheas, Jean, to CSF-Compagnie Generale de Telegraphie Sans Fil. High speed system for processing long range sonar pulses. 3,435,407, 03-25-69, Cl. 340-003.

Best, Stanley G., to United Aircraft Corporation. Cabin pressure fault detector. 3,434,407, 03-25-69, Cl. 098-001.5

Bestenreiner, Friedrich:*See*—
Biedermann, Friedrich, and Bestenreiner, Friedrich 3,434,403.

Bethell, James Robert, Gasson, Edward James, Hadley, David James, and Neale, Roderick Frank, to Distillers Company, Limited, The. Oxidation of acrolein and methacrolein with a molybdenum polyvalent metal-oxygen catalyst. 3,435,069, 03-25-69, Cl. 260-530.

Betschart, Robert J., to FMC Corporation. Bagging apparatus. 3,434,711, 03-25-69, Cl. 271-062.

Bettcher, Louis A., to Lab-O-Matic Corp. Power cleaver. 3,434,519, 03-25-69, Cl. 146-124.

Beurtheret, Charles A., and Boissiere, Jacques G., said Beurtheret assor. to Compagnie Francaise Thomson-Houston Hotchkiss-Brandt, and said Boissiere assor. to Society Thomson-Varian. Thermosyphonic heat exchange device for stabilizing the frequency of cavity resonators. 3,435,283, 03-25-69, Cl. 315-032.

Beyersdorf, Hartwig, and Bering, Gerhard, to Lloyd Dynamowerke G.m.b.H. Discoidal electrical machines. 3,435,267, 03-25-69, Cl. 310-168.

Beynon, Thomas J. Automatic self-locking swivel arrow quiver. 3,434,638, 03-25-69, Cl. 224-001.

Bezerie, Jean Pierre, to Societe Anonyme de Telecommunications. Means for reducing interference effects in electro- optical direction finders. 3,435,235, 03-25-69, Cl. 250-209.

Bezouska, Vlastimil, Skvor, Josef, Pajisek, Frantisek, Zavazal, Zdenek, and Polorny, Oldrich, to CKD Praha, oborovy podnik. Semi-conductor assembly with semiconductor element in area contact under pressure with conductive terminal elements. 3,435,304, 03-25-69, Cl. 317-234.

Biedermann, Friedrich, and Bestenreiner, Friedrich, to Agfa-Gevaert Aktiengesellschaft. Automatic exposure control circuit. 3,434,403, 03-25-69, Cl. 095-010.

Biel, John H.:*See*—
Judd, Claude I., Drukker, Alexander E., and Biel, John H. 3,435,073.

Bienwald, Wolfgang F., and Bowie, William J., to Leviton Manufacturing Co., Inc.Rocker type electric switch with pilot light. 3,435,169, 03-25-69, Cl. 200-167

Bilisoly, Julius Philip, and Zachry, James Bryan, to Esso Research and Engineering Company. Removing nitrogen from hydrocarbon oils. 3,434,964, 03-25-69, Cl. 208-254.

Billon, Guy M., and Daveau, Bernard J., to Compagnie Francaise Thomson-Houston-Hotchkiss Brandt. Polarization rotator for microwaves. 3,435,380, 03-25-69, Cl. 333-021.

Bily, Peter J., to FMC Corporation. Fluid transfer apparatus. 3,434,491, 03-25-69, Cl. 137-315.

Bily, Peter J., to FMC Corporation. Fluid transferring apparatus. 3,434,497, 03-25-69, Cl. 137-615.

B.I.P. Brevets Inventions Promotion S.A.:*See*—
Cazet, Bernard, 3,434,176.

Biraghi (Societe Anonyme):*See*—
Pignal, Edmond, 3,434,533.

Birkenmeyer, Robert D., to Upjohn Company, The. 7-Deoxylincomycin and analogs and isomers thereof and process for making the same. 3,435,025, 03-25-69, Cl. 260-210.

Birt, David Robin, to Communications Patents Limited. Apparatus for generating modulated waves from pulse-type modulating signal. 3,435,378, 03-25-69, Cl. 332-041.

Bishop, John D., to Bell Telephone Laboratories, Incorporated. Driven inverter dead-time circuit. 3,435,324, 03-25-69, Cl. 321-045.

Bissell, Robert D.:*See*—
Ingham, Robert J., and Bissell, Robert D. 3,434,330.

Bixby, William H., to New North Electric Company,. Filtered alternating current voltage regulator. 3,435,331, 03-25-69, Cl. 323-045.

Bjordahl, James:*See*—
Brastow, Edgar R., Bjordahl, James, and Little, Ronald F. 3,434,355.

Blair, David J., and Herold, Carl D., Jr., to Sylvania Electric Products, Inc.Radio communication systems. 3,435,344, 03-25-69, Cl. 325-421.

Blair, George Richard:*See*—
United States of America, National Aeronautics and Space Administration, Administrator, 3,434,855.

Blair, George Richard: United States of America, National Aeronautics and Space Administration, Administrator, 3,434,855.

Blair, William Carmichael:*See*—
Bennett, Roy Brian, and Blair, William Carmichael 3,435,262.

Blaker, David G.:*See*—
Cabbage, John T., Blaker, David G., and Berger, Richard F. 3,435,084.

BLH Electronics, Inc.:*See*—
Senour, Donald A., 3,434,343.

Bliss, E. W., Company:*See*—
Weld, Foster E., 3,435,413.

Bliss, George N., to Diamond International Corporation. Method and system for transferring heat-activated labels. 3,434,902, 03-25-69, Cl. 156-230.

Blitchington, Frank H., Jr., to Western Electric Company, Incorproated. Method of and an apparatus for determining a specific point or line. 3,435,335, 03-25-69, Cl. 324-034.

Blodgett, Edwin O., to Friden, Inc.Coil clutch with latch and position brake. 3,434,576, 03-25-69, Cl. 192-012.

Blohm, Robert. Magnetic stepping mechanism, especially for the feeding movements of grinding machines. 3,434,361, 03-25-69, Cl. 074-142.

Blomdahl, Floyd A.:*See*—
Reinke, John F., Schlicke, Heinz M., and Blomdahl, Floyd A. 3,435,387.

Blomgren, Lars, and Johansson, Ake, to Aktiebolaget Svenska Flaktfabriken. Ventilating apparatus for a paper machine. 3,434,224, 03-25-69, Cl. 034-114.

Blood, Raymond:*See*—
Bentley, William, and Blood, Raymond 3,434,305.

Blubaum, Werner, to Maschinenfabrik Kapp & Co.Device with adjustable templet for dressing profiled grinding wheels. 3,434,464, 03-25-69, Cl. 125-011.

Bluestein, Ben A., to General Electric Company. Organopolysiloxane compositions. 3,435,000, 03-25-69, Cl. 260-045.75

Bockelmann, Victor G., to United States of America, Navy. Parachute canopy deflation apparatus. 3,434,681, 03-25-69, Cl. 244-145.

Bockno, Gregory C., Da Vincii, Anthony P., and Schappel, Joseph W., to FMC Corporation. Viscose rayon fiber and method of making same. 3,434,913, 03-25-69, Cl. 161-070.

Bode, James Daniel, to FMC Corporation. Pyrylium salts as pickling inhibitors. 3,434,973, 03-25-69, Cl. 252-079.4

Bodge, Clifford A., to Texas Instruments, Incorporated. Apparatus for providing instantaneous overload protection especially useful in protecting semiconductive devices. 3,435,293, 03-25-69, Cl. 317-031.

Boehme, Horst:*See*—
Brumme, Fritz, and Boehme, Horst 3,434,660.

Boehne, Dale R.:*See*—
Connoy, Eugene N., and Boehne, Dale R. 3,435,173.

Boeing Company, The:*See*—
Maytone, Frank F., 3,434,455.

Boeker, Roy A., to FMC Corporation. Well apparatus. 3,434,743, 03-25-69, Cl. 285-039.

Boekhorst, Antonius, to North American Philips Company, Inc.Circuit arrangement for producing a sawtooth current through a deflection coil and a high voltage. 3,435,279, 03-25-69, Cl. 315-027.

Boemelburg, Josef:*See*—
Ibing, Guenther, Schirrmacher, Hermann, Vollmer, Herbert, Boemelburg, Josef, and Schwall, Fritz 3,434,807.

Boggs, William H., and Rousselot, George E., to International Business Machines Corporation. Method of etching and plating urea formaldehyde. 3,434,866, 03-25-69, Cl. 117-047.

Bogue, David. Fishing reel brake. 3,434,676, 03-25-69, Cl. 242-084.5

Bohrer, Albert H., Sr.Traffic control signal. 3,435,412, 03-25-69, Cl. 340-107.

Boissiere, Jacques G.:*See*—
Beurtheret, Charles A., and Boissiere, Jacques G. 3,435,283.

Bolden, Harold E.Eyeglass frame with pivotally mounted lens. 3,434,780, 03-25-69, Cl. 351-041.

Boling, Eldon A.Gas burner for atomic absorption spectroscopy. 3,434,668, 03-25-69, Cl. 239-552.

Bombardieri, Caurino C., to Esso Production Research Company. Acid treating subterranean formations. 3,434,545, 03-25-69, Cl. 166-042.

Bomberger, Howard B., Jr., to Crucible Steel Company of America. Composite titanium-alloy article resistant to hot salt corrosion. 3,434,813, 03-25-69, Cl. 029-194.

Bonacci, Nicholas A., to Maynard Manufacturing Company. Method of making a lobular threaded fastener. 3,434,168, 03-25-69, Cl. 010-027.

Bondley, Ralph J., to General Electric Company. Thermionic cathode. 3,434,812, 03-25-69, Cl. 029-182.5

Boorman, John K., to American Standard, Inc.Method for the manufacture of an anti-sweat closet tank. 3,435,101, 03-25-69, Cl. 264-045.

Borg-Warner Corporation:*See*—
de Perczel, Desi, 3,435,164.
Geis, Everett R., 3,435,248.
Smith, Herman E., 3,435,402.

Borkan, Harold, to Radio Corporation of America. Solid state image pickup device utilizing insulated gate field effect transistors. 3,435,138, 03-25-69, Cl. 178-007.1

Bosch, Robert, G.m.b.H.:*See*—
Beesch, Otto, 3,434,461.
Brand, Guenter, and Pfrommer, Gustav, 3,435,264.

Bosworth, Delbert B., Christy, Arthur S., Jr., and La Rochelle, Fernand L., to United Industrial Syndicate, Inc.Apparatus for transferring heavy objects between vertically spaced levels. 3,434,609, 03-25-69, Cl. 214-095.

Botha, Louis B.:*See*—
Thomas, William J., and Botha, Louis B. 3,434,548.

Bottcher, Peter:*See*—
Graff, Peter, and Bottcher, Peter 3,434,525.

Bottomley, James, and Strauss, Richard, to National Polychemicals, Inc.Phenolic sulfide phosphite compounds. 3,435,097, 03-25-69, Cl. 260-887.

Bough, Maynard O., Jr.:*See*—
Zappia, Anthony T., and Bough, Maynard O., Jr. 3,434,820.

Bower, Arnold B., Jr., to General Electric Company. Self-centering cutter bit for drills. 3,434,552, 03-25-69, Cl. 175-410.

Bower, Arnold B., Jr., to General Electric Company. Cutter bit for drills. 3,434,554, 03-25-69, Cl. 175-410.

Bowie, William J.:*See*—
Bienwald, Wolfgang F., and Bowie, William J. 3,435,169.

Bowles Engineering Corporation:*See*—
Bauer, Peter, 3,434,487.

Bowman, Donald C., to Sinclair Research, Inc... Apparatus for measurement of azimuth. 3,434,219, 03-25-69, Cl. 033-205.

Boyce, Harold D.:*See*—
Soderquist, Frederick J., Boyce, Harold D., and Kline, Paul E. 3,435,086.

Boyer, Ralph E., to United States of America, Navy,. Circuit module guide and retaining device. 3,434,687, 03-25-69, Cl. 248-361.

Boyle, Willard Sterling, and Creaghan, David Cyril. Snow making. 3,434,661, 03-25-69, Cl. 239-002

Brackin, Wayne L., to Dresser Industries, Inc.Hook assembly. 3,434,696, 03-25-69, Cl. 254-192.

Bradley, Edward Franklin, to International Business Machine Corporation. Electronic high speed strip record accessing control circuitry. 3,435,310, 03-25-69, Cl. 318-018.

Bradley, Edward Franklin, and Ferrier, Herman Anthony, Jr., to International Business Machines Corporation. Electronic high speed device incrementing control circuitry. 3,435,314, 03-25-69, Cl. 318-138.

Brainard, Edward C., II, to Braincon Corporation. Method and apparatus for underwater towing of seismic hydrophone arrays. 3,434,451, 03-25-69, Cl. 114-235.

Braincon Corporation:*See*—
Brainard, Edward C., II, 3,434,451.

Brand, Guenter, and Pfrommer, Gustav, to Bosch, Robert, G.m.b.H.Magneto flywheel ignition. 3,435,264, 03-25-69, Cl. 310-070.

Brandmayr, Ronald J., to United States of America, Army. Method of making a barium titanate body. 3,435,104, 03-25-69, Cl. 264-065.

Brandt, Armand, to Aktiengesellschaft Brown, Boveri & Cie. Electrical converter circuit for supplying a load with variable frequency alternating current from an alternating current source of constant frequency. 3,435,321, 03-25-69, Cl. 321-007.

Braslau, Norman, to International Business Machines Corporation. Semiconductor bulk effect microwave oscillator. 3,435,303, 03-25-69, Cl. 317-234.

Brastow, Edgar R., Bjordahl, James, and Little, Ronald F., to Clary Corporation. Gyroscope. 3,434,355, 03-25-69, Cl. 074-005.12

Brastow, Edgar R., Voge, Andrew, and Schaberg, Richard R., to Clary Corporation. Rate gyroscope. 3,434,353, 03-25-69, Cl. 074-005.6

Bratingham, Charles R., Beekman, Bruce E., and Eames, Loren W.Stress reducing floor surface. 3,434,715, 03-25-69, Cl. 272-057.

Braun, Herbert:*See*—
Ruprecht, Robert, Heydlauf, Kurt, and Braun, Herbert 3,434,363.

Braunisch, Herbert, Lenhart, Helga, and Seifried, Walter, to Kalle Aktiengesellschaft. Manufacture of polyethylene terephthalate laminates. 3,434,916, 03-25-69, Cl. 161-231.

Bray, Sidney Crockett. Food turner and grill cleaner kit combination. 3,434,175, 03-25-69, Cl. 015-105.

Bridges, Thomas F.:*See*—
Yearwood, Donald R., Basile, Norman K., and Bridges, Thomas F. 3,434,492.

Briggs & Stratton Corporation:*See*—
Jacobi, Edward N., 3,434,317.

Bringman, Joseph M., Lawther, James M., and Kendig, Paul M., to United States of America, Navy,. Line array hydrophone and system. 3,435,409, 03-25-69, Cl. 340-006.

British Titan Products Company Limited:*See*—
Weinberg, Felix Jiri, Howden, Derek, and Cleaver, Denis, 3,434,950.

Britton, Harrison J., to Alloy Steel Products Co.Torsional rotational valve seal construction. 3,434,693, 03-25-69, Cl. 251-203.

Broadbent, Norman, and Read, Kenneth G., to Canadian Marconi Company. Dual range VHF receiver. 3,435,348, 03-25-69, Cl. 325-453.

Broadway Research & Development Corporation:*See*—
Lowe, John C., 3,434,968.

Broder, Jacob:*See*—
Mandelkorn, Joseph, and Broder, Jacob 3,434,885.

Brokke, Mervin E., Lukes, George E., deceased (by Hazzard, John, administrator), and Arnekley, Duane R., to Stauffer Chemical Company. PF_3 adducts of certain substituted acetamides. 3,435,043, 03-25-69, Cl. 260-294.7

Brooks, Chester E., Henry, James L., and Meyerle, John A., to Bell Telephone Laboratories, Incorporated. Circuit and method for testing complex systems. 3,435,159, 03-25-69, Cl. 179-175.2

Brosseit, Fritz V., to Western Electric Company, Incorporated. Terminal forming machine. 3,434,324, 03-25-69, Cl. 072-324.

Brothers, Jack, to United States of America, Army. Air-burst fuze system for projectiles. 3,434,423, 03-25-69, Cl. 102-070.2

Broughton, Donald B., to Universal Oil Products Company. Recovery of aromatics. 3,435,087, 03-25-69, Cl. 260-674.

Brouwer, Charles W., and Norris, Alan H., to Leesona Corporation. Drive mechanism. 3,434,673, 03-25-69, Cl. 242-018.1

Brown, Cicero C.Floatable base for marine drilling platform and method of operation. 3,434,293, 03-25-69, Cl. 061-046.5

Brown, D. S., Company, The:*See*—
Aftreth, Owren J., 3,434,689.

Brown, Earl J., Crowder, James R., and Karl, Raymond O., to Douglas, McDonnell Corporation. Process for making thin-film temperature sensors. 3,434,940, 03-25-69, Cl. 204-015.

Brown, George C., Jr., to Martin-Marietta Corporation. Color selector and specifier. 3,434,227, 03-25-69, Cl. 035-028.3

Brown, Lyle Robert:*See*—
Aune, Edward S., and Brown, Lyle Robert 3,434,406.

Brown, Thomas D.:*See*—
Mickelson, Merlyn F., and Brown, Thomas D. 3,434,939.

Brown, William C., George, Roscoe H., Heenan, Neil I., and Wonson, Roger C., to Raytheon Company. Microwave to DC converter. 3,434,678, 03-25-69, Cl. 244-001.

Brueckmann, Helmut, to United States of America, Army. Underground antenna. 3,435,457, 03-25-69, Cl. 343-719.

Brukker, Alexander E., and Judd, Claude I., to Colgate-Palmolive Company. 2-Anilinoquinolines. 3,435,041, 03-25-69, Cl. 260-288.

Brumme, Fritz, and Boehme, Horst, to Effbe-Werke Fritz Brumme KG.Expansion tank for hot-water heating systems. 3,434,660, 03-25-69, Cl. 237-066.

Brunner, Richard, to American Standard, Inc.Swirl meter. 3,434,344, 03-25-69, Cl. 073-194.

Brunswick Corpoation:*See*—
Woodfill, William L., 3,434,448.

Brunswick Corporation:*See*—
Cornell, William D., Disney, Morton F., Jr., and Hoffman, Paul R., 3,435,120.
Kiekhaefer, Elmer C., 3,434,250.
Kiekhaefer, Elmer C., 3,434,251.
McCormick, Daniel F., 3,434,450.

Brunswick Corporation, :*See*—
Minks, Floyd M., 3,435,265.

Brunswick Corporation:*See*—
North, Irving W., 3,434,449.

Brunton, Donald C., to Industrial Nucleonics Corporation. Radiation sensitive structure determining apparatus. 3,435,240, 03-25-69, Cl. 250-219.

Buchman, Gerald. Locking device for portable equipment. 3,434,312, 03-25-69, Cl. 070-058.

Bucil, Frantisek:*See*—
Doudlebsky, Ctibor, Fajt, Ludvik, Bucil, Frantisek, and Kabele, Stanislav 3,434,184.

Buck, Francis Fremonte, and De Renzo, Edward Clarence, to American Cyanamid Company. Process for purifying plasmin. 3,434,929, 03-25-69, Cl. 195-066.

Buck, Thomas M., and Satterwhite, Fred B., to Klinger Manufacturing Company, Limited, The. Method of continuously dyeing and stretching undrawn yarn. 3,434,189, 03-25-69, Cl. 028-075.

Buckner Industries, Inc.:*See*—
Royer, John A., 3,434,665.

Bucyrus-Erie Company, :*See*—
Kordik, Kenneth S., Spunnhake, Ernst W., and Zaumseil, Dean R., 3,435,315.

Budd Company, The:*See*—
Eggert, Walter S., Jr., 3,434,256.
Freholm, Omar E., 3,434,570.
Haroldson, Arthur H., and Cox, Hubert L., 3,434,889.
Herkness, Frank G., and Simmons, Charles W., Jr., 3,434,215.
Rueth, Joseph F., and Urian, Charles A., 3,434,300.
Spry, James F., 3,434,216.
Van Sciver, Herbert D., 3,434,938.
Whitman, Robert M., 3,434,919.

Buhrer, Carl F., to General Telephone and Electronics Laboratories, Inc.Signal transmission systems. 3,435,229, 03-25-69, Cl. 250-199.

Bullock, Milon W., and Rohrbacher, George H., Jr., to American Cyanamid Company. O,O-dilower alkyl-O-(3-lower alkyl-4- sulfonoyl)-phenyl phosphorothioates. 3,435,100, 03-25-69, Cl. 260-944.

Bumbulis, Janis:*See*—
Eng, Jackson, and Bumbulis, Janis 3,434,961.

Bundy Corporation:*See*—
Knox, David R., 3,434,503.

Burckhardt, Christoph B., and Pennington, Keith S., to Bell Telephone Laboratories, Incorporated. Pattern recognition apparatus utilizing complex spatial filtering. 3,435,244, 03-25-69, Cl. 250-219.

Burgoon, Jack L.:*See*—
Dolan, Francis D., and Burgoon, Jack L. 3,434,178.

Burkhart, Joe H.Exhaust chamber. 3,434,280, 03-25-69, Cl. 060-032.

Burlington Industries, Inc.:*See*—
Smith, Vernon C., and Hinton, Everett H., Jr., 3,434,875.

Burnbaum, Jack. Combination motor and blower. 3,434,653, 03-25-69, Cl. 230-117.

Burnsweig, Joseph, Jr., and O'Brien, Larry H., to Hughes Aircraft Company. Power splitting high level RF modulator. 3,435,342, 03-25-69, Cl. 325-126.

Burroughs Corporation:*See*—
Barnes, George H., 3,435,426.
Lawrie, William N., Jr., 3,435,257.
Lemma, Robert H., 3,435,294.
McAvoy, John A., 3,435,258.
Rose, Thomas P., and Hollowood, Calvin T., 3,435,127.
Schira, John J., Sadler, William R., and Dragon, Thomas J., 3,435,424.

Burrows, Lewis M., to Dresser Industries, Inc.Fluid pressure reducer. 3,434,500, 03-25-69, Cl. 138-042.

Burton, Lawrence A.:*See*—
Mikolic, Charles R., and Burton, Lawrence A. 3,435,389.

Busala, Alessandro, Stokes, Rembert R., and Strommen, Lawrence A., to Bell Telephone Laboratories, Incorporated. Coin telephone control circuit. 3,435,146, 03-25-69, Cl. 179-006.3

Butler, John Mann:*See*—
Hathaway, Clayton E., Jr., De Brunner, Ralph E., and Butler, John Mann 3,435,004.

Cabbage, John T., Blaker, David G., and Berger, Richard F., to Phillips Petroleum Company. Combination process with biphenyl production. 3,435,084, 03-25-69, Cl. 260-667.

Caddick, Francis Richard. Watercraft with scoop. 3,434,444, 03-25-69, Cl. 114-057.

Cairatti, Anthony E., to Schafroth, Werner. Nailing machine. 3,434,393, 03-25-69, Cl. 091-417.

Caldemeyer, Daniel F., Caldemeyer, Lloyd O., Gates, John T., and Bellmer, Friedrich O., said Gates assor to said Caldemeyer, D. F., and said Caldemeyer, L. O.Combination reclining and rocking chair Rotary compressor. 3,434,755, 03-25-69, Cl. 297-269.

Caldemeyer, Daniel F.:*See*—
Caldemeyer, Daniel F., Caldemeyer, Lloyd O., Gates, John T., and Bellmer, Friedrich O., 3,434,755.

Caldemeyer, Lloyd O.:*See*—
Caldemeyer, Daniel F., Caldemeyer, Lloyd O., Gates, John T., and Bellmer, Friedrich O. 3,434,755.

Caldwell, Richard L., to Mobil Oil Corporation. Three-dimensional display of borehole logs. 3,434,568, 03-25-69, Cl. 181-000.5

Calgon Corporation:*See*—
Ralston, Paul H., 3,434,969.

Calico Cottage Candies, Inc.:*See*—
Barnett, Claude D., 3,434,847.

Callahan, James L.:*See*—
Grasselli, Robert K., and Callahan, James L. 3,435,061.

Calumet & Hecla, Inc.:*See*—
Goble, Ralph W., 3,434,329.

Cameras for Industry, Inc.:*See*—
Friedman, Hirsch, 3,434,405.

Campbell, Trevor G., Coogan, Lawrence P., and Hosoda, Yoshimi, to Caterpillar Tractor Co.Push-pull coupling for tractor-scraper units. 3,434,738, 03-25-69, Cl. 280-477.

Canadian Limited:*See*—
Kurdyla, Nicholas, 3,435,332.

Canadian Marconi Company:*See*—
Broadbent, Norman, and Read, Kenneth G., 3,435,348.

Canevari, Roger:*See*—
Regnier, Gilbert, Canevari, Roger, Le Douarec, Jean-Claude, and Laubie, Michel 3,435,036.

Cannon Mills Company:*See*—
Harkey, Johnny D., 3,434,504.

Cannon, William N., to Lilly, Eli, and Company. Synergistic combination containing an oxiodinium compound and 3,4,4'- trichlorocarbanilide. 3,435,119, 03-25-69, Cl. 424-322.

Canterino, Peter J.:*See*—
Goebel, George A., and Canterino, Peter J. 3,435,019.

Carbone, Anthony J., to Dow Chemical Company, The. Insulated frozen dessert packages. 3,434,849, 03-25-69, Cl. 099-192.

Carbonnel, Henri Amedee Basile:*See*—
Pinault, Jacques Gilbert, Lallet, Jean Paul, and Carbonnel, Henri Amedee Basile 3,435,145.

Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario, to Pirelli S.p.A.Method for manufacturing pneumatic tires. 3,434,897, 03-25-69, Cl. 156-132.

Carey, Richard J., and Dunlap, Robert B., to Compo Industries, Inc.Method of reinforcing shoe parts. 3,434,170, 03-25-69, Cl. 012-146.

Carey, Richard R.:*See*—
Dore, James E., and Carey, Richard R. 3,434,825.

Carlock, Frank R., Kippenhan, B. William, Lamoureux, William R., and Lazarchick, Nicholas, Jr., to International Business Machines Corporation. Pincushion corrected deflection system for flat faced cathode ray tube. 3,435,278, 03-25-69, Cl. 315-024.

Carlson, Arthur W., and Carlson, Ralph J., to A&R Meats, Inc.Mixing machine. 3,434,697, 03-25-69, Cl. 259-003.

Carlson, Ralph J.:*See*—
Carlson, Arthur W., and Carlson, Ralph J. 3,434,697.

Carolin, Lyn. Apparatus and method for cleaning fixed windows. 3,434,882, 03-25-69, Cl. 134-026.

Carpenter, James E., and Pleuthner, Richard L., to United States of America, Air Force. Rotating lip hot gas collector nozzle. 3,434,663, 03-25-69, Cl. 239-132.3

Carrier Corporation:*See*—
Fragnito, Daniel A., 3,434,409.

Carroll, James C., to International Telephone and Telegraph Corporation. Zero output impedance amplifier. 3,435,360, 03-25-69, Cl. 330-025.

Carter, Cecil O.:*See*—
Hutson, Tom, Jr., and Carter, Cecil O. 3,435,092.

Carter, George Harold, to Redland Tiles Limited. Tiled roofs. 3,434,260, 03-25-69, Cl. 052-471.

Caterpillar Tractor Co.:*See*—
Campbell, Trevor G., Coogan, Lawrence P., and Hosoda, Yoshimi, 3,434,738.
Olmsted, Peter B., 3,434,391.

Caveny, Leonard H., to Thiokol Chemical Corporation. Thrust vector control for solid propellant rocket motors by means of injection. 3,434,287, 03-25-69, Cl. 060-224.

Cazet, Bernard, to B.I.P. Brevets Inventions Promotion S.A.Shell-mounted broom or similar brush-wear article. 3,434,176, 03-25-69, Cl. 015-177.

Ceausescu, Elena, and Fieroiu, Victoria, to Ministerul Industriei Chimice. Continuous process and plant for polymer separation from polymer solutions. 3,434,523, 03-25-69, Cl. 159-047.

Celanese Corporation:*See*—
McAndrew, Francis B., 3,435,005.
Witt, Enrique R., 3,435,099.

Celanese Corporation of America:*See*—
Auville, Calvin, and Gross, Johann, 3,434,306.

Celovsky, Michael J., to Industrial Tool Engineering Company. Electrical discharge machining apparatus dies and roll manufacture. 3,435,174, 03-25-69, Cl. 219-069.
Ceraldi, Bernard A.Automatic soap dispenser. 3,434,628, 03-25-69, Cl. 222-052.
Cerles, Georges, and Fougeres, Michel, to Pechiney-Compagnie de Produits Chimiques et Electrometallurgique. Apparatus for cleaning and descaling tubular elements. 3,434,174, 03-25-69, Cl. 015-104.07
Cerutti, Giacomo, and Lanza, Alberto, to Bemberg S.p.A.Apparatus for melting synthetic linear polymers and feeding them to a spinneret. 3,434,180, 03-25-69, Cl. 018-008.
Chamberlain Manufacturing Corporation:*See*—
Herman, Irving, and Andreassen, Donald, 3,434,422.
Chance, Dudley A., to International Business Machines Corporation. Process for etching silicon monoxide and etchant solutions therefor. 3,434,896, 03-25-69, Cl. 156-017.
Chang, Winston H., to General Electric Company. Tungsten-base alloys. 3,434,829, 03-25-69, Cl. 075-176.
Channell, William H.Pedestal and underground terminals for buried cable systems. 3,435,124, 03-25-69, Cl. 174-038.
Chapin, Earl C., to Monsanto Company. Coating compositions comprising the reaction product of a drying or semidrying oil with vinyl benzyl alcohol. 3,434,986, 03-25-69, Cl. 260-021.
Charrier, Rolf:*See*—
Siefert, Roland, and Charrier, Rolf 3,435,313.
Chauvin, Bernard, to Westinghouse Electric Corporation. Apparatus for sealing off glass vessels. 3,434,818, 03-25-69, Cl. 065-152.
Check Data Control Corporation:*See*—
Wright, Lyle E., 3,434,414.
Chemische Werke Huels AG:*See*—
Rombusch, Konrad, and Seifert, Friedrich, 3,435,021.
Chemische Werke Huls A.G.:*See*—
Henckel, Ekkehard, and Von Portatius, Hans, 3,435,077.
Cheng, Chao-Shing, to Allied Chemical Corporation. Alkali metal-d,l-malate monohydrates. 3,435,070, 03-25-69, Cl. 260-535.
Chevron Research Company:*See*—
Goldstein, Alan A., 3,434,856.
Jacobson, Robert L., Kluksdahl, Harris E., and Spurlock, Burwell, 3,434,960.
Jaffe, Joseph, 3,434,965.
Kemp, Jacob D., Langlois, Gordon E., and Olson, Lloyd J., 3,434,963.
Lowe, Warren, 3,434,972.
Oldenburg, Charles C., 3,434,966.
Oldenburg, Charles C., 3,434,967.
White, Robert J., and Houston, Robert J., 3,435,085.
Chieger, George:*See*—
Tantlinger, Keith W., Chieger, George, and Hulverson, Adrian F. 3,434,751.
Chitayat, Anwar K., to OPTOmechanisms, Inc.Double axes interferometer. 3,434,787, 03-25-69, Cl. 356-106.
Chmura, Theodore S., to American Bosch Arma Corporation. Fuel injection nozzle. 3,434,667, 03-25-69, Cl. 239-533.
Christensen, Richard E., and Christensen, Richard N.Propeller-driven watercraft. 3,434,447, 03-25-69, Cl. 115-000.5
Christensen, Richard N.:*See*—
Christensen, Richard E., and Christensen, Richard N. 3,434,447.
Christy, Arthur S., Jr.:*See*—
Bosworth, Delbert B., Christy, Arthur S., Jr., and La Rochelle, Fernand L. 3,434,609.
Chrysler Corporation:*See*—
Renneker, Dennis N., and Lowery, Throck M., 3,434,367.
Chur, Sung Pal, to Data Products Corporation. Common cable communication system incorporating isolation diodes. 3,435,415, 03-25-69, Cl. 340-163.
Churla, John J., to Thomas & Betts Corporation. Multiconductor cable connector assembly. 3,435,403, 03-25-69, Cl. 339-017.
Ciampa, Lincoln L., to Becton, Dickinson and Company. Package for syringe. 3,434,587, 03-25-69, Cl. 206-017.5
Ciba Corporation:*See*—
Smith, James Gordon, 3,434,473.
Ciccone, Thomas Q., and Kowalick, James F., to United States of America, Army. Dispersal projectile. 3,434,420, 03-25-69, Cl. 102-056.
Cilag-Chemie Limited:*See*—
Habicht, Ernst, and Zubiani, Ruggero, 3,435,035.
Cincinnati Milling Machine Co., The:*See*—
Decker, Jacob, 3,434,244.
Cinnamon, Jerome M.:*See*—
Schipper, Edgar, Oroshnik, William, and Cinnamon, Jerome M. 3,435,064.
CKD Praha, oborovy podnik:*See*—
Bezouska, Vlastimil, Skvor, Josef, Pajisek, Frantisek, Zavazal, Zdenek, and Polorny, Oldrich, 3,435,304.
Clark, William H., and Hall, Stanley A., to Utah Research and Development Co., Inc.Apparatus for packing and hardening mixtures. 3,434,187, 03-25-69, Cl. 025-041.
Clarke, Beresford N.:*See*—
Shedd, Wilfred G., and Clarke, Beresford N. 3,434,703.
Clary Corporation:*See*—
Brastow, Edgar R., Voge, Andrew, and Schaberg, Richard R., 3,434,353.
Brastow, Edgar R., Bjordahl, James, and Little, Ronald F., 3,434,355.
Voge, Andrew, 3,434,354.
Clashusen, Walter, to Gebruder Honsberg. Automatic adjusting device for chip-removing tools. 3,434,375, 03-25-69, Cl. 077-058.
Claussen, Lorenz V., to GAF Corporation. Slide changing device. 3,434,229, 03-25-69, Cl. 040-079.
Cleaver, Denis:*See*—
Weinberg, Felix Jiri, Howden, Derek, and Cleaver, Denis 3,434,950.
Clendinning, William R., and Eden, Dayton D., to Texas Instruments Incorporated. Integrated electro-optic passive reflective display device. 3,435,445, 03-25-69, Cl. 340-324.
Clymer, Roger B.Houseboat. 3,434,166, 03-25-69, Cl. 009-001.
Coates, Joseph F.:*See*—
Wakeman, Reginald L., and Coates, Joseph F. 3,435,039.
Cohaly, Fox B.:*See*—
Lovell, George V., 3,434,273.
Cohen, Morris U.:*See*—
Liebowitz, Benjamin, and Cohen, Morris U. 3,434,478.
Cohen, Morris, to Loral Corporation. Electronically tunable yig filter having an electronically variable bandwidth. 3,435,385, 03-25-69, Cl. 333-073.
Colab Laboratories, Inc.:*See*—
Scherr, George H., 3,434,801.
Colbow, Konrad, Garrett, Charles G. B., and Thomas, Donald E., to Bell Telephone Laboratories, Incorporated. Light modulator using light choppers. 3,435,213, 03-25-69, Cl. 250-071.
Cole, Jimmy R., to Continental Oil Company. Remotely controllable pressure responsive apparatus. 3,434,446, 03-25-69, Cl. 114-235.
Colgate-Palmolive Company:*See*—
Austin, Amory Earl, and Lee, Preston Pope, 3,434,974.
Brukker, Alexander E., and Judd, Claude I., 3,435,041.
Drukker, Alexander E., and Judd, Claude I., 3,435,042.
Judd, Claude I., Drukker, Alexander E., and Biel, John H., 3,435,073.
Collard, Allison C., to Patent Service Corporation of America. Electrical soldering iron with a low adhesive protective sleeve. 3,435,188, 03-25-69, Cl. 219-237.
Collie, Stafford D., to Phillips Petroleum Company. Container. 3,434,644, 03-25-69, Cl. 229-005.6
Collins, Frank C., to PRD Electronics, Inc.Radiation discriminator means. 3,435,237, 03-25-69, Cl. 250-214.
Collins Radio Company:*See*—
Decker, David L., and Hamer, Morgan F., 3,435,347.
Robinson, Eugene A., 3,435,253.
Colombo, Francesco, and Babcock, Edward V., to United States Borax & Chemical Corporation. Silver nitrate stain removal composition and method for using same. 3,434,796, 03-25-69, Cl. 008-137.
Columbian Carbon Company:*See*—
Pobst, David F., Jr., 3,434,808.
Combustion Engineering, Inc.:*See*—
Hochmuth, Frank W., and Freiday, Jay H., 3,434,531.
Schroedter, Willburt W., 3,434,460.
Commissariat a l'Energie Atomique:*See*—
Vandenbussche, Gerard, 3,434,334.
Communications Patents Limited:*See*—
Birt, David Robin, 3,435,378.
Compagnie Francaise Thomson-Houston Hotchkiss-Brandt:*See*—
Beurtheret, Charles A., and Boissiere, Jacques G., 3,435,283.
Compagnie Francaise Thomson-Houston-Hotchkiss Brandt:*See*—
Billon, Guy M., and Daveau, Bernard J., 3,435,380.
Compagnie Royale Asturienne des Mines:*See*—
Sitges Menendez, Francisco Javier, and Arregui Fernandez, Vicente, 3,434,798.
Compo Industries, Inc.:*See*—
Carey, Richard J., and Dunlap, Robert B., 3,434,170.
Condorelli, Emanuele:*See*—
Nobile, Luciano, Condorelli, Emanuele, La Noce, Tullio, and Poma, Anteo 3,435,024.
Conix, Andre Jan:*See*—
De Keyser, Lodewijk Felix, Conix, Andre Jan, and Van Dessel, Lodewijk August 3,434,840.
Connally, Carl, Jr.:*See*—
Dotson, Billy J., and Connally, Carl, Jr. 3,434,542.
Connolly, Patrick J., to United States of America, Army. Anodized aluminum cap and branch of service insignia. 3,434,941, 03-25-69, Cl. 204-035.
Connoy, Eugene N., and Boehne, Dale R., to Continental Machines, Inc.Annealing device with automatic control therefor. 3,435,173, 03-25-69, Cl. 219-050.
Conrad, Winthrop B., to Teleflex Incorporated. Motion transmitting remote control assembly. 3,434,501, 03-25-69, Cl. 138-109.
Conrad, Winthrop B., to Teleflex, Incorporated. Method of manufacturing a motion transmitting remote control assembly. 3,435,107, 03-25-69, Cl. 264-159.
Conrath, Jules R., to Bell Telephone Laboratories, Incorporated. Drive circuit utilizing linear cores to control switching. 3,435,436, 03-25-69, Cl. 340-174.
Consolidated Electronics Industries Corp.:*See*—
Ouellette, Chester V., and Knecht, William A., 3,435,392.
Consortium fur Elektrochemische Industrie G.m.b.H.:*See*—
Wirth, Heinz, Helmberger, Hermann, and Herrmann, Hans, 3,434,803.
Continental Can Company, Inc.:*See*—
Hazdra, James J., Sonnleitner, David, and Wesolowski, Wyne E., 3,434,817.
Stec, Frederick J., 3,434,651.
Szajna, John L., 3,434,202.
Continental Granite Corp.:*See*—
Grage, Casper R., 3,434,362.
Continental Machines, Inc.:*See*—
Connoy, Eugene N., and Boehne, Dale R., 3,435,173.
Continental Oil Company:*See*—
Cole, Jimmy R., 3,434,446.
Coogan, Lawrence P.:*See*—
Campbell, Trevor G., Coogan, Lawrence P., and Hosoda, Yoshimi 3,434,738.
Cook, Alton A., and Sapers, Ira, to Arkansas Company, Inc.Methods of processing wool and other hair fibers. 3,434,795, 03-25-69, Cl. 008-127.6
Cook, Clive Douglas:*See*—
Ness, Norman Morin, Palluel, Auguste Louis Lucien, and Cook, Clive Douglas 3,434,951.
Cook, Evin L., and Talash, Alvin W., to Mobil Oil Corporation. In situ combustion process. 3,434,541, 03-25-69, Cl. 166-002.
Cook Testing Co., :*See*—
Page, John S., 3,434,535.
Cookson Sheet Metal Developments Limited:*See*—
Cookson, William, 3,434,623.
Cookson, William, to Cookson Sheet Metal Developments Limited. Container with pull-tab opener. 3,434,623, 03-25-69, Cl. 220-054.
Cooney, James S., to Pylon Company Inc.Electrical contact. 3,435,168, 03-25-69, Cl. 200-166.

Cope, Oswald James, to Du Pont de Nemours, E. I., and Company. Polymer blends of polyethylene terphthalate anda-olefin,α,β-unsaturated carboxylic acid copolymers. 3,435,093, 03-25-69, Cl. 260-857.
Corbin, Raymond Le Rae, to Johns-Manville Corporation. Roofing shingle. 3,434,259, 03-25-69, Cl. 052-420.
Coreci, Compagnie de Regulation et de ControleIndustriel:*See*—
Frachon, Marc, 3,434,207.
Cored Panels, Inc.:*See*—
Horton, John F., Jr., 3,434,434.
Corey, Jan Micheal. Machine tool. 3,434,242, 03-25-69, Cl. 051-034.
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S., to Texas Instruments, Incorporated. Gold alloy for attaching a lead to a semiconductor body. 3,434,828, 03-25-69, Cl. 075-165.
Cornell, William D., Disney, Morton F., Jr., and Hoffman, Paul R., to Brunswick Corporation. Automatic bowling scorer. 3,435,120, 03-25-69, Cl. 273-054.
Corning Glass Works:*See*—
Wiley, Robert F., 3,434,821.
Cotton Producers Institute:*See*—
Tovey, Henry, 3,434,794.
Cotton Producers Institute, :*See*—
Tovey, Henry, Prahl, Helmut F., and Hart, Frederick M., 3,434,870.
Cotton, William, Limited:*See*—
Bentley, William, and Blood, Raymond, 3,434,305.
Courtney-Pratt, Jeofry S., and Hargrove, Logan E., to Bell Telephone Laboratories, Incorporated. Optical information transmission system. 3,435,230, 03-25-69, Cl. 250-199.
Coutant, Andre, and Mathot, Jacques, to Eclair International, Societe Anonyme. Film moving mechanism of motion-picture apparatus. 3,434,640, 03-25-69, Cl. 226-057.
Cowles, Charles Donald, to Perkin-Elmer Corporation, The. Transports for elongated material. 3,434,639, 03-25-69, Cl. 226-021.
Cowles, David H.Lathe attachment. 3,434,384, 03-25-69, Cl. 090-011.
Cowles, John H., and Rollins, James W., to Torrington Company, The. Method and apparatus for rolling bearing races. 3,434,322, 03-25-69, Cl. 072-107.
Cox, Hubert L.:*See*—
Haroldson, Arthur H., and Cox, Hubert L. 3,434,889.
Craig, Forrest F., Jr.:*See*—
Satter, Abdus, and Craig, Forrest F., Jr. 3,434,544.
Cramer Industries, Inc.:*See*—
Walkinshaw, Thomas G., 3,434,756.
Crane Carton Corporation:*See*—
Schmidt, Leonard G., 3,434,646.
Craven, James M., to Du Pont de Nemours, E. I., and Company. Crosslinked thermally reversible polymers produced from condensation polymers with pendant furan groups crosslinked with maleimides. 3,435,003, 03-25-69, Cl. 260-047.
Creaghan, David Cyril:*See*—
Boyle, Willard Sterling, and Creaghan, David Cyril 3,434,661.
Creative Environments Inc.:*See*—
Solo, Alan J., 3,434,436.
Cresswell, Roger A., to Rolls-Royce Limited. Nozzle assembly. 3,434,290, 03-25-69, Cl. 060-232.
Cretella, Biagio A.:*See*—
Babusci, Louis D., Cretella, Biagio A., Feder, David O., and Koontz, Donald E. 3,434,883.
Critcher, John L., to AAI Corporation. Underwater projectile. 3,434,425, 03-25-69, Cl. 102-092.1
C.R.O. Engineering Co., Inc., :*See*—
Kleine, Rudolph W., and Wirth, Jon C., 3,434,212.
Crow, Howard M.Water borne vehicle. 3,434,452, 03-25-69, Cl. 115-070.
Crowder, James R.:*See*—
Brown, Earl J., Crowder, James R., and Karl, Raymond O. 3,434,940.
Crowson, Fred B., and Groth, George S., to Bell Telephone Laboratories, Incorporated. Steerable regenerative repeater circuit. 3,435,142, 03-25-69, Cl. 178-073.
Crucible Steel Company of America:*See*—
Bomberger, Howard B., Jr., 3,434,813.
Crumley, Ernest W.Cargo ship construction. 3,434,445, 03-25-69, Cl. 114-072.
CSF-Compagnie Generale de Telegraphie Sans Fil:*See*—
Bertheas, Jean, 3,435,407.
Girault, Jean, and Pandelle, Jean, 3,435,448.
Tournois, Pierre, 3,435,381.
Csicsatka, Antal, to General Electric Company. Cross-talk compensation for stereo receivers. 3,435,144, 03-25-69, Cl. 179-001.
Culligan, Inc.:*See*—
Lyall, Charles E., 3,434,490.
Cunningham, Leslie L.:*See*—
Hart, William E., Allen, William A., and Cunningham, Leslie L. 3,434,211.
Currey, John E.:*See*—
Hooker, Thomas, and Currey, John E. 3,434,948.
Cushing, Donald S., and Jenkins, Thomas E., to General Electric Company. Pump for dishwasher. 3,434,671, 03-25-69, Cl. 241-046.
Cushman, James E.:*See*—
Hender, Thomas A., and Cushman, James E. 3,434,371.
Cushman, Robert Holbrook, to Western Electric Company, Incorporated. Terminating and encapsulating devices in a single manufacturing operation. 3,434,201, 03-25-69, Cl. 029-527.
Czegledy, Geza. Easy opener for can tops. 3,434,622, 03-25-69, Cl. 220-054.
D'Amato, Carl. Electronic sound producing walking cane. 3,435,153, 03-25-69, Cl. 179-100.2
Da Vincii, Anthony P.:*See*—
Bockno, Gregory C., Da Vincii, Anthony P., and Schappel, Joseph W. 3,434,913.
Daghistani, Ihsan Shakeeb. Water fountains for plane and concave sheets. 3,434,662, 03-25-69, Cl. 239-017.
Daikin Kogyo Co., Ltd.:*See*—
Watanabe, Shiro, and Misaki, Susumu, 3,435,032.
Dailey, Robert W., to Far Gard Company. Disposable filter for tobacco-smoking device. 3,434,480, 03-25-69, Cl. 131-187.
Daimler-Benx Aktiengesellschaft:*See*—
Frotzhelm, Hans, 3,434,559.
Dale Electronics, Inc.:*See*—
Jacob, Marvin H., 3,435,386.
Dalin, David:*See*—
Henriksson, Per, 3,434,532.
Daltry, John Harold, to English Electric Company, Limited, The. Dry cooling towers. 3,434,529, 03-25-69, Cl. 165-047.
Daman, Arthur E., to Dejo, Inc.Apparatus for treating sewage or industrial waste liquids. 3,434,598, 03-25-68, Cl. 210-199.
Damen, Theodoor C., Leite, Rogerio C. C., and Porto, Sergio P. S., to Bell Telephone Laboratories, Incorporated. Optical power limiter. 3,434,779, 03-25-69, Cl. 350-160.
Danfoss A/S:*See*—
Jensen, Arne, 3,435,255.
Daniels, Arthur L.:*See*—
Schmidt, Donald L., and Daniels, Arthur L. 3,435,059
Daniels Plating Barrel & Supply Company:*See*—
Szeremany, Julius, 3,434,954.
Danielson, George E., Jr.:*See*—
Aas, Herbert G., and Danielson, George E., Jr. 3,435,372.
Dardick, David, to TRW, Inc.Salvo firing open chamber gun. 3,434,380, 03-25-69, Cl. 089-013.
Darrasse, Philippe. Telephone handset holder. 3,435,158, 03-25-69, Cl. 179-157.
DASA Corporation, :*See*—
Sharples, Kenneth R., 3,435,421.
Data Products Corporation:*See*—
Chur, Sung Pal, 3,435,415.
Daughetee, Lew H.:*See*—
Anton, Nicholas T., and Daughetee, Lew H. 3,434,247
Daum, Gerhard, Modic, Rudolf, and Richtzenhain, Hermann, to Dynamit Nobel Aktiengesellschaft. Production of 3,4,5,6-tetrahydropyridine derivatives containingy-aminopropyl groups. 3,435,045, 03-25-69, Cl. 260-296.
Daveau, Bernard J.:*See*—
Billon, Guy M., and Daveau, Bernard J. 3,435,380.
Davenport, Donald E., to Singer-General Precision, Inc.Explosive welding. 3,434,197, 03-25-69, Cl. 029-470.1
Davidson, James B., to Dow Corning Corporation. Foley catheter with silicone rubber coating. 3,434,869, 03-25-69, Cl. 117-094.
Davidson, Thomas William:*See*—
Ashpole, Raymond Sidney, and Davidson, Thomas William 3,434,872.
Davis, John K., Fernald, Henry G., and Rayner, Arline W., to American Optical Company.Ophthalmic lens series. 3,434,781, 03-25-69, Cl. 351-159.
Davis, Noel, to Integrated Development and Manufacturing Co.Environmental growth chamber construction. 3,434,530, 03-25-69, Cl. 165-060.
Dawson, Peter H. T., to Singer-Cobble Limited. Application of treatment media to elongate materials. 3,434,311, 03-25-69, Cl. 068-020.
Day, Lawrence, Dobrick, Joseph, and Kay, Arthur, to Spitfire Tool & Machine Co., Inc.Reciprocating lapping machine for railroad car air brakes. 3,434,243, 03-25-69, Cl. 051-059.
De Brunner, Ralph E.:*See*—
Hathaway, Clayton E., Jr., De Brunner, Ralph E., and Butler, John Mann 3,435,004.
De Coster, Frank A., to Douk's Experiment. Linear motor control system. 3,435,312, 03-25-69, Cl. 318-130.
De Croes, Leon C.Golf ball pickup device. 3,434,753, 03-25-69, Cl. 294-019.
De Dapper, Jay W.Combined ignitor and propellent grain. 3,434,426, 03-25-69, Cl. 102-100.
de Greeve, Harry V., and Ragan, James B., to Ways & Means, Inc.Plastic dispensing container and method of making same. 3,434,906, 03-25-69, Cl. 156-466.
De Havilland Aircraft of Canada, Limited, The:*See*—
Groskopfs, Ernest, 3,434,674.
De Keyser, Lodewijk Felix, Conix, Andre Jan, and Van Dessel, Lodewijk August, to Gevaert Photo-Producten N.V.Photographic element comprising subbed polyester film support. 3,434,840, 03-25-69, Cl. 096-087.
De Luxe Laboratories, Inc.:*See*—
Freedman, Harold J., 3,434,898.
De Nicola, Joseph Peter, to Instron Corporation. Recorder using pressurized ballpoint pen. 3,435,459, 03-25-69, Cl. 346-140.
de Perczel, Desi, to Borg-Warner Corporation. Angular speed change sensor. 3,435,164, 03-25-69, Cl. 200-061.46
De Renzo, Edward Clarence:*See*—
Buck, Francis Fremonte, and De Renzo, Edward Clarence 3,434,929.
De Rycke, Douglas August Charles, and Parker, Owen Gordon, to Spence, Peter & Sons Limited. Catalytic muffler. 3,434,806, 03-25-69, Cl. 023-288.
Dean, Jesse W., and Silverstein, Louis. Combination book and playhouse. 3,434,233, 03-25-69, Cl. 046-021.
Deane, Theodore E.:*See*—
Aldrich, F William, and Deane, Theodore E. 3,434,998.
Decker, David L., and Hamer, Morgan F., to Collins Radio Company. Cam mounted series resonant trap for tunable RF power amplifier to antenna coupling circuit. 3,435,347, 03-25-69, Cl. 325-452.
Decker, Jacob, to Cincinnati Milling Machine Co., The. Grinding machinery for finishing brake discs. 3,434,244, 03-25-69, Cl. 051-106.
Degenkolb, Robert S., and Liederbach, William H., to Radio Corporation of America. Metallic connection and the method of making same. 3,434,877, 03-25-69, Cl. 117-212.
Deguchi, Takashi:*See*—
Samejima, Horotoshi, Teranishi, Hiroshi, and Deguchi, Takashi 3,435,026.
Dehne, Clarence A., to Web, Jervis B., Company. Stop for conveyor carriers. 3,434,431, 03-25-69, Cl. 104-172.
Dejo, Inc.:*See*—
Daman, Arthur E., 3,434,598.
Del Vecchio, Michael, and Stidhams, Frederick J.Tow disk. 3,434,167, 03-25-69, Cl. 009-310.
Delaney, Vincent N., to Torrington Manufacturing Company, The. Apparatus for stacking palletized groups of articles in a container. 3,434,264, 03-25-69, Cl. 053-059.
Delker, Thomas C., to Bendix Corporation, The. Coupler. 3,434,372, 03-25-69, Cl. 074-579.
Delta Exploration Company, Inc.:*See*—
Babb, John J., 3,435,410.

Demyon, Thomas R.Radiator sight gauges. 3,434,346, 03-25-69, Cl. 073-334.
Dennis, Louis E., to Beloit Corporation. Headbox of a papermaking machine. 3,434,923, 03-25-69, Cl. 162-337.
Denton, Richard T., and Varnerin, Lawrence J., Jr., to Bell Telephone Laboratories, Incorporated. Solid state image translator. 3,435,234, 03-25-69, Cl. 250-209.
Desmarais, Armand J., and Reid, Albert R., to Hercules, Incorporated. Cellulose ether-esters and process. 3,435,027, 03-25-69, Cl. 260-226.
Dessau, Ralph M.:*See*—
Heiba, El-Ahmadi I., and Dessau, Ralph M. 3,435,080.
Det Norske Zinkkompani A/S:*See*—
Steintveit, Georg, 3,434,947.
Deutsche Gold-und Silber-Scheideanstalt vormalsRoessler:*See*—
Neugebauer, Walter, 3,434,977.
Deutsche Gold- und Silber-Scheideanstalt vormalsRoessler:*See*—
Holzmann, Hermann, 3,434,826.
Dex-A-Grind, Inc.:*See*—
Stuart, Robert J., 3,434,245.
Dexter, Martin, Spivack, John Denon, and Steinberg, David Herbert, to Geigy Chemical Corporation. N,N,N',N'-(Ethylenediamine)-tetrakis[ethylene-3-(3',5'-di-tert-butyl-4'-hydroxyphenyl) propionate] and compositions stabilized therewith. 3,435,065, 03-25-69, Cl. 260-473.
Dhein, Rolf, Raichle, Karl, and Schnell, Hermann, to Farbenfabriken Bayer Aktiengesellschaft. Aqueous stoving varnish bases on amine salts of semi-esters of hydroxyl group-containing, fatty acid-modified alkyd resins. 3,434,987, 03-25-69, Cl. 260-021.
Di Benedetto, Edward:*See*—
Di Benedetto, Pasquale, 3,434,315.
Di Benedetto, Pasquale, to Di Benedetto, Edward. Mechanism for locking the transmission of a motor vehicle. 3,434,315, 03-25-69, Cl. 070-202.
Di Giambattista, Vincent N., to Penn Nuclear Corporation. Apparatus and process for producing powdered metal from ductile elemental metal or alloys thereof. 3,434,669, 03-25-69, Cl. 241-016.
Diamond International Corporation:*See*—
Bliss, George N., 3,434,902.
Perkins, William H., 3,434,647.
Diamond Shamrock Corporation:*See*—
Sellet, Lucien, 3,435,009.
Shore, William S., 3,434,652.
Dickinson, Sanford C., to Kaplan, Joseph A., & Sons, Inc.Heat-sealable readily draping fabric and method of making it. 3,434,858, 03-25-69, Cl. 117-009.
Dietrich, Henri, to Geigy Chemical Corporation. Iminodibenzyl derivatives. 3,435,028, 03-25-69, Cl. 260-239.
Dilullo, Luciano L.Tiltable table for an umbrella. 3,434,484, 03-25-69, Cl. 135-016.
Dimond, Robert M., and Payne, Howard H.Rocket assisted projectile with movable piston base plate. 3,434,419, 03-25-69, Cl. 102-049.3
Disney, Morton F., Jr.:*See*—
Cornell, William D., Disney, Morton F., Jr., and Hoffman, Paul R. 3,435,120.
Distillers Company, Limited, The:*See*—
Bethell, James Robert, Gasson, Edward James, Hadley, David James, and Neale, Roderick Frank, 3,435,069.
Ditlinger, Richard J., to Bendix Corporation, The. Helicopter tie-bar. 3,434,373, 03-25-69, Cl. 074-581.
Dobrick, Joseph:*See*—
Day, Lawrence, Dobrick, Joseph, and Kay, Arthur 3,434,243.
Dobson, Howard Franklin. Guard for fire and smoke protection. 3,434,252, 03-25-69, Cl. 052-029.
Dolan, Francis D., and Burgoon, Jack L., to Scott & Fetzer Company,. Apparatus for cleaning floors. 3,434,178, 03-25-69, Cl. 015-369.
Doll, Edouard, to Societe a Responsabilite Limitee, Filatures et Tissages F. & Th. Frey. Apparatus for winding rovings having anti- tangle plate stop motion device. 3,434,274, 03-25-69, Cl. 057-080.
Dollman, Stephen C.:*See*—
Salatiello, Peter P., and Dollman, Stephen C. 3,434,996.
Donaldson, John D., to General Dynamics Corporation. Standby automatic water-methanol system for multiengine aircraft. 3,434,281, 03-25-69, Cl. 060-039.15
Doquire, Gilbert, and Tasset, Michel, to Glaverbel S.A.Process and apparatus for controlling a continuous spray to produce intermittent marks. 3,434,865, 03-25-69, Cl. 117-037.
Dore, James E., and Carey, Richard R., to Olin Mathieson Chemical Corporation. Process for purifying copper base alloys. 3,434,825, 03-25-69, Cl. 075-076.
Dorwald, Rudolf, to Bendix Corporation, The,. Replaceable vacuum-tight current feedthroughs. 3,435,128, 03-25-69, Cl. 174-151.
Doser, Manfred:*See*—
Gielisse, Peter J., and Doser, Manfred 3,435,398.
Gielisse, Peter J., and Doser, Manfred 3,435,399.
Dotson, Billy J., and Connally, Carl, Jr., to Mobil Oil Corporation. Waterflood process employing surfactant and graded viscosity. 3,434,542, 03-25-69, Cl. 166-273.
Doudlebsky, Ctibor, Fajt, Ludvik, Bucil, Frantisek, and Kabele, Stanislav, to Vyzkumny Ustav Bavlnarsky. Apparatus for separating fibers. 3,434,184, 03-25-69, Cl. 019-083.
Douglas, McDonnell Corporation:*See*—
Brown, Earl J., Crowder, James R., and Karl, Raymond O., 3,434,940.
Douk's Experiment:*See*—
De Coster, Frank A., 3,435,312.
Dow Chemical Company, The:*See*—
Atkins, Bobby L., 3,434,971.
Carbone, Anthony J., 3,434,849.
Schmidt, Donald L., and Daniels, Arthur L., 3,435,059.
Scott, Charles R., 3,434,846.
Soderquist, Frederick J., Boyce, Harold D., and Kline, Paul E., 3,435,086.
Starkovsky, Nicolas A., and Langer, Horst G., 3,435,007.
Walles, Wilhelm E., 3,435,296.
Wasco, Joseph L., 3,435,050.
Wiggins, Glenn C., 3,434,904.
Dow Company, The:*See*—
Langer, Horst G., and Starkovsky, Nicolas A., 3,435,037.
Dow Corning Corporation:*See*—
Davidson, James B., 3,434,869.
Kern, Edward L., 3,434,776.
Downey, David F.End closure for disposable vacuum cleaner dust bag. 3,434,351, 03-25-69, Cl. 073-368.3
Downing, Edward T., and Plumridge, Robert F., to Raytheon Company. Turnable coaxial cavity magnetron. 3,435,284, 03-25-69, Cl. 315-039.61
Dragon, Thomas J.:*See*—
Schira, John J., Sadler, William R., and Dragon, Thomas J. 3,435,424.
Dresser Industries, Inc.:*See*—
Brackin, Wayne L., 3,434,696.
Burrows, Lewis M., 3,434,500.
Ingham, Robert J., and Bissell, Robert D., 3,434,330.
Kilgore, Marion D., and Pumpelly, Robert C., 3,434,538.
Yoke, Michael P., Montesi, Robert P., and Paterson, Robert N., 3,434,744.
Drukker, Alexander E., and Judd, Claude I., to Colgate-Palmolive Company. Novel morphanthridine derivatives. 3,435,042, 03-25-69, Cl. 260-293.
Drukker, Alexander E.:*See*—
Judd, Claude I., Drukker, Alexander E., and Biel, John H. 3,435,073.
Du Barry, Adrian P., Jr., to Weyerhaeuser Company. Reinforced container structure. 3,434,648, 03-25-69, Cl. 229-023.
Du Pont de Nemours, E. I., and Company:*See*—
Cope, Oswald James, 3,435,093.
Craven, James M., 3,435,003.
Garrison, William E., 3,434,915.
Kuhrt, Noel Hawkins, Jr., 3,434,841.
Pratt, Herbert Thomas, 3,434,793.
Proffitt, Thomas Jefferson, Jr., 3,434,874.
Summers, Ronald John, 3,434,188.
Dubeck, Michael, and Kleiman, Joseph P., to Ethyl Corporation. Emission control additive. 3,434,814, 03-25-69, Cl. 044-069.
Duclaux, Daniel, to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques. Lifting beam for electrolysis cells. 3,434,955, 03-25-69, Cl. 204-225.
Duda, William L., Fleisher, Harold, Kulcke, Werner W., and Max, Erhard, to International Business Machines Corporation. Light deflecting mechanisms. 3,435,447, 03-25-69, Cl. 340-347.
Dunfieldheodore Elmer:*See*—
Smit, Hendrik 3,434,994.
Dunlap, Robert B.:*See*—
Carey, Richard J., and Dunlap, Robert B. 3,434,170.
Dura Corporation:*See*—
Shelhart, Robert Edward, 3,434,282.
Durand, Fred A., Jr., and May, Charles R., to National Biscuit Company. Automatic coring machine. 3,434,517, 03-25-69, Cl. 146-052.
Duro-Test Corporation:*See*—
Kayatt, Philip J., 3,435,286.
Durst, Jack R., to Pillsbury Company, The. Stable food pieces. 3,434,843, 03-25-69, Cl. 099-001.
Dykstra, Stanley J.:*See*—
Lish, Paul Merrill, Weikel, John H., and Dykstra, Stanley J. 3,435,114.
Dynamic Instrument Corporation:*See*—
Mas, Joseph A., 3,435,318.
Dynamit Nobel Aktiengesellschaft:*See*—
Daum, Gerhard, Modic, Rudolf, and Richtzenhain, Hermann, 3,435,045.
Schmoll, Kurt, 3,434,997.
Eames, Loren W.:*See*—
Bratingham, Charles R., Beekman, Bruce E., and Eames, Loren W. 3,434,715.
Eastman Kodak Company:*See*—
Fox, Charles J., 3,434,833.
Knott, Edward B, Mijovic, Miroslav V. and Saunders, David George, 3,434,837.
McGuckin, Hugh G., 3,434,839.
Eaton Yale & Towne Inc.:*See*—
Previte, Dominick L., 3,434,621.
Eberhart, Arthur H., to Westinghouse Electric Corporation. Dual-passage line-breaking valve. 3,434,498, 03-25-69, Cl. 137-625.18
Eby, Ralph H.:*See*—
Friedmann, Anton R. J., and Eby, Ralph H. 3,434,664.
Eclair International, Societe Anonyme:*See*—
Coutant, Andre, and Mathot, Jacques, 3,434,640.
Eden, Dayton D.:*See*—
Clendinning, William R., and Eden, Dayton D. 3,435,445.
Edwards, John A., and Knox, Lawrence H., to Syntex Corporation. Halogenated cyclopropyl and cyclopropenyl steroids and process for their preparation. 3,435,056, 03-25-69, Cl. 260-397.4
Effbe-Werke Fritz Brumme KG.:*See*—
Brumme, Fritz, and Boehme, Horst, 3,434,660.
Egger, Linus, to Heberein & Co. AG. Electromagnetic control device. 3,435,394, 03-25-69, Cl. 335-272.
Eggert, Walter S., Jr., to Budd Company, The. Doorway construction. 3,434,256, 03-25-69, Cl. 052-208.
Eggstein, Giorgio, to Heinkel, Ernst, AG. Arrangement for evacuating gases from hydraulic systems. 3,434,573, 03-25-69, Cl. 188-152.
Ehrig, Raymond J., and Kundell, Frederick A., to Grace, W. R., & Co.Polymerization of diacetone crylamide by electrolysis. 3,434,946, 03-25-69, Cl. 204-072.
Eibensteiner, Walter, to North American Philips Company, Inc.Automatic stop apparatus for a recorder/reproducer. 3,434,725, 03-25-69, Cl. 274-004.
Eisenhart, Arlin C.:*See*—
Raso, Vito, and Eisenhart, Arlin C. 3,434,366.
Electric Machinery Mfg. Company:*See*—
Schlicher, David W., 3,435,340.
Electro-Voice, Incorporated, :*See*—
Mosier, Harold F., Jr., 3,434,205.
Elektrochemische Werke Munchen A. G.:*See*—
Ruchardt, Christoph Johannes, 3,435,060.
Elgeet Optical Company, Inc.:*See*—
Santirocco, Louis J., and Ritter, Joachim A., 3,434,777.
Elion, Herbert A.:*See*—
Stetson, Karl A., and Elion, Herbert A. 3,434,339.
Ellenbogen, Leon:*See*—
Highley, Derek Rowland, and Ellenbogen, Leon 3,434,927.

Elliott Brothers (London) Limited:*See*—
Ellis, Stafford M., 3,434,387.
Elliott, George A., Akin, Jerome E., and Mac Gregor, Rob R., to Allied Chemical Corporation. Distillation purification of crude synthetic methanol. 3,434,937, 03-25-69, Cl. 203-079.
Ellis, Stafford M., to Elliott Brothers (London) Limited. Hydraulic actuators. 3,434,387, 03-25-69, Cl. 091-001.
Ellner, Edwin, to Stapling Machines Co.,. Control panel. 3,435,251, 03-25-69, Cl. 307-115.
Elmo Company Limited:*See*—
Sakaki, Fumio, and Nakamura, Toshimitsu, 3,434,783.
Elox Inc.,.:*See*—
Lobur, Walter, 3,435,176.
Shaffer, William B., 3,435,175.
Shaffer, William B., 3,435,177.
Ely, Donald A., to Beloit Corporation. Piston diaphragm combination. 3,434,396, 03-25-69, Cl. 092-036.
Ely, Donald A., to Beloit Corporation. Press arrangement. 3,434,922, 03-25-69, Cl. 162-303.
Ely, Laurice D.Illuminated vanity mirror. 3,435,199, 03-25-69, Cl. 240-004.2
Embry, Elisama.:*See*—
Embry, Raymond S., Jr., 3,434,625.
Embry, Raymond S., Jr., to Embry, Elisama,. Waste container with detachable funneling collar. 3,434,625, 03-25-69, Cl. 220-065.
Emerson Electric Co.:*See*—
Raso, Vito, and Eisenhart, Arlin C., 3,434,366.
Wright, James A., 3,434,788.
Emerson, William A., to Westinghouse Electric Corporation. Induction heating system. 3,435,172, 03-25-69, Cl. 219-010.75
Empisal(Proprietary)Limited: *ee*—
Mizuki, Yoshiaki, 3,434,307
Endsdown Company Inc.:*See*—
Liebowitz, Benjamin, and Cohen, Morris U., 3,434,478.
Eng, Jackson, and Bumbulis, Janis, to Esso Research and Engineering Company. Production of liquefied petroleum gas from olefin hydrogenation during catalytic reforming. 3,434,961, 03-25-69, Cl. 208-238.
Engelhard Industries, Inc.:*See*—
Hauel, Anna P., and Langley, Robert C., 3,434,871.
Langley, Robert C., 3,434,879.
Engelhard Minerals & Chemicals Corporation, :*See*—
Haden, Walter L., Jr., and Sawyer, Edgar W., Jr., 3,434,864.
Engelmann, Joachim. Adjustable side view mirror. 3,434,688, 03-25-69, Cl. 248-483.
Engh, Robert O., to Honeywell Inc.Ultraviolet sensitive geiger tube operating circuit with reverse quench voltage. 3,435,225, 03-25-69, Cl. 250-083.6
English Electric Company, Limited, The:*See*—
Ashpole, Raymond Sidney, and Davidson, Thomas William, 3,434,872.
Bennett, Roy Brian, and Blair, William Carmichael, 3,435,262.
Daltry, John Harold, 3,434,529.
English, William Kirk:*See*—
Bennion, David Ralph, and English, William Kirk 3,435,432.
Bennion, David Ralph, and English, William Kirk 3,435,433.
Eprova Limited:*See*—
Suter, Hans, and Zutter, Hans, 3,435,066.
Epstein, Henry David, to Texas Instruments, Incorporated. Insulated electrical conductors. 3,435,401, 03-25-69, Cl. 338-214.
Epstein, Martin:*See*—
Schmitt, Edward Emil, Epstein, Martin, and Polistina, Rocco Albert 3,435,008.
Erickson Tool Company:*See*—
Benjamin, Milton L., Walker, David D., and Miles, Wilbur N., 3,434,376.
Erwin, John R.:*See*—
Kutney, John T., and Erwin, John R. 3,434,679.
Esposito, Joseph J.Golf swing training device. 3,434,722, 03-25-69, Cl. 273-186.
Esso Production Research Company:*See*—
Bombardieri, Caurino C., 3,434,545.
Esso Research and Engineering Company:*See*—
Bilisoly, Julius Philip, and Zachry, James Bryan, 3,434,964.
Eng, Jackson, and Bumbulis, Janis, 3,434,961.
Forster, Eric O., 3,434,220.
Kuntz, Irving, and Thomas, Robert M., 3,435,015.
Talbot, Frank D. F., 3,434,488.
Estabrook, Norman B., to United States of America, Navy. Underwater buoyancy transport vehicle. 3,434,443, 03-25-69, Cl. 114-016.
Esterline, Corporation:*See*—
Adlaf, William J., 3,434,246.
Estrin, Gerald, Estrin, Thelma A., Estrin, Margo Ilene, and Estrin, Judith Lenore. Playing board with removable apertured overlay disposed above a shiftable writing medium. 3,434,718, 03-25-69, Cl. 273-130.
Estrin, Judith Lenore:*See*—
Estrin, Gerald, Estrin, Thelma A., Estrin, Margo Ilene, and Estrin, Judith Lenore 3,434,718.
Estrin, Margo Ilene:*See*—
Estrin, Gerald, Estrin, Thelma A., Estrin, Margo Ilene, and Estrin, Judith Lenore 3,434,718.
Estrin, Thelma A.:*See*—
Estrin, Gerald, Estrin, Thelma A., Estrin, Margo Ilene, and Estrin, Judith Lenore 3,434,718.
Ethicon, Inc.:*See*—
Nichols, Joseph, 3,435,110.
Nichols, JSEPH, 3,435,117.
Ethyl Corporation:*See*—
Dubeck, Michael, and Kleiman, Joseph P., 3,434,814.
Ligett, Waldo B., 3,435,118.
Eubanks, John M., to Bell Telephone Laboratories, Incorporated. D. C. restorer. 3,435,252, 03-25-69, Cl. 307-237.
European Atomic Energy Community (Euratom):*See*—
Montagnani, Mario, and Farfaletti-Casali, 3,434,925.
Evans, James R., and Rowe, Thomas H., to International Business Machines Corporation. Record retrieval and record hold system. 3,435,418, 03-25-69, Cl. 340-172.5
Fairbanks Morse, Inc.:*See*—
Zechlin, Richard, 3,435,326.
Fairchild Camera & Instrument Corp.:*See*—
McCall, John M., 3,434,402.
Fajt, Ludvik:*See*—
Doudlebsky, Ctibor, Fajt, Ludvik, Bucil, Frantisek, and Kabele, Stanislav 3,434,184.
Fannin, Loyd W.:*See*—
Abell, Joseph B., Jr., Fannin, Loyd W., and Roth, James F. 3,435,090.
Fanning, William J., to Western Electric Company, Incorporated. Metallized capacitor with moisture barrier. 3,435,308, 03-25-69, Cl. 317-260.
Fantl, Joel, Huhn, Frank J., Hardy, Edgar E., and Heaps, John F., to Monsanto Company. Polymerization of unsaturated compounds using amino salts of adducts of hydrolyl copolymer esters as emulsifying agents. 3,434,989, 03-25-69, Cl. 260-023.7
Far Gard Company:*See*—
Dailey, Robert W., 3,434,480.
Farbenfabriken Bayer Aktiengesellschaft:*See*—
Dhein, Rolf, Raichle, Karl, and Schnell, Hermann, 3,434,987.
Farbwerke Franz Rasquin G.m.b.H.:*See*—
Seelig, Fritz, 3,434,857.
Farbwerke Hoechst Aktiengesellschaft vormalsMeister Lucius & Bruning:*See*—
Horner, Leopold, and Neumann, Heinz, 3,434,944.
Meininger, Fritz, and Hille, Ernst, 3,435,023.
Weber, Helmut, Aumuller, Walter, Weyer, Rudi, and Muth, Karl, 3,435,116.
Weissermel, Klaus, Fischer, Edgar, and Schott, Claus, 3,435,006.
Farfaletti-Casali:*See*—
Montagnani, Mario, and Farfaletti-Casali 3,434,925.
Farm Fans, Inc.:*See*—
Pfeiffer, William E., 3,435,247.
Farmer, John, to Honolulu Iron Works Company. Pineapple slice coring and loading machine. 3,434,515, 03-25-69, Cl. 146-006.
Farmer, John, to Honolulu Iron Works Company. Machine for coring pineapple slices. 3,434,516, 03-25-69, Cl. 146-006.
Farnsworth, Robert P., to Hughes Aircraft Company. Gain control system for photomultiplier systems. 3,435,233, 03-25-69, Cl. 250-207.
Farrell, Edward A., to Sperry Rand Corporation. Selectable pulse width modulator using biased saturable transformer. 3,435,249, 03-25-69, Cl. 307-088.
Fastener Corporation:*See*—
Wandel, Oscar A., 3,434,643.
Feder, David O.:*See*—
Babusci, Louis D., Cretella, Biagio A., Feder, David O., and Koontz, Donald E. 3,434,883.
Fein, Harvey C.Curtain suspension device. 3,434,524, 03-25-69, Cl. 160-345.
Feinberg, Irving, to Presto Lock Co., Inc.Latching and locking means for luggage cases or the like. 3,434,313, 03-25-69, Cl. 070-070.
Feldmuhle Aktiengesellschaft:*See*—
Graff, Peter, and Bottcher, Peter, 3,434,525.
Felgner, Karl, to Hottinger Baldwin Mesztechnik G.m.b.H.Indicating device. 3,434,453, 03-25-69, Cl. 116-129.
Feller, Thomas R., to Allis-Chalmers Manufacturing Company. Device for washing centrifugal compressor. 3,434,654, 03-25-69, Cl. 230-134.
Ferguson, Leslie A., and Williams, George M., to Unroyal, Inc.Method and apparatus for coating tubular fabric. 3,434,860, 03-25-69, Cl. 117-007.
Ferguson, Otis B., to Recovery Systems Research, Inc.Rereefing parachute assembly and system. 3,434,680, 03-25-69, Cl. 244-142.
Fernald, Henry G.:*See*—
Davis, John K., Fernald, Henry G., and Rayner, Arline W. 3,434,781.
Fernseh GmbH:*See*—
Bachmann, Horst, Schneider, Hans-Dieter, and Sennhenn, Emil, 3,435,136.
Fernseh G.m.b.H.:*See*—
Sennhenn, Emil, 3,435,359.
Ferranti, Limited:*See*—
Thorp, William, 3,434,203.
Ferrari, Armando Gene, to Western Electric Company, Incorporated. Manufacturing a balloon-type helical insulator. 3,435,105, 03-25-69, Cl. 264-095.
Ferrari, Hugo V.Sleeve extension adapter. 3,434,611, 03-25-69, Cl. 214-653.
Ferrier, Herman Anthony, Jr.:*See*—
Bradley, Edward Franklin, and Ferrier, Herman Anthony, Jr. 3,435,314.
Ferro Corporation:*See*—
Fry, Ralph, 3,434,758.
Fiber Industries, Inc.:*See*—
Hendry, Glenn G., Jr., 3,435,108.
Fibreboard Corporation andsaid Poupitch assor. to Illinois Tool Works, Inc.:*See*—
Moore, Norman H., and Poupitch, Ougljesa Jules, 3,434,592.
Fieroiu, Victoria:*See*—
Ceausescu, Elena, and Fieroiu, Victoria 3,434,523.
Firestone Tire & Rubber Company, The:*See*—
Harr, George B., 3,434,336.
Firma Jost-Werke G.m.b.H.:*See*—
Lindner, Heinz, 3,434,736.
Fischer, Edgar:*See*—
Weissermel, Klaus, Fischer, Edgar, and Schott, Claus 3,435,006.
Fischer, Richard L., to Walker Manufacturing Company. Silencer with angled tuning tube leading to Helmholtz resonator. 3,434,565, 03-25-69, Cl. 181-048.
Fischer, Willi:*See*—
Habendorff, Richard, and Fischer, Willi 3,434,935.
Fisher, Charles P.Ribbon microphone. 3,435,143, 03-25-69, Cl. 179-001.
Fitzpatrick, Hugh M.:*See*—
Strasberg, Murray, and Fitzpatrick, Hugh M. 3,434,340.
Flaming, Edwin H., to Phillips Petroleum Company. Process for flaring plastic pipe ends. 3,435,109, 03-25-69, Cl. 264-322.
Fleisher, Harold:*See*—
Harris, Thomas J., Fleisher, Harold, and Shapiro, Eugene 3,434,778.
Duda, William L., Fleisher, Harold, Kulcke, Werner W., and Max, Erhard 3,435,447.
Floehr, Walter L., to Unitcast Corporation. Hopper car door operating mechanism. 3,434,433, 03-25-69, Cl. 105-249.
Flora, Laurence H., to Tinnerman Products, Inc.Plastic fastener with curved entry shoulder in bore. 3,434,521, 03-25-69, Cl. 151-041.73
Flynn, Paul D., Roll, Arthur A., and Gilbert, Joseph T., to United States of America, Navy. Dual-beam polariscope. 3,434,786, 03-25-69, Cl. 356-033.

FMA, Inc.:*See*—
Harper, Jack R., and Loughlin, James, 3,434,331.
F.M.C. (Australia) Limited:*See*—
Lee, Harold Barry, 3,434,630.
FMC Corporation:*See*—
Ager, John W., Jr., 3,435,082.
Belk, Wilber C., 3,434,583.
Betschart, Robert J., 3,434,711.
Bily, Peter J., 3,434,491.
Bily, Peter J., 3,434,497.
Bockno, Gregory C., Da Vincii, Anthony P., and Schappel, Joseph W., 3,434,913.
Bode, James Daniel, 3,434,973.
Boeker, Roy A., 3,434,743.
Gellatly, Robert K., 3,434,634.
Lee, Harold B., 3,434,585.
Reimers, James L., 3,434,582.
Seaborn, Paul E., and Thompson, Wendell S., 3,434,595.
Wilson, Kenneth R., and Hill, Kenneth L., 3,434,822.
Winkler, Edwin, 3,434,584.
Fogels, Mintauts W.:*See*—
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W., 3,434,270.
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W., 3,434,271.
Fogle, Richard J.Stereoscopic and microscopic binocular, 3,434,772, 03-25-69, Cl. 350-035.
Foldes, Stephen, to General Electric Company, Tungsten-hafnium-oxygen alloys, 3,434,811, 03-25-69, Cl. 029-182.5
Forbes, Norman A., to American Standard Inc.Proximity-flushed urinal, 3,434,164, 03-25-69, Cl. 004-100.
Ford Motor Company:*See*—
Tsou, Ivan H., 3,434,952.
Forrest, Joseph B., and Hart, Gene E., to Southern Mill Equipment Corporation, Apparatus for automatically closing the ends of tubular fabric articles, 3,434,438, 03-25-69, Cl. 112-002.
Forster, Eric O., to Esso Research and Engineering Company, Microwave drying process for synthetic polymers, 3,434,220, 03-25-69, Cl. 034-001.
Fortenbaugh, Robert Berendt:*See*—
Klothen, Irving, Fortenbaugh, Robert Berendt, and Abbey, Anthony 3,434,844.
Fougeres, Michel:*See*—
Cerles, Georges, and Fougeres, Michel 3,434,174.
Four-D Productions:*See*—
Kent, James J., Jr., 3,434,713.
Fowler, Allan, R.:*See*—
Grace, Alan G., 3,435,354.
Fox, Charles J., to Eastman Kodak Company, Stable free radicals as activators for photoconductive and photohardenable polymer light- sensitive systems, 3,434,833, 03-25-69, Cl. 096-001.5
Foxboro Company, The:*See*—
Swift, Willard Everett, 3,435,221.
Frachon, Marc, to Coreci, Compagnie de Regulation et de Controle Industriel, Process for making pyrometric probes or rods, 3,434,207, 03-25-69, Cl. 029-612.
Fragnito, Daniel A., to Carrier Corporation, Air distribution unit, 3,434,409, 03-25-69, Cl. 098-041.
Franklin, Richard N., to General Dynamics Corporation, Force-to-frequency transducer, 3,435,377, 03-25-69, Cl. 332-026.
Freedman, Harold J., to De Luxe Laboratories, Inc.Methods and devices for handling and applying of thin film materials, 3,434,898, 03-25-69, Cl. 156-157.
Freholm, Omar E., to Budd Company, The, Disk brake apparatus, 3,434,570, 03-25-69, Cl. 188-059.
Freibergs, Elmer:*See*—
Agrios, John P., and Freibergs, Elmer 3,435,382.
Freiday, Jay H.:*See*—
Hochmuth, Frank W., and Freiday, Jay H. 3,434,531.
Freihofer, Alexis, to Ruti Machinery Work Ltd., formerly Casper Honegger, Weaving shuttle, 3,434,507, 03-25-69, Cl. 139-125.
French, Charlie N.:*See*—
Julow, Thomas M., and French, Charlie N. 3,434,388.
Friden, Inc.:*See*—
Blodgett, Edwin O., 3,434,576.
Hender, Thomas A., and Cushman, James E., 3,434,371.
Ragen, Robert A., 3,435,351.
Friedman, Hirsch, to Cameras for Industry, Inc.Camera control circuit, 3,434,405, 03-25-69, Cl. 095-011.
Friedman, Isidore H., Jr., to Thiokol Chemical Corporation, Thrust termination apparatus for solid propellant rocket motors, 3,434,291, 03-25-69, Cl. 060-254.
Friedmann, Anton R. J., and Eby, Ralph H., to Ward, Ashley F., Inc.Rotary impulse sprinkler, 3,434,664, 03-25-69, Cl. 239-206.
Friichtenicht, Joseph F.:*See*—
Hansen, David O., Friichtenicht, Joseph F., and Roy, Neal L. 3,435,208.
Frischmann, Peter G., to General Electric Company, Electronic clinical thermometer, 3,434,349, 03-25-69, Cl. 073-361.
Froitzhelm, Hans, to Daimler-Benx Aktiengesellschaft, Instrument panel of vehicles, especially commercial-type vehicles, 3,434,559, 03-25-69, Cl. 180-090.
Fruehauf Corporation:*See*—
Tantlinger, Keith W., Chieger, George, and Hulverson, Adrian F., 3,434,751.
Fry, Ralph, to Ferro Corporation, Applicator for particulate material, 3,434,758, 03-25-69, Cl. 302-061.
Fuji Keiki Kabushiki Kaisha:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao, 3,434,277.
Fuji Shashin Film Kabushiki Kaisha:*See*—
Kaneko, Keezi, 3,434,782.
Fujita, Yoshimasa, Nakagawa, Kazumi, Shimoda, Keitaro, and Miyashita, Koji, to Japan Exlan Company Limited, Production of bulky products of acrylic composite fibers, 3,434,276, 03-25-69, Cl. 057-140.
Fukuyo, Hitohiro, and Tabuchi, Norio, to Kabushiki Kaisha Nattori Tokeiten, Low frequency piezolectric crystal oscillator having a single driving circuit, 3,435,368, 03-25-69, Cl. 331-037.
Fuller, Richard H., Tu, Ju C., and Worthy, Robert M., to General Precision Systems Inc.Data processing system, 3,435,423, 03-25-69, Cl. 340-172.5
Furyear, David B.:*See*—
Smith, Donald F., Furyear, David B., and Smith, Donald W. 3,434,427.
Fyanes, Robert V.Checker-type board game apparatus, 3,434,719, 03-25-69, Cl. 273-131.
Gaeth, Rudolf:*See*—
Stastny, Fritz, Gaeth, Rudolf, Schmitt, Bernhard, and Haardt, Udo 3,434,980.
GAF Corporation:*See*—
Claussen, Lorenz V., 3,434,229.
Gale, Alfred J., to Ion Physics Corporation, Fabricating solid state devices by ion implantation, 3,434,894, 03-25-69, Cl. 148-187.
Galle, Edward L., to Pillsbury Company, The, Bottom feed quench dryer apparatus, 3,434,410, 03-25-69, Cl. 099-246.
Gallo, Mario:*See*—
Wegmann, Lienhard, and Gallo, Mario 3,435,333.
Garg, Jag Mohan:*See*—
Shukla, Narendra M., and Garg, Jag Mohan 3,434,581.
Garrett, Charles G. B.:*See*—
Colbow, Konrad, Garrett, Charles G. B., and Thomas, Donald E. 3,435,213
Garrett Corporation, The:*See*—
Marley, David J., 3,434,761.
Marley, David J., 3,434,762.
Garrison, William E., to Du Pont de Nemours, E. I., and Company, Glass laminate, 3,434,915, 03-25-69, Cl. 161-199.
Gasson, Edward James:*See*—
Bethell, James Robert, Gasson, Edward James, Hadley, David James, and Neale, Roderick Frank 3,435,069.
Gates, John T.:*See*—
Caldemeyer, Daniel F., Caldemeyer, Lloyd O., Gates, John T., and Bellmer, Friedrich O. 3,434,755.
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W., to Massey-Ferguson (Australia) Limited, Harvester suspension system, 3,434,270, 03-25-69, Cl. 056-015.
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W., to Massey-Ferguson (Australia) Limited, Power unit and frame, 3,434,271, 03-25-69, Cl. 056-016.
Gaus, Jakob:*See*—
Lischer, Georg, and Gaus, Jakob 3,434,171.
Gayle, Robert E., to Phantom Products, Shaft sealing means for underwater motors, 3,434,726, 03-25-69, Cl. 277-036.
Gaynor, Joseph, Sewell, Gordon J., and Metlay, Max, to General Electric Company, Image deposition by means of a light sensitive solution containing organic haloform compounds and a dye, 3,434,835, 03-25-69, Cl. 096-035.
GCA Corporation:*See*—
Stetson, Karl A., and Elion, Herbert A., 3,434,339.
Geating, Chester J.Machine for circumferential color coding, 3,434,456, 03-25-69, Cl. 118-211.
Gebruder Honsberg:*See*—
Clashusen, Walter, 3,434,375.
Geer, Ronald L.:*See*—
Otteman, Lloyd G., and Geer, Ronald L. 3,434,296.
Gehring, Albert, and Sailer, Richard, to Inventa A.G. fur Forschung und Patentverwertung, Process for the manufacture of*p*-hydroxybenzoic acid, 3,435,068, 03-25-69, Cl. 260-521.
Geigy Chemical Corporation:*See*—
Dexter, Martin, Spivack, John Denon, and Steinberg, David Herbert, 3,435,065
Dietrich, Henri, 3,435,028.
Pesterfield, Enos Charles, Jr., 3,435,051.
Geigy, J. R., A.G.:*See*—
Voltz, Jacques, 3,435,022.
Geis, Everett R., to Borg-Warner Corporation, A-C voltage regulator, 3,435,248, 03-25-69, Cl. 307-046.
Gellatly, Robert K., to FMC Corporation, Liquid dispensing apparatus, 3,434,634, 03-25-69, Cl. 222-450.
Gelsenberg Benzin Aktiengesellschaft:*See*—
Hofmann, Paul, and Peterlein, Karl, 3,435,091.
General Dynamics Corporation:*See*—
Donaldson, John D., 3,434,281.
Franklin, Richard N., 3,435,377.
Hotine, William, 3,435,222.
General Electric Company:*See*—
Baldwin, George C., 3,435,207.
Barkan, Philip, 3,435,166.
Bluestein, Ben A., 3,435,000.
Bondley, Ralph J., 3,434,812.
Bower, Arnold B., Jr., 3,434,552.
Bower, Arnold B., Jr., 3,434,554.
Chang, Winston H., 3,434,829.
Csicsatka, Antal, 3,435,144.
Cushing, Donald S., and Jenkins, Thomas E., 3,434,671.
Foldes, Stephen, 3,434,811.
Frischmann, Peter G., 3,434,349.
Gaynor, Joseph, Sewell, Gordon J., and Metlay, Max, 3,434,835.
Gibson, Van R., Jr., 3,435,133.
Gielisse, Peter J., and Doser, Manfred, 3,435,398.
Gielisse, Peter J., and Doser, Manfred, 3,435,399.
Green, David H., 3,435,272.
Greenwood, Allan N., 3,435,288.
Ham, Donald M., and Taft, William E., 3,434,659.
Harrod, John F., 3,434,873.
Havn, Svend E., and Namordi, Mooshi R., 3,435,277.
Havn, Svend E., 3,435,280.
Holub, Fred F., 3,435,002.
Jorgensen, Paul J., 3,434,868.
Kershaw, Delmar D., 3,435,180.
Kutney, John T., and Erwin, John R., 3,434,679.
Lyman, Arthur T., 3,435,290.

Merrill, Duane F., 3,435,001.
Palladino, Michael J., 3,435,132.
Palmer, Ansell W., 3,434,724.
Peddle, Charles I., 3,435,191.
Rublack, Wilfred D., 3,435,268.
Schaefer, Orville L., 3,435,427.
Schmid, Hermann, 3,435,196.
Szeremy, Norman, 3,435,139.
Vodicka, Vincent, 3,435,270.
Weller, Elbert J., 3,434,553.
Whitten, James R., 3,435,374.
Willyoung, David M., 3,435,263.
General Motors Corporation:*See*—
Massoll, Stanley R., and Roper, Donald G., 3,435,200.
General Precision Systems Inc.:*See*—
Fuller, Richard H., Tu, Ju C., and Worthy, Robert M., 3,435,423.
General Radio Company:*See*—
Skilling, James K., 3,435,366.
General Signal Corporation:*See*—
Haner, Robert B., Jr., Sibley, Henry C., Sutton, Paul C., and Pettitt, Walter G., 3,435,223.
McCauley, Donald R., 3,435,406.
Prsson, Sen I., 3,435,405.
General Telephone and Electronics Laboratories, Inc.:*See*—
Buhrer, Carl F., 3,435,229.
Renkowitz, Donald, 3,435,384.
General Time Corporation:*See*—
Schroeppel, John H., and McGaughey, Raymond L., 3,435,184.
George, Roscoe H.:*See*—
Brown, William C., George, Roscoe H., Heenan, Neil I., and Wonson, Roger C. 3,434,678.
Gerard, Milan E., to Rohr Corporation, Sliding vacuum seal for electron beam welder, 3,435,185, 03-25-69, Cl. 219-121.
Gerard, William A., to Westinghouse Electric Corporation, Coaxial magnetron having anode vanes with notches thereon for reducing the frequency of operation, 3,435,285, 03-25-69, Cl. 315-039.77
Gerhardt, Lester A., Goerner, Johannes G., and Powell, Frederic D., to Bell Aerospace Corporation, Self-organizing system, 3,435,422, 03-25-69, Cl. 340-172.5
Gerner, Theodore C.Pivotal connection for idler arms, 3,434,763, 03-25-69, Cl. 308-070.
Gessinger, Werner, and Hocke, Wilhelm, Light metal piston, 3,434,398, 03-25-69, Cl. 092-228.
Gevaert Photo-Producten N.V.:*See*—
De Keyser, Lodewijk Felix, Conix, Andre Jan, and Van Dessel, Lodewijk August, 3,434,840.
Gewerkschaft Eisenhutte Westfalia:*See*—
Grisebach, Hans-Theodor, 3,434,389.
Heyer, Willy, 3,434,292.
Gibson, Van R., Jr., to General Electric Company, Interstage coupling and neutralization circuit, 3,435,133, 03-25-69, Cl. 178-005.6
Gielisse, Peter J., and Doser, Manfred, to General Electric Company, Thermistor device and method of producing said device, 3,435,398, 03-25-69, Cl. 338-022.
Gielisse, Peter J., and Doser, Manfred, to General Electric Company, Thermistor device and method of producing said device, 3,435,399, 03-25-69, Cl. 338-022.
Gilbert, Joseph T.:*See*—
Flynn, Paul D., Roll, Arthur A., and Gilbert, Joseph T. 3,434,786.
Giletta, Dario:*See*—
Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario 3,434,897.
Gill, Joseph:*See*—
Luppold, Robert H., Jr., and Gill, Joseph 3,435,355.
Girault, Jean, and Pandelle, Jean, to CSF-Compagnie Generale de Telegraphie Sans Fil, Magnetic coder for transmitting the angular position of a shaft, 3,435,448, 03-25-69, Cl. 340-347.
Given:*See*—
Given, Kenneth M. 3,434,441.
Given, Kenneth M., deceased (by Given, Marian K., executrix), Tagging machine, 3,434,441, 03-25-69, Cl. 112-104.
Givens, Wyatt W., to Mobil Oil Corporation, Pulsed neutron well logging technique and system, 3,434,161, 03-25-69, Cl. 250-083.1
Givens, Wyatt W., to Mobil Oil Corporation, Pulsed neutron well logging technique and system, 3,435,216, 03-25-69, Cl. 250-083.1
Givens, Wyatt W., to Mobil Oil Corporation, Production of chemistry-dependent gamma ray and thermal neutron logs corrected for porosity, 3,435,217, 03-25-69, Cl. 250-083.1
Glacier Ware, Inc.:*See*—
Stoner, Arthur M., Schneider, Richard C., and Paquin, Roger L., 3,434,302.
Glamkowski, Edward J., and Sletzinger, Meyer, to Merck & Co., Inc Process for preparing (halophenyl) alkyl ketone compounds, 3,435,075, 03-25-69, Cl. 260-590.
Glaverbel S.A.:*See*—
Doquire, Gilbert, and Tasset, Michel, 3,434,865.
Glenn, Eldridge Myles, to Upjohn Company, The, Process for darkening skin using a glyceraldehyde composition, 3,435,111, 03-25-69, Cl. 424-059.
Glenn Electronic and Mechanical Specialities, Inc.:*See*—
Glenn, Richard C., 3,434,956.
Glenn, Richard C., to Glenn Electronic and Mechanical Specialities, Inc.Apparatus for the electrolytic thinning of metallic specimens for transmission electron microscopy, 3,434,956, 03-25-69, Cl. 204-237.
Goble, Ralph W., to Calumet & Hecla, Inc.Electrostrictive effect in a transducer for drawing wire, rod or tube, 3,434,329, 03-25-69, Cl. 072-467.
Goebel, George A., and Canterino, Peter J., to Rexall Drug and Chemical Company, Deactivating residual polymerization catalyst in polypropylene, 3,435,019, 03-25-69, Cl. 260-093.7
Goeke, Alfons, to Th. Kieserling & Albrecht, Apparatus for clamping and sealing pipes or the like, 3,434,337, 03-25-69, Cl. 073-049.8
Goerner, Johannes G.:*See*—
Gerhardt, Lester A., Goerner, Johannes G., and Powell, Frederic D. 3,435,422.
Goings, Harford E.Disposable tray, 3,434,649, 03-25-69, Cl. 229-028.
Goings, Harford E.Foldable tray, 3,434,650, 03-25-69, Cl. 229-028.
Goldschnidt, Th., A.-G.:*See*—
Holtschmidt, Ulrich, and Michel, Alfred, 3,434,992.
Goldstein, Alan A., to Chevron Research Company, Single-stage process for making paving mixes, 3,434,856, 03-25-69, Cl. 106-277.
Goldstein, Sol, Rotary indicator, 3,434,658, 03-25-69, Cl. 235-084.
Gomi, Nagao:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao 3,434,277.
Goodwin, Richard R., to United States of America, Army, Free piston and cylinder assembly for hydraulic pumps and motors, 3,434,429, 03-25-69, Cl. 103-162.
Goordman, Robert V., to Bell Telephone Laboratories, Incorporated, Ultralinear transistor amplifier, 3,435,364, 03-25-69, Cl. 330-024.
Gordon, Eugene I., to Bell Telephone Laboratories, Incorporated, Light beam controlling system, 3,435,228, 03-25-69, Cl. 250-199.
Gordon, Irving:*See*—
Baranauckas, Charles F., and Gordon, Irving 3,434,981.
Gordon, Robert G., and Tweddell, James C., to Matthews, Jas. H., & Co.Flower vase and holder, 3,434,235, 03-25-69, Cl. 047-041.1
Gorgone, Saverino S.Slidable support for window coverings, 3,434,685, 03-25-69, Cl. 248-263.
Goshi Kaisha Mizuno Kogeisha:*See*—
Mizuno, Akira, 3,434,575.
Gosselin, Norman R., to Iota-Cam Corporation, Flexible fiber optic borescope, 3,434,775, 03-25-69, Cl. 350-096.
Grabbe, Dimitry G., to Photocircuits Corporation, Interconnection structure and method of making same, 3,434,204, 03-25-69, Cl. 029-577.
Grabhofer, Herbert:*See*—
Huckstadt, Harald, Saleck, Wilhelm, Ulrich, Hans, Randolph, August, and Grabhofer, Herbert 3,434,842.
Grace, Alan G., to Fowler, Allan, R., Pulse type demodulator system for angle modulated signals utilizing the characteristics of a tunnel diode for forming the pulse train, 3,435,354, 03-25-69, Cl. 329-126.
Grace, W. R., & Co.:*See*—
Ehrig, Raymond J., and Kundell, Frederick A., 3,434,946.
Kabas, Guglielmo, 3,435,072.
Krau, John W., and Hurley, Forrest R., 3,434,917.
Schirmer, Henry G., 3,435,190.
Surland, George J., and Magee, John S., Jr., 3,434,976.
Graff, Peter, and Bottcher, Peter, to Feldmuhle Aktiengesellschaft, Disposable curtain, 3,434,525, 03-25-69, Cl. 160-388.
Grage, Casper R., to Continental Granite Corp.Wheel for wire type stone cutting saws, 3,434,362, 03-25-69, Cl. 074-230.7
Grant, Nicholas J.Dispersion strengthening of metals and alloys, 3,434,830, 03-25-69, Cl. 075-206.
Grant, William Henry, Jr.Trailer hitch lock, 3,434,741, 03-25-69, Cl. 280-507.
Grasselli, Robert K., and Callahan, James L., to Standard Oil Company, The (Ohio), Manufacture of aromatic aldehydes and nitriles, 3,435,061, 03-25-69, Cl. 260-465.
Graver, Richard B., and Sedgwick, Grant O., to Ashland Oil & Refining Company, Preparation of polycarboxylic acid resins using an organic sulfonic acid catalyst, 3,434,988, 03-25-69, Cl. 260-023.7
Green, Carl W., to Bell Telephone Laboratories, Incorporated, Pulse delay control circuit, 3,435,437, 03-25-69, Cl. 340-174.
Green Cross Corporation, The:*See*—
Naito, Ryoichi, Oguro, Yoshigoro, and Murata, Yorihiko, 3,434,928.
Green, David H., to General Electric Company, Tubular halogen cycle incandescent lamp with inner cylinder for universal operation, 3,435,272, 03-25-69, Cl. 313-222.
Green, Derek B., to Scovill Manufacturing Company, Valve structure for aerosol container, 3,434,695, 03-25-69, Cl. 251-349.
Green, Derek Bernard, to Scovill Manufacturing Company, Dispensing actuator for aerosol containers, 3,434,633, 03-25-69, Cl. 222-402.13
Green, Derek, to United Kingdom Atomic Energy Authority, Hydrostatic extrusion apparatus, 3,434,320, 03-25-69, Cl. 072-060.
Green, Frank B. K.Apparatus for continuous digesting, 3,434,920, 03-25-69, Cl. 162-237.
Green, Gloyd W.Automated animal feeder, 3,434,459, 03-25-69, Cl. 119-051.11
Green, Gordon F.:*See*—
Luckham, Denis C., and Green, Gordon F. 3,434,657.
Greenberg, Elmer H., and Greenberg, William B., said Greenberg, Elmer H., assor. to said Greenberg, William B.Apparatus for surface-finishing metalwork, 3,434,241, 03-25-69, Cl. 051-014.
Greenberg, Elmer H.:*See*—
Greenberg, Elmer H., and Greenberg, William B., 3,434,241.
Greenberg, William B.:*See*—
Greenberg, Elmer H., and Greenberg, William B. 3,434,241.
Greenberg, William B.:*See*—
Laudel, Arthur, Jr., 3,435,325.
Greenley, Robert Z.:*See*—
Nielsen, Morris L., and Greenley, Robert Z. 3,435,013.
Greenwood, Allan N., to General Electric Company, Circuit interrupting means for a high voltage D-C circuit, 3,435,288, 03-25-69, Cl. 317-011.
Greeson, James C., Jr., to International Business Machines Corporation, Monolithically fabricated operational amplifier device with self drive, 3,435,365, 03-25-69, Cl. 330-030.
Gregor, Harry P., Teyssie, Philippe, and Hoeschele, Guenther K.Oleophilic-hydrophilic ion exchange resins, 3,434,979, 03-25-69, Cl. 260-002.1
Greig, James D.:*See*—
Bailey, Alfred J., and Greig, James D. 3,434,737.
Greiner, Joachim, and Krones, Friedrich, to Agfa-Gevaert Aktiengesellschaft, Magnetographic testing with recording layer having oriented magnetizable crystals, 3,435,336, 03-25-69, Cl. 324-037.
Gretter, Ralph W., Spollen, Francis J., and Voigt, Gottfried O., to Bell Telephone Laboratories, Incorporated, Submarine cable burying machine, 3,434,297, 03-25-69, Cl. 061-072.4
Griffiths, Darrell J. L., Miller, Kenyon W., and Nikkel, Willem A., to West Virginia Pulp and Paper Company, Method for manufacturing corrugated board, 3,434,901, 03-25-69, Cl. 156-210.
Griffiths, John H., and Poulson, Barrie K., to Instron Limited, Optical means for following the relative movement of two marks on a specimen during tensile testing, 3,435,231, 03-25-69, Cl. 250-201.

Grisebach, Hans-Theodor, to Gewerkschaft Eisenhutte Westfalia. Automatic sequence cycle controlled advanceable mining prop arrangement. 3,434,389, 03-25-69, Cl. 091-036.

Grob & Co. Aktiengesellschaft:*See*—
Koch, Bernhard R., 3,434,505.

Groce, Homer W.:*See*—
Meyer, Theodore J., Jr., and Groce, Homer W. 3,434,440.

Groschke, Albert C., to Agway, Inc. Method of treating soybeans. 3,434,845, 03-25-69, Cl. 099-002.

Groskopfs, Ernest, to De Havilland Aircraft of Canada, Limited, The. Storable tubular extensible member device. 3,434,674, 03-25-69, Cl. 242-054.

Gross, Johann:*See*—
Auville, Calvin, and Gross, Johann 3,434,306.

Groth, George S.:*See*—
Crowson, Fred B., and Groth, George S. 3,435,142.

Grove, Gene A.:*See*—
Allen, Gilbert D., and Grove, Gene A. 3,434,411.

Guilden, Paul:*See*—
Kemenczky, Miklos, 3,435,201.

Guin, Joel B. High speed crushers. 3,434,672, 03-25-69, Cl. 241-194.

Gunter, Ernest M., and Simon, James L., to Bell Telephone Laboratories, Incorporated. Ringing signal detector which distinguishes ringing signal from periodic noise. 3,435,152, 03-25-69, Cl. 179-084.

Haaijman, Pieter Willem, Wijnen, Marinus Dirk, and Hengst, Johannes Hubertus Theodorus, to North American Philips Company, Inc. Primary cell. 3,434,886, 03-25-69, Cl. 136-093.

Haardt, Udo:*See*—
Stastny, Fritz, Gaeth, Rudolf, Schmitt, Bernhard, and Haardt, Udo 3,434,980.

Habendorff, Richard, and Fischer, Willi, to Leybold-Heraeus-Verwaltung G.m.b.H. Apparatus for vacuum and short-path distillation. 3,434,935, 03-25-69, Cl. 202-187.

Habicht, Ernst, and Zubiani, Ruggero, to Cilag-Chemie Limited. Pyrimidine sulfones. 3,435,035, 03-25-69, Cl. 260-251.

Hada, Yukihiro:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao 3,434,277.

Haden, Walter L., Jr., and Sawyer, Edgar W., Jr., to Engelhard Minerals & Chemicals Corporation. Sensitized sheet material containing deammoniated, ammonium-exchanged modecular sieve. 3,434,864, 03-25-69, Cl. 117-036.2

Hadley, David James:*See*—
Bethell, James Robert, Gasson, Edward James, Hadley, David James, and Neale, Roderick Frank 3,435,069.

Hagemayer, Gunther:*See*—
Scholl, Hans, and Hagemayer, Gunther 3,434,370.

Hager, John L., to Northfield Processed Food Systems Company, Inc. Method for agglomerating powdered material. 3,435,106, 03-25-69, Cl. 264-113.

Hager, Robert R., to Bendix Corporation, The. Duo servomotor valve means. 3,434,285, 03-25-69, Cl. 060-054.5

Haglund, Norman E.:*See*—
Keough, Thomas H., and Haglund, Norman E. 3,435,125.

Hahn, Frank J.:*See*—
Fantl, Joel, Hahn, Frank J., Hardy, Edgar E., and Heaps, John F. 3,434,989.

Haldimann, Hans Rudolph, and Bartels, Helmut, to Werner, Bahlsen. Material handling system. 3,434,604, 03-25-69, Cl. 214-016.4

Hall, James D. Golf putting device. 3,434,720, 03-25-69, Cl. 273-180.

Hall, John R. Method and apparatus for forming concrete piles. 3,434,294, 03-25-69, Cl. 061-053.6

Hall, Lawrence J., Mayer, Robert, and Young, Einar T., to Sun Oil Company. Catalyst analysis apparatus. 3,435,238, 03-25-69, Cl. 250-218.

Hall, Mitchell A. Coin slide latch and caliper assembly. 3,434,578, 03-25-69, Cl. 194-092.

Hall, Mitchell A. Coin slide construction. 3,434,579, 03-25-69, Cl. 194-092.

Hall, Mitchell A. Manual actuator for service machines. 3,434,580, 03-25-69, Cl. 194-009.

Hall, Stanley A.:*See*—
Clark, William H., and Hall, Stanley A. 3,434,187.

Haller, James Gilbert. Aesthetic illuminating device. 3,434,789, 03-25-69, Cl. 431-126.

Ham, Donald M., and Taft, William E., to General Electric Company. Take-up totalizing relay. 3,434,659, 03-25-69, Cl. 235-091.

Hamada Printing Press Mfg., Co., Ltd.:*See*—
Ishii, Toshio, 3,434,415.

Hamer, Morgan F.:*See*—
Decker, David L., and Hamer, Morgan F. 3,435,347.

Hamilton, Clark H. Valve. 3,434,691, 03-25-69, Cl. 251-184.

Hamilton, Douglas L. P. Means securing a cable sheath to a grounding and supporting member. 3,435,126, 03-25-69, Cl. 174-078.

Hamlin, Halley H., to United States of America, Navy,. Barrel engine pistons. 3,434,397, 03-25-69, Cl. 092-071.

Hammond, Albert S., to Weyerhaeuser Company. Redry veneer drying method and apparatus. 3,434,221, 03-25-69, Cl. 034-006.

Hammond Corporation:*See*—
Schrecongost, Ray B., 3,435,123.

Hamrick, James G., Lee, Milton O., and Loewenthal, Ariadne L., to Numo-Trans Data Corporation,. Print reading systems. 3,435,414, 03-25-69, Cl. 340-146.3

Hancock, John L., and Koplar, Solomon Edward, to Koplar, Solomon Edward,. Pendulum hanger. 3,434,279, 03-25-69, Cl. 058-134.

Haner, Robert B., Jr., Sibley, Henry C., Sutton, Paul C., and Pettitt, Walter G., to General Signal Corporation. Stabilization of an infrared detector cell as used in thermal wheel scanner systems. 3,435,223, 03-25-69, Cl. 250-083.3

Hanken, Albert F., to Industrial Nucleonics Corporation. Dual channel radiation gauge for identifying material components. 3,435,220, 03-25-69, Cl. 250-083.3

Hann, Gordon E., to Tremco Manufacturing Company, The. Method of producing a pressure sensitive sealing strip. 3,434,903, 03-25-69, Cl. 156-244.

Hannis, Eugene S., and Reale, Paul J., to Western Electric Company, Incorporated. Reversible flyer for paying off wire from a supply spool. 3,434,677, 03-25-69, Cl. 242-128.

Hanscom, H. F., & Company, Inc.:*See*—
Hanscom, Harris F., 3,434,591.

Hanscom, Harris F., to Hanscom, H. F., & Company, Inc. Pancake type package having controlled unwinding. 3,434,591, 03-25-69, Cl. 206-052.

Hansen, David O., Frichtenicht, Joseph F., and Roy, Neal L., to TRW Inc. Arrangement for electrically charging a beam of microparticles with an ion beam. 3,435,208, 03-25-69, Cl. 250-041.9

Hansen, Wilbur W., and Myers, Robert E., to Stanford Research Institute. Luminescent films containing rare earth oxides. 3,434,863, 03-25-69, Cl. 117-033.5

Hara, Junji:*See*—
Watanabe, Hiroshi, Ozaki, Masami, and Hara, Junji 3,435,098.

Hardtmann, Goetz E., and Ott, Hans, to Sandoz, Inc. 5,6,7,9,10,14b-Hexahydroisoquinolo[2,1-d] benzo[1,4] diazepines. 3,435,038, 03-25-69, Cl. 260-286.

Hardtmann, Goetz E., and Ott, Hans, to Sandoz, Inc. Preparation of isoquinolines. 3,435,040, 03-25-69, Cl. 260-288.

Hardy, Edgar E.:*See*—
Fantl, Joel, Hahn, Frank J., Hardy, Edgar E., and Heaps, John F. 3,434,989.

Hargrove, Logan E.:*See*—
Courtney-Pratt, Jeofry S., and Hargrove, Logan E. 3,435,230.

Harkey, Johnny D., to Cannon Mills Company, Shuttleless terry loom warp shedding means and method. 3,434,504, 03-25-69, Cl. 139-025.

Harley-Davidson Motor Co.:*See*—
Seckinger, Albert E., 3,434,887.

Haroldson, Arthur H., and Cox, Hubert L., to Budd Company, The. Copper foil surface treatment. 3,434,889, 03-25-69, Cl. 148-006.14

Harper, Jack R., and Loughlin, James, to FMA, Inc. Vector mensuration device, method for its use, and method for its calibration. 3,434,331, 03-25-69, Cl. 073-001.

Harr, George B., to Firestone Tire & Rubber Company, The. Explosion barrier. 3,434,336, 03-25-69, Cl. 073-035.

Harr, Thomas E.:*See*—
Altshuler, Thomas L., Harr, Thomas E., and Ledges, George E. 3,435,137.

Harris-Intertype Corporation:*See*—
Kolb, Edwin R., Richardson, James I., and Hunstiger, Francis, 3,435,309.

Harris, James D.:*See*—
Thompson, Raymond, and Harris, James D. 3,434,999.

Harris, Thomas J., Fleisher, Harold, and Shapiro, Eugene, to International Business Machines Corporation. Radiation beam deflection system. 3,434,778, 03-25-69, Cl. 350-160.

Harris, Thomas J., and Max, Erhard, to International Business Machines Corporation. High speed laser frequency selector. 3,435,370, 03-25-69, Cl. 331-094.5

Harrod, John F., to General Electric Company. Polymerization of phenols on metallic copper. 3,434,873, 03-25-69, Cl. 117-127.

Harshaw Chemicals Limited:*See*—
Benjamin, Harry, 3,434,859.

Hart-Carter Company:*See*—
Hume, Horace D., 3,434,733.

Hart, Frederick M.:*See*—
Tovey, Henry, Prahl, Helmut F., and Hart, Frederick M. 3,434,870.

Hart, Gene E.:*See*—
Forrest, Joseph B., and Hart, Gene E. 3,434,438.

Hart, William E., Allen, William A., and Cunningham, Leslie L., to United States of America, Navy. Satellite tracking and plotting device. 3,434,211, 03-25-69, Cl. 033-001.

Hartmann, Valentin:*See*—
Machleidt, Hans, and Hartmann, Valentin 3,435,063.

Hartney, Thomas C. Record device and system. 3,435,192, 03-25-69, Cl. 235-061.12

Hartz, Joseph M., Miknaitis, Sigitas, and Vogel, Carl W., to Automatic Electric Laboratories, Inc. Pushbutton signaling arrangement. 3,435,160, 03-25-69, Cl. 179-179.

Haselton, Ernest F., Jr., to Sylvania Electric Products, Inc. Electronic switching system. 3,435,417, 03-25-69, Cl. 340-166.

Hashimoto, Kiyoji:*See*—
Aoe, Seigo, and Hashimoto, Kiyoji 3,434,272.

Hastings, Charles W., to Honeywell Inc. Storage device with readout system and having photoconductors and ferroelectric devices. 3,435,425, 03-25-69, Cl. 340-173.2

Hatcher, Frank M. Foldable utility building. 3,434,253, 03-25-69, Cl. 052-069.

Hathaway, Clayton E., Jr., De Brunner, Ralph E., and Butler, John Mann, to Monsanto Research Corporation. Nitrogenous polymers prepared from esters of aromatic tetracarboxylic acid derivatives and aromatic tetramines. 3,435,004, 03-25-69, Cl. 260-065.

Hauel, Anna P., and Langley, Robert C., to Engelhard Industries, Inc. Method for preparing chromium containing films. 3,434,871, 03-25-69, Cl. 117-119.

Havn, Svend E., to General Electric Company. Deflection circuit. 3,435,280, 03-25-69, Cl. 315-027.

Havn, Svend E., and Namordi, Mooshi R., to General Electric Company. Deflection system for a flat tube display. 3,435,277, 03-25-69, Cl. 315-018.

Hawk, Raymond A., Jr., to Mack Truck, Inc. Two-stage rubber vehicle suspension. 3,434,708, 03-25-69, Cl. 267-063.

Hayashi, Kanekichi, and Naito, Susumu, to Kabushiki Kaisha Rinnai Sensakusho. Burner. 3,434,791, 03-25-69, Cl. 431-328.

Hazdra, James J., Sonnleitner, David, and Wesolowski, Wyne E., to Continental Can Company, Inc. Increasing the strength of glass by overglazing. 3,434,817, 03-25-69, Cl. 065-060.

Hazzard, John:*See*—
Brokke, Mervin E., Lukes, George E., and Arneklev, Duane R. 3,435,043.

Heaps, John F.:*See*—
Fantl, Joel, Hahn, Frank J., Hardy, Edgar E., and Heaps, John F. 3,434,989.

Heberein & Co. AG:*See*—
Egger, Linus, 3,435,394.

Hecker, Klaus J.:*See*—
Hueber, Werner G., and Hecker, Klaus J. 3,435,140.

Heckler, Clarence H., and Baer, James A., to Stanford Research Institute. Multipulse current driver comprised of a plurality of stages, each of which has a high Q at resonance. 3,435,431, 03-25-69, Cl. 340-174.

Heenan, Neil I.:*See*—
Brown, William C., George, Roscoe H., Heenan, Neil I., and Wonson, Roger C. 3,434,678.

Heer, Roland:*See*—
Weber, Herbert, Lange, Gunter, Muller, Hubert, Von Fellner, Michael, and Heer, Roland 3,435,376.

Heiba, El-Ahmadi I., and Dessau, Ralph M., to Mobil Oil Corporation. Cyclization reaction and vinylcyclopentane derivatives. 3,435,080, 03-25-69, Cl. 260-648.

Heidrich, Gunther R.:*See*—
Barwig, Hans A., and Heidrich, Gunther R. 3,434,374.

Heimke, Gunther, to Magnetfabrik Bonn G.m.b.H. vorm. Gewerkschaft Windhorst. Directionally solidified permanent magnet alloys with aligned ferromagnetic whiskers. 3,434,892, 03-25-69, Cl. 148-031.57

Heinkel, Ernst, AG:*See*—
Eggstein, Giorgio, 3,434,573.

Heinkel, Ernst Aktiengesellschaft:*See*—
Ruprecht, Robert, Heydlauf, Kurt, and Braun, Herbert, 3,434,363.

Heinrich Koppers Gesellschaft mit beschrankterHaftung:*See*—
Luther, Guenter, Schulze, Martin, and Richter, Klaus, 3,434,936.

Heinz Mathes KG.:*See*—
Muller, Heinz, 3,434,238.

Heldenbrand, Laurance E. Vertically adjustable cattle chute. 3,434,732, 03-25-69, Cl. 280-043.17

Helmberger, Hermann:*See*—
Wirth, Heinz, Helmberger, Hermann, and Herrmann, Hans 3,434,803.

Helmer, John C., to Varian Associates. Method and apparatus for measuring high vacuums. 3,435,334, 03-25-69, Cl. 324-033.

Henckel, Ekkehard, and Von Portatius, Hans, to Chemische Werke Huls A.G. Process for the production of asymmetrical formals. 3,435,077, 03-25-69, Cl. 260-611.

Hender, Thomas A., and Cushman, James E., to Friden, Inc. Silent ratchet. 3,434,371, 03-25-69, Cl. 074-576.

Henderson, John Frederick:*See*—
Scherf, Gerhard Wolfgang Helmut, and Henderson, John Frederick 3,435,014.

Hendry, Glenn G., Jr., to Fiber Industries, Inc. Filament production for synthetic linear polymers. 3,435,108, 03-25-69, Cl. 264-176.

Hendus, Hans:*See*—
Martin, Wolfgang, Linge, Hermann, Hendus, Hans, and Wenger, Friedrich 3,434,278.

Hengst, Johannes Hubertus Theodorus:*See*—
Haaijman, Pieter Willem, Wijnen, Marinus Dirk, and Hengst, Johannes Hubertus Theodorus 3,434,886.

Henriksson, Per, to Dalin, David. Heat exchanger for waste heat recovery. 3,434,532, 03-25-69, Cl. 165-075.

Henry, James L.:*See*—
Brooks, Chester E., Henry, James L., and Meyerle, John A. 3,435,159.

Hercules, Incorporated:*See*—
Desmarais, Armand J., and Reid, Albert R., 3,435,027.
Olson, Setha G., 3,435,020.

Herkness, Frank G., and Simmons, Charles W., Jr., to Budd Company, The. Apparatus for dispensing and measuring strand material. 3,434,215, 03-25-69, Cl. 033-127.

Herman, Irving, and Andreassen, Donald, to Chamberlain Manufacturing Corporation. Continuous rod mat. 3,434,422, 03-25-69, Cl. 102-067.

Herniman, Peter Douglas, and Lickman, David Austin, to Smith, T. J., & Nephew Limited. Surgical dressings. 3,434,472, 03-25-69, Cl. 128-156.

Herold, Carl D., Jr.:*See*—
Blair, David J., and Herold, Carl D., Jr. 3,435,344.

Herrmann, Hans:*See*—
Wirth, Heinz, Helmberger, Hermann, and Herrmann, Hans 3,434,803.

Hertzberg, Gunther:*See*—
Munder, Johannes, and Hertzberg, Gunther 3,434,838.

Hetrick, Glenn C. Hook sneller. 3,434,750, 03-25-69, Cl. 289-017.

Hewlett-Packard Company:*See*—
Reis, Charles S., 3,434,878.
Sauber, James W., 3,435,353.
Sorensen, Hans O., 3,435,232.

Hewlett-Packard Company,:*See*—
Vanier, Jacques P., 3,435,369.

Heydlauf, Kurt:*See*—
Ruprecht, Robert, Heydlauf, Kurt, and Braun, Herbert 3,434,363.

Heyer, Willy, to Gewerkschaft Eisenhutte Westfalia. Mining support arrangement. 3,434,292, 03-25-69, Cl. 061-045.

Heywood, Kenneth W., and Trampier, Charles Raymond, Jr., to National Lead Company. Titanium dioxide granules and their use in a molten glass batch. 3,434,853, 03-25-69, Cl. 106-052.

Hi-Shear Corporation:*See*—
Wing, George S., 3,434,379.

Hice, Jackson O., to Union Carbide Corporation. Food product cryogenic freezing system. 3,434,301, 03-25-69, Cl. 062-374.

Hickey, William P., and Martin, Philip T., to Industrial Nucleonics Corporation. Structure inspection equipment. 3,435,241, 03-25-69, Cl. 250-219.

Highley, Derek Rowland, and Ellenbogen, Leon, to American Cyanamid Company. Highly purified intrinsic factor. 3,434,927, 03-25-69, Cl. 195-002.

Hileman, Ronald E., and Oxley, Vincent C., to Sylvania Electric Products, Inc. Television camera synchronization control system. 3,435,141, 03-25-69, Cl. 178-069.5

Hill, Kenneth L.:*See*—
Wilson, Kenneth R., and Hill, Kenneth L. 3,434,822.

Hille, Ernst:*See*—
Meininger, Fritz, and Hille, Ernst 3,435,023.

Hine, Louis P., Jr., to Luxaire, Inc. Balanced flue enclosed infra-red heater. 3,434,466, 03-25-69, Cl. 126-092.

Hinton, Everett H., Jr.:*See*—
Smith, Vernon C., and Hinton, Everett H., Jr. 3,434,875.

Hinton, George F., to United States of America, Navy. Line integral magnetometer for measuring current flow through an electrolyte. 3,435,338, 03-25-69, Cl. 324-043.

Hirshfield, Edward:*See*—
Allen, James S., and Hirshfield, Edward 3,435,346.

Hitachi Zosen Kabushiki Kaisha:*See*—
Nakanishi, Tetsuichiro, 3,434,926.

Hobbs, William A. Adjustable radius attachment. 3,434,386, 03-25-69, Cl. 090-024.3

Hochfeld, Henry J., to American Fiber-Velope Mfg., Co. Apparatus for bending accordion pleated strips. 3,434,400, 03-25-69, Cl. 093-084.

Hochmuth, Frank W., and Freiday, Jay H., to Combustion Engineering, Inc. Semirigid tube supporting tie. 3,434,531, 03-25-69, Cl. 165-067.

Hocke, Wilhelm:*See*—
Gessinger, Werner, and Hocke, Wilhelm 3,434,398.

Hoeschele, Guenther K.:*See*—
Gregor, Harry P., Teyssie, Philippe, and Hoeschele, Guenther K. 3,434,979.

Hoffer, Max, to Hoffman-La Roche, Inc. Nitroimidazole derivatives. 3,435,049, 03-25-69, Cl. 260-309.

Hoffman Information Systems, Inc.:*See*—
Stoyanoff, Louis J., 3,434,784.

Hoffman, John E.:*See*—
Wischmeyer, William F., and Hoffman, John E. 3,434,599.

Hoffman-La Roche, Inc.:*See*—
Hoffer, Max, 3,435,049.

Hoffman, Paul R.:*See*—
Cornell, William D., Disney, Morton F., Jr., and Hoffman, Paul R. 3,435,120.

Hofmann, Paul, and Peterlein, Karl, to Gelsenberg Benzin Aktiengesellschaft. Preparation of 1,2,4-trimethyl-5- isopropylbenzene. 3,435,091, 03-25-69, Cl. 260-671.

Hollabaugh, George R., to Mobil Oil Corporation. System for automatic injection of coolant into thermal recovery wells. 3,434,534, 03-25-69, Cl. 166-053.

Holland, Gerald F., to Pfizer, Chas., & Co., Inc. Lipid regulation with 5-(pyridyl)tetrazole derivatives. 3,435,115, 03-25-69, Cl. 424-263.

Holley Carburetor Company:*See*—
Lockwood, Leon J., 3,434,347.
Londal, Ralph K., 3,434,395.
Schneider, Alfred, Shunn, William F., and Roeske, Paul W., 3,434,462.
Zaske, Arthur P., 3,434,341.

Hollowood, Calvin T.:*See*—
Rose, Thomas P., and Hollowood, Calvin T. 3,435,127.

Holtschmidt, Ulrich, and Michel, Alfred, to Goldschmidt, Th., A.-G. Binder composition comprising a mixture of a barium hydroxide catalyzed phenol-formaldehyde resole and a melamine formaldehyde condensate. 3,434,992, 03-25-69, Cl. 260-029.3

Holub, Fred F., to General Electric Company. Polyamide acid resins and polyimides therefrom. 3,435,002, 03-25-69, Cl. 260-046.5

Holzmann, Hermann, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Recovery of noble metals which are volatilized during catalytic reactions. 3,434,826, 03-25-69, Cl. 075-083.

Honeywell Inc.:*See*—
Aitchison, Don E., 3,435,193.
Engh, Robert O., 3,435,225.
Hastings, Charles W., 3,435,425.
Josephs, Harold C., and Zook, James David, 3,434,893.

Honolulu Iron Works Company:*See*—
Farmer, John, 3,434,515.
Farmer, John, 3,434,516.

Hooge, Alvin W., and Hooge, Yvonne L. Mouth wash dispenser. 3,434,629, 03-25-69, Cl. 222-088.

Hooge, Yvonne L.:*See*—
Hooge, Alvin W., and Hooge, Yvonne L. 3,434,629.

Hooker Chemical Corporation:*See*—
Baranauckas, Charles F., and Gordon, Irving, 3,434,981

Hooker Chemical Corporation,:*See*—
Hooker, Thomas, and Currey, John E., 3,434,948.

Hooker, Thomas, and Currey, John E., to Hooker Chemical Corporation. Method for chlorine cooling and brine heating. 3,434,948, 03-25-69, Cl. 204-128.

Hooton, Ivor Noel, to United Kingdom Atomic Energy Authority. Trigonometrical function generators. 3,435,197, 03-25-69, Cl. 235-197.

Hoover Ball and Bearing Company:*See*—
Phelps, Vernon A., 3,434,240.

Horak, Frank A.:*See*—
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S. 3,434,828.

Horman, Alfred E., to Palletizer Corporation. Loading machine. 3,434,603, 03-25-69, Cl. 214-006.

Hormann, Frank R. Rotary electric current interrupter. 3,435,388, 03-25-69, Cl. 335-068.

Horner, Leopold, and Neumann, Heinz, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Electrolytic process for splitting aromatic carboxylic acid amides and sulfonic acid amides. 3,434,944, 03-25-69, Cl. 204-059.

Horton, John F., Jr., to Cored Panels, Inc. Pallet structures and methods for their use. 3,434,434, 03-25-69, Cl. 108-051.

Hosoda, Yoshimi:*See*—
Campbell, Trevor G., Coogan, Lawrence P., and Hosoda, Yoshimi 3,434,738.

Hostalek, Zdenek:*See*—
Paleckova, Frantisek, Hostalek, Zdenek, and Rehacek, Zdenek 3,434,930.

Hostetler, Donald E., to Rexall Drug and Chemical Company,. Thermal degradation of ethylene/propylene block copolymers. 3,435,095, 03-25-69, Cl. 260-878.

Hotine, William, to General Dynamics Corporation. Infrared sensitive photoconductive matrix. 3,435,222, 03-25-69, Cl. 250-083.3

Hottenrott, Hans G.:*See*—
Bertelsen, Bruce I., Hottenrott, Hans G., and Kump, Herbert J. 3,435,428.

Hottinger Baldwin Mesztechnik G.m.b.H.:*See*—
Felgner, Karl, 3,434,453.

Hotwork Limited:*See*—
Ward, Trevor, 3,434,704.

Houlihan, William J., Manning, Robert E., and Theuer, William S., to Sandoz, Inc. Pyridazino[3,4-β] indoles. 3,435,034, 03-25-69, Cl. 260-250.

Houston Engineers, Inc.:*See*—
Webb, Derrel D., 3,434,543.

Houston, Robert J.:*See*—
White, Robert J., and Houston, Robert J. 3,435,085.

Houtz, Kenneth E.:*See*—
Kampert, Keith W., and Houtz, Kenneth E. 3,434,766.

Howaldtswerke-Deutsche Werft Aktiengesellschaft:*See*—
Kollenberger, Walter, 3,434,727.

Howard, Dean D., to United States of America, Navy. Sidelobe cancelling system for array type target detectors. 3,435,453, 03-25-69, Cl. 343-100.

Howden, Derek:*See*—
Weinberg, Felix Jiri, Howden, Derek, and Cleaver, Denis 3,434,950.

Huckstadt, Harald, Saleck, Wilhelm, Ulrich, Hans, Randolph, August, and Grabhofer, Herbert, to Agfa-Gevaert Aktiengesellschaft. Photographic silver halide emulsions stabilized with 2-imino-thiazolones. 3,434,842, 03-25-69, Cl. 096-109.

Hueber, Werner G., and Hecker, Klaus J., to United States of America, Navy. Adaptive control system for airborne television camera. 3,435,140, 03-25-69, Cl. 178-007.81

Huff, George F., and Voegtly, Richard O., to Mine Safety Appliances Company. Spray couting apparatus. 3,434,458, 03-25-69, Cl. 118-301.

Huff, John B., to United States of America, Interior. Process for preserving fish by irradiation. 3,434,850, 03-25-69, Cl. 099-217.

Hughes Aircraft Company:*See*—
Burnsweig, Joseph, Jr., and O'Brien, Larry H., 3,435,342.
Farnsworth, Robert P., 3,435,233.
Kennedy, Joseph B., 3,435,273.

Hulverson, Adrian F.:*See*—
Tantlinger, Keith W., Chieger, George, and Hulverson, Adrian F. 3,434,751.

Hume, Horace D., to Hart-Carter Company. Resilient trailer mount. 3,434,733, 03-25-69, Cl. 280-104.5

Hunley, Homer E., to TRW, Inc.DC voltage regulator utilizing phase controlled rectifying means. 3,435,322, 03-25-69, Cl. 321-018.

Hunstiger, Francis:*See*—
Kolb, Edwin R., Richardson, James I., and Hunstiger, Francis 3,435,309.

Hunt-Wesson Foods, Inc.:*See*—
Mason, Stanley I., Jr., 3,434,635.

Hunter, Colin Edward, to National Research Development Corporation. SCR type alternating current electric power control. 3,435,329, 03-25-69, Cl. 323-022.

Hurley, Forrest R.:*See*—
Krau, John W., and Hurley, Forrest R. 3,434,917.

Husome, Robert G., to San Marino Electronic Corporation. Empty bottle inspection machine. 3,434,594, 03-25-69, Cl. 209-074.

Hutson, Tom, Jr., and Carter, Cecil O., to Phillips Petroleum Company. Alkylation utilizing fine dispersion of reactants in a constant catalyst mass. 3,435,092, 03-25-69, Cl. 260-683.43

Hyatt, Philip L., to American Air Filter Company, Inc.Filter cell retaining apparatus. 3,434,269, 03-25-69, Cl. 055-490.

Hyland, James W., Jr., to Owens-Illinois, Inc.Thermosetting cationic resin and method of making same. 3,434,984, 03-25-69, Cl. 260-018.

Ibing, Guenther, Schirrmacher, Hermann, Vollmer, Herbert, Boemelburg, Josef, and Schwall, Fritz. Reactor with heat exchanger. 3,434,807, 03-25-69, Cl. 023-288.

Ikeda, Takashi:*See*—
Kitabatake, Michitoshi, Ito, Masatomo, Ikeda, Takashi, Aozuka, Noriyoshi, and Noguchi, Yoshitaka 3,435,067.

Imahashi, Issei:*See*—
Matsuzawa, Masanao, Imahashi, Issei, and Nakamura, Koichi 3,435,311.

Imperial Chemical Industries Limited:*See*—
Marrable, Christopher David, 3,435,062.
Ness, Norman Morin, Palluel, Auguste Louis Lucien, and Cook, Clive Douglas, 3,434,951.
Winn, Richard, 3,434,804.

Improved Machinery Inc.:*See*—
Rich, John Parker., 3,434,921.

Imura, Toshinobu:*See*—
Kobayashi, Tatsuo, and Imura, Toshinobu 3,434,404.

Ince, Norman S.:*See*—
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S. 3,434,828.

Industrial Development Corporation, The, :*See*—
Meyer, Harry W., 3,434,193.

Industrial Nucleonics Corporation:*See*—
Brunton, Donald C., 3,435,240.
Hanken, Albert F., 3,435,220.
Hickey, William P., and Martin, Philip T., 3,435,241.
Kinne, Robert W., 3,435,242.

Industrial Tool Engineering Company:*See*—
Celovsky, Michael J., 3,435,174.

Industrie-Werke Karlsruhe Aktiengesellschaft:*See*—
Madlener, Paul, and Pecksen, Otto, 3,434,418.

Ingersoll Milling Machine Company, The:*See*—
Kaiser, Karl B., 3,434,190.

Ingham, Robert J., and Bissell, Robert D., to Dresser Industries, Inc.Gauge casing. 3,434,330, 03-25-69, Cl. 073-001.

Inose, Hiroshi, and Koono, Zenya, to Bell Telephone Laboratories, Incorporated. Tone generators for delta modulation time division communication switching systems. 3,435,149, 03-25-69, Cl. 179-018.

Inouye, George T., and Judge, Darrell L., to TRW, Inc.Superconductive fluxgate magnetometer. 3,435,337, 03-25-69, Cl. 324-043.

Institut fur Regelungstechnik:*See*—
Prochnow, Horst, 3,435,356.

Instron Corporation:*See*—
De Nicola, Joseph Peter, 3,435,459.

Instron Limited:*See*—
Griffiths, John H., and Poulson, Barrie K., 3,435,231.

Instruments Displays, Inc.:*See*—
Baker, William F., 3,434,624.

Integrated Development and Manufacturing Co.:*See*—
Davis, Noel, 3,434,530.

Intercontinental Systems, Inc., :*See*—
Bernier, Donald R., 3,435,419.

International Business Machine Corporation:*See*—
Bradley, Edward Franklin, 3,435,310.

International Business Machines Corporation:*See*—
Bertelsen, Bruce I., Hottenrott, Hans G., and Kump, Herbert J., 3,435,428.
Boggs, William H., and Rousselot, George E., 3,434,866.
Bradley, Edward Franklin, and Ferrier, Herman Anthony, Jr., 3,435,314.
Braslau, Norman, 3,435,303.
Carlock, Frank R., Kippenhan, B. William, Lamoureux, William R., and Lazarchick, Nicholas, Jr., 3,435,278.
Chance, Dudley A., 3,434,896.
Duda, William L., Fleisher, Harold, Kulcke, Werner W., and Max, Erhard, 3,435,447.
Evans, James R., and Rowe, Thomas H., 3,435,418.
Greeson, James C., Jr., 3,435,365.
Harris, Thomas J., Fleisher, Harold, and Shapiro, Eugene, 3,434,778
Harris, Thomas J., and Max, Erhard, 3,435,370.
Landauer, Rolf W., 3,435,307.
Nallin, Eugene J., 3,435,440.
Pierret, Jean Marc, 3,435,343.
Roshon, David, Jr., and Young, Thomas, 3,435,186.
Rousselot, Georges E., 3,434,867.
Simkins, Quinton W., 3,435,429.
Wissick, William P., 3,435,420.

International Computers and Tabulators Limited:*See*—
Lee, Ronald Henry, and Keen, Albert John, 3,434,413.

International Equipment Company:*See*—
Barletta, Anthony J., 3,434,615.

International Harvester Company:*See*—
Kampert, Keith W., and Houtz, Kenneth E., 3,434,766.

International Standard Electric Corporation:*See*—
Russell, Percy Arthur, 3,435,151.

International Telephone and Telegraph Corporation:*See*—
Carroll, James C., 3,435,360.

Inventa A.G. fur Forschung und Patentverwertung:*See*—
Gehring, Albert, and Sailer, Richard, 3,435,068.

Ion Physics Corporation:*See*—
Gale, Alfred J., 3,434,894.

Iota-Cam Corporation:*See*—
Gosselin, Norman R., 3,434,775.

Ippolito, Anthony C., to Wurlitzer Company, The. Electronic piano feedback reduction. 3,435,122, 03-25-69, Cl. 084-001.14

Ishii, Toshio, to Hamada Printing Press Mfg., Co., Ltd.Mechanism for mounting wrap-around plates on the impression cylinder. 3,434,415, 03-25-69, Cl. 101-415.1

Isomura Sangyo Kaisha, Ltd.:*See*—
Kiyohara, Shinzo, and Shibasaki, Yasuichi, 3,434,905.

Itek Corporation:*See*—
Arazi, Efraim R., 3,435,227.

Ito, Masatomo:*See*—
Kitabatake, Michitoshi, Ito, Masatomo, Ikeda, Takashi, Aozuka, Noriyoshi, and Noguchi, Yoshitaka 3,435,067.

Iwai, Issei, and Nakamura, Norio, to Sankyo Company, Limited. Process for preparing 3-aminoisoxazole derivatives. 3,435,047, 03-25-69, Cl. 260-307.

Iwai, Issei, and Nakamura, Norio, to Sankyo Company. Process for preparing 5-aryl-3-aminoisoxazoles. 3,435,048, 03-25-69, Cl. 260-307.

Jablonski, Edward R., to McGraw-Edison Company. Luminaire. 3,435,202, 03-25-69, Cl. 240-025.

Jackman, Robert M., to Smith, A. O., Corporation. Pipe coupling having a split ring locking means. 3,434,745, 03-25-69, Cl. 285-111.

Jackson, Byron, Inc.:*See*—
Merritt, John B., 3,434,539.

Jackson, Harold S., to Allegheny Ludlum Steel Corporation. Arc power responsive control system for consumable electrode furnace. 3,435,121, 03-25-69, Cl. 013-013.

Jackson, Robert W., and Pike, John E., to Upjohn Company, The. 16-Oxygenated-20-methyl-21-oic acids and 16- oxygenated-17α, 20-methylene-21-oic acids of the pregnane series and the 21-lower alkyl esters thereof. 3,435,029, 03-25-69, Cl. 260-239.55

Jacob, Marvin H., to Dale Electronics, Inc.Series resonant trap and method of making same. 3,435,386, 03-25-69, Cl. 333-076.

Jacobi, Edward N., to Briggs & Stratton Corporation. Tumbler lock with automatic key ejector. 3,434,317, 03-25-69, Cl. 070-388.

Jacobsen, Clas, to Allmanna Svenska Elektriska Aktiebolaget. Deionization of a gas discharge device by varying the tube parameters. 3,435,287, 03-25-69, Cl. 315-110.

Jacobson, Robert L., Kluksdahl, Harris E., and Spurlock, Burwell, to Chevron Research Company. Low-pressure reforming process with a platinum-rhenium catalyst. 3,434,960, 03-25-69, Cl. 208-138.

Jaffe, Joseph, to Chevron Research Company. Method of operating a hydrofining process. 3,434,965, 03-25-69, Cl. 208-254.

Janssen, Hans-Joachim, and Schutte, Reinhold, to Licentia Patentverwaltungs- G.m.b.H.Electric motor mounting arrangement. 3,434,723, 03-25-69, Cl. 274-001.

Japan Exlan Company Limited:*See*—
Fujita, Yoshimasa, Nakagawa, Kazumi, Shimoda, Keitaro, and Miyashita, Koji, 3,434,276.

Jarret, Jacques:*See*—
Jarret, Jean, and Jarret, Jacques 3,435,266.

Jarret, Jean, and Jarret, Jacques. Variable speed electric motor. 3,435,266, 03-25-69, Cl. 310-164.

Jenkins, Thomas E.:*See*—
Cushing, Donald S., and Jenkins, Thomas E. 3,434,671.

Jensen, Arne, to Danfoss A/S. Pulse controlled switch having solid state switching elements isolated from transient voltages. 3,435,255, 03-25-69, Cl. 307-258.

Jensen, Oluf Fred. Power brakes for automotive vehicles. 3,434,394, 03-25-69, Cl. 091-470.

Jewell, Wendell D., Nevala, Lloyd A., and Korn, Frederick, to American Bosch Arma Corporation. Accelerometers. 3,434,352, 03-25-69, Cl. 073-517.

Johansson, Ake:*See*—
Blomgren, Lars, and Johansson, Ake 3,434,224.

Johns-Manville Corporation:*See*—
Corbin, Raymond Le Rue, 3,434,259.

Johnson & Johnson:*See*—
Philippi, George J., and Rosnick, Albert L., 3,434,907.

Johnson, Arthur F.Aluminum reduction cell with aluminum and refractory layered bottom construction. 3,434,957, 03-25-69, Cl. 204-243.

Johnson, Arthur F.Electrolytic cell bottom construction. 3,434,958, 03-25-69, Cl. 204-243.

Johnson, Beth E., and Stuart, Bernice E.Decorative article and method of making same. 3,434,911, 03-25-69, Cl. 161-016.

Johnson, Jay H.:*See*—
Merchant, Chester O., and Johnson, Jay H. 3,434,819.

Johnson, Malcolm O., to Mobil Oil Corporation. Air feed device for valve retract system in pneumatic acoustic source. 3,434,562, 03-25-69, Cl. 181-000.5

Johnson Service Company, :*See*—
Smith, Walter J., and Parker, Rienzi B., 3,434,348.

Johnston, Thomas Jseph, to Reynolds Metals Company. Reduction of aluminum oxide by elemental silicon. 3,434,824, 03-25-69, Cl. 075-068.

Jones & Laughlin Steel Corporation:*See*—
Palmer, Charles E., 3,434,399.

Jones, Francis T., and Sworski, Thomas J., to Union Carbide Corporation. Hydrazine production. 3,434,949, 03-25-69, Cl. 204-157.1

Jones, Morton E.:*See*—
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S. 3,434,828.

Jorgensen, Paul J., to General Electric Company. Silicon dioxide coatings utilizing a plasma. 3,434,868, 03-25-69, Cl. 117-093

Joseph, Robert J., and Murphy, William J., to Xerox Corporation. Xerographic plate comprising a protective coating of a resin mixed with a metallic stearate. 3,434,832, 03-25-69, Cl. 096-001.5

Josephs, Harold C., and Zook, James David, to Honeywell Inc.Semiconductor device with a lateral retrograded PN junction. 3,434,893, 03-25-69, Cl. 148-033.

Josephsen, Gene H., and Weaver, Frank C., to Stewart-Warner Corporation. Bimetallic thermostatic device having ambient temperature compensation by means of a U-shaped bimetal element with a permanently set leg. 3,435,339, 03-25-69, Cl. 324-105.

Journapak Corporation, The, :*See*—
Tracey, George B., 3,434,767.

Judd, Claude I., Drukker, Alexander E., and Biel, John H., to Colgate-Palmolive Company. 5-(N-benzyl-N-lower alkylamino alkylene)-5H-dibenzo[a,d]0 cycloheptenes. 3,435,073, 03-25-69, Cl. 260-570.8

Judd, Claude I.:*See*—
Brukker, Alexander E., and Judd, Claude I. 3,435,041
Drukker, Alexander E., and Judd, Claude I. 3,435,042.

Judge, Darrell L.:*See*—
Inouye, George T., and Judge, Darrell L. 3,435,337.

Julow, Thomas M., to Bendix Corporation, The. Deceleration sensitive reaction for a fluid pressure servomotor control means. 3,434,759, 03-25-69, Cl. 303-024.

Julow, Thomas M., and French, Charlie N., to Bendix Corporation, The. Servomotor control means with primary and secondary pressure sources. 3,434,388, 03-25-69, Cl. 091-006.

Jurascheck, Richard:*See*—
Kannegiesser, Herbert, and Jurascheck, Richard 3,434,910.

Kabas, Guglielmo, to Grace, W. R., & Co.Cyclohexeneimine thiocyanates. 3,435,072, 03-25-69, Cl. 260-566.

Kabele, Stanislav:*See*—
Doudlebsky, Ctibor, Fajt, Ludvik, Bucil, Frantisek, and Kabele, Stanislav 3,434,184.

Kabushiki Kaisha Aida Tekkosho:*See*—
Taniguchi, Naonori, and Wachi, Akira, 3,434,328.

Kabushiki Kaisha Hitachi Seisakusho:*See*—
Yoshine, Hiroki, 3,435,148.

Kabushiki Kaisha Nattori Tokeiten:*See*—
Fukuyo, Hitohiro, and Tabuchi, Norio, 3,435,368.

Kabushiki Kaisha Rinnai Seisakusho:*See*—
Hayashi, Kanekichi, and Naito, Susumu, 3,434,791.

Kabushiki Kaisha Suwa Seikosha:*See*—
Matsuzawa, Masanao, Imahashi, Issei, and Nakamura, Koichi, 3,435,311.

Kachman, Robert D.Pourer for liquor bottles. 3,434,636, 03-25-69, Cl. 222-567.

Kaenan, Joseph P., to Patch Rubber Company. Portable tire repair device. 3,434,183, 03-25-69, Cl. 018-045.

Kaiser, Donald W., and Zane, John K., to Olin Mathieson Chemical Corporation. Polyurethanes prepared from oxyalkylated cyanoguanidines. 3,434,982, 03-25-69, Cl. 260-002.5

Kaiser, Karl B., to Ingersoll Milling Machine Company, The. Indexable cutter blade. 3,434,190, 03-25-69, Cl. 029-095.

Kaiser Steel Corporation:*See*—
Bergantini, Attilio R., 3,434,198.

Kalart Company, Inc., The:*See*—
Schwartz, Morris, and Bender, Werner K., 3,435,156.

Kalle Aktiengesellschaft:*See*—
Braunisch, Herbert, Lenhart, Helga, and Seifried, Walter, 3,434,916.

Kamlet, Mortimer J.:*See*—
Adolph, Horst G., and Kamlet, Mortimer J. 3,435,079.

Kampert, Keith W., and Houtz, Kenneth E., to International Harvester Company. Self-aligning thrust bushing assembly. 3,434,766, 03-25-69, Cl. 308-135.

Kanawyer, Walter N.:*See*—
Margolien, David H., and Kanawyer, Walter N. 3,435,446.

Kanda, Isao, to NGK Spark Plug Co., Ltd.Piezoelectric ignition device. 3,434,790, 03-25-69, Cl. 431-255.

Kaneko, Keezi, to Fuji Shashin Film Kabushiki Kaisha. Film magazine for motion picture cameras. 3,434,782, 03-25-69, Cl. 352-072.

Kannegiesser, Herbert, and Jurascheck, Richard, to Kannegiesser Maschinenfabrik Gesellschaft mit beschrankter Haftung. Gluing press for textile pieces. 3,434,910, 03-25-69, Cl. 156-583.

Kannegiesser Maschinenfabrik Gesellschaft mitbeschrankter Haftung:*See*—
Kannegiesser, Herbert, and Jurascheck, Richard, 3,434,910.

Kaplan, Joseph A., & Sons, Inc.:*See*—
Dickinson, Sanford C., 3,434,858.

Kaplan, Sam H., to Rauland Corporation, The. Process for screening a color cathode-ray tube. 3,434,836, 03-25-69, Cl. 096-036.1

Karl, Raymond O.:*See*—
Brown, Earl J., Crowder, James R., and Karl, Raymond O. 3,434,940.

Kashiwagi, Tetsuo:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao 3,434,277.

Kassl Window Company, Inc.:*See*—
Weidner, Ralph J., and Benigno, James, 3,434,236.

Kasten, Walter, to Bendix Corporation, The. Fuel transfer device having water sensing shutoff valve. 3,434,486, 03-25-69, Cl. 137-067.

Kato, Jumpei, to Royal Products Incorporated. Glow plug connector. 3,435,404, 03-25-69, Cl. 339-026.

Kato, Masao:*See*—
Mitani, Tetsuo, and Kato, Masao 3,434,547.

Kato, Tokue:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao 3,434,277.

Katrak Vehicle Company:*See*—
Schoonover, Richard H. A., 3,434,739.

Katz, Louis B.Apparatus for bonding a brake lining to a brake shoe. 3,434,412, 03-25-69, Cl. 100-093.

Katz, Morris H., to Pillsbury Company, The. Edible dry mix composition for producing an aerated food product. 3,434,848, 03-25-69, Cl. 099-139.

Kay, Arthur:*See*—
Day, Lawrence, Dobrick, Joseph, and Kay, Arthur 3,434,243.

Kayatt, Philip J., to Duro-Test Corporation. Plural lamps for simulating a candle flame. 3,435,286, 03-25-69, Cl. 315-047.

Kazmarek, Edward, to Lear Siegler, Inc.Force sensing apparatus. 3,434,342, 03-25-69, Cl. 073-133.

Keahl, Gerald Thomas, to Beckman Instruments, Inc.Two wavelength infrared analyzer having a pair of variable interference filters for determining the respective wavelengths. 3,435,209, 03-25-69, Cl. 250-043.5

Keane, Francis Xavier, to Vickers Limited. Hospital bed. 3,434,165, 03-25-69, Cl. 005-061.

Keeling, Edward J.Safety ski binding. 3,434,731, 03-25-69, Cl. 280-011.35

Keen, Albert John:*See*—
Lee, Ronald Henry, and Keen, Albert John 3,434,413.

Keese, Beverly W., to Rockwell-Standard Company,. Vehicle drive assembly. 3,434,364, 03-25-69, Cl. 074-391.

Kel Corporation, :*See*—
Robb, Winfred Edward, Jr., 3,435,456.

Keller & Knappich G.m.b.H.:*See*—
Kirsch, Karl, Uhl, Siegfried, and Schiele, August, 3,434,382.

Kemenczky, Miklos, to Guilden, Paul. Heat-rotated illuminated ornament. 3,435,201, 03-25-69, Cl. 240-010.1

Kemp, Jacob D., Langlois, Gordon E., and Olson, Lloyd J., to Chevron Research Company. Solvent demetalation of a hydrocarbon oil. 3,434,963, 03-25-69, Cl. 208-252.

Ken-Vac Corporation, :*See*—
Kenyon, Robert L., and Thompson, Donald, 3,434,173.

Kendig, Paul M.:*See*—
Bringman, Joseph M., Lawther, James M., and Kendig, Paul M. 3,435,409.

Kennedy, Joseph B., to Hughes Aircraft Company. Slow-wave structure encasing envelope with matching thermal expansion properties. 3,435,273, 03-25-69, Cl. 313-283.

Kent, James J., Jr., to Four-D Productions. Method of and system for staging productions. 3,434,713, 03-25-69, Cl. 272-010.

Kentucky Electronics, Inc.:*See*—
Merchant, Chester O., and Johnson, Jay H., 3,434,819.
Merchant, Chester O., 3,435,179.

Kenyon, Robert L., and Thompson, Donald, to Ken-Vac Corporation,. Vehicle washing apparatus. 3,434,173, 03-25-69, Cl. 015-021.

Keough, Thomas H., and Haglund, Norman E., to Allis-Chalmers Manufacturing Company. T-junction box for three phase primary feeder cable. 3,435,125, 03-25-69, Cl. 174-059.

Kern, Edward L., to Dow Corning Corporation. Laser communication system using flexible silicone transmission line. 3,434,776, 03-25-69, Cl. 350-096.

Kershaw, Delmar D., to General Electric Company. Method of making a molybdenum-tungsten thimble seal. 3,435,180, 03-25-69, Cl. 219-085.

Keuffel & Esser Company, :*See*—
Munder, Johannes, and Hertzberg, Gunther, 3,434,838.

Kevey, Andrew, to United States of America, Atomic Energy Commission. Neutron spectrometer for high neutron flux. 3,435,219, 03-25-69, Cl. 250-083.1

Keystone Consolidated Industrie, Inc.:*See*—
Beckman, Melvin H., Unter, Robert K., and Wald, Samuel K., 3,434,263.

Kiekhaefer, Elmer C., to Brunswick Corporation. Dual dome skylight. 3,434,250, 03-25-69, Cl. 052-022.

Kiekhaefer, Elmer C., to Brunswick Corporation. Dual pane skylight. 3,434,251, 03-25-69, Cl. 052-022.

Kienzle Uhrenfabriken G.m.b.H.:*See*—
Siefert, Roland, and Charrier, Rolf, 3,435,313.

Kiewit, Jack L., to United States of America, Interior. Sealing strips for concrete slabs. 3,434,401, 03-25-69, Cl. 094-018.

Kihara, Nobutoshi, to Sony Corporation. Tape guide apparatus for helical scan recorders. 3,435,154, 03-25-69, Cl. 179-100.2

Kilgore, Marion D., and Pumpelly, Robert C., to Dresser Industries, Inc.Retrievable bridge plug. 3,434,538, 03-25-69, Cl. 166-123.

Kilpatrick, David D., to United States of America, Navy. Surrogate viewing system. 3,435,452, 03-25-69, Cl. 343-006.

Kimberley, John A.:*See*—
Rosenberg, Merton I., and Kimberley, John A. 3,435,395.

Kimberly-Clark Corporation:*See*—
Bernardin, Leo J., 3,434,918.

King, Arlie L.Fishing tool. 3,434,231, 03-25-69, Cl. 043-053.5

Kinne, Robert W., to Industrial Nucleonics Corporation. Formation inspecting arrangement. 3,435,242, 03-25-69, Cl. 250-219.

Kinney, John F., to Bendix Corporation, The. Compensated temperature sensor. 3,434,350, 03-25-69, Cl. 073-362.4

Kinslow, William G., Jr., to Phillips Petroleum Company. Plastic container bottom of increased strength. 3,434,626, 03-25-69, Cl. 220-066.

Kippenhan, B. William:*See*—
Carlock, Frank R., Kippenhan, B. William, Lamoureux, William R., and Lazarchick, Nicholas, Jr. 3,435,278.

Kircher, Rene, to Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture. Starch pastes of improved fluidity. 3,434,880, 03-25-69, Cl. 127-070.

Kirk, Merritt C., Jr., to Sun Oil Company. Reforming process. 3,434,959, 03-25-69, Cl. 208-062.

Kirkpatrick, Wylie C., to SCM Corporation.. Plastic containers for paint. 3,434,588, 03-25-69, Cl. 206-046.

Kirsch, Karl, Uhl, Siegfried, and Schiele, August, to Keller & Knappich G.m.b.H. Securing a gun turret on an armored vehicle. 3,434,382, 03-25-69, Cl. 089-036.

Kitabatake, Michitoshi, Ito, Masatomo, Ikeda, Takashi, Aozuka, Noriyoshi, and Noguchi, Yoshitaka, to Showa Denko Kabushiki Kaisha. Process for preparing high purity bis (β-hydroxyethyl) terephthalate. 3,435,067, 03-25-69, Cl. 260-475.

Kiyohara, Shinzo, and Shibasaki, Yasuichi, to Isomura Sangyo Kaisha, Ltd. Method of manufacturing lead dioxide electrode. 3,434,905, 03-25-69, Cl. 156-327.

Kleiman, Joseph P.:*See*—
Dubeck, Michael, and Kleiman, Joseph P. 3,434,814.

Kleine, Rudolph W., and Wirth, Jon C., to C.R.O. Engineering Co., Inc.. Machine control for cutting geometric shapes. 3,434,212, 03-25-69, Cl. 033-027.

Klimstra, Paul D., to Searle , G. D., & Co. 17-Alkenyl/alkynyl-5α-androst-1-ene-3β, 17β- diols, esters thereof and intermediates thereto. 3,435,030, 03-25-69, Cl. 260-239.55

Klimstra, Paul D., to Searle, G. D., & Co. 7-Methylestr-2-en-17-one and derivatives thereof. 3,435,055, 03-25-69, Cl. 260-397.3

Kline, Paul E.:*See*—
Soderquist, Frederick J., Boyce, Harold D., and Kline, Paul E. 3,435,086.

Klinger Manufacturing Company, Limited, The:*See*—
Buck, Thomas M., and Satterwhite, Fred B., 3,434,189.

Klootwijk, Arie, to Shell Oil Company. Alpha-substituted beta-propiolactone stabilization with alpha-halocarboxylic acids. 3,435,052, 03-25-69, Cl. 260-343.9

Klothen, Irving, Fortenbaugh, Robert Berendt, and Abbey, Anthony, to American Cyanamid Company. Stabilization of animal and poultry feeds containing a tetracycline antibiotic. 3,434,844, 03-25-69, Cl. 099-002.

Kluksdahl, Harris E.:*See*—
Jacobson, Robert L., Kluksdahl, Harris E., and Spurlock, Burwell 3,434,960.

Knapsack Aktiengesellschaft:*See*—
Baader, Herbert, Sennewald, Kurt, and Reis, Helmut, 3,435,083.

Knaus, Oleg Mikchailovich. Preaeration and flotation of mineral particles. 3,434,596, 03-25-69, Cl. 209-184.

Knecht, William A.:*See*—
Ouellette, Chester V., and Knecht, William A. 3,435,392.

Knibiehly, Earle M., to LogEtronics, Inc. Drier for film processors. 3,434,225, 03-25-69, Cl. 034-160.

Knopp, Walter V., to Olin Mathieson Chemical Corporation. Fabrication of spherical powders. 3,434,831, 03-25-69, Cl. 075-211.

Knott, Edward B, Mijovic, Miroslav V, and Saunders, David George, to Eastman Kodak Company. Photographic element. 3,434,837, 03-25-69, Cl. 096-074.

Knox, David R., to Bundy Corporation. Method of making tubing and product thereof. 3,434,503, 03-25-69, Cl. 138-171.

Knox, Lawrence H.:*See*—
Edwards, John A., and Knox, Lawrence H. 3,435,056.

Kobayashi, Tatsuo, and Imura, Toshinobu, to Minoltacamera Kabushiki Kaisha. Automatic diaphragm setting system for flash photography. 3,434,404, 03-25-69, Cl. 095-010.

Kobe Steel, Ltd.:*See*—
Mitani, Tetsuo, and Kato, Masao, 3,434,547.

Koch, Bernhard R., to Grob & Co. Aktiengesellschaft. Heddle frame for looms. 3,434,505, 03-25-69, Cl. 139-092.

Koch, David Hamilton:*See*—
Till, Derek Elliott, Levins, Philip Leo, and Koch, David Hamilton 3,434,479.

Kochs Adlernahmaschinen-Werke AG:*See*—
Scholl, Hans, and Hagemayer, Gunther, 3,434,370.

Kolb, Edwin R., Richardson, James L., and Hunstiger, Francis, to Harris-Intertype Corporation. Corona charging unit. 3,435,309, 03-25-69, Cl. 317-262.

Koll, Stanley J.:*See*—
Wolf, Edward M., and Koll, Stanley J. 3,434,266.

Kollenberger, Walter, to Howaldtswerke-Deutsche Werft Aktiengesellschaft. Fluid-tight seals for rotatable shafts and the like. 3,434,727, 03-25-69, Cl. 277-058.

Koono, Zenya:*See*—
Inose, Hiroshi, and Koono, Zenya 3,435,149.

Koontz, Donald E.:*See*—
Babusci, Louis D., Cretella, Biagio A., Feder, David O., and Koontz, Donald E. 3,434,883.

Koplar, Solomon Edward:*See*—
Hancock, John L., and Koplar, Solomon Edward 3,434,279.

Koplar, Solomon Edward, :*See*—
Hancock, John L., and Koplar, Solomon Edward, 3,434,279.

Koppers-Wistra Ofenbau G.m.b.H.:*See*—
Krause, Wilhelm, 3,434,702.

Kordik, Kenneth S., Spannhake, Ernst W., and Zaumseil, Dean R., to Bucyrus-Erie Company.. Apparatus for control of adjustable speed A-C motors. 3,435,315, 03-25-69, Cl. 318-239.

Korn, Frederick:*See*—
Jewell, Wendell D., Nevala, Lloyd A., and Korn, Frederick 3,434,352.

Kowalick, James F.:*See*—
Ciccone, Thomas Q., and Kowalick, James F. 3,434,420.

Kozlovic, John M., to Westinghouse Electric Corporation. Vertical-lift metal-clad switchgear equipment. 3,435,162, 03-25-69, Cl. 200-050.

Kranz, Joachim, Maier, Karl, and Polster, Rudolf, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Alpha-alkoxyalkylamino- anthraquinone dyes for gasoline. 3,435,054, 03-25-69, Cl. 260-378.

Krau, John W., and Hurley, Forrest R., to Grace, W. R., & Co. Preparation of vermiculite paper. 3,434,917, 03-25-69, Cl. 162-003.

Krause, Wilhelm, to Koppers-Wistra Ofenbau G.m.b.H. Conveyor furnace. 3,434,702, 03-25-69, Cl. 263-008.

Krawetz, Arthur A.:*See*—
Tovrog, Theodore, and Krawetz, Arthur A. 3,434,338.

Kretsch, Kenneth P., and Lyons, Edward F., to Bell Telephone Laboratories, Incorporated. Monitoring and control system. 3,435,416, 03-25-69, Cl. 340-163.

Krikau, Frederick G.:*See*—
Taylor, Robert A., and Krikau, Frederick G. 3,434,797.

Krones, Friedrich:*See*—
Greiner, Joachim, and Krones, Friedrich 3,435,336.

Krug, Robert W., to Zenith Radio Corporation. Automatic chrominance control system. 3,435,131, 03-25-69, Cl. 178-005.4

Kuhn, Hans, to Securiton AG. Wireless alarm transmission installation. 3,435,444, 03-25-69, Cl. 340-214.

Kuhns, Charles R., and Beckenhauer, William H., to Norden Laboratories, Inc. Repository vaccine and method of preparing the same. 3,435,112, 03-25-69, Cl. 424-089.

Kuhrt, Noel Hawkins, Jr., to Du Pont de Nemours, E. I., and Company. Process for preparing silver halide photographic emulsions utilizing betaines. 3,434,841, 03-25-69, Cl. 096-094.

Kulcke, Werner W.:*See*—
Duda, William L., Fleisher, Harold, Kulcke, Werner W., and Max, Erhard 3,435,447.

Kump, Herbert J.:*See*—
Bertelsen, Bruce I., Hottenrott, Hans G., and Kump, Herbert J. 3,435,428.

Kundell, Frederick A.:*See*—
Ehrig, Raymond J., and Kundell, Frederick A. 3,434,946.

Kuntz, Irving, and Thomas, Robert M., to Esso Research and Engineering Company. Tetrahydrofuran polymers. 3,435,015, 03-25-69, Cl. 260-093.1

Kuo, Chan Hwa:*See*—
Wendler, Norman L., Taub, David, and Kuo, Chan Hwa 3,435,044.

Kurashiki Rayon Co., Ltd.:*See*—
Aoe, Seigo, and Hashimoto, Kiyoji, 3,434,272.

Kurdyla, Nicholas, to Canadian Limited. Temperature compensating mechanism for hall effect device. 3,435,332, 03-25-69, Cl. 323-094.

Kurtz, Richard J.:*See*—
Angelucci, George V., Kurtz, Richard J., and O'Fallon, Richard G. 3,434,770.

Kutney, John T., and Erwin, John R., to General Electric Company. Simulated reaction engine model. 3,434,679, 03-25-69, Cl. 244-053.

Kyowa Hakko Kogyo Co., Ltd. (Kyowa Hakko KogyoKabushiki Kaisha):*See*—
Samejima, Horotoshi, Teranishi, Hiroshi, and Deguchi, Takashi, 3,435,026.

L'Aluminium Francais:*See*—
Podesta, Armando, Vignati, Carlo, and Bereziat, Andre, 3,434,325.

La Noce, Tullio:*See*—
Nobile, Luciano, Condorelli, Emanuele, La Noce, Tullio, and Poma, Anteo 3,435,024.

La Rochelle, Fernand L.:*See*—
Bosworth, Delbert B., Christy, Arthur S., Jr., and La Rochelle, Fernand L. 3,434,609.

Lab-O-Matic Corp.:*See*—
Bettcher, Louis A., 3,434,519.

Ladd, Frederick F., Jr., Marsh, Lynn W., Jr., and Muschinske, John E., to Mohawk Data Sciences Corporation.. Integrated power driver circuit. 3,435,295, 03-25-69, Cl. 317-033.

Lake Chemical Co.:*See*—
Aronberg, Lester, 3,434,890.

Lallet, Jean Paul:*See*—
Pinault, Jacques Gilbert, Lallet, Jean Paul, and Carbonnel, Henri Amedee Basile 3,435,145.

Lamasney, Michael V., to United States of America, Navy.. Transistor amplifier for photomultiplier tube output. 3,435,357, 03-25-69, Cl. 330-020.

Lambton Trust Co. Limited:*See*—
Smit, Hendrik 3,434,994.

Lamoureux, William R.:*See*—
Carlock, Frank R., Kippenhan, B. William, Lamoureux, William R., and Lazarchick, Nicholas, Jr. 3,435,278.

Landauer, Rolf W., to International Business Machines Corporation. Electrical shock wave devices and control thereof. 3,435,307, 03-25-69, Cl. 317-235.

Landers, Harvey S. Hydraulic system for operating a cylinder. 3,434,392, 03-25-69, Cl. 091-414.

Lange, Gunter:*See*—
Weber, Herbert, Lange, Gunter, Muller, Hubert, Von Fellner, Michael, and Heer, Roland 3,435,376.

Langecker, Erhard. Plastic tear-off closure caps for bottles and bottle neck adapted to receive the same. 3,434,613, 03-25-69, Cl. 215-041.

Langer, Gerhard, to United States of America, National Science Foundation, Director of the. Apparatus for acoustically detecting minute particles suspended in a gaseous atmosphere. 3,434,335, 03-25-69, Cl. 073-028.

Langer, Horst G., and Starkovsky, Nicolas A., to Dow Company, The. Organotin derivatives of glutarimide-β-acetic acid. 3,435,037, 03-25-69, Cl. 260-270.

Langer, Horst G.:*See*—
Starkovsky, Nicolas A., and Langer, Horst G. 3,435,007.

Langley, Robert C., to Engelhard Industries, Inc. Preparation of thin films of the intermetallic compound NiAl. 3,434,879, 03-25-69, Cl. 117-227.

Langley, Robert C.:*See*—
Hauel, Anna P., and Langley, Robert C. 3,434,871.

Langlois, Gordon E.:*See*—
Kemp, Jacob D., Langlois, Gordon E., and Olson, Lloyd J. 3,434,963.

Lanman, Guy Riley. Teeter-totter with adjustable brake means. 3,434,714, 03-25-69, Cl. 272-054.

Lanza, Alberto:*See*—
Cerutti, Giacomo, and Lanza, Alberto 3,434,180.

Larkin Goils, Inc.:*See*—
Nussbaum, Otto J., 3,434,299.

Larson, Robert E.:*See*—
Peschl, John, and Larson, Robert E. 3,435,194.

Laubie, Michel:*See*—
Regnier, Gilbert, Canevari, Roger, Le Douarec, Jean-Claude, and Laubie, Michel 3,435,036.

Laudel, Arthur, Jr., to Alternac, Paririe Village, Greenberg, William B. Electric generator and speed control system therefor. 3,435,325, 03-25-69, Cl. 322-015.

Lauder, Gilbert L., Gunsight. 3,434,213, 03-25-69, Cl. 033-059.

Laughlin, Edith M.:*See*—
Laughlin, Evan D., and Laughlin, Edith M. 3,434,590.

Laughlin, Evan D., and Laughlin, Edith M. Spool and bobbin holder. 3,434,590, 03-25-69, Cl. 206-047.

Laurenty, Francois. Spray type flash evaporator. 3,434,522, 03-25-69, Cl. 159-003.

Laurizio, Jeremiah, to American Flange & Manufacturing Co., Inc. Frangible plastic closure. 3,434,620, 03-25-69, Cl. 220-027.

Lavengood, Thomas H., to Bendix Corporation, The. Method of making a universal joint. 3,434,196, 03-25-69, Cl. 029-437.

Lawrence, Frank W., to National Screw & Manufacturing Company, The. Blind fastener for sandwich panel and method. 3,434,262, 03-25-69, Cl. 052-617.

Lawrence, Philip L., to Mobil Oil Corporation. Seismic wavelength filtering in optical data processing. 3,435,411, 03-25-69, Cl. 340-015.5

Lawrie, William N., Jr., to Burroughs Corporation. Threshold biased control circuit for trailing edge triggered flip flops. 3,435,257, 03-25-69, Cl. 307-289.

Lawther, James M.:*See*—
Bringman, Joseph M., Lawther, James M., and Kendig, Paul M 3,435,409.

Lazarchick, Nicholas, Jr.:*See*—
Carlock, Frank R., Kippenhan, B. William, Lamoureux, William R., and Lazarchick, Nicholas, Jr. 3,435,278.

Le Douarec, Jean-Claude:*See*—
Regnier, Gilbert, Canevari, Roger, Le Douarec, Jean-Claude, and Laubie, Michel 3,435,036.

Leadore, Toney E.:*See*—
Berlin, A Samuel, Little, Vincent C., Leadore, Toney E., and Reid, Edwin J., Jr. 3,434,421.

Lear Siegler, Inc.:*See*—
Kazmarek, Edward, 3,434,342.
Osborn, Fredrick W., 3,435,317.

Leavitt, Theodore W. Bumper hitch. 3,434,740, 03-25-69, Cl. 280-502.

Ledges, George E.:*See*—
Altshuler, Thomas L., Harr, Thomas E., and Ledges, George E. 3,435,137.

Ledoga S.p.A.:*See*—
Nobile, Luciano, Condorelli, Emanuele, La Noce, Tullio, and Poma, Anteo, 3,435,024.

Lee, Harold Barry, to F.M.C. (Australia) Limited. Can filling apparatus. 3,434,630, 03-25-69, Cl. 222-168.5

Lee, Harold B., to FMC Corporation. Hydrostatic cooker conveyor. 3,434,585, 03-25-69, Cl. 198-131.

Lee, Lester H., to Ampex Corporation. Photocell position sensor having masks for linearizing photocell. 3,435,245, 03-25-69, Cl. 250-219.

Lee, Milton O.:*See*—
Hamrick, James G., Lee, Milton O., and Loewenthal, Ariadne L. 3,435,414.

Lee, Preston Pope:*See*—
Austin, Amory Earl, and Lee, Preston Pope 3,434,974.

Lee, Robert H., and Stearns, Dick E. DC to DC converter. 3,435,320, 03-25-69, Cl. 321-002.

Lee, Ronald Henry, and Keen, Albert John, to International Computers and Tabulators Limited. Print hammer mechanisms for high speed printers. 3,434,413, 03-25-69, Cl. 101-093.

Leemetals Limited:*See*—
Stanway, Edward, 3,434,642.

Leesona Corporation:*See*—
Brouwer, Charles W., and Norris, Alan H., 3,434,673.

Leibach, Heinrich, and Vedova, Ralph, to M.A.N. Turbo G.m.b.H. Fuel supply for afterburner. 3,434,289, 03-25-69, Cl. 060-232.

Leite, Rogerio C. C.:*See*—
Damen, Theodoor C., Leite, Rogerio C. C., and Porto, Sergio P. S. 3,434,779.

Lemkey, Franklin D., to United Aircraft Corporation. Anisotropic monotectic alloys and process for making the same. 3,434,827, 03-25-69, Cl. 075-134.

Lemma, Robert H., to Burroughs Corporation. Voltage regulator circuit having constant input impedance and means for protecting against load voltage ripple. 3,435,294, 03-25-69, Cl. 317-031.

Lenhart, Helga:*See*—
Braunisch, Herbert, Lenhart, Helga, and Seifried, Walter 3,434,916.

Lepak, Theodore John, to Miller Company, The. Lighting fixture. 3,435,204, 03-25-69, Cl. 240-051.11

Lepelletier, Pierre Andre Georges, to Societe Anonyme Francaise du Ferodo. Braking systems for automobile vehicles. 3,434,572, 03-25-69, Cl. 188-152.

Les Forges de Zubrugge S.A.:*See*—
Schroth, Fridolin, 3,434,417.

Leurent, Ghislain, to Societe Industrielle de Transformation des Plastiques. Partitions and the like having no sound bridges. 3,434,258, 03-25-69, Cl. 052-397.

Leurent, Ghislain, to Societe Industrielle de Transformation des Plastiques, Societe Anonyme. Device for assembly of metallic sectional structures. 3,434,748, 03-25-69, Cl. 287-054.

Levins, Philip Leo:*See*—
Till, Derek Elliott, Levins, Philip Leo, and Koch, David Hamilton 3,434,479.

Leviton Manufacturing Co., Inc.:*See*—
Bienwald, Wolfgang F., and Bowie, William J., 3,435,169.

Lewis, Bernard L., to Radiation Incorporated. Stepped dielectric constant end fire antenna. 3,435,458, 03-25-69, Cl. 343-753.

Lewis, Charles Edward, to American Cyanamid Company. 1-Amino- (and methylamino) 2-bromo-4-[p- (β-hydroxyethyl)-anilino]-anthraquinone disperse dyes for nylon and polypropylene. 3,434,792, 03-25-69, Cl. 008-039.

Leybold-Heraeus-Verwaltung G.m.b.H.:*See*—
Habendorff, Richard, and Fischer, Willi, 3,434,935.

Leyer, Albert, to Metallschlauchfabrik A.C. Arrangement for coupling shafts. 3,434,303, 03-25-69, Cl. 064-006.

Liberatore, Michael Angelo:*See*—
Siegele, Frederick Herman, Ondera, Emil Vincent, and Liberatore, Michael Angelo 3,434,970.

Licentia Patentverwaltungs- G.m.b.H.:*See*—
Janssen, Hans-Joachim, and Schutte, Reinhold, 3,434,723.

Lickman, David Austin:*See*—
Herniman, Peter Douglas, and Lickman, David Austin 3,434,472.

Liebowitz, Benjamin, and Cohen, Morris U., to Endsdown Company Inc. Molded garment. 3,434,478, 03-25-69, Cl. 128-463.

Liederbach, William H.:*See*—
Degenkolb, Robert S., and Liederbach, William H. 3,434,877.

Liescroart, Louis Constant Joseph, and Marlot, Pierre Louis Michel. Devices for the continuous manufacture of tiling sheets. 3,434,909, 03-25-69, Cl. 156-552.

Ligett, Waldo B., to Ethyl Corporation. Dibutyltin diacetate as a fungicidal agent. 3,435,118, 03-25-69, Cl. 424-288.

Liggett & Myers Tobacco Company, :*See*—
Till, Derek Elliott, Levins, Philip Leo, and Koch, David Hamilton, 3,434,479.

Liles, Clarence E., to White Motor Corporation. Intake control for multiple piston pump. 3,434,428, 03-25-69, Cl. 103-040.

Lilly, Eli, and Company:*See*—
Cannon, William N., 3,435,119.
Whitehead, Calvert W., 3,435,031.

Limbert, Frank J., and Paddock, Charles F., to United States Rubber Company. Method of making graft polymers of vinyl monomers onto ethylene/propylene terpolymer in a latex. 3,435,096, 03-25-69, Cl. 260-878.

Lincoln, Frank H., Jr.:*See*—
Beal, Philip F., III, Lincoln, Frank H., Jr., and Pike, John E. 3,435,053.

Lindaw, Arthur Clarence:*See*—
Starer, Ira, and Lindaw, Arthur Clarence 3,435,010.

Lindner, Heinz, to Firma Jost-Werke G.m.b.H. Coupler for tractor-trailer. 3,434,736, 03-25-69, Cl. 280-435.

Lineback, James T.:*See*—
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S. 3,434,828.

Linge, Hermann:*See*—
Martin, Wolfgang, Linge, Hermann, Hendus, Hans, and Wenger, Friedrich 3,434,278.

Lischer, Georg, and Gaus, Jakob, to Maschinenfabrik Moenus A.G. Heel attachment by screwnail. 3,434,171, 03-25-69, Cl. 012-147.

Lish, Paul Merrill, Weikel, John H., and Dykstra, Stanley J., to Mead Johnson & Company. Topical antihistaminic compositions containing methdilazine sulfoxide. 3,435,114, 03-25-69, Cl. 424-247.

Liston, Max D., to Smith Kline & French Laboratories. Therapeutic intermittent positive pressure respirator. 3,434,471, 03-25-69, Cl. 128-145.8

Little, Donald M., to Phillips Petroleum Company. Sulfolane extraction of liquid hydrocarbon streams. 3,434,962, 03-25-69, Cl. 208-237.

Little, Knowles G., Jr., to Bendix Corporation, The. Digitally controlled frequency synthesizer. 3,435,367, 03-25-69, Cl. 331-002.

Little, Ronald F.:*See*—
Brastow, Edgar R., Bjordahl, James, and Little, Ronald F. 3,434,355.

Little, Vincent C.:*See*—
Berlin, A Samuel, Little, Vincent C., Leadore, Toney E., and Reid, Edwin J., Jr. 3,434,421.

Littlefield, Robert W. Fish lure. 3,434,230, 03-25-69, Cl. 043-042.06

Litton Precision Products, Inc.:*See*—
Margolien, David H., and Hanawyer, Walter N., 3,435,446.

Liva, Robert H.:*See*—
Yarger, Norman L., and Liva, Robert H. 3,434,710.

L.K.B.-Produkter Aktiebolag:*See*—
Stalberg, Nils G., 3,435,239.

Lloyd Dynamowerke G.m.b.H.:*See*—
Beyersdorf, Hartwig, and Bering, Gerhard, 3,435,267.

Lobur, Walter, to Elox Inc.,. Variable velocity servo control circuit for electrical discharge machining apparatus. 3,435,176, 03-25-69, Cl. 219-069.

Lockwood, Leon J., to Holley Carburetor Company. Ice condition detecting device. 3,434,347, 03-25-69, Cl. 073-336.

Loctite Corporation:*See*—
Nordlander, Birger W., 3,435,012.

Loewenthal, Ariadne L.:*See*—
Hamrick, James G., Lee, Milton O., and Loewenthal, Ariadne L. 3,435,414.

Logerot, Jean-Marie R., to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques. Beryllium products and method. 3,434,319, 03-25-69, Cl. 072-047.

LogEtronics, Inc.:*See*—
Knibiehly, Earle M., 3,434,225.

Lohest, Hans, to Barmag Barmer Maschinenfabrik AG. Heated galette. 3,435,171, 03-25-69, Cl. 219-010.61

Lohninger, Wilhelm J., to United States of America, Army. Electromechanical fuze timer regulation. 3,434,424, 03-25-69, Cl. 102-070.2

Lombard, Claude, to Regie Nationale des Usines Renault, and Automobiles Peugeot. Electric contact units of cable control devices. 3,435,165, 03-25-69, Cl. 200-061.89

Lombardy, Joseph B. Railway boxcar journal lubricator. 3,434,764, 03-25-69, Cl. 308-085.

Londal, Ralph K., to Holley Carburetor Company. Pressure responsive mechanism. 3,434,395, 03-25-69, Cl. 092-006.

Long Manufacturing Co., Inc.:*See*—
Atkinson, Wallace E., 3,434,314.

Longwell, Thomas F., to Automatic Electric Laboratories Inc. Semiconductor transducer assembly. 3,435,157, 03-25-69, Cl. 179-110.

Loper, George B., to Mobil Oil Corporation. Fuel mixing and ignition system in pneumatic acoustic source. 3,434,561, 03-25-69, Cl. 181-000.5

Loper, George B., to Mobil Oil Corporation. Correlating seismic signals. 3,435,195, 03-25-69, Cl. 235-181.

Loral Corporation:*See*—
Cohen, Morris, 3,435,385.

Loughlin, James:*See*—
Harper, Jack R., and Loughlin, James 3,434,331.

Louthan, Rector P., to Phillips Petroleum Company. Plasticized sulfur compositions. 3,434,852, 03-25-69, Cl. 106-019.

Love, Gordon W., deceased (by Love, Mildred W. Simon, Stanley A., co-executors). Self-locking spring sash balance for tiltably- removable sash windows. 3,434,237, 03-25-69, Cl. 049-181.

Love, John A., III, and Sizelove, John R., to United States of America, Air Force. High ohmic semiconductor tuned narrow bandpass barrier photodiode. 3,435,236, 03-25-69, Cl. 250-211.

Love, Mildred W.:*See*—
Love, Gordon W. 3,434,237.

Lovell, George V., of 1/2 to Cohaly, Fox B.Tape cleaning apparatus. 3,434,273, 03-25-69, Cl. 057-056.

Lowe, Betty J.Toy drinking kit. 3,434,512, 03-25-69, Cl. 141-018.

Lowe, John C., to Broadway Research & Development Corporation. Method and apparatus for clarifying water. 3,434,968, 03-25-69, Cl. 210-044.

Lowe, Raymond E., to Shell Oil Company. Shothole drilling method. 3,434,549, 03-25-69, Cl. 175-001.

Lowe, Warren, to Chevron Research Company. Lubricant compositions containing rust inhibitors. 3,434,972, 03-25-69, Cl. 252-051.5

Lowery, Throck M.:*See*—
Renneker, Dennis N., and Lowery, Throck M. 3,434,367.

LTV Electrosystems, Inc.:*See*—
Owens, Bobby. 3,434,493.

Luc, Jane. Process for forming decorative patterns. 3,434,861, 03-25-69, Cl. 117-010.

Luc, Jane. Decorative process. 3,434,862, 03-25-69, Cl. 117-010.

Lucas, James W.:*See*—
Barr, Courtland H., Sr., Barr, Courtland H., Jr., Barr, John W., and Lucas, James W. 3,434,468.

Luckham, Denis C., and Green, Gordon F., to Luckham Limited. Portable centrifuge. 3,434,657, 03-25-69, Cl. 233-026.

Luckham Limited:*See*—
Luckham, Denis C., and Green, Gordon F., 3,434,657.

Lukes, George E.:*See*—
Brokke, Mervin E., Lukes, George E., and Arneklev, Duane R. 3,435,043.

Lummus, James L., to Pan American Petroleum Corporation. Transpoation of viscous liquids. 3,434,485, 03-25-69, Cl. 137-013.

Luppold, Robert H., Jr., and Gill, Joseph, to Westinghouse Electric Corporation,. Low level direct current amplifier. 3,435,355, 03-25-69, Cl. 330-009.

Luther, Guenter, Schulze, Martin, and Richter, Klaus, to Heinrich Koppers Gesellschaft mit beschrankter Haftung. Method of separating aromatic compounds from hydrocarbon mixtures containing the same by extrac- tive distillation with an N-substituted morpholine. 3,434,936, 03-25-69, Cl. 203-032.

Lutz, Edgar, to Semikron Gesellschaft fur Gleichrichterbau und Elektronik m.b.H.Method and article for making switchable semiconductor elements. 3,435,305, 03-25-69, Cl. 317-235.

Lutzenberger, Kurt:*See*—
Bailey, James R., and Lutzenberger, Kurt 3,435,163.

Luxaire, Inc.:*See*—
Hine, Louis P., Jr., 3,434,466.

Lyall, Charles E., to Culligan, Inc.Chemical solution feeder. 3,434,490, 03-25-69, Cl. 137-101.31

Lyle, Charles W.Dew point temperature indicator. 3,434,333, 03-25-69, Cl. 073-017.

Lyman, Arthur T., to General Electric Company. Voltage surge protector for submerged deep well pump motors. 3,435,290, 03-25-69, Cl. 317-013.

Lyons, Edward F.:*See*—
Kretsch, Kenneth P., and Lyons, Edward F. 3,435,416.

Ma, Joseph T., and Nakai, Roy T., to Ampex Corporation. Fluid lubricated magnetic tape transducer. 3,435,442, 03-25-69, Cl. 340-174.1

Mac Gregor, Rob R.:*See*—
Elliott, George A., Akin, Jerome E., and Mac Gregor, Rob R. 3,434,937.

MacDonald, Douglas Blake. Electrical receptacle cover. 3,434,618, 03-25-69, Cl. 220-024.2

Macdonald, Warren E., to Summerhayes Holdings Limited,. Sealing head. 3,434,908, 03-25-69, Cl. 156-514.

Machleidt, Hans, and Hartmann, Valentin, to Squibb, E. R., & Sons, Inc.,. Fluorinated cyclic keto esters. 3,435,063, 03-25-69, Cl. 260-468.

Mack Truck, Inc.:*See*—
Hawk, Raymond A., Jr., 3,434,708.

Madlener, Paul, and Pecksen, Otto, to Industrie-Werke Karlsruhe Aktiengesellschaft. Jumping mine. 3,434,418, 03-25-69, Cl. 102-008.

Maeda, Kaoru:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao 3,434,277.

Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao, to Fuji Keiki Kabushiki Kaisha. Process for producing crimped yarns. 3,434,277, 03-25-69, Cl. 057-157.

Magee, John S., Jr.:*See*—
Surland, George J., and Magee, John S., Jr. 3,434,976.

Magnetfabrik Bonn G.m.b.H. vorm. Gewerkschaft Windhorst:*See*—
Heimke, Gunther, 3,434,892.

Maier, Karl:*See*—
Kranz, Joachim, Maier, Karl, and Polster, Rudolf 3,435,054.

Maley, Dale R., to Automation Industries, Inc.Nondestructive tester. 3,434,332, 03-25-69, Cl. 073-015.

Mallebrein, Rainer, to Telefunken Patentverwertungsgesellschaft m.b.H.Electron beam deflection circuits. 3,435,281, 03-25-69, Cl. 315-027.

Malm, Robert E., to Page Communications Engineers, Inc.Adaptive data modem whereby digital data is encoded in time division format and converted to frequency division. 3,435,147, 03-25-69, Cl. 179-015.

Malmquist, Lars, to Aktiebolaget Svenska Flaktfabriken. Method and an apparatus for the drying of wood in a channel. 3,434,222, 03-25-69, Cl. 034-016.5

M.A.N. Turbo G.m.b.H.:*See*—
Leibach, Heinrich, and Vedova, Ralph, 3,434,289.

Mandelkorn, Joseph, and Broder, Jacob, to United States of America, National Aeronautics and Space Administration. Method of making electrical contact on silicon solar cell and resultant product. 3,434,885, 03-25-69, Cl. 136-089.

Manecke, Siegfried E.Thermostatic control system for water heater tanks or the like. 3,435,189, 03-25-69, Cl. 219-321.

Manning, Robert E.:*See*—
Houlihan, William J., Manning, Robert E., and Theuer, William S. 3,435,034.

Manning, William F., to Mobil Oil Corporation. Pipe laying method. 3,434,295, 03-25-69, Cl. 061-072.3

Manning, William F., to Mobil Oil Corporation. Offloading moored production storage unit. 3,434,442, 03-25-69, Cl. 114-000.5

Mansfield, Vaughn, to Peabody Coal Company,. Coke, tar, and clean coal gas producing method and apparatus. 3,434,931, 03-25-69, Cl. 201-027.

Mansfield, Vaughn, to Peabody Coal Company,. Coke and heat producing method. 3,434,932, 03-25-69, Cl. 201-027.

Mansfield, Vaughn, to Peabody Coal Company,. Method for producing high yield coke by downdrafting of hot gases. 3,434,933, 03-25-69, Cl. 201-032.

Manufactures Jean-Baptiste Martin, Jean MartinAndre Charbin & Cie:*See*—
Perrier, Marius Antoine, 3,434,310.

Marcel, Henri. Fitting for containers. 3,434,637, 03-25-69, Cl. 222-570.

Marchione, Joseph H., to Atwood Vacuum Machine Company. Preloaded torsion bar door hold-open device. 3,434,179, 03-25-69, Cl. 016-145.

Margolien, David H., and Kanawyer, Walter N., to Litton Precision Products, Inc.Digital encoder. 3,435,446, 03-25-69, Cl. 340-347.

Mark, Alexander H., and Morrison, John E., Jr., to Massey-Ferguson Inc.Precision planter with seed accelerator. 3,434,437, 03-25-69, Cl. 111-085.

Marley, David J., to Garrett Corporation, The. Hydrodynamic shaft bearing. 3,434,761, 03-25-69, Cl. 308-009.

Marley, David J., to Garrett Corporation, The. Hydrodynamic shaft bearing. 3,434,762, 03-25-69, Cl. 308-009.

Marlot, Pierre Louis Michel:*See*—
Liescroart, Louis Constant Joseph, and Marlot, Pierre Louis Michel 3,434,909.

Marrable, Christopher David, to Imperial Chemical Industries Limited. Water-insoluble malononitrile-derived styryl dyestuffs. 3,435,062, 03-25-69, Cl. 260-465.

Marsden, James G.:*See*—
Sterman, Samuel, and Marsden, James G. 3,434,914.

Marsh, Lynn W., Jr.:*See*—
Ladd, Frederick F., Jr., Marsh, Lynn W., Jr., and Muschinske, John E. 3,435,295.

Martin, David D., to Texas Instruments, Incorporated. Structure and fabrication of microwave oscillators. 3,435,306, 03-25-69, Cl. 317-237.

Martin-Marietta Corporation:*See*—
Brown, George C., Jr., 3,434,227.

Martin, Neil F. D.Apparatus and method for grinding inserts. 3,434,248, 03-25-69, Cl. 051-234.

Martin, Philip T.:*See*—
Hickey, William P., and Martin, Philip T. 3,435,241.

Martin, Wolfgang, Linge, Hermann, Hendus, Hans, and Wenger, Friedrich, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Production of bulked yarn. 3,434,278, 03-25-69, Cl. 057-157.

Marxen, Friedrich:*See*—
Vogel, Reinhard Ernst, 3,434,978.

Mas, Joseph A., to Dynamic Instrument Corporation. Safety battery charger. 3,435,318, 03-25-69, Cl. 320-015.

Maschinenfabrik Kapp & Co.:*See*—
Blubaum, Werner, 3,434,464.

Maschinenfabrik Moenus A.G.:*See*—
Lischer, Georg, and Gaus, Jakob, 3,434,171.
Teerling, Martinus, and Ruppert, Horst, 3,434,169.

Mason, Ronald F., to Shell Oil Company. Tricyclic phosphines and the preparation thereof. 3,435,076, 03-25-69, Cl. 260-606.5

Mason, Stanley L., Jr., to Hunt-Wesson Foods, Inc.Container having a spout and a hollow handle. 3,434,635, 03-25-69, Cl. 222-468.

Massey-Ferguson (Australia) Limited:*See*—
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W., 3,434,270.
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W., 3,434,271.

Massey-Ferguson Inc.:*See*—
Mark, Alexander H., and Morrison, John E., Jr., 3,434,437.

Massey-Ferguson Services N.V.:*See*—
Bailey, Alfred J., and Greig, James D., 3,434,737.

Massoll, Stanley R., and Roper, Donald G., to General Motors Corporation. Cornering lamp assembly. 3,435,200, 03-25-69, Cl. 240-008.2

Mathison, Robert V.Clutch devices. 3,434,577, 03-25-69, Cl. 192-046.

Mathot, Jacques:*See*—
Coutant, Andre, and Mathot, Jacques 3,434,640.

Matsumura, Yoichi, Ogawa, Mitsuo, and Toda, Mitsuhiro, to Matsushita Electric Industrial Co., Ltd.Apparatus for determining time and order of arrival. 3,434,712, 03-25-69, Cl. 272-004.

Matsushita Electric Industrial Co., Ltd.:*See*—
Matsumura, Yoichi, Ogawa, Mitsuo, and Toda, Mitsuhiro, 3,434,712.
Suoka, Shine, and Oyama, Tomio, 3,435,135.

Matsuzawa, Masanao, Imahashi, Issei, and Nakamura, Koichi, to Kabushiki Kaisha Suwa Seikosha. Oscillatory electromechanical converter. 3,435,311, 03-25-69, Cl. 318-129.

Matthews, Jas. H., & Co.:*See*—
Gordon, Robert G., and Tweddell, James C., 3,434,235.

Max, Erhard:*See*—
Harris, Thomas J., and Max, Erhard 3,435,370.
Duda, William L., Fleisher, Harold, Kulcke, Werner W., and Max, Erhard 3,435,447.

May, Charles R.:*See*—
Durand, Fred A., Jr., and May, Charles R. 3,434,517.

May, William Donald, to Pulp and Paper Research Institute of Canada. Apparatus for measuring out of tram and plate separation of disc refiners. 3,434,670, 03-25-69, Cl. 241-037.

Mayer, Robert:*See*—
Hall, Lawrence J., Mayer, Robert, and Young, Einar T. 3,435,238.

Maynard Manufacturing Company:*See*—
Bonacci, Nicholas A., 3,434,168.

Maytone, Frank F., to Boeing Company, The. Apparatus for tinning printed circuitry. 3,434,455, 03-25-69, Cl. 118-072.

Mazzanti, Giorgio:*See*—
Natta, Giulio, Pino, Piero, and Mazzanti, Giorgio 3,435,017.
Natta, Guilio, Pino, Piero, and Mazzanti, Giorgio 3,435,018.

Mazzocco, Philip, Wiglet, 3,434,481, 03-25-69, Cl. 132-053.

McAndrew, Francis B., to Celanese Corporation. Branched oxymethylene copolymers and method of preparation. 3,435,005, 03-25-69, Cl. 260-067.

McAvoy, John A., to Burroughs Corporation. Time responsive error signal generator. 3,435,258, 03-25-69, Cl. 307-293.

McCall, John M., to Fairchild Camera & Instrument Corp.Turret font photocomposing machine. 3,434,402, 03-25-69, Cl. 095-004.5

McCauley, Donald R., to General Signal Corporation. Sonic vehicle detector using noise blanking. 3,435,406, 03-25-69, Cl. 340-001.

McCormick, Daniel F., to Brunswick Corporation. Mounting arrangement for hydraulic impact damping and power lift means for an outboard propulsion unit. 3,434,450, 03-25-69, Cl. 115-041.

McDonnell Douglas Corporation, :*See*—
Speakman, Eugene R., 3,434,327.

McGaughey, Raymond L.:*See*—
Schroeppel, John H., and McGaughey, Raymond L. 3,435,184.

McGeeney, William Stone, to United Engineering and Foundry Company. Mold structure leveling device. 3,434,528, 03-25-69, Cl. 164-339.

McGraw-Edison Company:*See*—
Jablonski, Edward R., 3,435,202.
Paulus, Jerry Lee, 3,435,291.
Sankey, Edward L., and Stoelting, Herman O., 3,435,397.

McGuckin, Hugh G., to Eastman Kodak Company. Photographic antihalation layers. 3,434,839, 03-25-69, Cl. 096-084.

McIntosh, Robert B., Jr.:*See*—
Yoder, John R., and McIntosh, Robert B., Jr. 3,435,212.

McKenzie, Marshall J.Exhaust gas filter system. 3,434,268, 03-25-69, Cl. 055-418.

McManama, Charles E.Machine for sawing lumber from hollow logs. 3,434,514, 03-25-69, Cl. 143-047.

McMullen, John J.:*See*—
Yearwood, Donald R., Basile, Norman K., and Bridges, Thomas F., 3,434,492.

McNeil Laboratories, Inc.:*See*—
Plostnieks, Janis, 3,435,033.

Mead Corporation, The:*See*—
Sanders, Frederick W., 3,434,834.

Mead Johnson & Company:*See*—
Lish, Paul Merrill, Weikel, John H., and Dykstra, Stanley J., 3,435,114.

Medhurst, Ralph C., to Standard Oil Company (Indiana). Process for forming solid articles from expandable polymer. 3,435,103, 03-25-69, Cl. 264-053.

Meier, Donal A., to National Cash Register Company, The. Two magnetic element memory per bit. 3,435,434, 03-25-69, Cl. 340-174.

Meininger, Fritz, and Hille, Ernst, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble mono and disazo dyestuffs containing N-(thiosulfatoalkanoylamino) groups. 3,435,023, 03-25-69, Cl. 260-163.

Meisel, William H., to Abex Corporation. Null adjuster for magnetically operated torque motors. 3,435,393, 03-25-69, Cl. 335-237.

Meissner, Josef, G.m.b.H. & Co. KG:*See*—
Toischer, Karl Engelbert Ludwig, and Bergmann, Horst Sigurd Max, 3,434,802.

Merchant, Chester O., to Kentucky Electronics, Inc.Cathode ray tube color gun centering brace welding system. 3,435,179, 03-25-69, Cl. 219-078.

Merchant, Chester O., and Johnson, Jay H., to Kentucky Electronics, Inc.Color gun beading apparatus. 3,434,819, 03-25-69, Cl. 065-155.

Merchlewitz, Anthony W., to Pillsbury Company, The. Liquid dispensing container and cap therefor. 3,434,631, 03-25-69, Cl. 222-213.

Merck & Co., Inc.:*See*—
Glamkowski, Edward J., and Sletzinger, Meyer, 3,435,075.
Schoenewaldt, Erwin F., 3,435,046.
Wendler, Norman L., Taub, David, and Kuo, Chan Hwa, 3,435,044.

Merhof, Wilfried, and Stadler, Bruno, to Aktiengesellschaft Brown, Boveri & Cie. Apparatus for monitoring rectifier component of rotor mounted exciter system for synchronous machine. 3,435,327, 03-25-69, Cl. 322-099.

Merrill, Duane F., to General Electric Company. Method for hydrolyzing organochlorosilanes. 3,435,001, 03-25-69, Cl. 260-046.5

Merritt, John B., to Jackson, Byron, Inc.Plugs for use in treating wells with liquids. 3,434,539, 03-25-69, Cl. 166-153.

Messen-Jaschin, G. A.:*See*—
Messen-Jaschin, Gregori, 3,434,267.

Messen-Jaschin, Gregori, to Messen-Jaschin, G. A.Apparatus for purifying air. 3,434,267, 03-25-69, Cl. 055-101.

Messer, Chester R., to Page Belting Company. Check strap and method of making the same. 3,434,509, 03-25-69, Cl. 139-161.

Messer Griesheim G.m.b.H.:*See*—
Roder, Georg, 3,434,706.

Messrs. Filterwerk Mann & Hummel G.m.b.H.:*See*—
Barth, Alfred, Beck, Karl, and Wiedmann, Walter, 3,434,601.

Metal Box Company Limited, The:*See*—
Tebbutt, Charles Norman, 3,434,627.

Metal Box Company, Limited, The:*See*—
Wyard, Walter Harvie, 3,434,265.

Metallschlauchfabrik A.C.:*See*—
Leyer, Albert, 3,434,303.

Metlay, Max:*See*—
Gaynor, Joseph, Sewell, Gordon J., and Metlay, Max 3,434,835.

Mette, Herbert L., to United States of America, Army. Filter circuit. 3,435,259, 03-25-69, Cl. 307-309.

Mette, Herbert L., to United States of America, Army. Solid-state magnetoelectric modulator and switch. 3,435,379, 03-25-69, Cl. 332-052.

Meyer, Harry W., to Industrial Development Corporation, The,. Process of manufacturing hair rollers. 3,434,193, 03-25-69, Cl. 029-419.

Meyer, Theodore J., Jr., and Groce, Homer W., to Riegel Textile Corporation. Mechanism for automatically conveying, bar tacking and stacking individual flat flexible workpieces. 3,434,440, 03-25-69, Cl. 112-010.

Meyer, Willy. Corner connection especially for producing frames for windows and aquariums. 3,434,749, 03-25-69, Cl. 287-189.36

Meyerhoefer, Carl E., to Regina Corporation, The. Spindle insulating seal. 3,434,304, 03-25-69, Cl. 064-006.

Meyerle, John A.:*See*—
Brooks, Chester E., Henry, James L., and Meyerle, John A. 3,435,159.

Michel, Alfred:*See*—
Holtschmidt, Ulrich, and Michel, Alfred 3,434,992.

Mickelson, Merlyn F., and Brown, Thomas D.Process for making printed circuits. 3,434,939, 03-25-69, Cl. 204-015.

Mijovic, Miroslav V.:*See*—
Knott, Edward B. Mijovic, Miroslav V. and Saunders, David George 3,434,837.

Miknaitis, Sigitas:*See*—
Hartz, Joseph M., Miknaitis, Sigitas, and Vogel, Carl W. 3,435,160.

Mikolic, Charles R., and Burton, Lawrence A., to Allis-Chalmers Manufacturing Company. Electromagnetic contactor having cam means for operating auxiliary switch. 3,435,389, 03-25-69, Cl. 335-121.

Mildice, James W.:*See*—
United States of America, National Aeronautics and Space Administration, Administrator, 3,435,246.

Mildice, James W.: United States of America, National Aeronautics and Space Administration, Administrator, 3,435,246.

Miles, Wilbur N.:*See*—
Benjamin, Milton L., Walker, David D., and Miles, Wilbur N. 3,434,376.

Miller Company, The:*See*—
Lepak, Theodore John, 3,435,204.

Miller, Edward J., Jr., to Motorola, Inc.Controller having FET bridge circuit. 3,435,375, 03-25-69, Cl. 331-110.

Miller, Frank P.Support apparatus. 3,434,566, 03-25-69, Cl. 182-015.

Miller, Harold D., to United States of America, Army,. Plurality of ceramic spacers for separating planar grids. 3,435,274, 03-25-69, Cl. 313-348.

Miller, Kenyon W.:*See*—
Griffiths, Darrell J. L., Miller, Kenyon W., and Nikkel, Willem A. 3,434,901.

Miller, Leo C., to United States of America, Navy. No-scan detector. 3,435,352, 03-25-69, Cl. 328-120.

Miller, Stewart E., to Bell Telephone Laboratories, Incorporated. Waveguide for millimeter and optical waves. 3,434,774, 03-25-69, Cl. 350-096.

Millmaster Onyx Corporation:*See*—
Wakeman, Reginald L., and Coates, Joseph F., 3,435,039.

Mine Safety Appliances Company:*See*—
Huff, George F., and Voegtly, Richard O., 3,434,458.

Ministerul Industriei Chimice:*See*—
Ceausescu, Elena, and Fieroiu, Victoria, 3,434,523.

Minks, Floyd M., to Brunswick Corporation,. Housing and mounting for ignition trigger circuit. 3,435,265, 03-25-69, Cl. 310-070.

Minoltacamera Kabushiki Kaisha:*See*—
Kobayashi, Tatsuo, and Imura, Toshinobu, 3,434,404.

Mirabile, Frank A., and Rabel, Steven T., to Allied Chemical Corporation. Aqueous emulsion of emulsifiable oxidized polyethylene. 3,434,993, 03-25-69, Cl. 260-029.6

Misaki, Susumu:*See*—
Watanabe, Shiro, and Misaki, Susumu 3,435,032.

Mitani, Tetsuo, and Kato, Masao, to Kobe Steel, Ltd., and Nippon Airbrake Co., Ltd., The. Torque control device for air wrenches. 3,434,547, 03-25-69, Cl. 173-012.

Mixon, James Lenhart, Jr., to AMP, Incorporated. Tool for securing a cable to an electrical connector. 3,434,511, 03-25-69, Cl. 140-117.

Miyashita, Koji:*See*—
Fujita, Yoshimasa, Nakagawa, Kazumi, Shimoda, Keitaro, and Miyashita, Koji 3,434,276.

Mizuki, Yoshiaki, to Empisal(Proprietary)Limited. Needle bed of hand knitting machine. 3,434,307, 03-25-69, Cl. 066-115.

Mizuno, Akira, to Goshi Kaisha Mizuno Kogeisha. Motor control and brake holder. 3,434,575, 03-25-69, Cl. 192-003.

Mlier, Charles R., to Ashland Oil & Refining Company. Rustproofing compositions. 3,434,851, 03-25-69, Cl. 106-014.

Mobil Oil Corporation:*See*—
Allen, Linus S., Jr., 3,435,218.
Caldwell, Richard L., 3,434,568.
Cook, Evin L., and Talash, Alvin W., 3,434,541.
Dotson, Billy J., and Connally, Carl, Jr., 3,434,542.
Givens, Wyatt W., 3,434,161.
Givens, Wyatt W., 3,435,216.
Givens, Wyatt W., 3,435,217.
Heiba, El-Ahmadi I., and Dessau, Ralph M., 3,435,080.
Hollabaugh, George R., 3,434,534.
Johnson, Malcolm O., 3,434,562.
Lawrence, Philip L., 3,435,411.
Loper, George B., 3,434,561.
Loper, George B., 3,435,195.
Manning, William F., 3,434,295.
Manning, William F., 3,434,442.
Stein, Nathan, 3,434,540.
Townsend, Robert D., Jr., 3,434,550.
Zemanek, Joseph, Jr., 3,434,563.
Zemanek, Joseph, Jr., 3,435,224.

Modic, Rudolf:*See*—
Daum, Gerhard, Modic, Rudolf, and Richtzenhain, Hermann 3,435,045.

Mohawk Data Sciences Corporation, :*See*—
Ladd, Frederick F., Jr., Marsh, Lynn W., Jr., and Muschinske, John E., 3,435,295.

Molins Organisation Limited, The:*See*—
Muir, Douglas William Ballantyne, 3,435,443.

Moller, Bynum W., to Moller Enterprises, Inc.Closures for containers. 3,434,614, 03-25-69, Cl. 215-041.

Moller Enterprises, Inc.:*See*—
Moller, Bynum W., 3,434,614.

Moller, Per Julius Leth, to Slagteriernes Forskningsinstitut. Apparatus for changing the moisture content of a material by the action of air. 3,434,223, 03-25-69, Cl. 034-046.

Monsanto Company:*See*—
Abell, Joseph B., Jr., Fannin, Loyd W., and Roth, James F., 3,435,090.
Chapin, Earl C., 3,434,986.
Fantl, Joel, Hahn, Frank J., Hardy, Edgar E., and Heaps, John F., 3,434,989.

Monsanto Research Corporation:*See*—
Beaver, Emil R., Jr., 3,434,888.
Hathaway, Clayton E., Jr., De Brunner, Ralph E., and Butler, John Mann, 3,435,004.
Nielsen, Morris L., and Greenley, Robert Z., 3,435,013.

Montagnani, Mario, and Farfaletti-Casali, to European Atomic Energy Community (Euratom). Heat insulation for nuclear reactor pressure tubes. 3,434,925, 03-25-69, Cl. 176-044.

Montecatini Edison S.p.A.:*See*—
Natta, Giulio, Pino, Piero, and Mazzanti, Giorgio, 3,435,017.
Natta, Guilio, Pino, Piero, and Mazzanti, Giorgio, 3,435,018.

Montesi, Robert P.:*See*—
Yoke, Michael P., Montesi, Robert P., and Paterson, Robert N. 3,434,744.

Moore, Norman H., and Poupitch, Ouglesa Jules, said Moore assor. to Fibreboard Corporation and said Poupitch assor. to Illinois Tool Works, Inc.Container package. 3,434,592, 03-25-69, Cl. 206-065.

Moore, Roy C., to United States of America, Navy,. Multimode hydrophone transducer simulator. 3,435,408, 03-25-69, Cl. 340-005.

Moore, William P., Jr., and Mosier, Jack W., to Allied Chemical Corporation. Dehydrodimerization process and catalyst therefor. 3,435,089, 03-25-69, Cl. 260-680.

Morgan, Thomas M.Compound work tool. 3,434,321, 03-25-69, Cl. 072-083.

Morris, John M., to Rex Chainbelt, Inc.Vibration generator controls. 3,434,586, 03-25-69, Cl. 198-220.

Morrison, John E., Jr.:*See*—
Mark, Alexander H., and Morrison, John E., Jr. 3,434,437.

Mosier, Harold F., Jr., to Electro-Voice, Incorporated,. Method of making electroacoustical devices. 3,434,205, 03-25-69, Cl. 029-594.

Mosier, Jack W.:*See*—
Moore, William P., Jr., and Mosier, Jack W. 3,435,089.

Motis, Gilbert M., to Unimaco, Inc... Food handling apparatus. 3,434,518, 03-25-69, Cl. 146-068.

Motorola, Inc.:*See*—
Angelucci, George V., Kurtz, Richard J., and O'Fallon, Richard G., 3,434,770.
Miller, Edward J., Jr., 3,435,375.

Muir, Douglas William Ballantyne, to Molins Organisation Limited, The. Flux sensitive transducer with tuned resonant circuit. 3,435,443, 03-25-69, Cl. 340-174.1

Muller, Heinz, to Heinz Mathes KG.Window frame of structural metal or synthetic material. 3,434,238, 03-25-69, Cl. 049-192.

Muller, Hubert:*See*—
Weber, Herbert, Lange, Gunter, Muller, Hubert, Von Fellner, Michael, and Heer, Roland 3,435,376.

Muller, Jakob. Weft yarn anchoring arrangement for needle looms. 3,434,506, 03-25-69, Cl. 139-124.

Munder, Johannes, and Hertzberg, Gunther, to Keuffel & Esser Company,. Heat-developable reproduction material. 3,434,838, 03-25-69, Cl. 096-075.

Murata, Yorihiko:*See*—
Naito, Ryoichi, Oguro, Yoshigoro, and Murata, Yorihiko 3,434,928.

Murphy, William J.:*See*—
Joseph, Robert J., and Murphy, William J. 3,434,832.

Muschinske, John E.:*See*—
Ladd, Frederick F., Jr., Marsh, Lynn W., Jr., and Muschinske, John E. 3,435,295.

Muth, Karl:*See*—
Weber, Helmut, Aumuller, Walter, Weyer, Rudi, and Muth, Karl 3,435,116.

Myers, Robert E.:*See*—
Hansen, Wilbur W., and Myers, Robert E. 3,434,863.

Nagy, Francis G.:*See*—
Baron, Albert A., and Nagy, Francis G. 3,435,341.

Naito, Ryoichi, Oguro, Yoshigoro, and Murata, Yorihiko, to Green Cross Corporation, The. Process for preparing peptone for bacterial culture. 3,434,928, 03-25-69, Cl. 195-029.

Naito, Susumu:*See*—
Hayashi, Kanekichi, and Naito, Susumu 3,434,791.

Nakagawa, Kazumi:*See*—
Fujita, Yoshimasa, Nakagawa, Kazumi, Shimoda, Keitaro, and Miyashita, Koji 3,434,276.

Nakai, Roy T.:*See*—
Ma, Joseph T., and Nakai, Roy T. 3,435,442.

Nakamura, Katsuro, to Toko Kabushiki Kaisha. Woven type, magnetic memory device employing shielding terminal plates. 3,435,439, 03-25-69, Cl. 340-174.

Nakamura, Koichi:*See*—
Matsuzawa, Masanao, Imahashi, Issei, and Nakamura, Koichi 3,435,311.

Nakamura, Norio:*See*—
Iwai, Issei, and Nakamura, Norio 3,435,047.
Iwai, Issei, and Nakamura, Norio 3,435,048.

Nakamura, Toshimitsu:*See*—
Sakaki, Fumio, and Nakamura, Toshimitsu 3,434,783.

Nakanishi, Tetsuichiro, to Hitachi Zosen Kabushiki Kaisha. Indirect-cycle integral steam cooled nuclear reactor. 3,434,926, 03-25-69, Cl. 176-054.

Nallin, Eugene J., to International Business Machines Corporation. Null sweeping head. 3,435,440, 03-25-69, Cl. 340-174.1

Namordi, Mooshi R.:*See*—
Havn, Svend E., and Namordi, Mooshi R. 3,435,277.

National Biscuit Company:*See*—
Durand, Fred A., Jr., and May, Charles R., 3,434,517.

National Cash Register Company, The:*See*—
Meier, Donal A., 3,435,434.

National Lead Company:*See*—
Heywood, Kenneth W., and Trampier, Charles Raymond, Jr., 3,434,853.

National Polychemicals, Inc.:*See*—
Bottomley, James, and Strauss, Richard, 3,435,097.

National Research Development Corporation:*See*—
Hunter, Colin Edward, 3,435,329.

National Screw & Manufacturing Company, The:*See*—
Lawrence, Frank W., 3,434,262.

Natta, Giulio, Pino, Piero, and Mazzanti, Giorgio, to Montecatini Edison S.p.A.Isotactic polymers of butene-1. 3,435,017, 03-25-69, Cl. 260-093.7

Natta, Guilio, Pino, Piero, and Mazzanti, Giorgio, to Montecatini Edison S.p.A.Isotactic polymers of styrene and pentene-1, and products made thereof. 3,435,018, 03-25-69, Cl. 260-093.5

Neale, Roderick Frank:*See*—
Bethell, James Robert, Gasson, Edward James, Hadley, David James, and Neale, Roderick Frank 3,435,069.

Neary, Ralph E., to Schlage Lock Company. Removable lock cylinder mechanism. 3,434,316, 03-25-69, Cl. 070-371.

Nelson, Ardell H., to Pittsburgh-Des Moines Steel Company. Floating roof seal. 3,434,619, 03-25-69, Cl. 220-026.

Nelson, Arthur W.Automobile towing device. 3,434,607, 03-25-69, Cl. 214-086.

Nelson, Arthur W.Automobile towing device. 3,434,608, 03-25-69, Cl. 214-086.

Neptune Meter Company:*See*—
Barber, Ronald B., 3,434,345.

Ness, Norman Morin, Palluel, Auguste Louis Lucien, and Cook, Clive Douglas, to Imperial Chemical Industries Limited. Electrodeposition of paint using formaldehyde to control pH. 3,434,951, 03-25-69, Cl. 204-181.

Nestlerode, William A., Sr., to Ball Brothers Research Corporation. Wire positioning and protective device. 3,434,682, 03-25-69, Cl. 248-068.

Neugebauer, Walter, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler. Process for the production of extremely finely divided inorganic mixtures, particularly those containing silicon dioxide. 3,434,977, 03-25-69, Cl. 252-454.

Neumann, Heinz:*See*—
Horner, Leopold, and Neumann, Heinz 3,434,944.

Nevala, Lloyd A.:*See*—
Jewell, Wendell D., Nevala, Lloyd A., and Korn, Frederick 3,434,352.

New North Electric Company, .:*See*—
Bixby, William H., 3,435,331.

Neyret, Georges. Woven fabric with interwoven design. 3,434,510, 03-25-69, Cl. 139-408.

NGK Spark Plug Co., Ltd.:*See*—
Kanda, Isao, 3,434,790.

Nichols, Harry J.Quickly operable keyless couplings. 3,434,747, 03-25-69, Cl. 287-053.

Nichols, Joseph, to Ethicon, Inc.Collagen fibril matrix pharmaceuticals. 3,435,110, 03-25-69, Cl. 424-020.

Nichols, JSEPH, to Ethicon, Inc.Collagen fibril matrix pharmaceuticals. 3,435,117, 03-25-69, Cl. 424-271.

Nielsen, Morris L., and Greenley, Robert Z., to Monsanto Research Corporation. Method for preparing polymers of phosphinic amides. 3,435,013, 03-25-69, Cl. 260-088.3

Nikkel, Willem A.:*See*—
Griffiths, Darrell J. L., Miller, Kenyon W., and Nikkel, Willem A. 3,434,901.

Nippon Airbrake Co., Ltd., The:*See*—
Mitani, Tetsuo, and Kato, Masao, 3,434,547.

Nixon, William C., Jr.:*See*—
Standish, Norman W., and Nixon, William C., Jr. 3,434,983.

Nobile, Luciano, Condorelli, Emanuele, La Noce, Tullio, and Poma, Anteo, to Ledoga S.p.A.Process for the preparation of surfactants from hydroxylated organic compounds, fatty acid esters and alkylene oxides. 3,435,024, 03-25-69, Cl. 260-210.

Nobilium Products, Inc.:*See*—
Prosen, Emil M., 3,434,526.

Noguchi, Yoshitaka:*See*—
Kitabatake, Michitoshi, Ito, Masatomo, Ikeda, Takashi, Aozuka, Noriyoshi, and Noguchi, Yoshitaka 3,435,067.

Norden Laboratories, Inc.:*See*—
Kuhns, Charles R., and Beckenhauer, William H., 3,435,112.

Nordlander, Birger W., to Loctite Corporation. Anaerobic sealant composition containing monoacrylate esters. 3,435,012, 03-25-69, Cl. 260-088.3

Norris, Alan H.:*See*—
Brouwer, Charles W., and Norris, Alan H. 3,434,673.

Norris Industries, Inc.:*See*—
Russell, Fred J., Armstrong, Richard L., and Spinuzzi, Sam J., 3,434,752.

North American Philips Company, Inc.:*See*—
Boekhorst, Antonius, 3,435,279.
Eibensteiner, Walter, 3,434,725.
Haaijman, Pieter Willem, Wijnen, Marinus Dirk, and Hengst, Johannes Hubertus Theodorus, 3,434,886.
Rietdijk, Johan Adriaan, 3,434,298.
Van Der Voo, Bastiaan, 3,435,155.
Van Doorn, Willem, 3,435,361.

North American Rockwell Corporation:*See*—
Poulos, Gus L., 3,434,734.
Rockwell, Willard F., Jr., 3,434,560.

North, Irving W., to Brunswick Corporation. Combined impact damping and power lift mechanism for an outboard propulsion unit assembly. 3,434,449, 03-25-69, Cl. 115-041.

Northfield Processed Food Systems Company, Inc.:*See*—
Hager, John L., 3,435,106.

Northwestern University:*See*—
Thomas, Edward R., Jr., 3,434,477.

Numo-Trans Data Corporation, .:*See*—
Hamrick, James G., Lee, Milton O., and Loewenthal, Ariadne L., 3,435,414.

Nussbaum, Otto J., to Larkin Goils, Inc.Evaporator control with constant pressure expansion valve and by-pass means. 3,434,299, 03-25-69, Cl. 062-199.

Nychka, Henry R., and Anello, Louis G., to Allied Chemical Corporation.α,γ-Bis(fluoroperhaloisopropoxy)-perfluoro- alkanes and process for preparing them. 3,435,078, 03-25-69, Cl. 260-615.

O'Bannon, Richard M.Combined liquid dispenser and liquid level indicator. 3,434,513, 03-25-69, Cl. 141-095.

O'Brien, Larry H.:*See*—
Burnsweig, Joseph, Jr., and O'Brien, Larry H. 3,435,342.

O'Connor, Thomas J.Quick-change tool for electrical machining of deep holes. 3,435,178, 03-25-69, Cl. 219-069.

O'Fallon, Richard G.:*See*—
Angelucci, George V., Kurtz, Richard J., and O'Fallon, Richard G. 3,434,770.

Oehme, Frank. Pressure release valve for a container. 3,435,301, 03-25-69, Cl. 317-230.

Oerlikon Engineering Company:*See*—
Spiess, Hans, 3,435,261.

Ogawa, Mitsuo:*See*—
Matsumura, Yoichi, Ogawa, Mitsuo, and Toda, Mitsuhiro 3,434,712.

Oguro, Yoshigoro:*See*—
Naito, Ryoichi, Oguro, Yoshigoro, and Murata, Yorihiko 3,434,928.

Oickle, Charles, Jr.:*See*—
Peters, George T., and Oickle, Charles, Jr. 3,434,569.

Oldenburg, Charles C., to Chevron Research Company. Process for simultaneous solvent recovery from and granulation of asphalts. 3,434,966, 03-25-69, Cl. 208-309.

Oldenburg, Charles C., to Chevron Research Company. Process for simultaneous solvent recovery from and granulation of asphalts. 3,434,967, 03-25-69, Cl. 208-309.

Olin Mathieson Chemical Corporation:*See*—
Dore, James E., and Carey, Richard R., 3,434,825.
Kaiser, Donald W., and Zane, John K., 3,434,982.
Knopp, Walter V., 3,434,831.
Ramsay, Marcus, 3,434,709.

Olmsted, Peter B., to Caterpillar Tractor Co.Hydraulic booster mechanism. 3,434,391, 03-25-69, Cl. 091-216.

Olson, Lloyd J.:*See*—
Kemp, Jacob D., Langlois, Gordon E., and Olson, Lloyd J. 3,434,963

Olson, Setha G., to Hercules, Incorporated. Crystalline polymers of alpha, omega- diolefins. 3,435,020, 03-25-69, Cl. 260-094.2

Ondera, Emil Vincent:*See*—
Siegele, Frederick Herman, Ondera, Emil Vincent, and Liberatore, Michael Angelo 3,434,970.

OPTOmechanisms, Inc.:*See*—
Chitayat, Anwar K., 3,434,787.

Ormerod, Leslie Roy, to United Kingdom Atomic Energy Authority. Extrusion of composite bodies. 3,434,192, 03-25-69, Cl. 029-411.

Ormerod, Leslie Roy, to United Kingdom Atomic Energy Authority. Extrusion of composite bodies. 3,434,323, 03-25-69, Cl. 072-258.

Oroshnik, William:*See*—
Schipper, Edgar, Oroshnik, William, and Cinnamon, Jerome M. 3,435,064.

Osborn, Fredrick W., to Lear Siegler, Inc.Differential output circuit for capacitive pickoffs and the like. 3,435,317, 03-25-69, Cl. 320-001.

Ott, Hans:*See*—
Hardtmann, Goetz E., and Ott, Hans 3,435,038.
Hardtmann, Goetz E., and Ott, Hans 3,435,040.

Otteman, Lloyd G., and Geer, Ronald L., to Shell Oil Company. Method and apparatus for connecting an underwater pipeline to an offshore installation. 3,434,296, 03-25-69, Cl. 061-072.3

Ouellette, Chester V., and Knecht, William A., to Consolidated Electronics Industries Corp.Alternating current rotary solenoid having a rotor with permanent magnet poles. 3,435,392, 03-25-69, Cl. 335-230.

Owens, Bobby, to LTV Electrosystems, Inc.Flow-sensitive shutoff valve. 3,434,493, 03-25-69, Cl. 137-460.

Owens-Illinois, Inc.:*See*—
Hyland, James W., Jr., 3,434,984.

Oxley, Vincent C.:*See*—
Hileman, Ronald E., and Oxley, Vincent C. 3,435,141.

Oyama, Tomio:*See*—
Suoka, Shine, and Oyama, Tomio 3,435,135.

Ozaki, Masami:*See*—
Watanabe, Hiroshi, Ozaki, Masami, and Hara, Junji 3,435,098.

Pacciarini, Antonio:*See*—
Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario 3,434,897.

Paddock, Charles F.:*See*—
Limbert, Frank J., and Paddock, Charles F. 3,435,096.

Page Belting Company:*See*—
Messer, Chester R., 3,434,509.

Page Communications Engineers, Inc.::*See*—
Malm, Robert E., 3,435,147.

Page, Eulah N.:*See*—
Page, John S. 3,434,535.

Page, John S., deceased, (by Page, Eulah N., executrix), to Cook Testing Co., Multiple tubing string support and safety valve installation. 3,434,535, 03-25-69, Cl. 166-072.

Pajisek, Frantisek:*See*—
Bezouska, Vlastimil, Skvor, Josef, Pajisek, Frantisek, Zavazal, Zdenek, and Polorny, Oldrich 3,435,304.

Paleckova, Frantisek, Hostalek, Zdenek, and Rehacek, Zdenek, to Spofa Sdruzeni Podniku Pro Zdravotnickou Vyrobu. Method of producing tetracycline. 3,434,930, 03-25-69, Cl. 195-080.

Palladino, Michael J., to General Electric Company. Reference wave generator for a color television receiver. 3,435,132, 03-25-69, Cl. 178-005.4

Palletizer Corporation:*See*—
Horman, Alfred E., 3,434,603.

Palluel, Auguste Louis Lucien:*See*—
Ness, Norman Morin, Palluel, Auguste Louis Lucien, and Cook, Clive Douglas 3,434,951.

Palmer, Ansell W., to General Electric Company. Mechanism to obtain gap between recordings on a tape recorder. 3,434,724, 03-25-69, Cl. 274-004.

Palmer, Charles E., to Jones & Laughlin Steel Corporation. Process for scoring and folding steel foil- paperboard laminates. 3,434,399, 03-25-69, Cl. 093-058.

Pamlenyi, George L., to Ball Brothers Research Corporation. Wideband differential amplifier having improved gain control. 3,435,362, 03-25-69, Cl. 330-029.

Pan American Petroleum Corporation:*See*—
Lummus, James L., 3,434,485.
Satter, Abdus, and Craig, Forrest F., Jr., 3,434,544.

Pandelle, Jean:*See*—
Girault, Jean, and Pandelle, Jean 3,435,448.

Pansteel, Inc.:*See*—
Barnett, William J., 3,434,810.

Panther Machine Corporation:*See*—
Zuckerman, Ira, 3,434,675.

Paquin, Roger L.:*See*—
Stoner, Arthur M., Schneider, Richard C., and Paquin, Roger L. 3,434,302.

Paramythioti, Jean Michel, to Societe Anonyme des Anciem Etablissements Albaret. Self-propelled compactor roller. 3,434,557, 03-25-69, Cl. 180-006.48

Parker, Earl E., to PPG Industries, Inc.Ethylene glycol-based, organic solvent-resistant polyester resins. 3,435,094, 03-25-69, Cl. 260-872.

Parker-Hannifin Corporation:*See*—
Balogh, Stephen, and Adams, Cecil L., 3,434,597.

Parker Instrument Corporation:*See*—
Baron, Albert A., and Nagy, Francis G., 3,435,341.

Parker, Owen Gordon:*See*—
De Rycke, Douglas August Charles, and Parker, Owen Gordon 3,434,806.

Parker, Rienzi B.:*See*—
Smith, Walter J., and Parker, Rienzi B. 3,434,348.

Parry, Robert D.Scouring pad. 3,434,177, 03-25-69, Cl. 015-209.

Pascoe, Kenneth H., and Salter, Calvin R., to United States of America, Army,. Duo-crystal mixer. 3,435,349, 03-25-69, Cl. 325-449.

Patch Rubber Company:*See*—
Kuenan, Joseph P., 3,434,183.

Patel, Chandra K. N., to Bell Telephone Laboratories, Incorporated. Self-focusing laser. 3,435,363, 03-25-69, Cl. 330-004.3

Patent Service Corporation of America:*See*—
Collard, Allison C., 3,435,188.

Paterson, Robert N.:*See*—
Yoke, Michael P., Montesi, Robert P., and Paterson, Robert N 3,434,744.

Paul, Anthony. Collapsible lamp shade. 3,435,205, 03-25-69, Cl. 240-108.

Paulus, Jerry Lee, to McGraw-Edison Company. Transformer fuse mounting. 3,435,291, 03-25-69, Cl. 317-015.

Pauwels, Edward M., to Bendix Corporation, The. Fail safe fluid regulator 3,434,489, 03-25-69, Cl. 137-098.

Payne, Howard H.:*See*—
Dimond, Robert M., and Payne, Howard H. 3,434,419.

Peabody Coal Company, .:*See*—
Mansfield, Vaughn, 3,434,931.
Mansfield, Vaughn, 3,434,932.
Mansfield, Vaughn, 3,434,933.

Pearse, James N., to Allen-Bradley Company. Cam operated relay shift register. 3,435,297, 03-25-69, Cl. 317-139.

Pechiney-Compagnie de Produits Chimiques etElectrometallurgique:*See*—
Cerles, Georges, and Fougeres, Michel, 3,434,174

Pechiney-Compagnie de Produits Chimiques etElectrometallurgiques:*See*—
Duclaux, Daniel, 3,434,955.
Logerot, Jean-Marie R., 3,434,319.

Pecksen, Otto:*See*—
Madlener, Paul, and Pecksen, Otto 3,434,418.

Peddle, Charles I., to General Electric Company. Tape start detector. 3,435,191, 03-25-69, Cl. 235-061.11

Pena, Pascual J., to Automatic Electric Laboratories, Inc.Piezoelectric signaling device. 3,435,450, 03-25-69, Cl. 340-392.

Penn Nuclear Corporation:*See*—
Di Giambattista, Vincent N., 3,434,669.

Pennington, Keith S.:*See*—
Burckhardt, Christoph B., and Pennington, Keith S. 3,435,244.

Pere, Carlo, to Societa Italiana Impianti-Societa per Azioni. Pneumatic steelmaking plant. 3,434,705, 03-25-69, Cl. 266-013.

Peri, John B., to Standard Oil Company. Self-sustaining, thin, crack-free sheet of inorganic aerogel. 3,434,912, 03-25-69, Cl. 161-046.

Perkin-Elmer Corporation, The:*See*—
Cowles, Charles Donald, 3,434,639.

Perkins, William H., to Diamond International Corporation. Collapsible carton and blank. 3,434,647, 03-25-69, Cl. 229-016.

Permawick Company, Inc.:*See*—
Abel, Martin L., 3,434,765.

Perrier, Marius Antoine, to Manufactures Jean-Baptiste Martin, Jean Martin Andre Charbin & Cie. Tubular warp-knit stockings having a mock seam. 3,434,310, 03-25-69, Cl. 066-181.

Peschl, John, and Larson, Robert E., to Stanford Research Institute. Computer for the approximation of the correlation between signals. 3,435,194, 03-25-69, Cl. 235-181.

Pesterfield, Enos Charles, Jr., to Geigy Chemical Corporation. Cyclization of substituted propargyl ureas to 2- imidazolone derivatives. 3,435,051, 03-25-69, Cl. 260-309.6

Peterlein, Karl:*See*—
Hofmann, Paul, and Peterlein, Karl 3,435,091.

Peters, George T., and Oickle, Charles, Jr., to United Aircraft Corporation. Dynamic braking system for wheeled vehicles. 3,434,569, 03-25-69, Cl. 188-002.

Petersen, Paul S., to Rosemount Engineering Company. Mold and method of making same. 3,434,182, 03-25-69, Cl. 018-035.

Petrie, James Alexander, to Rolls-Royce Limited. By-pass gas turbine engine. 3,434,288, 03-25-69, Cl. 060-226.

Pettitt, Walter G.:*See*—
Haner, Robert B., Jr., Sibley, Henry C., Sutton, Paul C., and Pettitt, Walter G. 3,435,223.

Pfeiffer, William E., to Farm Fans, Inc.Batch timer. 3,435,247, 03-25-69, Cl. 307-038.

Pfizer, Chas., & Co., Inc.:*See*—
Holland, Gerald F., 3,435,115.

Pfleger, Frederick W.Multiposition push-button switch. 3,435,167, 03-25-69, Cl. 200-156.

Pfrommer, Gustav:*See*—
Brand, Guenter, and Pfrommer, Gustav 3,435,264.

Phantom Products:*See*—
Gayle, Robert E., 3,434,726.

Phelps, Morton E., and Bell, Tommy O.Liquid spray-control device. 3,434,496, 03-25-69, Cl. 137-561.

Phelps, Vernon A., to Hoover Ball and Bearing Company. Apparatus for finishing endless metallic belts. 3,434,240, 03-25-69, Cl. 051-005.

Philippi, George J., and Rosnick, Albert L., to Johnson & Johnson. Splicing device and resulting product. 3,434,907, 03-25-69, Cl. 156-505.

Phillips, Donald D.:*See*—
Ward, Loyal F., Jr., and Phillips, Donald D. 3,435,113.

Phillips Petroleum Company:*See*—
Bauer, Robert D., 3,434,701.
Cabbage, John T., Blaker, David G., and Berger, Richard F., 3,435,084.
Collie, Stafford D., 3,434,644.

Flaming, Edwin H., 3,435,109.
Hutson, Tom, Jr., and Carter, Cecil O., 3,435,092.
Kinslow, William G., Jr., 3,434,626.
Little, Donald M., 3,434,962.
Louthan, Rector P., 3,434,852.
Shotton, James A., 3,434,995.
Uraneck, Carl A., and Trepka, William J., 3,435,011.
Washer, Stone P., 3,434,934.
Zuech, Ernest A., 3,435,088.

Phoenix Chemical Laboratory, Inc.:*See*—
Tovrog, Theodore, and Krawetz, Arthur A., 3,434,338.

Photocircuits Corporation:*See*—
Grabbe, Dimitry G., 3,434,204.

Picard, Jean P., and Voigt, H. William, Jr., to United States of America, Army. Process of preparing a particulate nitrocellulose containing explosive. 3,434,895, 03-25-69, Cl. 149-027.

Pierret, Jean Marc, to International Business Machines Corporation. Apparatus for carrier phase correction. 3,435,343, 03-25-69, Cl. 325-389.

Pignal, Edmond, to Biraghi (Societe Anonyme). Gilled pipes for heat exchange. 3,434,533, 03-25-69, Cl. 165-183.

Pike, John E.:*See*—
Jackson, Robert W., and Pike, John E. 3,435,029.
Beal, Philip F., III, Lincoln, Frank H., Jr., and Pike, John E. 3,435,053.

Pillsbury Company, The:*See*—
Durst, Jack R., 3,434,843.
Galle, Edward L., 3,434,410.
Katz, Morris H., 3,434,848.
Merchlewitz, Anthony W., 3,434,631.

Pinault, Jacques Gilbert, Lallet, Jean Paul, and Carbonnel, Henri Amedee Basile, to Societe Anonyme:Groupement Atomique Alsacienne Atlantiques (G.A.A.A.). Remote-controlled alarm networks. 3,435,145, 03-25-69, Cl. 179-002.

Pino, Piero:*See*—
Natta, Giulio, Pino, Piero, and Mazzanti, Giorgio 3,435,017.
Natta, Guilio, Pino, Piero, and Mazzanti, Giorgio 3,435,018.

Pirelli S.p.A.:*See*—
Caretta, Renato, Pacciarini, Antonio, and Giletta, Dario, 3,434,897.

Piret, Jean, to Societe Anonyme des Automobiles Simca. Hydraulic antishock device. 3,434,283, 03-25-69, Cl. 060-052.

Pitchford, Lorena Jean. Aircraft landing gear viewer. 3,434,773, 03-25-69, Cl. 350-009.

Pitt, Richard W.:*See*—
Rodriguez, George L., and Pitt, Richard W. 3,434,546.

Pittsburgh-Des Moines Steel Company:*See*—
Nelson, Ardell H., 3,434,619.

Player, Alfred:*See*—
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W. 3,434,270.
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W. 3,434,271.

Pleuthner, Richard L.:*See*—
Carpenter, James E., and Pleuthner, Richard L. 3,434,663.

Plostnieks, Janis, to McNeil Laboratories, Inc.Indolizinone derivatives. 3,435,033, 03-25-69, Cl. 260-244.

Plumridge, Robert F.:*See*—
Downing, Edward T., and Plumridge, Robert F. 3,435,284.

Pobst, David F., Jr., to Columbian Carbon Company. Method and means for pumping powdered solids. 3,434,808, 03-25-69, Cl. 023-314.

Podesta, Armando, Vignati, Carlo, and Bereziat, Andre, to L'Aluminium Francais. Apparatus for the manufacture of caps from sheet material. 3,434,325, 03-25-69, Cl. 072-354.

Polistina, Rocco Albert:*See*—
Schmitt, Edward Emil, Epstein, Martin, and Polistina, Rocco Albert 3,435,008.

Polorny, Oldrich:*See*—
Bezouska, Vlastimil, Skvor, Josef, Pajisek, Frantisek, Zavazal, Zdenek, and Polorny, Oldrich 3,435,304.

Polster, Rudolf:*See*—
Kranz, Joachim, Maier, Karl, and Polster, Rudolf 3,435,054.

Polymer Corporation Limited:*See*—
Scherf, Gerhard Wolfgang Helmut, and Henderson, John Frederick, 3,435,014.

Poma, Anteo:*See*—
Nobile, Luciano, Condorelli, Emanuele, La Noce, Tullio, and Poma, Anteo 3,435,024.

Popper, Peter:*See*—
Backer, Stanley, and Popper, Peter 3,434,275.

Porter, Joe A., and Waters, Ronald F., to Beckman Instruments, Inc.Electrochemical electrode assembly. 3,434,953, 03-25-69, Cl. 204-195.

Porto, Sergio P. S.:*See*—
Damen, Theodoor C., Leite, Rogerio C. C., and Porto, Sergio P. S. 3,434,779.

Potter Instrument Company, Inc.:*See*—
Potter, John T., 3,434,218.

Potter Instruments Company, Inc.:*See*—
Schwartz, Harold S., 3,435,299.

Potter, John T., to Potter Instrument Company, Inc.Coordinate measuring machine. 3,434,218, 03-25-69, Cl. 033-189.

Pouderoux, Pierre, to Societe Stein et Roubaix. Method of power generation and thermal power plant for the application of said method. 3,434,924, 03-25-69, Cl. 176-020.

Poulos, Gus L., to North American Rockwell Corporation. Auxiliary spring. 3,434,734, 03-25-69, Cl. 280-124.

Poulson, Barrie K.:*See*—
Griffiths, John H., and Poulson, Barrie K. 3,435,231.

Poulton, George W.Variable contact arrangement for electric coils. 3,435,396, 03-25-69, Cl. 336-139.

Poupitch, Ougljesa Jules:*See*—
Moore, Norman H., and Poupitch, Ougljesa Jules 3,434,592.

Powell, Frederic D.:*See*—
Gerhardt, Lester A., Goerner, Johannes G., and Powell, Frederic D. 3,435,422.

Powers, Martin V., to Sylvania Electric Products, Inc.Digital waveform transition synthesizer. 3,435,350, 03-25-69, Cl. 328-014.

PPG Industries, Inc.:*See*—
Parker, Earl E., 3,435,094.
Smith, Clete M., 3,434,881.
Wilson, William L., 3,434,799.

Prahl, Helmut F.:*See*—
Tovey, Henry, Prahl, Helmut F., and Hart, Frederick M. 3,434,870.

Prats, Michael, to Shell Oil Company. Shale oil-producing process. 3,434,757, 03-25-69, Cl. 299-002.

Pratt, Herbert Thomas, to Du Pont de Nemours, E. I., and Company. Method for screen printing pile structures. 3,434,793, 03-25-69, Cl. 008-062.

Pratt, James S.Measuring device for safety distances between moving vehicles. 3,434,214, 03-25-69, Cl. 033-064.

PRD Electronics, Inc.:*See*—
Collins, Frank C., 3,435,237.

Presto Lock Co., Inc.:*See*—
Feinberg, Irving, 3,434,313.

Previte, Dominick L., to Eaton Yale & Towne Inc.Safety pressure cap. 3,434,621, 03-25-69, Cl. 220-044.

Price, Robert S.Lingerie clasp. 3,434,185, 03-25-69, Cl. 024-074.

Prisco, Biagio. Instant gift package. 3,434,645, 03-25-69, Cl. 229-008.

Pritchett, William C., to Atlantic Richfield Company. Calibration of gamma ray radioactive borehole logging tools. 3,435,215, 03-25-69, Cl. 250-083.

Prochnow, Horst, to Institut fur Regelungstechnik. Drift free stabilized operational amplifier. 3,435,356, 03-25-69, Cl. 330-009.

Prodesco, Inc.:*See*—
Alterman, Daniel S., and Williams, Lester, 3,434,508.

Proffitt, Thomas Jefferson, Jr., to Du Pont de Nemours, E. I., and Company. Acrylic fibers. 3,434,874, 03-25-69, Cl. 117-138.8

Prohofsky, Le Roy A.:*See*—
Bergman, Robert J., and Prohofsky, Le Roy A. 3,435,435.

Prosen, Emil M., to Nobilium Products, Inc.Method of making cast movable joint. 3,434,526, 03-25-69, Cl. 164-069.

Prsson, Sen I., to General Signal Corporation. Ultrasonic vehicle presence detector. 3,435,405, 03-25-69, Cl. 340-001.

Pucel, Edward L.:*See*—
Schmidt, Edward C., 3,434,612.

Pulp and Paper Research Institute of Canada:*See*—
May, William Donald, 3,434,670.

Pumpelly, Robert C.:*See*—
Kilgore, Marion D., and Pumpelly, Robert C. 3,434,538.

Pylon Company Inc.:*See*—
Cooney, James S., 3,435,168.

Quenneville, Raymond N., to United Aircraft Corporation. Gear alignment means. 3,434,365, 03-25-69, Cl. 074-410.

Rabel, Steven T.:*See*—
Mirabile, Frank A., and Rabel, Steven T. 3,434,993.

Rabenhorst, David W., to United States of America, Navy. Spacecraft extendible boom sunshade. 3,434,255, 03-25-69, Cl. 052-108.

Rack, Alois J., to Bell Telephone Laboratories, Incorporated. Optical pulse generator. 3,435,226, 03-25-69, Cl. 250-199.

Radiation Incorporated:*See*—
Lewis, Bernard L., 3,435,458.

Radio Corporation of America:*See*—
Borkan, Harold, 3,435,138.
Degenkolb, Robert S., and Liederbach, William H., 3,434,877.
Richards, Gerald P., 3,435,134.
Rodner, Robert A., 3,435,129.
Sendelweck, Gene Karl, 3,435,276.
Stoudenheimer, Richard G., and Thoman, Daniel L., 3,434,876.

Ragan, James B.:*See*—
de Greeve, Harry V., and Ragan, James B. 3,434,906.

Ragen, Robert A., to Friden, Inc.Delay line transit time control system. 3,435,351, 03-25-69, Cl. 328-056.

Raichle, Karl:*See*—
Dhein, Rolf, Raichle, Karl, and Schnell, Hermann 3,434,987.

Raidel, John E.Suspensions. 3,434,707, 03-25-69, Cl. 267-031.

Raizes, Sheldon F., to Bendix Corporation, The. Pressure failure warning device. 3,434,286, 03-25-69, Cl. 060-054.5

Ralston, Paul H., to Calgon Corporation. Scale inhibiting. 3,434,969, 03-25-69, Cl. 210-058.

Ramsay, Marcus, to Olin Mathieson Chemical Corporation. Pipe gripping and flaring apparatus. 3,434,709, 03-25-69, Cl. 269-048.1

Randolph, August:*See*—
Huckstadt, Harald, Saleck, Wilhelm, Ulrich, Hans, Randolph, August, and Grabhofer, Herbert 3,434,842.

Rappold & Co. G.m.b.H.:*See*—
Uerlichs, Johannes, 3,434,499.

Raso, Vito, and Eisenhart, Arlin C., to Emerson Electric Co.Modular drive and gear reduction unit. 3,434,366, 03-25-69, Cl. 074-421.

Rauland Corporation, The:*See*—
Kaplan, Sam H., 3,434,836.

Ray, Donald A.:*See*—
Williams, William J., and Ray, Donald A. 3,434,359.

Ray, William B.Combination router carriage, work holder and template holder and adjuster. 3,434,385, 03-25-69, Cl. 090-013.1

Rayner, Arline W.:*See*—
Davis, John K., Fernald, Henry G., and Rayner, Arline W. 3,434,781.

Raytheon Company:*See*—
Brown, William C., George, Roscoe H., Heenan, Neil I., and Wonson, Roger C., 3,434,678.
Downing, Edward T., and Plumridge, Robert F., 3,435,284.

Read, Kenneth G.:*See*—
Broadbent, Norman, and Read, Kenneth G. 3,435,348.

Reading, Oscar W.Color filter for light bulbs. 3,435,203, 03-25-69, Cl. 240-046.57

Reale, Paul J.:*See*—
Hannis, Eugene S., and Reale, Paul J. 3,434,677.

Recovery Systems Research, Inc.:*See*—
Ferguson, Otis B., 3,434,680.

Redland Tiles Limited:*See*—
Carter, George Harold, 3,434,260.

Reggia, Frank, to United States of America, Army. Solid state microwave acoustic delay line and frequency converter. 3,435,250, 03-25-69, Cl. 307-088.3

Reggia, Frank, to United States of America, Army. Nondispersive electrically variable microwave acous- tic delay line comprising a ferrite Faraday rotator coupled to an anisotropic piezoelectric crystal. 3,435,383, 03-25-69, Cl. 333-031.

Regie Nationale des Usines Renault:*See*—
Lombard, Claude, 3,435,165.

Regina Corporation, The:*See*—
Meyerhoefer, Carl E., 3,434,304.

Regitz, William M., to Bell Telephone Laboratories, Incorporated. Pulse delay control circuit. 3,435,438, 03-25-69, Cl. 340-174.

Regnier, Gilbert, Canevari, Roger, Le Douarec, Jean-Claude, and Laubie, Michel, to Science Union et Cie, Societe Francaise de Recherche Medicale. Di- and triphenylpropyl piperazine pyrimidyl and quinazolinyl compounds. 3,435,036, 03-25-69, Cl. 260-256.4

Rehacek, Zdenek:*See*—
Paleckova, Frantisek, Hostalek, Zdenek, and Rehacek, Zdenek 3,434,930.

Reichhold Chemicals, Inc.:*See*—
Becker, Wilhelm, 3,434,985.

Reid, Albert R.:*See*—
Desmarais, Armand J., and Reid, Albert R. 3,435,027.

Reid, Edwin J., Jr.:*See*—
Berlin, A Samuel, Little, Vincent C., Leadore, Toney E., and Reid, Edwin J., Jr. 3,434,421.

Reikes, Alex E.Pallet bin hardware. 3,434,616, 03-25-69, Cl. 217-069.

Reimers, James L., to FMC Corporation. Nonshock container handling apparatus. 3,434,582, 03-25-69, Cl. 198-031.

Reinforced Plastic Container Corporation:*See*—
Wilkins, William B., 3,434,567.

Reinke, John F., Schlicke, Heinz M., and Blomdahl, Floyd A., to Allen-Bradley Company. Solderless mounting filter connection. 3,435,387, 03-25-69, Cl. 333-079.

Reis, Charles S., to Hewlett-Packard Company. Method of forming a multicolor electrosensitive recording medium and article. 3,434,878, 03-25-69, Cl. 117-217.

Reis, Helmut:*See*—
Bauder, Herbert, Sennewald, Kurt, and Reis, Helmut 3,435,083.

Renkowitz, Donald, to General Telephone and Electronics Laboratories, Inc.Waveguide filter. 3,435,384, 03-25-69, Cl. 333-073.

Renneker, Dennis N., and Lowery, Throck M., to Chrysler Corporation. Steering column. 3,434,367, 03-25-69, Cl. 074-492.

Rennert, Stanley. Releasable buckle for strapped loads. 3,434,186, 03-25-69, Cl. 024-191.

Rex Chainbelt, Inc.:*See*—
Morris, John M., 3,434,586.

Rexall Drug and Chemical Company:*See*—
Goebel, George A., and Canterino, Peter J., 3,435,019.

Rexall Drug and Chemical Company, :*See*—
Hostetler, Donald E., 3,435,095.

Reynolds, Lamar W.Chick vaccination device. 3,434,474, 03-25-69, Cl. 128-253.

Reynolds Metals Company:*See*—
Johnston, Thomas Jseph, 3,434,824.

Rheinfelder, William A., to Anaconda Electronics Company. Cable television amplifier powering. 3,435,358, 03-25-69, Cl. 330-022.

Rhodes, Cecil:*See*—
Whittaker, Stanley James, and Rhodes, Cecil 3,434,194.

Rich, John Parker,, to Improved Machinery Inc.Continuous digester with multiple column discharger. 3,434,921, 03-25-69, Cl. 162-237.

Richards, Gerald P., to Radio Corporation of America. Digital television data compression system. 3,435,134, 03-25-69, Cl. 178-006.

Richardson, James I.:*See*—
Kolb, Edwin R., Richardson, James I., and Hunstiger, Francis 3,435,309.

Richey, Reed W.Mobile wall unit. 3,434,249, 03-25-69, Cl. 052-001.

Richman, Peter L., to Weston Instruments, Inc.Thermal RMS converter with feedback to control operating point. 3,435,319, 03-25-69, Cl. 321-001.5

Richter, Klaus:*See*—
Luther, Guenter, Schulze, Martin, and Richter, Klaus 3,434,936.

Richter, Sidney B.:*See*—
Wilks, Louis P., and Richter, Sidney B. 3,435,081.

Richtzenhain, Hermann:*See*—
Daum, Gerhard, Modic, Rudolf, and Richtzenhain, Hermann 3,435,045.

Riegel Textile Corporation:*See*—
Meyer, Theodore J., Jr., and Groce, Homer W., 3,434,440.

Rietdijk, Johan Adriaan, to North American Philips Company, Inc.Apparatus and ejector for producing cold. 3,434,298, 03-25-69, Cl. 062-115.

Rietsch, Eberhard, to Wuppermann, Theodor Gesellschaft mit beschrankter Haftung. Welding method. 3,435,182, 03-25-69, Cl. 219-100.

Rinehart, Robert E., to Uniroyal, Inc.Chemical composition and process of preparation and use. 3,435,016, 03-25-69, Cl. 260-093.1

Rinehart, Rogert E., to Uniroyal, Inc.Cyclooctadienyl palladium chloride complex. 3,435,058, 03-25-69, Cl. 260-429.

Ritsema, Irving R., to Bendix Corporation, The. Method of forming a lash-free universal joint. 3,434,195, 03-25-69, Cl. 029-437.

Ritter, Joachim A.:*See*—
Santirocco, Louis J., and Ritter, Joachim A. 3,434,777.

Rivers, Frank J.:*See*—
Rivers, Joe F., and Rivers, Frank J. 3,434,408.

Rivers, Joe F., and Rivers, Frank J.Vehicle window air vent. 3,434,408, 03-25-69, Cl. 098-002.

Roantree Electro-Mech Corporation:*See*—
Roantree, William J., 3,434,357.

Roantree, William J., to Roantree Electro-Mech Corporation. Linear power amplifier mechanism. 3,434,357, 03-25-69, Cl. 074-025.

Robb, Winfred Edward, Jr., to Kel Corporation,. Adjustable whip antenna for portable receiver. 3,435,456, 03-25-69, Cl. 343-702.

Robinson, Eugene A., to Collins Radio Company. Symmetrical clipper. 3,435,253, 03-25-69, Cl. 307-237.

Rocha, John G., to United States of America, Army. Energy discharge device. 3,434,383, 03-25-69, Cl. 089-042.

Rockwell-Standard Company, :*See*—
Keese, Beverly W., 3,434,364.

Rockwell-Standard Company:*See*—
Williams, William J., and Ray, Donald A., 3,434,359.

Rockwell, Willard F., Jr., to North American Rockwell Corporation. Tractor-trailer with ground effect device. 3,434,560, 03-25-69, Cl. 180-119.

Roder, Georg, to Messer Griesheim G.m.b.H.Traversing carriage for metal-burning cutting machines. 3,434,706, 03-25-69, Cl. 266-023.

Rodner, Robert A., to Radio Corporation of America. Circuit for distinguishing interrupt signal from other signals. 3,435,129, 03-25-69, Cl. 178-003.

Rodriguez, George L., and Pitt, Richard W., to Bell Aerospace Corporation. Rotor blade grip bearing. 3,434,546, 03-25-69, Cl. 170-160.58

Roeske, Paul W.:*See*—
Schneider, Alfred, Shunn, William F., and Roeske, Paul W. 3,434,462.

Rohe, Frederick W.Molded-in insert with floating nut. 3,434,261, 03-25-69, Cl. 052-617.

Rohr Corporation:*See*—
Gerard, Milan E., 3,435,185.

Rohrbacher, George H., Jr.:*See*—
Bullock, Milon W., and Rohrbacher, George H., Jr. 3,435,100.

Roll, Arthur A.:*See*—
Flynn, Paul D., Roll, Arthur A., and Gilbert, Joseph T. 3,434,786.

Rollei-Werke Franke & Heidecke:*See*—
Sobotta, Reinhard, 3,434,360.

Rollins, Dallas W., to ACF Industries, Incorporated. Single strut trailer hitches with cushioning means. 3,434,683, 03-25-69, Cl. 248-119.

Rollins, James W.:*See*—
Cowles, John H., and Rollins, James W. 3,434,322.

Rolls-Royce Limited:*See*—
Cresswell, Roger A., 3,434,290.
Petrie, James Alexander, 3,434,288.
Shaw, William, 3,434,666.

Rombusch, Konrad, and Seifert, Friedrich, to Chemische Werke Huels AG. Compositions of antistatic agents and polyethylene and crack-free antistatic molded polyethylene bodies. 3,435,021, 03-25-69, Cl. 260-094.9

Roper, Donald G.:*See*—
Massoll, Stanley R., and Roper, Donald G. 3,435,200.

Rose, Thomas P., and Hollowood, Calvin T., to Burroughs Corporation. Conductive adhesive articles and manufacture. 3,435,127, 03-25-69, Cl. 174-094.

Rosemount Engineering Company:*See*—
Petersen, Paul S., 3,434,182.

Rosenberg, Merton I., and Kimberley, John A., to American Bosch Arma Corporation. Rotary electromagnetic actuator having linear response characteristics. 3,435,395, 03-25-69, Cl. 335-276.

Rosfelder, Andre M., to United States of America, Navy,. Buoyant coring apparatus. 3,434,551, 03-25-69, Cl. 175-006.

Roshon, David, Jr., and Young, Thomas, to International Business Machines Corporation. Selective piercing and machining of sheet material. 3,435,186, 03-25-69, Cl. 219-121.

Rosnick, Albert L.:*See*—
Philippi, George J., and Rosnick, Albert L. 3,434,907.

Roth, James F.:*See*—
Abell, Joseph B., Jr., Fannin, Loyd W., and Roth, James F. 3,435,090.

Rousselot, George E.:*See*—
Boggs, William H., and Rousselot, George E. 3,434,866.

Rousselot, Georges E., to International Business Machines Corporation. Method of etching urea formaldehyde for making printing elements. 3,434,867, 03-25-69, Cl. 117-047.

Rowe, Thomas H.:*See*—
Evans, James R., and Rowe, Thomas H. 3,435,418.

Roy, Neal L.:*See*—
Hansen, David O., Frichtenicht, Joseph F., and Roy, Neal L. 3,435,208.

Royal Products Incorporated:*See*—
Kato, Jumpei, 3,435,404.

Royer, John A., to Buckner Industries, Inc.Rotary impact sprinkler having control means for increasing the force of impact. 3,434,665, 03-25-69, Cl. 239-230.

Rubin, Charles P., to TRW, Inc.Deployable boom. 3,434,254, 03-25-69, Cl. 052-108.

Rublack, Wilfred D., to General Electric Company. In-line plural beam cathode ray tube with an aspherical aperture mask. 3,435,268, 03-25-69, Cl. 313-070.

Ruchardt, Christoph Johannes, to Elektrochemische Werke Munchen A. G.Novel organic peresters and process therefor. 3,435,060, 03-25-69, Cl. 260-453.

Rueth, Joseph F., and Urian, Charles A., to Budd Company, The. Air conditioning vaporizer. 3,434,300, 03-25-69, Cl. 062-309.

Runkle, Dean E., to Bendix Corporation, The. No-lash axially movable steering column. 3,434,368, 03-25-69, Cl. 074-493.

Runkle, Dean E., to Bendix Corporation, The. No-lash axially movable steering column. 3,434,369, 03-25-69, Cl. 074-493.

Ruppert, Horst:*See*—
Teerling, Martinus, and Ruppert, Horst 3,434,169.

Ruprecht, Robert, Heydlauf, Kurt, and Braun, Herbert, to Heinkel, Ernst Aktiengesellschaft. Sheave. 3,434,363, 03-25-69, Cl. 074-230.17

Russell, Fred J., Armstrong, Richard L., and Spinuzzi, Sam J., to Norris Industries, Inc.Handhold shank bearing. 3,434,752, 03-25-69, Cl. 292-356.

Russell, Percy Arthur, to International Standard Electric Corporation. Arrangement of branched telephone subsets. 3,435,151, 03-25-69, Cl. 179-027.

Russell, Robert J., to Texas Instruments, Incorporated. Method of manufacturing hard-faced metal products. 3,434,200, 03-25-69, Cl. 029-527.

Ruti Machinery Work Ltd.:*See*—
Freihofer, Alexis, 3,434,507.

Ryan, William T., Jr., to Westinghouse Electric Corporation. Photoflash cube. 3,435,198, 03-25-69, Cl. 240-001.3

Sadler, William R.:*See*—
Schira, John J., Sadler, William R., and Dragon, Thomas J. 3,435,424.

Sagawa, Seizi:*See*—
Terao, Shinichiro, Sagawa, Seizi, and Yabuta, Seizo 3,435,074.

Sage, David L.Dental clasp. 3,434,210, 03-25-69, Cl. 032-040.

Sailer, Richard:*See*—
Gehring, Albert, and Sailer, Richard 3,435,068.

Sakaki, Fumio, and Nakamura, Toshimitsu, to Elmo Company Limited. Cartridge-type motion picture camera having automatically adjustable film gate. 3,434,783, 03-25-69, Cl. 352-072.

Sakuma, Youukou. Tile-setting frame apparatus. 3,434,257, 03-25-69, Cl. 052-387.

Salatello, Peter P., and Dollman, Stephen C., to Allied Chemical Corporation. Polytetrafluoroethylene extrusion compositions and extrusion process. 3,434,996, 03-25-69, Cl. 260-033.8

Saleck, Wilhelm:*See*—
Huckstadt, Harald, Saleck, Wilhelm, Ulrich, Hans, Randolph, August, and Grabhofer, Herbert 3,434,842.

Salet, Thomas E., to Stow-Easy Display & Mfg. Co.Collapsible display cases. 3,434,769, 03-25-69, Cl. 312-258.

Salter, Calvin R.:*See*—
Pascoe, Kenneth H., and Salter, Calvin R. 3,435,349.

Samejima, Horotoshi, Teranishi, Hiroshi, and Deguchi, Takashi, to Kyowa Hakko Kogyo Co., Ltd. (Kyowa Hakko Kogyo Kabushiki Kaisha). Process for the recovery of nicotinic acidamide- adenine dinucleotide. 3,435,026, 03-25-69, Cl. 260-211.

San Marino Electronic Corporation:*See*—
Husome, Robert G., 3,434,594.

Sanders, Frederick W., to Mead Corporation, The. Electrophotographic materials and process of producing same. 3,434,834, 03-25-69, Cl. 096-001.8

Sandoz, Inc.:*See*—
Hardtmann, Goetz E., and Ott, Hans, 3,435,038.
Hardtmann, Goetz E., and Ott, Hans, 3,435,040.
Houlihan, William J., Manning, Robert E., and Theuer, William S., 3,435,034.

Sankey, Edward L., and Stoelting, Herman O., to McGraw-Edison Company. Combination overvoltage protective device and conducton support. 3,435,397, 03-25-69, Cl. 337-034.

Sankyo Company:*See*—
Iwai, Issei, and Nakamura, Norio, 3,435,048.

Sankyo Company, Limited:*See*—
Iwai, Issei, and Nakamura, Norio, 3,435,047.
Sunagawa, Genshun, Soma, Nobuo, Watanabe, Taiichiro, and Sato, Yoshio, 3,435,071.

Santirocco, Louis J., and Ritter, Joachim A., to Elgeet Optical Company, Inc.Attachment for stereomicroscopes. 3,434,777, 03-25-69, Cl. 350-136.

Sapers, Ira:*See*—
Cook, Alton A., and Sapers, Ira 3,434,795.

Sato, Keisuke, to Akai Electric Company, Limited. Eraser and cleaner set. 3,435,300, 03-25-69, Cl. 317-157.5

Sato, Yoshio:*See*—
Sunagawa, Genshun, Soma, Nobuo, Watanabe, Taiichiro, and Sato, Yoshio 3,435,071.

Satter, Abdus, and Craig, Forrest F., Jr., to Pan American Petroleum Corporation. Method for conducting cyclic steam injection in recovery of hydrocarbons. 3,434,544, 03-25-69, Cl. 166-040.

Satterwhite, Fred B.:*See*—
Buck, Thomas M., and Satterwhite, Fred B. 3,434,189.

Sauber, James W., to Hewlett-Packard Company. Amplifier-detector having wide dynamic range. 3,435,353, 03-25-69, Cl. 328-145.

Saunders, David George:*See*—
Knott, Edward B, Mijovic, Miroslav V, and Saunders, David George 3,434,837.

Saverino, Pasquale. Prosthetic holder for use with a mutilated or deformed hand. 3,434,163, 03-25-69, Cl. 003-012.8

Sawyer, Edgar W., Jr.:*See*—
Haden, Walter L., Jr., and Sawyer, Edgar W., Jr. 3,434,864.

Scaglione, Paul J.Two-piece car trunk cover. 3,434,754, 03-25-69, Cl. 296-076.

Scaramucci, Domer. Flow control apparatus having differential area body seals. 3,434,495, 03-25-69, Cl. 137-542.

Schaberg, Richard R.:*See*—
Brastow, Edgar R., Voge, Andrew, and Schaberg, Richard R. 3,434,353.

Schaefer, Orville L., to General Electric Company. Magnetic memory system for the storage of digital information. 3,435,427, 03-25-69, Cl. 340-174.

Schafroth, Werner:*See*—
Cairatti, Anthony E., 3,434,393.

Schaller, John W., to AAI Corporation. Pulse discriminating hit indicator arrangement. 3,434,226, 03-25-69, Cl. 035-025.

Schaper, Hans:*See*—
Schmitt, Johannes, and Schaper, Hans 3,434,945.

Schappel, Joseph W.:*See*—
Bockno, Gregory C., Da Vincii, Anthony P., and Schappel, Joseph W. 3,434,913.

Schaum Chemie, Wilhelm Baner K.-G.:*See*—
Bar, Karl, 3,434,805.

Scherf, Gerhard Wolfgang Helmut, and Henderson, John Frederick, to Polymer Corporation Limited. Polymerization process. 3,435,014, 03-25-69, Cl. 260-089.5

Scherr, George H., to Colab Laboratories, Inc.Diagnostic test material for determination of ovulatory function and method for production of said test material. 3,434,801, 03-25-69, Cl. 023-253.

Schiele, August:*See*—
Kirsch, Karl, Uhl, Siegfried, and Schiele, August 3,434,382.

Schipper, Edgar, Oroshnik, William, and Cinnamon, Jerome M., to Shulton, Inc.Process to convert activated methylene groups to the corresponding carbonyl groups. 3,435,064, 03-25-69, Cl. 260-469.

Schira, John J., Sadler, William R., and Dragon, Thomas J., to Burroughs Corporation. Synchronizing system. 3,435,424, 03-25-69, Cl. 340-172.5

Schirmer, Henry G., to Grace, W. R., & Co.Apparatus for perforating film. 3,435,190, 03-25-69, Cl. 219-384.

Schirrmacher, Hermann:*See*—
Ibing, Guenther, Schirrmacher, Hermann, Vollmer, Herbert, Boemelburg, Josef, and Schwall, Fritz 3,434,807.

Schlage Lock Company:*See*—
Neary, Ralph E., 3,434,316.

Schleter, George H.:*See*—
Watts, Melvin P., and Schleter, George H. 3,434,234.

Schlicher, David W., to Electric Machinery Mfg. Company. Plural input electrical system for measuring alternating-current power. 3,435,340, 03-25-69, Cl. 324-142.

Schlicke, Heinz M.:*See*—
Reinke, John F., Schlicke, Heinz M., and Blomdahl, Floyd A. 3,435,387.

Schmid, Hermann, to General Electric Company. Pulse-width function generator. 3,435,196, 03-25-69, Cl. 235-197.

Schmidt, Donald L., and Daniels, Arthur L., to Dow Chemical Company, The. Aluminum monohydride catecholate. 3,435,059, 03-25-69, Cl. 260-448.

Schmidt, Edward C., to Pucel, Edward L.Tilting arc device having improved trolley carrier. 3,434,612, 03-25-69, Cl. 214-658.

Schmidt, Leonard G., to Crane Carton Corporation. Shadow box. 3,434,646, 03-25-69, Cl. 229-016.

Schmitt, Bernhard:*See*—
Stastny, Fritz, Gaeth, Rudolf, Schmitt, Bernhard, and Haardt, Udo 3,434,980.

Schmitt, Edward Emil, Epstein, Martin, and Polistina, Rocco Albert, to American Cyanamid Company. Method for preparation of isomerically pureβ-glycolide and polymerization method for glycolide compositions employing partial hydrolyzate of saidβ-glycolide. 3,435,008, 03-25-69, Cl. 260-078.3

Schmitt, Johannes, and Schaper, Hans, to Swiss Aluminium Ltd.Terminal voltage regulation in electrolytic aluminum production. 3,434,945, 03-25-69, Cl. 204-067.

Schmoll, Kurt, to Dynamit Nobel Aktiengesellschaft. Novolak resins mined with polyvinyl alcohol. 3,434,997, 03-25-69, Cl. 260-033.4

Schneider, Alfred, Shunn, William F., and Roeske, Paul W., to Holley Carburetor Company. Semiconductor ignition. 3,434,462, 03-25-69, Cl. 123-148.

Schneider, Hans-Dieter:*See*—
Bachmann, Horst, Schneider, Hans-Dieter, and Sennhenn, Emil 3,435,136.

Schneider, Richard C.:*See*—
Stoner, Arthur M., Schneider, Richard C., and Paquin, Roger L. 3,434,302.

Schnell, Hermann:*See*—
Dhein, Rolf, Raichle, Karl, and Schnell, Hermann 3,434,987.

Schoenewaldt, Erwin F., to Merck & Co., Inc.Trialkyl-silyl ethers of N-carboxy anhydrides of monohydroxy-amino acids and processes for preparing them. 3,435,046, 03-25-69, Cl. 260-307.

Scholl, Hans, and Hugemayer, Gunther, to Kochs Adlernahmaschinen-Werke AG. Stencil control for production machines, such as sewing machines, by means of driven rollers. 3,434,370, 03-25-69, Cl. 074-569.

Schoonover, Richard H. A., to Katrak Vehicle Company. Tandem type vehicle and steering drive and torque limit controls therefor. 3,434,739, 03-25-69, Cl. 280-492.

Schott, Claus:*See*—
Weissermel, Klaus, Fischer, Edgar, and Schott, Claus 3,435,006.

Schrecongost, Ray B., to Hammond Corporation. Electrical musical instrument keying system. 3,435,123, 03-25-69, Cl. 084-001.26

Schreyer, Kenneth D.Desk construction. 3,434,768, 03-25-69, Cl. 312-194.

Schroedter, Willburt W., to Combustion Engineering, Inc.Multicircuit recirculation system for vapor generating power plant. 3,434,460, 03-25-69, Cl. 122-406.

Schroeppel, John H., and McGaughey, Raymond L., to General Time Corporation. Parallel gap welding. 3,435,184, 03-25-69, Cl. 219-119.

Schroth, Fridolin, to Les Forges de Zubrugge S.A.Bomb braking system. 3,434,417, 03-25-69, Cl. 102-004.

Schulze, Martin:*See*—
Luther, Guenter, Schulze, Martin, and Richter, Klaus 3,434,936.

Schutte, Reinhold:*See*—
Janssen, Hans-Joachim, and Schutte, Reinhold 3,434,723.

Schwall, Fritz:*See*—
Ibing, Guenther, Schirrmacher, Hermann, Vollmer, Herbert, Boemelburg, Josef, and Schwall, Fritz 3,434,807.

Schwartz, Arthur. Sinkable toy target. 3,434,716, 03-25-69, Cl. 273-086.

Schwartz, Arthur. Water gun target. 3,434,717, 03-25-69, Cl. 273-101.

Schwartz, Harold S., to Potter Instruments Company, Inc.Circuit for energizing an electromagnet. 3,435,299, 03-25-69, Cl. 317-148.5

Schwartz, Morris, and Bender, Werner K., to Kalart Company, Inc., The. Optical multiple track sound projector with stationary light source. 3,435,156, 03-25-69, Cl. 179-100.3

Schwenker, Eric H., to Whirlpool Corporation. Snap-on vacuum break device for refrigerators. 3,434,239, 03-25-69, Cl. 049-478.

Sciaky, David, to Welding Research, Inc.Electron beam welding method with feed back control. 3,435,187, 03-25-69, Cl. 219-121.

Science Union et Cie, Societe Francaise deRecherche Medicale:*See*—
Regnier, Gilbert, Canevari, Roger, Le Douarec, Jean-Claude, and Laubie, Michel, 3,435,036.

SCM Corporation, :*See*—
Kirkpatrick, Wylie C., 3,434,588.

Scott & Fetzer Company, :*See*—
Dolan, Francis D., and Burgoon, Jack L., 3,434,178.

Scott, Charles R., to Dow Chemical Company, The. Edible propylene glycol solid. 3,434,846, 03-25-69, Cl. 099-056.

Scovill Manufacturing Company:*See*—
Green, Derek B., 3,434,695.
Green, Derek Bernard, 3,434,633.

Seaborn, Paul E., and Thompson, Wendell S., to FMC Corporation. Assembly for sorting articles by weight. 3,434,595, 03-25-69, Cl. 209-121.

Searle , G. D., & Co.:*See*—
Klimstra, Paul D., 3,435,030.

Searle, G. D., & Co.:*See*—
Klimstra, Paul D., 3,435,055.

Sechrist, Edward L.Sound reproduction system. 3,434,564, 03-25-69, Cl. 181-031.

Seckinger, Albert E., to Harley-Davidson Motor Co.Battery fill apparatus. 3,434,887, 03-25-69, Cl. 136-162.

Securiton AG.:*See*—
Kuhn, Hans, 3,435,444.

Sedgwick, Grant O.:*See*—
Graver, Richard B., and Sedgwick, Grant O. 3,434,988.

Seelig, Fritz, to Farbwerke Franz Rasquin G.m.b.H.Method of producing lead chromates. 3,434,857, 03-25-69, Cl. 106-298.

Seidel, Harold, to Bell Telephone Laboratories, Incorporated. Vibration sensor. 3,435,260, 03-25-69, Cl. 310-008.3

Seifert, Arthur. Convertible rail-highway vehicle. 3,434,432, 03-25-69, Cl. 105-215.

Seifert, Friedrich:*See*—
Rombusch, Konrad, and Seifert, Friedrich 3,435,021.

Seifried, Walter:*See*—
Braunisch, Herbert, Lenhart, Helga, and Seifried, Walter 3,434,916.

Sellet, Lucien, to Diamond Shamrock Corporation. Derivatives of anionic linear copolymers. 3,435,009, 03-25-69, Cl. 260-078.5

Semikron Gesellschaft fur Gleichrichterbau undElektronik m.b.H.:*See*—
Lutz, Edgar, 3,435,305.

Sendelweck, Gene Karl, to Radio Corporation of America. Convergence apparatus for nullifying unwanted induced deflection currents. 3,435,276, 03-25-69, Cl. 315-013.

Sennewald, Kurt:*See*—
Baader, Herbert, Sennewald, Kurt, and Reis, Helmut 3,435,083.

Sennhenn, Emil:*See*—
Bachmann, Horst, Schneider, Hans-Dieter, and Sennhenn, Emil 3,435,136.

Sennhenn, Emil, to Fernseh G.m.b.H.Video signal level control circuit. 3,435,359, 03-25-69, Cl. 330-022.

Senour, Donald A., to BLH Electronics, Inc.Low frequency damping circuit for strain gage transducers. 3,434,343, 03-25-69, Cl. 073-141.

Serret, Robert G. C., to Societe anonyme dite Etablissements Bauche (Coffres-forts Bauche et Nicolle et Cie). Method and apparatus for making annular parts of U-section. 3,434,326, 03-25-69, Cl. 072-354.

Sewell, Gordon J.:*See*—
Gaynor, Joseph, Sewell, Gordon J., and Metlay, Max 3,434,835.

Sexton, Robert W., and Akers, George J., to American Air Filter Company, Inc.Gas-liquid contact apparatus for gas cleaners. 3,434,700, 03-25-69, Cl. 261-109.

Shaffer, Donald U., and Vertson, John A., to Shaffer Tool Works. Ram assembly. 3,434,729, 03-25-69, Cl. 277-181.

Shaffer Tool Works:*See*—
Shaffer, Donald U., and Vertson, John A., 3,434,729.

Shaffer, William B., to Elox Inc., Coolant circulation system for electrical discharge machining apparatus. 3,435,175, 03-25-69, Cl. 219-069.

Shaffer, William B., to Elox Inc., Servo control circuit for electrical discharge machining apparatus. 3,435,177, 03-25-69, Cl. 219-069.

Shanafelt, Leo A., and Banks, Abraham. Thin cathode ray tube with array of planar vertical deflection elements. 3,435,269, 03-25-69, Cl. 313-078.

Shapiro, Eugene:*See*—
Harris, Thomas J., Fleisher, Harold, and Shapiro, Eugene 3,434,778.

Sharples, Kenneth R., to DASA Corporation,. Apparatus for composing messages for telephonic transmission. 3,435,421, 03-25-69, Cl. 340-172.5

Shaw, Robert F., and Sheer, Charles, said Sheer assor. to said Shaw. Plasma arc scalpel. 3,434,476, 03-25-69, Cl. 128-303.1

Shaw, Robert F.:*See*—
Shaw, Robert F., and Sheer, Charles, 3,434,476.

Shaw, William, to Rolls-Royce Limited. Thrust reverser for a jet propulsion engine. 3,434,666, 03-25-69, Cl. 239-265.19

Shedd, Wilfred G., and Clarke, Beresford N.Hearth. 3,434,703, 03-25-69, Cl. 263-021.

Sheer, Charles:*See*—
Shaw, Robert F., and Sheer, Charles 3,434,476.

Shelhart, Robert Edward, to Dura Corporation. Safety backup system for power steering. 3,434,282, 03-25-69, Cl. 060-052.

Shell Oil Company:*See*—
Klootwijk, Arie, 3,435,052.
Lowe, Raymond E., 3,434,549.
Mason, Ronald F., 3,435,076.
Otteman, Lloyd G., and Geer, Ronald L., 3,434,296.
Prats, Michael, 3,434,757.
Sieders, Christiaan H., and Verbeek, Henri P. J., 3,434,617.
Ward, Loyal F., Jr., and Phillips, Donald D., 3,435,113.

Sheng, Ming Nan, and Zajacek, John G., to Atlantic Richfield Company. Molybdenum-containing catalyst and method for the preparation thereof. 3,434,975, 03-25-69, Cl. 252-431.

Shibasaki, Yasuichi:*See*—
Kiyohara, Shinzo, and Shibasaki, Yasuichi 3,434,905.

Shimoda, Keitaro:*See*—
Fujita, Yoshimasa, Nakagawa, Kazumi, Shimoda, Keitaro, and Miyashita, Koji 3,434,276.

Shore, William S., to Diamond Shamrock Corporation. Self supporting plastic container and method of making same. 3,434,652, 03-25-69, Cl. 229-052.

Shotton, James A., to Phillips Petroleum Company. Rodent repellent coating. 3,434,995, 03-25-69, Cl. 260-031.2

Showa Denko Kabushiki Kaisha:*See*—
Kitabatake, Michitoshi, Ito, Masatomo, Ikeda, Takashi, Aozuka, Noriyoshi, and Noguchi, Yoshitaka, 3,435,067.

Shukla, Narendra M., and Garg, Jag Mohan. Position detector. 3,434,581, 03-25-69, Cl. 197-187.

Shuler, James Edward. Magnetic operated locking device. 3,434,571, 03-25-69, Cl. 188-069.

Shulton, Inc.:*See*—
Schipper, Edgar, Oroshnik, William, and Cinnamon, Jerome M., 3,435,064.

Shunn, William F.:*See*—
Schneider, Alfred, Shunn, William F., and Roeske, Paul W. 3,434,462.

Sibley, Henry C.:*See*—
Haner, Robert B., Jr., Sibley, Henry C., Sutton, Paul C., and Pettitt, Walter G. 3,435,223.

Sieders, Christiaan H., and Verbeek, Henri P. J., to Shell Oil Company. Liquid storage tank. 3,434,617, 03-25-69, Cl. 220-009.

Siefert, Roland, and Charrier, Rolf, to Kienzle Uhrenfabriken G.m.b.H.Magnetic timing impulse switch. 3,435,313, 03-25-69, Cl. 318-138.

Siegele, Frederick Herman, Ondera, Emil Vincent, and Liberatore, Michael Angelo, to American Cyanamid Company. Selective flocculant in drilling muds. 3,434,970, 03-25-69, Cl. 252-008.5

Sieger, Maurice Paul, and Stiveson, Robert A., to United Engineering and Foundry Company. Apparatus for shearing plate. 3,434,378, 03-25-69, Cl. 083-556.

Siegler, Lear, Inc.:*See*—
Weber, Paul E., 3,434,785.

Siemens Aktiengesellschaft:*See*—
Volkmann, Werner, 3,435,254.
Warden, Hans E., 3,434,684.

Silverstein, Louis:*See*—
Dean, Jesse W., and Silverstein, Louis 3,434,233.

Simkins, Quinton W., to International Business Machines Corporation. Magnetic film storage systems providing cancellation of spurious noise signals. 3,435,429, 03-25-69, Cl. 340-174.

Simmons, Charles W., Jr.:*See*—
Herkness, Frank G., and Simmons, Charles W., Jr. 3,434,215.

Simon, James L.:*See*—
Gunter, Ernest M., and Simon, James L. 3,435,152.

Simon, Stanley A.:*See*—
Love, Gordon W. 3,434,237.

Sinclair Research, Inc., :*See*—
Bowman, Donald C., 3,434,219.

Singer-Cobble Limited:*See*—
Dawson, Peter H. T., 3,434,311.

Singer-General Precision, Inc.:*See*—
Davenport, Donald E., 3,434,197.

Siptrott, Fred M.Hydro-centrifugal reactor. 3,434,284, 03-25-69, Cl. 060-054.

Sitges Menendez, Francisco Javier, and Arregui Fernandez, Vicente, to Compagnie Royale Asturienne des Mines. Process for recovering zinc from ferrites. 3,434,798, 03-25-69, Cl. 023-125.

Sizelove, John R.:*See*—
Love, John A., III, and Sizelove, John R. 3,435,236.

Skilling, James K., to General Radio Company. Tunnel diode-transistor bistable amplifier circuit. 3,435,366, 03-25-69, Cl. 330-069.

Skinner, Harvey G., to Westmoreland Plastics Company,. Valve mechanisms. 3,434,694, 03-25-69, Cl. 251-215.

Skvor, Josef:*See*—
Bezouska, Vlastimil, Skvor, Josef, Pajisek, Frantisek, Zavazal, Zdenek, and Polorny, Oldrich 3,435,304.

Slagteriernes Forskningsinstitut:*See*—
Moller, Per Julius Leth, 3,434,223.

Slaughter, John:*See*—
Berman, Merril, and Slaughter, John 3,434,430.

Sletzinger, Meyer:*See*—
Glamkowski, Edward J., and Sletzinger, Meyer 3,435,075.

Sloan, Charles S.Indicator light and light housing for printed- circuit boards. 3,435,449, 03-25-69, Cl. 340-381.

Smico, Inc.:*See*—
Wyatt, Luther E., 3,434,555.

Smit, Hendrik, deceased (by Lambton Trust Co. Limited, executor). Oil extension of high solids latex. 3,434,994, 03-25-69, Cl. 260-029.7

Smith, A. O., Corporation:*See*—
Jackman, Robert M., 3,434,745.

Smith, A. O., Harvestore Products, Inc.:*See*—
Yung, William H., 3,434,605.

Smith, Clete M., to PPG Industries, Inc.Solvent cleaning process. 3,434,881, 03-25-69, Cl. 134-022.

Smith, Donald F., Furyear, David B., and Smith, Donald W., to Bendix Corporation, The. Control means for hydrostatic transmissions. 3,434,427, 03-25-69, Cl. 103-038.

Smith, Donald W.:*See*—
Smith, Donald F., Furyear, David B., and Smith, Donald W. 3,434,427.

Smith, Herman E., to Borg-Warner Corporation. Slip ring assembly and process of manufacturing same. 3,435,402, 03-25-69, Cl. 339-005.

Smith, James Gordon, to Ciba Corporation. Hypodermic needle unit with integral needle guard. 3,434,473, 03-25-69, Cl. 128-221.

Smith, Kai Robert, to AB Autokemi. Device for heating chemical reagents. 3,435,170, 03-25-69, Cl. 219-010.49

Smith Kline & French Laboratories:*See*—
Liston, Max D., 3,434,471.

Smith, Millard F., and Anusauckas, Anthony V., said Anusauckas assor. to said Smith. Fluid mixing, moving and atomizing methods and apparatus. 3,434,698, 03-25-69, Cl. 259-004.

Smith, Millard F.:*See*—
Smith, Millard F., and Anusauckas, Anthony V., 3,434,698.

Smith, T. J., & Nephew Limited:*See*—
Herniman, Peter Douglas, and Lickman, David Austin, 3,434,472.

Smith, Vernon C., and Hinton, Everett H., Jr., to Burlington Industries, Inc.Textile fabric coated with a high molecular weight methylpolysiloxane elastomer polymer. 3,434,875, 03-25-69, Cl. 117-139.4

Smith, Walter J., and Parker, Rienzi B., to Johnson Service Company,. Humidity sensing element. 3,434,348, 03-25-69, Cl. 073-337.

Smrekar, Larry F.Collet mechanism. 3,434,730, 03-25-69, Cl. 279-004.

Snelling, Charles D.Flexible fire resistant air duct. 3,434,502, 03-25-69, Cl. 138-129.

Sobotta, Reinhard, to Rollei-Werke Franke & Heidecke. Slide changer drive for projectors. 3,434,360, 03-25-69, Cl. 074-112.

Societa Italiana Impianti-Societa per Azioni:*See*—
Pere, Carlo, 3,434,705.

Societe a Responsabilite Limitee:*See*—
Doll, Edouard, 3,434,274.

Societe Anonyme de Telecommunications:*See*—
Bezerie, Jean Pierre, 3,435,235.

Societe Anonyme des Anciem Etablissements Albaret:*See*—
Paramythioti, Jean Michel, 3,434,557.

Societe Anonyme des Automobiles Simca:*See*—
Piret, Jean, 3,434,283.

Societe anonyme dite Etablisements Bauche(Coffres-forts Bauche et Nicolle et Cie):*See*—
Serret, Robert G. C., 3,434,326.

Societe Anonyme Francaise du Ferodo:*See*—
Lepelletier, Pierre Andre Georges, 3,434,572.

Societe Anonyme:Groupement Atomique AlsacienneAtlantiques (G.A.A.A.):*See*—
Pinault, Jacques Gilbert, Lallet, Jean Paul, and Carbonnel, Henri Amedee Basile, 3,435,145.

Societe d'Etudes Chimiques Pour l'Industrie etl'Agriculture:*See*—
Kircher, Rene, 3,434,880.

Societe de Tricolage Aube et Marne:*See*—
Bellot, Jacques, 3,434,309.

Societe des Accumulateurs Fixes et de Traction(Societe Anonyme):*See*—
Amiet, Bernard Paul Louis, 3,434,884.

Societe Industrielle de Transformation des Plastiques:*See*—
Leurent, Ghislain, 3,434,258.

Societe Industrielle de Transformation desPlastiques, Societe Anonyme:*See*—
Leurent, Ghislain, 3,434,748.

Societe Stein et Roubaix:*See*—
Pouderoux, Pierre, 3,434,924.

Society Thomson-Varian:*See—*
Beurtheret, Charles A., and Boissiere, Jacques G., 3,435,283.
Soderquist, Frederick J., Boyce, Harold D., and Kline, Paul E., to Dow Chemical Company, The. Self-regenerative dehydrogenation catalyst for electric resistance heated reactors. 3,435,086, 03-25-69, Cl. 260-669.
Softky, Sheldon D., to Stanford Research Institute. Gaseous glow discharge tube with cathode means surrounding anode means. 3,435,211, 03-25-69, Cl. 250-051.5
Sola Basic Industries, Inc.:*See—*
Sola, Joseph G., 3,435,330.
Sola, Joseph G., to Sola Basic Industries, Inc.Inductive voltage divider-autotransformer automatic voltage regulating system. 3,435,330, 03-25-69, Cl. 323-043.5
Soldato, Paul C.Means of automatically adjusting hydraulic pneumatic packings. 3,434,728, 03-25-69, Cl. 277-059.
Solenoid Devices, Inc.:*See—*
Straub, Joseph E., 3,435,391.
Solo, Alan J., to Creative Environments Inc.Collapsible workbench. 3,434,436, 03-25-69, Cl. 108-128.
Soma, Nobuo:*See—*
Sunagawa, Genshun, Soma, Nobuo, Watanabe, Taiichiro, and Sato, Yoshio 3,435,071.
Sonnleitner, David:*See—*
Hazdra, James J., Sonnleitner, David, and Wesolowski, Wyne E. 3,434,817.
Sony Corporation:*See—*
Kihara, Nobutoshi, 3,435,154.
Sorensen, Hans O., to Hewlett-Packard Company. Beam position detector. 3,435,232, 03-25-69, Cl. 250-203.
Southern Instruments Limited:*See—*
Wildy, Peter Charles, and Wilson, Donald, 3,434,358.
Southern Mill Equipment Corporation:*See—*
Forrest, Joseph B., and Hart, Gene E., 3,434,438.
Spannhake, Ernst W.:*See—*
Kordik, Kenneth S., Spannhake, Ernst W., and Zaumseil, Dean R. 3,435,315.
Speakman, Eugene R., to McDonnell Douglas Corporation,. Stress coining. 3,434,327, 03-25-69, Cl. 072-377.
Spectrospin A.G.:*See—*
Wegmann, Lienhard, and Gallo, Mario, 3,435,333.
Spence, Peter & Sons Limited:*See—*
De Rycke, Douglas August Charles, and Parker, Owen Gordon, 3,434,806.
Sperry Rand Corporation:*See—*
Bergman, Robert J., and Prohofsky, Le Roy A., 3,435,435.
Farrell, Edward A., 3,435,249.
Spiess, Hans, to Oerlikon Engineering Company. Electric machine having a liquid-cooled rotor. 3,435,261, 03-25-69, Cl. 310-054.
Spinelli, Frank P., and Wiktor, Dominik M., to Automatic Switch Company. Actuator having releasable latch. 3,435,390, 03-25-69, Cl. 335-161.
Spinuzzi, Sam J.:*See—*
Russell, Fred J., Armstrong, Richard L., and Spinuzzi, Sam J. 3,434,752.
Spitfire Tool & Machine Co., Inc.:*See—*
Day, Lawrence, Dobrick, Joseph, and Kay, Arthur, 3,434,243.
Spivack, John Denon:*See—*
Dexter, Martin, Spivack, John Denon, and Steinberg, David Herbert 3,435,065.
Spofa Sdruzeni Podniku Pro Zdravotnickou Vyrobu:*See—*
Paleckova, Frantisek, Hostalek, Zdenek, and Rehacek, Zdenek, 3,434,930.
Spollen, Francis J.:*See—*
Gretter, Ralph W., Spollen, Francis J., and Voigt, Gottfried O. 3,434,297.
Spry, James F., to Budd Company, The. Apparatus for dispensing and measuring strand material. 3,434,216, 03-25-69, Cl. 033-136.
Spurlock, Burwell:*See—*
Jacobson, Robert L., Kluksdahl, Harris E., and Spurlock, Burwell 3,434,960.
Squibb, E. R., & Sons, Inc.,:*See—*
Machleidt, Hans, and Hartmann, Valentin, 3,435,063.
Stadler, Bruno:*See—*
Merhof, Wilfried, and Stadler, Bruno 3,435,327.
Stahler, Alfred F., to Ampex Corporation. Fluid lubricated magnetic tape transducer. 3,435,441, 03-25-69, Cl. 340-174.1
Stalberg, Nils G., to L.K.B.-Produkter Aktiebolag. Radiation absorption tester using RC network to simulate absorption function. 3,435,239, 03-25-69, Cl. 250-218.
Standard Oil Company:*See—*
Peri, John B., 3,434,912.
Standard Oil Company (Indiana):*See—*
Medhurst, Ralph C., 3,435,103.
Standard Oil Company, (Ohio):*See—*
Standish, Norman W., and Nixon, William C., Jr., 3,434,983.
Standard Oil Company, The (Ohio):*See—*
Grasselli, Robert K., and Callahan, James L., 3,435,061.
Standish, Norman W., and Nixon, William C., Jr., to Standard Oil Company, (Ohio). Stain-resistant composition comprising 2,2'- (1,2-cyclobutylene) bis 4,6-diamine-S-triazine melamin-aldehyde reaction product and a filler. 3,434,983, 03-25-69, Cl. 260-017.3
Stanford Research Institute:*See—*
Hansen, Wilbur W., and Myers, Robert E., 3,434,863.
Heckler, Clarence H., and Baer, James A., 3,435,431.
Peschl, John, and Larson, Robert E., 3,435,194.
Softky, Sheldon D., 3,435,211.
Stanway, Edward, to Leemetals Limited. Winch dyeing machine having a variable contoured winch drum. 3,434,642, 03-25-69, Cl. 226-191.
Stapling Machines Co., :*See—*
Ellner, Edwin, 3,435,251.
Starer, Ira, and Lindaw, Arthur Clarence, to American Cyanamid Company. Curing system for halogen containing acrylic elastomers. 3,435,010, 03-25-69, Cl. 260-079.5
Starkovsky, Nicolas A., and Langer, Horst G., to Dow Chemical Company, The. Mercury derivative of glutarimide-β-acetic acid. 3,435,007, 03-25-69, Cl. 260-078.
Starkovsky, Nicolas A.:*See—*
Langer, Horst G., and Starkovsky, Nicolas A. 3,435,037.
Stastny, Fritz, Gaeth, Rudolf, Schmitt, Bernhard, and Haardt, Udo, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of insulating materials having low specific gravity. 3,434,980, 03-25-69, Cl. 260-002.5
Stauffer Chemical Company:*See—*
Brokke, Mervin E., Lukes, George E., and Arneklev, Duane R., 3,435,043.
Stearns, Dick E.:*See—*
Lee, Robert H., and Stearns, Dick E. 3,435,320.
Stec, Frederick J., to Continental Can Company, Inc.Mesh reinforced closure for full opening can. 3,434,651, 03-25-69, Cl. 229-043.
Stein, Nathan, to Mobil Oil Corporation. Sand control method using a particulate pack with external and internal particle size distribution relationships. 3,434,540, 03-25-69, Cl. 166-004.
Steinberg, David Herbert:*See—*
Dexter, Martin, Spivack, John Denon, and Steinberg, David Herbert 3,435,065.
Steintveit, Georg, to Det Norske Zinkkompani A/S. Process for the separation of iron from metal sulphate solutions and a hydrometallurgic process for the production of zinc. 3,434,947, 03-25-69, Cl. 204-119.
Stephen, Arulanandasami Joseph, and Arulanandasami, Sinnappa Adaikalam. Electric shock control device. 3,435,292, 03-25-69, Cl. 317-018.
Sterman, Samuel, and Marsden, James G., to Union Carbide Corporation. Glass fiber reinforced thermoplastic polyarylene polyether resin article and process for making same. 3,434,914, 03-25-69, Cl. 161-093.
Stetson, Karl A., and Elion, Herbert A., to GCA Corporation. Holographic method and apparatus for acoustical field recording. 3,434,339, 03-25-69, Cl. 073-067.6
Stewart-Warner Corporation:*See—*
Josephsen, Gene H., and Weaver, Frank C., 3,435,339.
Stewart-Warner Corporation, :*See—*
Vagi, Julius J., 3,435,183.
Stewart, William R., to Bear Archery Company. Laminated archery bow. 3,434,465, 03-25-69, Cl. 124-023.
Stidhams, Frederick J.:*See—*
Del Vecchio, Michael, and Stidhams, Frederick J. 3,434,167.
Still, James M., Jr.:*See—*
Valtri, Frank J., and Still, James M., Jr. 3,434,589.
Stiveson, Robert A.:*See—*
Sieger, Maurice Paul, and Stiveson, Robert A. 3,434,378.
Stoelting, Herman O.:*See—*
Sankey, Edward L., and Stoelting, Herman O. 3,435,397.
Stokes, Rembert R.:*See—*
Busala, Alessandro, Stokes, Rembert R., and Strommen, Lawrence A. 3,435,146.
Stone, Herbert, Tool post and tool holder. 3,434,377, 03-25-69, Cl. 082-037.
Stoner, Arthur M., deceased (by Connecticut Bank and Trust Company, executor), Schneider, Richard C., and Paquin, Roger L., to Glacier Ware, Inc.Bottle chilling device. 3,434,302, 03-25-69, Cl. 062-457.
Stoudenheimer, Richard G., and Thoman, Daniel L., to Radio Corporation of America. Photosensitive cathodes. 3,434,876, 03-25-69, Cl. 117-211.
Stow-Easy Display & Mfg. Co.:*See—*
Salet, Thomas E., 3,434,769.
Stoyanoff, Louis J., to Hoffman Information Systems, Inc.Film strip and sound track carrier. 3,434,784, 03-25-69, Cl. 353-019.
Strasberg, Murray, and Fitzpatrick, Hugh M.Method and apparatus for observing mechanical oscillations. 3,434,340, 03-25-69, Cl. 073-071.4
Straub, Joseph E., to Solenoid Devices, Inc.Electromagnetic linear-to-rotary motion stepping mechanism. 3,435,391, 03-25-69, Cl. 335-228.
Strauss, Richard:*See—*
Bottomley, James, and Strauss, Richard 3,435,097.
Strickland, James C.Snore inhibiting device. 3,434,470, 03-25-69, Cl. 128-136.
Strommen, Lawrence A.:*See—*
Busala, Alessandro, Stokes, Rembert R., and Strommen, Lawrence A. 3,435,146.
Stuart, Bernice E.:*See—*
Johnson, Beth E., and Stuart, Bernice E. 3,434,911
Stuart, Fred E., Sr.Agitator structure for filter bed. 3,434,600, 03-25-69, Cl. 210-272.
Stuart, Fred E.Method and apparatus for water treatment. 3,434,699, 03-25-69, Cl. 259-004.
Stuart, Robert J., to Dex-A-Grind, Inc.Apparatus and method for grinding inserts. 3,434,245, 03-25-69, Cl. 051-124.
Sturtevant Mill Company:*See—*
Sullivan, Daniel J., 3,434,593.
Sullhofer, Heinz. Method of and apparatus for making covered plates of polyurethane in a continuous process. 3,435,102, 03-25-69, Cl. 264-047.
Sullivan, Daniel J., to Sturtevant Mill Company. Methods and apparatus for air classifying and screening of finely divided material. 3,434,593, 03-25-69, Cl. 209-031.
Sumitomo Chemical Company, Ltd.:*See—*
Terao, Shinichiro, Sagawa, Seizi, and Yabuta, Seizo, 3,435,074.
Sumitomo Electric Industries, Ltd.:*See—*
Suzuki, Takashi, and Watanabe, Takahide, 3,435,302.
Summerhayes Holdings Limited, :*See—*
Macdonald, Warren E., 3,434,908.
Summers, Ronald John, to Du Pont de Nemours, E. I., and Company. Process for producing nonwoven fabrics. 3,434,188, 03-25-69, Cl. 028-072.2
Sun Oil Company:*See—*
Hall, Lawrence J., Mayer, Robert, and Young, Einar T., 3,435,238.
Kirk, Merritt C., Jr., 3,434,959.
Weiss, Eric A., 3,435,451.
Sunagawa, Genshun, Soma, Nobuo, Watanabe, Taiichiro, and Sato, Yoshio, to Sankyo Company, Limited. Process for preparing troponeimines. 3,435,071, 03-25-69, Cl. 260-566.
Suoka, Shine, and Oyama, Tomio, to Matsushita Electric Industrial Co., Ltd.Magnetic recording and reproducing device for television signals using pulse modulation. 3,435,135, 03-25-69, Cl. 178-006.6
Surland, George J., and Magee, John S., Jr., to Grace, W. R., & Co.Preparation of silica-alumina catalyst. 3,434,976, 03-25-69, Cl. 252-453.

Suter, Hans, and Zutter, Hans, to Eprova Limited. Radiopaque esters of triiodophenoxyalkanoic acids. 3,435,066, 03-25-69, Cl. 260-473.
Sutton, Paul C.:*See—*
Haner, Robert B., Jr., Sibley, Henry C., Sutton, Paul C., and Pettitt, Walter G. 3,435,223.
Suzuki, Takashi, and Watanabe, Takahide, to Sumitomo Electric Industries, Ltd.Constant current semiconductor device. 3,435,302, 03-25-69, Cl. 317-234.
Swanson, Donald H., to United States of America, Atomic Energy Commission. Separation of actinium and thorium from uranium and its daughters. 3,434,809, 03-25-69, Cl. 023-338.
Swanson, Richard C.Portable fluorescent lamp. 3,435,206, 03-25-69, Cl. 240-011.4
Swift, Paul C., to Yardney Enterprises, Inc.Orthopedic appliance. 3,434,469, 03-25-69, Cl. 128-078.
Swift, Willard Everett, to Foxboro Company, The. Barometric compensation for gauging apparatus. 3,435,221, 03-25-69, Cl. 250-083.3
Swinney, Alvis C.Tapered bearing swivel. 3,434,742, 03-25-69, Cl. 285-016.
Swiss Aluminium Ltd.:*See—*
Schmitt, Johannes, and Schaper, Hans, 3,434,945.
Switchcraft Inc.:*See—*
Bailey, James R., and Lutzenberger, Kurt, 3,435,163.
Sworski, Thomas J.:*See—*
Jones, Francis T., and Sworski, Thomas J. 3,434,949.
Sylvania Electric Products, Inc.:*See—*
Allen, James S., and Hirshfield, Edward, 3,435,346.
Blair, David J., and Herold, Carl D., Jr., 3,435,344.
Haselton, Ernest F., Jr., 3,435,417.
Hileman, Ronald E., and Oxley, Vincent C., 3,435,141.
Powers, Martin V., 3,435,350.
Syntex Corporation:*See—*
Edwards, John A., and Knox, Lawrence H., 3,435,056.
Zderic, John A., 3,435,057.
Szajna, John L., to Continental Can Company, Inc.Neck reaming and finishing tools. 3,434,202, 03-25-69, Cl. 029-566.
Szeremany, Julius, to Daniels Plating Barrel & Supply Company. Barrel plating machine. 3,434,954, 03-25-69, Cl. 204-214.
Szeremy, Norman, to General Electric Company, Contrast control circuit for television receiver. 3,435,139, 03-25-69, Cl. 178-007.3
Tabuchi, Norio:*See—*
Fukuyo, Hitohiro, and Tabuchi, Norio 3,435,368.
Taft, William E.:*See—*
Ham, Donald M., and Taft, William E. 3,434,659.
Talash, Alvin W.:*See—*
Cook, Evin L., and Talash, Alvin W. 3,434,541.
Talbot, Frank D. F., to Esso Research and Engineering Company. Controlling the proportioning of blended fluids. 3,434,488, 03-25-69, Cl. 137-090.
Taniguchi, Nuonori, and Wachi, Akira, to Kabushiki Kaisha Aida Tekkosho. Transfer press system. 3,434,328, 03-25-69, Cl. 072-405.
Tankersley, James A., to Bendix Corporation, The. Laminated coupling. 3,434,899, 03-25-69, Cl. 156-172.
Tantlinger, Keith W., Chieger, George, and Hulverson, Adrian F., to Fruehauf Corporation. Door lock. 3,434,751, 03-25-69, Cl. 292-218.
Tarrson, Sidney A.Take-apart simulated facial toy. 3,434,232, 03-25-69, Cl. 046-011.
Tasset, Michel:*See—*
Doquire, Gilbert, and Tasset, Michel 3,434,865.
Taub, David:*See—*
Wendler, Norman L., Taub, David, and Kuo, Chan Hwa 3,435,044.
Taylor, Robert A., and Krikau, Frederick G., said Taylor assor. to Du Pont de Nemours, E. I., Process for treatment of hydrochloric acid waste pickle liquor. 3,434,797, 03-25-69, Cl. 023-090.
Tebbutt, Charles Norman, to Metal Box Company Limited, The. Containers end closure structure. 3,434,627, 03-25-69, Cl. 220-067.
Technical Processing, Inc.:*See—*
Aron, Erwin, 3,434,991.
Teerling, Martinus, and Ruppert, Horst, to Maschinenfabrik Moenus A.G.Shoemaking machine. 3,434,169, 03-25-69, Cl. 012-012.
Teleflex Incorporated:*See—*
Conrad, Winthrop B., 3,434,501.
Teleflex, Incorporated:*See—*
Conrad, Winthrop B., 3,435,107.
Telefonaktiebolaget LM Ericsson:*See—*
Bengtsson, Hans Georg, 3,435,430.
Telefunken Patentverwertungsgesellschaft m.b.H.:*See—*
Mallebrein, Rainer, 3,435,281.
Weber, Herbert, Lange, Gunter, Muller, Hubert, Von Fellner, Michael, and Heer, Roland, 3,435,376.
Teranishi, Hiroshi:*See—*
Samejima, Horotoshi, Teranishi, Hiroshi, and Deguchi, Takashi 3,435,026.
Terao, Shinichiro, Sagawa, Seizi, and Yabuta, Seizo, to Sumitomo Chemical Company, Ltd.Process for producing nitrodiarylamines. 3,435,074, 03-25-69, Cl. 260-576.
Testone, Anthony Q., to Testone Electronics Company. Printing press excess powder collector. 3,434,416, 03-25-69, Cl. 101-416.
Testone Electronics Company:*See—*
Testone, Anthony Q., 3,434,416.
Texas Instruments Incorporated:*See—*
Clendinning, William R., and Eden, Dayton D., 3,435,445.
Texas Instruments, Incorporated:*See—*
Bodge, Clifford A., 3,435,293.
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S., 3,434,828.
Epstein, Henry David, 3,435,401.
Martin, David D., 3,435,306.
Russell, Robert J., 3,434,200.
Walkow, Arnold M., 3,435,181.
Teyssie, Philippe:*See—*
Gregor, Harry P., Teyssie, Philippe, and Hoeschele, Guenther K. 3,434,979.
Th. Kieserling & Albrecht:*See—*
Goeke, Alfons, 3,434,337.
Theuer, William S.:*See—*
Houlihan, William J., Manning, Robert E., and Theuer, William S 3,435,034.
Thieman, Graham F.:*See—*
Arthur, James C., and Thieman, Graham F. 3,434,199.
Thierry, Robert J., to United States of America, Army. Multiring seal for obturating the breech of large caliber guns. 3,434,381, 03-25-69, Cl. 089-026.
Thiokol Chemical Corporation:*See—*
Caveny, Leonard H., 3,434,287.
Friedman, Isidore H., Jr., 3,434,291.
Upper, Charles E., 3,434,494.
Thiry, Gerald J.Door and trunk lock cover. 3,434,318, 03-25-69, Cl. 070-455.
Thoman, Daniel L.:*See—*
Stoudenheimer, Richard G., and Thoman, Daniel L. 3,434,876.
Thomas & Betts Corporation:*See—*
Churla, John J., 3,435,403.
Thomas, Donald E.:*See—*
Colbow, Konrad, Garrett, Charles G. B., and Thomas, Donald E. 3,435,213.
Thomas, Edward R., Jr., to Northwestern University. Surgical instrument. 3,434,477, 03-25-69, Cl. 128-303.1
Thomas, Robert M.:*See—*
Kuntz, Irving, and Thomas, Robert M. 3,435,015.
Thomas, William J., and Botha, Louis B., to Barlow, Thos., and Sons, Limited. Down-the-hole rock drill with flushing fluid bypass control. 3,434,548, 03-25-69, Cl. 173-018.
Thompson, Donald:*See—*
Kenyon, Robert L., and Thompson, Donald 3,434,173.
Thompson, Raymond, and Harris, James D., to United States Borax & Chemical Corporation. Vulcanization of rubber by use of amine borate activators. 3,434,999, 03-25-69, Cl. 260-041.5
Thompson, Wendell S.:*See—*
Seaborn, Paul E., and Thompson, Wendell S. 3,434,595.
Thorp, William, to Ferranti, Limited. Manufacture of thermo-electric generators. 3,434,203, 03-25-69, Cl. 029-573.
Till, Derek Elliott, Levins, Philip Leo, and Koch, David Hamilton, to Liggett & Myers Tobacco Company,. Permanganate tobacco smoke filter. 3,434,479, 03-25-69, Cl. 131-010.9
Tillman, Cassius L., III. Bifaced wedged gate valve. 3,434,692, 03-25-69, Cl. 251-202.
Timmons, Archie Durwood, to Tri-State Oil Tool Industries, Inc.Apparatus for protecting well pipe. 3,434,191, 03-25-69, Cl. 029-200.
Tinnerman Products, Inc.:*See—*
Flora, Laurence H., 3,434,521.
T.N.E., Incorporated:*See—*
Aselman, Edward C., Jr., 3,435,289.
Toda, Mitsuhiro:*See—*
Matsumura, Yoichi, Ogawa, Mitsuo, and Toda, Mitsuhiro 3,434,712.
Toischer, Karl Engelbert Ludwig, and Bergmann, Horst Sigurd Max, to Messner, Josef, G.m.b.H & Co. KG. Apparatus for the staged nitration of aromatic hydrocarbons. 3,434,802, 03-25-69, Cl. 023-260.
Toko Kabushiki Kaisha:*See—*
Nakamura, Katsuro, 3,435,439.
Toomey, John A., and Toomey, Lawrence T.Clerical garment with military collar. 3,434,160, 03-25-69, Cl. 002-129.
Toomey, John W.:*See—*
Toomey, William H., and Toomey, John W. 3,434,208.
Toomey, Lawrence T.:*See—*
Toomey, John A., and Toomey, Lawrence T. 3,434,160.
Toomey, William H., and Toomey, John W.Circuit assembly process. 3,434,208, 03-25-69, Cl. 029-626.
Topham, Elgin H.Portable windbreaker. 3,434,483, 03-25-69, Cl. 135-005.
Torrington Company, The:*See—*
Cowles, John H., and Rollins, James W., 3,434,322.
Torrington Manufacturing Company, The:*See—*
Delaney, Vincent N., 3,434,264.
Tournois, Pierre, to CSF-Compagnie Generale de Telegraphie Sans Fil. Dispersive acoustic line using two-layer fluid media. 3,435,381, 03-25-69, Cl. 333-030.
Tovey, Henry, to Cotton Producers Institute. Delayed cure of cellulosic articles. 3,434,794, 03-25-69, Cl. 008-116.3
Tovey, Henry, Prahl, Helmut F., and Hart, Frederick M., to Cotton Producers Institute,. Treating cellulosic textiles. 3,434,870, 03-25-69, Cl. 117-106.
Tovrog, Theodore, and Krawetz, Arthur A., to Phoenix Chemical Laboratory, Inc.Viscometer. 3,434,338, 03-25-69, Cl. 073-055.
Townsend, Robert D., Jr., to Mobil Oil Corporation. Method and apparatus for lightening the load on a subsea conductor pipe. 3,434,550, 03-25-69, Cl. 175-005.
Toyo Koatou Industries, Incorporated:*See—*
Watanabe, Hiroshi, Ozaki, Masami, and Hara, Junji, 3,435,098.
Tracey, George B., to Journapak Corporation, The,. Journal lubricator for railway cars. 3,434,767, 03-25-69, Cl. 308-243.
Trampier, Charles Raymond, Jr.:*See—*
Heywood, Kenneth W., and Trampier, Charles Raymond, Jr. 3,434,853.
Travers, Alphonso M.Golf putting target. 3,434,721, 03-25-69, Cl. 273-180.
Tremco Manufacturing Company, The:*See—*
Hann, Gordon E., 3,434,903.
Trepka, William J.:*See—*
Uraneck, Carl A., and Trepka, William J. 3,435,011.
Tri-State Oil Tool Industries, Inc.:*See—*
Timmons, Archie Durwood, 3,434,191.
Troncale, Joseph D., Sr.Electrically operated fluid control valve. 3,434,690, 03-25-69, Cl. 251-030.
TRW, Inc.:*See—*
Dardick, David, 3,434,380.
Hunley, Homer E., 3,435,322.
Inouye, George T., and Judge, Darrell L., 3,435,337.
Rubin, Charles P., 3,434,254.
TRW Inc.:*See—*
Bernstein, William, and Wax, Robert L., 3,435,214.
Hansen, David O., Frichtenicht, Joseph F., and Roy, Neal L., 3,435,208.
Tsou, Ivan H., to Ford Motor Company. Electrocoating bath control. 3,434,952, 03-25-69, Cl. 204-181.
Tsunoda, Fukuyuki. Irons including manually operated spray means. 3,434,228, 03-25-69, Cl. 038-078.

Tu, Ju C.:*See*—
Fuller, Richard H., Tu, Ju C., and Worthy, Robert M. 3,435,423.
Tubbs, Howard A.Well system coupler. 3,434,536, 03-25-69, Cl. 166-088.
Tweddell, James C.:*See*—
Gordon, Robert G., and Tweddell, James C. 3,434,235.
Uerlichs, Johannes, to Rappold & Co. G.m.b.H.Slide valve plate with a relief device particularly for slide valves of large size. 3,434,499, 03-25-69, Cl. 137-630.12
Uhl, Siegfried:*See*—
Kirsch, Karl, Uhl, Siegfried, and Schiele, August 3,434,382.
Ulrich, Hans:*See*—
Huckstadt, Harald, Saleck, Wilhelm, Ulrich, Hans, Randolph, August, and Grabhofer, Herbert 3,434,842.
Umantsev, Victor Sergeevich, to Zavod Elektroizmeritelnykh Priborov. Method of manufacturing a laminated foil resistor. 3,434,206, 03-25-69, Cl. 029-610.
Unimaco, Inc.,:*See*—
Motis, Gilbert M., 3,434,518.
Union Carbide Corporation:*See*—
Hice, Jackson O., 3,434,301.
Jones, Francis T., and Sworski, Thomas J., 3,434,949.
Sterman, Samuel, and Marsden, James G., 3,434,914.
Uniroyal, Inc.:*See*—
Ferguson, Leslie A., and Williams, George M., 3,434,860.
Rinehart, Robert E., 3,435,016.
Rinehart, Rogert E., 3,435,058.
Unitcast Corporation:*See*—
Floehr, Walter L., 3,434,433.
United Aircraft Corporation:*See*—
Aas, Herbert G., and Danielson, George E., Jr., 3,435,372.
Best, Stanley G., 3,434,407.
Lemkey, Franklin D., 3,434,827.
Peters, George T., and Oickle, Charles, Jr., 3,434,569.
Quenneville, Raymond N., 3,434,365.
United Engineering and Foundry Company:*See*—
McGeeney, William Stone, 3,434,528.
Sieger, Maurice Paul, and Stiveson, Robert A., 3,434,378.
United Industrial Syndicate, Inc.:*See*—
Bosworth, Delbert B., Christy, Arthur S., Jr., and La Rochelle, Fernand L., 3,434,609.
United Kingdom Atomic Energy Authority:*See*—
Green, Derek, 3,434,320.
Hooton, Ivor Noel, 3,435,197.
Ormerod, Leslie Roy, 3,434,192.
Ormerod, Leslie Roy, 3,434,323.
United States Borax & Chemical Corporation:*See*—
Colombo, Francesco, and Babcock, Edward V., 3,434,796.
Thompson, Raymond, and Harris, James D., 3,434,999.
United States of America
Air Force:*See*—
Anderson, Donald R., and Ballinger, Edwin R., 3,434,467.
Carpenter, James E., and Pleuthner, Richard L., 3,434,663.
Love, John A., III, and Sizelove, John R., 3,435,236.
Army:*See*—
Agrios, John P., and Freibergs, Elmer, 3,435,382.
Berlin, A Samuel, Little, Vincent C., Leadore, Toney E., and Reid, Edwin J., Jr., 3,434,421.
Brandmayr, Ronald J., 3,435,104.
Brothers, Jack, 3,434,423.
Brueckmann, Helmut, 3,435,457.
Ciccone, Thomas Q., and Kowalick, James F., 3,434,420.
Connolly, Patrick J., 3,434,941.
Goodwin, Richard R., 3,434,429.
Lohninger, Wilhelm J., 3,434,424.
Mette, Herbert L., 3,435,259.
Mette, Herbert L., 3,435,379.
Miller, Harold D., 3,435,274.
Pascoe, Kenneth H., and Salter, Calvin R., 3,435,349.
Picard, Jean P., and Voigt, H. William, Jr., 3,434,895.
Reggia, Frank, 3,435,250.
Reggia, Frank, 3,435,383.
Rocha, John G., 3,434,383.
Thierry, Robert J., 3,434,381.
Vogt, Gottfried F., 3,435,454.
Atomic Energy Commission:*See*—
Kevey, Andrew, 3,435,219.
Swanson, Donald H., 3,434,809.
Health, Education and Welfare:*See*—
Wolfe, Robert W., 3,434,162.
Interior:*See*—
Huff, John B., 3,434,850.
Kiewit, Jack L., 3,434,401.
Ward, Frederick N., 3,434,800.
National Aeronautics and Space Administration, Administrator, with respect to an invention of:
Blair, George Richard, 3,434,855, 03-25-69, Cl. 106-084.
Mildice, James W., 3,435,246, 03-25-69, Cl. 250-237.
National Aeronautics and Space Administration:*See*—
Mandelkorn, Joseph, and Broder, Jacob, 3,434,885.
National Science Foundation:*See*—
Langer, Gerhard, 3,434,335.
Navy:*See*—
Adicoff, Arnold, and Yukelson, Arnold A., 3,434,990.
Adolph, Horst G., and Kamlet, Mortimer J., 3,435,079.
Allen, Walter E., 3,435,328.
Altshuler, Thomas L., Harr, Thomas E., and Ledges, George E., 3,435,137.
Bockelmann, Victor G., 3,434,681.
Boyer, Ralph E., 3,434,687.
Bringman, Joseph M., Lawther, James M., and Kendig, Paul M., 3,435,409.
Estabrook, Norman B., 3,434,443.
Flynn, Paul D., Roll, Arthur A., and Gilbert, Joseph T., 3,434,786.
Hamlin, Halley H., 3,434,397.
Hart, William E., Allen, William A., and Cunningham, Leslie L., 3,434,211.
Hinton, George F., 3,435,338.
Howard, Dean D., 3,435,453.
Hueber, Werner G., and Hecker, Klaus J., 3,435,140.
Kilpatrick, David D., 3,435,452.
Lamasney, Michael V., 3,435,357.
Miller, Leo C., 3,435,352.
Moore, Roy C., 3,435,408.
Rabenhorst, David W., 3,434,255.
Rosfelder, Andre M., 3,434,551.
Wieder, Harry H., 3,435,323.
United States Rubber Company:*See*—
Limbert, Frank J., and Paddock, Charles F., 3,435,096.
Universal Oil Products Company:*See*—
Broughton, Donald B., 3,435,087.
Unter, Robert K.:*See*—
Beckman, Melvin H., Unter, Robert K., and Wald, Samuel K. 3,434,263.
Upjohn Company, The:*See*—
Beal, Philip F., III, Lincoln, Frank H., Jr., and Pike, John E., 3,435,053.
Birkenmeyer, Robert D., 3,435,025.
Glenn, Eldridge Myles, 3,435,111.
Jackson, Robert W., and Pike, John E., 3,435,029.
Upper, Charles E., to Thiokol Chemical Corporation. In-line check valve. 3,434,494, 03-25-69, Cl. 137-467.
Uraneck, Carl A., and Trepka, William J., to Phillips Petroleum Company. Modified polymers of conjugated dienes. 3,435,011, 03-25-69, Cl. 260-080.7
Urian, Charles A.:*See*—
Rueth, Joseph F., and Urian, Charles A. 3,434,300.
Utah Research and Development Co., Inc.:*See*—
Clark, William H., and Hall, Stanley A., 3,434,187.
Vagi, Julius J., to Stewart-Warner Corporation,. Method and apparatus for welding an aluminum fin to a ferrous metal. 3,435,183, 03-25-69, Cl. 219-107.
Valdre, Ugo, Device for heating, rotating and tilting a specimen in an electron microscope. 3,435,210, 03-25-69, Cl. 250-049.5
Valtri, Frank J., and Still, James M., Jr.Expandable container. 3,434,589, 03-25-69, Cl. 206-046.
Van Der Voo, Bastiaan, to North American Philips Company, Inc.Pole pieces for magnetic heads with accurately determined gap heights. 3,435,155, 03-25-69, Cl. 179-100.2
Van Dessel, Lodewijk August:*See*—
De Keyser, Lodewijk Felix, Conix, Andre Jan, and Van Dessel, Lodewijk August 3,434,840.
Van Doorn, Willem, to North American Philips Company, Inc.Cable termination amplifier having a negative feedback circuit providing high frequency cable termination impedance. 3,435,361, 03-25-69, Cl. 330-028.
Van Sciver, Herbert D., to Budd Company, The. Method and apparatus for producing metal screen sheet. 3,434,938, 03-25-69, Cl. 204-011.
Vandenbussche, Gerard, to Commissariat a l'Energie Atomique. Sonic analyzer. 3,434,334, 03-25-69, Cl. 073-024.
Vandewell Products Limited:*See*—
Waterman, William John, 3,434,942.
Vanier, Jacques P., to Hewlett-Packard Company,. Tuning of atomic masers by magnetic quenching using transverse magnetic fields. 3,435,369, 03-25-69, Cl. 331-094.
Vann, Clifton B., III, to West Virginia Pulp and Paper Company. Pallet loading machine for sequentially delivered articles. 3,434,602, 03-25-69, Cl. 214-001.
Vare Corporation:*See*—
Bedford, William A., Jr., 3,434,520.
Varian Associates:*See*—
Helmer, John C., 3,435,334.
Varnerin, Lawrence J., Jr.:*See*—
Denton, Richard T., and Varnerin, Lawrence J., Jr. 3,435,234.
Vedova, Ralph:*See*—
Leibach, Heinrich, and Vedova, Ralph 3,434,289.
Velsicol Chemical Corporation:*See*—
Wilks, Louis P., and Richter, Sidney B., 3,435,081.
Verbeek, Henri P. J.:*See*—
Sieders, Christiaan H., and Verbeek, Henri P. J. 3,434,617.
Vereinigte Deutsche Metallwerke AG:*See*—
Wenderott, Berthold, 3,434,891.
Vertson, John A.:*See*—
Shaffer, Donald U., and Vertson, John A. 3,434,729.
Vicker Aircraft Holdings Limited:*See*—
Benzies, George Y., 3,434,181.
Vickers Limited:*See*—
Keane, Francis Xavier, 3,434,165.
Vignati, Carlo:*See*—
Podesta, Armando, Vignati, Carlo, and Bereziat, Andre 3,434,325.
Vodicka, Vincent, to General Electric Company. Electroluminescent display device with indicia electrodes and circuit leads of metal foil. 3,435,270, 03-25-69, Cl. 313-108.
Vodoklys, Frank M., to Westinghouse Electric Corporation. Discharge lamp incorporating phosphor which is normally sensitive to lehring and method. 3,435,271, 03-25-69, Cl. 313-109.
Voegtly, Richard O.:*See*—
Huff, George F., and Voegtly, Richard O. 3,434,458.
Voge, Andrew:*See*—
Brastow, Edgar R., Voge, Andrew, and Schaberg, Richard R. 3,434,353.
Voge, Andrew, to Clary Corporation. Spring driven gyroscope. 3,434,354, 03-25-69, Cl. 074-005.12
Vogel, Carl W.:*See*—
Hartz, Joseph M., Miknaitis, Sigitas, and Vogel, Carl W. 3,435,160.
Vogel, Reinhard Ernst, of 1/2 to Marxen, Friedrich. Shielding composition of cementitious material mixed with a metallic saturated fatty acid compound. 3,434,978, 03-25-69, Cl. 252-478.
Vogt, Gottfried F., to United States of America, Army. Electronic servo system. 3,435,454, 03-25-69, Cl. 343-100.
Voigt, Gottfried O.:*See*—
Gretter, Ralph W., Spollen, Francis J., and Voigt, Gottfried O. 3,434,297.

Voigt, H. William, Jr.:*See*—
Picard, Jean P., and Voigt, H. William, Jr. 3,434,895.
Volkmann, Werner, to Siemens Aktiengesellschaft. System for controlling thyristors by periodically recurring firing pulses. 3,435,254, 03-25-69, Cl. 307-252.
Vollmer, Herbert:*See*—
Ibing, Guenther, Schirrmacher, Hermann, Vollmer, Herbert, Boemelburg, Josef, and Schwall, Fritz 3,434,807.
Voltz, Jacques, to Geigy, J. R., A.G.Pyrazolone monoazo dyes containing indole or carbazole groups. 3,435,022, 03-25-69, Cl. 260-147.
Von Fellner, Michael:*See*—
Weber, Herbert, Lange, Gunter, Muller, Hubert, Von Fellner, Michael, and Heer, Roland 3,435,376.
Von Portatius, Hans:*See*—
Henckel, Ekkehard, and Von Portatius, Hans 3,435,077.
Voss, Wendell G., to Aeronca, Inc.Method and material for making joints between refractory panels. 3,434,854, 03-25-69, Cl. 106-057.
Vyzkumny Ustav Bavlnarsky:*See*—
Doudlebsky, Ctibor, Fajt, Ludvik, Bucil, Frantisek, and Kabele, Stanislav, 3,434,184.
Wachi, Akira:*See*—
Taniguchi, Naonori, and Wachi, Akira 3,434,328.
Wagner Electric Corporation,:*See*—
Atkins, Carl E., and Ziolkowski, Robert L., 3,435,298.
Wakeman, Reginald L., and Coates, Joseph F., to Millmaster Onyx Corporation. Quaternary ammonium salts of alcohol ether sulfates. 3,435,039, 03-25-69, Cl. 260-286.
Wald, Samuel K.:*See*—
Beckman, Melvin H., Unter, Robert K., and Wald, Samuel K. 3,434,263.
Walker, David D. *See*—
Benjamin, Milton L., Walker, David D., and Miles, Wilbur N. 3,434,376.
Walker Manufacturing Company:*See*—
Fischer, Richard L., 3,434,565.
Walkinshaw, Thomas G., to Cramer Industries, Inc.Chair with adjustable back and arm rests. 3,434,756, 03-25-69, Cl. 297-300.
Walkow, Arnold M., to Texas Instruments, Incorporated. Method of welding using concentric electrodes. 3,435,181, 03-25-69, Cl. 219-091.
Walles, Wilhelm E., to Dow Chemical Company, The. Incremental magnet. 3,435,296, 03-25-69, Cl. 317-123.
Wandel, Oscar A., to Fastener Corporation. Fastener driving apparatus. 3,434,643, 03-25-69, Cl. 227-130.
Wanskuck Company:*See*—
Wilson, Ronald, 3,434,610.
Ward, Ashley F., Inc.:*See*—
Friedmann, Anton R. J., and Eby, Ralph H., 3,434,664.
Ward, Frederick N., to United States of America, Interior. Process for determining mercury in geologic materials. 3,434,800, 03-25-69, Cl. 023-230.
Ward, Loyal F., Jr., and Phillips, Donald D., to Shell Oil Company. Method of controlling insects with dimethyl 2- chloro-1-(2,5-dichlorophenyl) vinyl phosphate. 3,435,113, 03-25-69, Cl. 424-225.
Ward, Trevor, to Hotwork Limited. Heating up furnaces. 3,434,704, 03-25-69, Cl. 263-043.
Warden, Hans E., to Siemens Aktiengesellschaft. Stand for an X-ray device. 3,434,684, 03-25-69, Cl. 248-162.
Wasco, Joseph L., to Dow Chemical Company, The. 2,4,5-Trichloroimidazole and method of preparation. 3,435,050, 03-25-69, Cl. 260-309.
Washer, Stone P., to Phillips Petroleum Company. Control system for fractional distillation columns. 3,434,934, 03-25-69, Cl. 202-154.
Watanabe, Hiroshi, Ozaki, Masami, and Hara, Junji, to Toyo Koatou Industries, Incorporated. Resin composition of a vinyl chloride polymer blended with an ethylene-vinyl chloride copolymer. 3,435,098, 03-25-69, Cl. 260-897.
Watanabe, Shiro, and Misaki, Susumu, to Daikin Kogyo Co., Ltd.Thiadiazine ring containing ethylene dithiocarbamate compounds. 3,435,032, 03-25-69, Cl. 260-242.
Watanabe, Taiichiro:*See*—
Sunagawa, Genshun, Soma, Nobuo, Watanabe, Taiichiro, and Sato, Yoshio 3,435,071.
Watanabe, Takahide:*See*—
Suzuki, Takashi, and Watanabe, Takahide 3,435,302.
Waterman, William John, to Vandewell Products Limited. Electrodeposition of lead and polytetrafluoro- ethylene. 3,434,942, 03-25-69, Cl. 204-038.
Waters, Ronald F.:*See*—
Porter, Joe A., and Waters, Ronald F. 3,434,953.
Watts, Melvin P., and Schleter, George H.Diving duck toy. 3,434,234, 03-25-69, Cl. 046-092.
Watts, William Sewell, to AMP Incorporated. Flexible tube coupling. 3,434,746, 03-25-69, Cl. 285-162.
Wax, Robert L.:*See*—
Bernstein, William, and Wax, Robert L. 3,435,214.
Ways & Means, Inc.:*See*—
de Greeve, Harry V., and Ragan, James B., 3,434,906.
Weaver, Frank C.:*See*—
Josephsen, Gene H., and Weaver, Frank C. 3,435,339.
Web, Jervis B., Company:*See*—
Dehne, Clarence A., 3,434,431.
Web Press Engineering, Inc.:*See*—
Wilkerson, Alan W., 3,435,316.
Webb, Derrel D., to Houston Engineers, Inc.Method and apparatus for separating sections of well pipe. 3,434,543, 03-25-69, Cl. 166-277.
Webb, Douglas E., to Xerox Corporation. Film frame detection system. 3,435,243, 03-25-69, Cl. 250-219.
Weber, Helmut, Aumuller, Walter, Weyer, Rudi, and Muth, Karl, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Treatment of diabetes mellitus with benzenesulfonyl ureas. 3,435,116, 03-25-69, Cl. 424-267.
Weber, Herbert, Lange, Gunter, Muller, Hubert, Von Fellner, Michael, and Heer, Roland, to Telefunken Patentverwertungsgesellschaft m.b.H.Distortion-free frequency modulator circuit. 3,435,376, 03-25-69, Cl. 332-018.
Weber, Paul E., to Siegler, Lear, Inc.Beam sweeping optical distance meter. 3,434,785, 03-25-69, Cl. 356-004.
Webster, Millard A.Rotary type distributor. 3,435,161, 03-25-69, Cl. 200-026.
Wegmann, Lienhard, and Gallo, Mario, to Spectrospin A.G.Nuclear resonance spectrograph. 3,435,333, 03-25-69, Cl. 324-000.5
Weidner, Ralph J., and Benigno, James, to Kassl Window Company, Inc.Sash lock. 3,434,236, 03-25-69, Cl. 049-176.
Weikel, John H.:*See*—
Lish, Paul Merrill, Weikel, John H., and Dykstra, Stanley J. 3,435,114.
Weinberg, Felix Jiri, Howden, Derek, and Cleaver, Denis, to British Titan Products Company Limited. Process for producing metal oxide particles of reduced particle size. 3,434,950, 03-25-69, Cl. 204-164.
Weiss, Eric A., to Sun Oil Company. Temperature difference detector. 3,435,451, 03-25-69, Cl. 340-413.
Weiss, Ernest, to Bendix Corporation, The. Shaft position limiting device. 3,434,356, 03-25-69, Cl. 074-010.2
Weiss, Paul C., to American Bosch Arma Corporation,. Valve control apparatus. 3,434,390, 03-25-69, Cl. 091-051.
Weissermel, Klaus, Fischer, Edgar, and Schott, Claus, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Copolyacetals and process for their manufacture. 3,435,006, 03-25-69, Cl. 260-067.
Weissman, Bernard. Method for building superstructures on dentition. 3,434,209, 03-25-69, Cl. 032-015.
Weld, Foster E., to Bliss, E. W., Company. Apparatus and method for translating a nondescript signal into a distinctive recordable signal. 3,435,413, 03-25-69, Cl. 340-147.
Welding Research, Inc.:*See*—
Sciaky, David, 3,435,187.
Weller, Elbert J., to General Electric Company. Drill cutter bit. 3,434,553, 03-25-69, Cl. 175-410.
Wen Products, Inc.:*See*—
Anton, Nicholas T., and Daughetee, Lew H., 3,434,247.
Wenderott, Berthold, to Vereinigte Deutsche Metallwerke AG. Method for improvement of nickel-chromium and nickel-chromium-iron alloys. 3,434,891, 03-25-69, Cl. 148-013.
Wendler, John C., to Acme-Danneman Company, Inc.Holder for positioning die-set bearing parts. 3,434,760, 03-25-69, Cl. 308-004.
Wendler, Norman L., Taub, David, and Kuo, Chan Hwa, to Merck & Co., Inc.Processes for preparing nicotinonitrile. 3,435,044, 03-25-69, Cl. 260-294.9
Wenger, Friedrich:*See*—
Martin, Wolfgang, Linge, Hermann, Hendus, Hans, and Wenger, Friedrich 3,434,278.
Werner, Bahlsen:*See*—
Haldimann, Hans Rudolph, and Bartels, Helmut, 3,434,604.
Wesolowski, Wyne E.:*See*—
Hazdra, James J., Sonnleitner, David, and Wesolowski, Wyne E. 3,434,817.
West Virginia Pulp and Paper Company:*See*—
Griffiths, Darrell J. L., Miller, Kenyon W., and Nikkel, Willem A., 3,434,901.
Vann, Clifton B., III, 3,434,602.
Western Electric Company, Incorporated:*See*—
Brosseit, Fritz V., 3,434,324.
Cushman, Robert Holbrook, 3,434,201.
Fanning, William J., 3,435,308.
Ferrari, Armando Gene, 3,435,105.
Hannis, Eugene S., and Reale, Paul J., 3,434,677.
Western Electric Company, Incorproated:*See*—
Blitchington, Frank H., Jr., 3,435,335.
Westinghouse Electric Corporation:*See*—
Chauvin, Bernard, 3,434,818.
Eberhart, Arthur H., 3,434,498.
Emerson, William A., 3,435,172.
Gerard, William A., 3,435,285.
Kozlovic, John M., 3,435,162.
Westinghouse Electric Corporation, :*See*—
Luppold, Robert H., Jr., and Gill, Joseph, 3,435,355.
Westinghouse Electric Corporation:*See*—
Ryan, William T., Jr., 3,435,198.
Vodoklys, Frank M., 3,435,271.
Westmoreland Plastics Company, :*See*—
Skinner, Harvey G., 3,434,694.
Weston Instruments, Inc.:*See*—
Richman, Peter L., 3,435,319.
Weyer, Rudi:*See*—
Weber, Helmut, Aumuller, Walter, Weyer, Rudi, and Muth, Karl 3,435,116.
Weyerhaeuser Company:*See*—
Allen, Gilbert D., and Grove, Gene A., 3,434,411.
Du Barry, Adrian P., Jr., 3,434,648.
Hammond, Albert S., 3,434,221.
Whirlpool Corporation:*See*—
Schwenker, Eric H., 3,434,239.
White, Alan D., to Bell Telephone Laboratories, Incorporated. Laser mode selection apparatus. 3,435,371, 03-25-69, Cl. 331-094.5
White Motor Corporation:*See*—
Liles, Clarence E., 3,434,428.
White, Robert J., and Houston, Robert J., to Chevron Research Company. Aromatic hydrogenation using a fluorided alumina catalyst. 3,435,085, 03-25-69, Cl. 260-667.
Whitehead, Calvert W., to Lilly, Eli, and Company. Novel thiatriazinedionedioxides. 3,435,031, 03-25-69, Cl. 260-242.
Whitman, Robert M., to Budd Company, The. Decorative laminated article with transparent overlay sheet and method of making it. 3,434,919, 03-25-69, Cl. 162-123.
Whittaker, Stanley James, and Rhodes, Cecil. Method of forming joint between tube and fitting. 3,434,194, 03-25-69, Cl. 029-421.
Whitten, James R., to General Electric Company. Negative resistance device oscillator circuits having harmonic impedance means for modifying the oscillator frequency. 3,435,374, 03-25-69, Cl. 331-107.
Wieder, Harry H., to United States of America, Navy. Magnetoresistive modulator. 3,435,323, 03-25-69, Cl. 321-044.
Wiedmann, Walter:*See*—
Barth, Alfred, Beck, Karl, and Wiedmann, Walter 3,434,601.
Wiener Schwachstromwerke Gesellschaft m.b.H.:*See*—
Adamec, Alfred, 3,434,823.
Wiggins, Glenn C., to Dow Chemical Company, The. Protection of polished metal surfaces. 3,434,904, 03-25-69, Cl. 156-306.

Wiggins, John H.Dry-seal pressure-type gasholders provided with stretch resistant seal structures and tensioned fender structures. 3,434,815, 03-25-69, Cl. 048-178.

Wiggins, John H.Gasholder provided with mechanism for preventing wrinkling of the flexible curtain seal incorporated therein. 3,434,816, 03-25-69, Cl. 048-179.

Wijnen, Marinus Dirk:*See*—
Haaijman, Pieter Willem, Wijnen, Marinus Dirk, and Hengst, Johannes Hubertus Theodorus 3,434,886.

Wiktor, Dominik M.:*See*—
Spinelli, Frank P., and Wiktor, Dominik M. 3,435,390.

Wildy, Peter Charles, and Wilson, Donald, to Southern Instruments Limited. Mechanical drives. 3,434,358, 03-25-69, Cl. 074-103.

Wiley, Robert F., to Corning Glass Works. Apparatus for pressing articles of thermoplastic material. 3,434,821, 03-25-69, Cl. 065-320.

Wilkerson, Alan W., to Web Press Engineering, Inc.Static regenerative direct current motor control. 3,435,316, 03-25-69, Cl. 318-302.

Wilkins, William B., to Reinforced Plastic Container Corporation. Work platform for scaffolds. 3,434,567, 03-25-69, Cl. 182-222.

Wilks, Louis P., and Richter, Sidney B., to Velsicol Chemical Corporation. Process for the production of hexachlorometh- anoindene isomer. 3,435,081, 03-25-69, Cl. 260-648.

Williams, George M.:*See*—
Ferguson, Leslie A., and Williams, George M. 3,434,860.

Williams, Lester:*See*—
Alterman, Daniel S., and Williams, Lester 3,434,508.

Williams, William J., and Ray, Donald A., to Rockwell-Standard Company. Brake actuator assembly. 3,434,359, 03-25-69, Cl. 074-110.

Willyoung, David M., to General Electric Company. Gap pickup rotor with radially extended outlets. 3,435,263, 03-25-69, Cl. 310-061.

Wilson, Donald:*See*—
Wildy, Peter Charles, and Wilson, Donald 3,434,358.

Wilson, Earl E.Car wash brushing apparatus. 3,434,172, 03-25-69, Cl. 015-021.

Wilson, Kenneth R., and Hill, Kenneth L., to FMC Corporation. M-ureidophenyl carbamates as herbicides. 3,434,822, 03-25-69, Cl. 071-106.

Wilson, Ronald, to Wanskuck Company. Feeding apparatus for tubes, rodes and the like. 3,434,610, 03-25-69, Cl. 214-339.

Wilson, William L., to PPG Industries, Inc.Process for preparing pigmentary titanium dioxide. 3,434,799, 03-25-69, Cl. 023-202.

Winberg, Ragnar W.Material stitching and guiding apparatus. 3,434,439, 03-25-69, Cl. 112-002.

Wing, George S., to Hi-Shear Corporation. Inherently torque-limited fastener. 3,434,379, 03-25-69, Cl. 085-061.

Winkler, Edwin, to FMC Corporation. Extendible conveyor. 3,434,584, 03-25-69, Cl. 198-089.

Winn, Richard, to Imperial Chemical Industries Limited. Apparatus for utilizing a webbed stirrer for continuous mixing. 3,434,804, 03-25-69, Cl. 023-285.

Wirth, Heinz, Helmberger, Hermann, and Herrmann, Hans, to Consortium fur Elektrochemische Industrie G.m.b.H.Apparatus for manufacturing flawless, stress-free boron rods. 3,434,803, 03-25-69, Cl. 023-273.

Wirth, Jon C.:*See*—
Kleine, Rudolph W., and Wirth, Jon C. 3,434,212.

Wischmeyer, William F., and Hoffman, John E.Filter-drier unit. 3,434,599, 03-25-69, Cl. 210-266.

Wisconsin Electrical Mfg., Co., Inc.:*See*—
Bale, Alton G., Jr., 3,434,556.

Wissick, William P., to International Business Machines Corporation. Contiguous bulk storage addressing. 3,435,420, 03-25-69, Cl. 340-172.5

Witt, Enrique R., to Celanese Corporation. Polymethylene and polyalkylene ether polythiono- phosphate esters. 3,435,099, 03-25-69, Cl. 260-929.

Wolf, Edward M., and Koll, Stanley J., to American Flange & Manufacturing Co., Inc.Cap crimping apparatus. 3,434,266, 03-25-69, Cl. 053-353.

Wolfe, Peter A., to Bell Telephone Laboratories, Incorporated. Tunable raman laser. 3,435,373, 03-25-69, Cl. 331-094.5

Wolfe, Robert W., to United States of America, Health, Education and Welfare. Totally implanted artificial heart power system utilizing a rechargeable thermal energy source. 3,434,162, 03-25-69, Cl. 003-001.

Wolff, Elmer A., Jr.:*See*—
Cornelison, Boyd, Jones, Morton E., Lineback, James T., Wolff, Elmer A., Jr., Barcus, Samuel W., Jr., Horak, Frank A., and Ince, Norman S. 3,434,828.

Wonson, Roger C.:*See*—
Brown, William C., George, Roscoe H., Heenan, Neil I., and Wonson, Roger C. 3,434,678.

Woodfill, William L., to Brunswick Corpoation. Combined impact damping and power lift mechanism for an outboard propulsion unit assembly. 3,434,448, 03-25-69, Cl. 115-041.

Working, Kenneth C.Anodizing process and additive for anodizing aluminum and its alloys. 3,434,943, 03-25-69, Cl. 204-058.

Worthington Corporation:*See*—
Bellmer, Friedrich O., 3,434,655.
Bellmer, Friedrich O., 3,434,656.
Berman, Merril, and Slaughter, John, 3,434,430.

Worthy, Robert M.:*See*—
Fuller, Richard H., Tu, Ju C., and Worthy, Robert M. 3,435,423.

Wright, James A., to Emerson Electric Co.Burner control system. 3,434,788, 03-25-69, Cl. 431-066.

Wright, Lyle E., to Check Data Control Corporation. Credit car assembly. 3,434,414, 03-25-69, Cl. 101-369.

Wuppermann, Theodor Gesellschaft mitbeschrankter Haftung:*See*—
Rietsch, Eberhard, 3,435,182.

Wurlitzer Company, The:*See*—
Ippolito, Anthony C., 3,435,122.

Wyard, Walter Harvie, to Metal Box Company, Limited, The. Closing containers. 3,434,265, 03-25-69, Cl. 053-077.

Wyatt, Luther E., to Smico, Inc.Trimming weighing machine. 3,434,555, 03-25-69, Cl. 177-052.

Xerox Corporation:*See*—
Joseph, Robert J., and Murphy, William J., 3,434,832.
Webb, Douglas E., 3,435,243.
Yarger, Norman L., and Liva, Robert H., 3,434,710.

Yabuta, Seizo:*See*—
Terao, Shinichiro, Sagawa, Seizi, and Yabuta, Seizo 3,435,074.

Yamamoto, Tetsuya:*See*—
Maeda, Yutaka, Maeda, Kaoru, Yamamoto, Tetsuya, Kashiwagi, Tetsuo, Hada, Yukihiro, Kato, Tokue, and Gomi, Nagao 3,434,277.

Yardney Enterprises, Inc.:*See*—
Swift, Paul C., 3,434,469.

Yarger, Norman L., and Liva, Robert H., to Xerox Corporation. Sheet handling apparatus. 3,434,710, 03-25-69, Cl. 271-051.

Yawata Iron & Steel Co., Ltd.:*See*—
Asamura, Shunzo, 3,434,606.

Yearwood, Donald R., Basile, Norman K., and Bridges, Thomas F., to McMullen, John J.System for loading and discharging liquefied gases from storage tanks. 3,434,492, 03-25-69, Cl. 137-394.

Yello, Joseph F., to Zenith Radio Corporation. Radio direction finder having inductorless demodulator. 3,435,455, 03-25-69, Cl. 343-120.

Yoder, John R., and McIntosh, Robert B., Jr., to Barnes Egineering Company. Radiometric microscope with means to produce a visual image. 3,435,212, 03-25-69, Cl. 250-065.

Yoke, Michael P., Montesi, Robert P., and Paterson, Robert N., to Dresser Industries, Inc.Tube fitting with locking means. 3,434,744, 03-25-69, Cl. 285-052.

Yoshine, Hiroki, to Kabushiki Kaisha Hitachi Seisakusho. Time division multiplex pulse code modulation communication system by pulse distribution transmission. 3,435,148, 03-25-69, Cl. 179-015.

Young, Einar T.:*See*—
Hall, Lawrence J., Mayer, Robert, and Young, Einar T. 3,435,238.

Young, Frederick C., to Bell Telephone Laboratories, Incorporated. Alternating polarity current driver using cascaded active switching elements. 3,435,256, 03-25-69, Cl. 307-262.

Young, Thomas:*See*—
Roshon, David, Jr., and Young, Thomas 3,435,186.

Yukelson, Arnold A.:*See*—
Adicoff, Arnold, and Yukelson, Arnold A. 3,434,990.

Yung, William H., to Smith, A. O., Harvestore Products, Inc.Unloading mechanism for a storage structure. 3,434,605, 03-25-69, Cl. 214-017.

Zachry, James Bryan:*See*—
Bilisoly, Julius Philip, and Zachry, James Bryan 3,434,964.

Zagorski, Jacek J.:*See*—
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W. 3,434,270.
Gaunt, James K., Zagorski, Jacek J., Player, Alfred, and Fogels, Mintauts W. 3,434,271.

Zajacek, John G.:*See*—
Sheng, Ming Nan, and Zajacek, John G. 3,434,975

Zandmer, Solis Myron. Well completion apparatus. 3,434,537, 03-25-69, Cl. 166-100.

Zane, John K.:*See*—
Kaiser, Donald W., and Zane, John K. 3,434,982.

Zappia, Anthony T., and Bough, Maynard O., Jr.Hollow glassware forming machine. 3,434,820, 03-25-69, Cl. 065-223.

Zaske, Arthur P., to Holley Carburetor Company. Carburetor test equipment. 3,434,341, 03-25-69, Cl. 073-118.

Zaumseil, Dean R.:*See*—
Kordik, Kenneth S., Spannhake, Ernst W., and Zaumseil, Dean R. 3,435,315.

Zavazal, Zdenek:*See*—
Bezouska, Vlastimil, Skvor, Josef, Pajisek, Frantisek, Zavazal, Zdenek, and Polorny, Oldrich 3,435,304.

Zavod Elektroizmeritelnykh Priborov:*See*—
Umantsev, Victor Sergeevich, 3,434,206.

Zderic, John A., to Syntex Corporation. 16α, 17α-Ethylene and substituted ethylene pregnane derivatives and process. 3,435,057, 03-25-69, Cl. 260-397.45

Zechlin, Richard, to Fairbanks Morse, Inc.Static exciter regulator for generators. 3,435,326, 03-25-69, Cl. 322-025.

Zemanek, Joseph, Jr., to Mobil Oil Corporation. Acoustic well logging tool. 3,434,563, 03-25-69, Cl. 181-000.5

Zemanek, Joseph, Jr., to Mobil Oil Corporation. Downhole system for storing and reading out detector signals for transmission to the surface at relatively low frequency. 3,435,224, 03-25-69, Cl. 250-083.6

Zenith Radio Corporation:*See*—
Krug, Robert W., 3,435,131.
Yello, Joseph F., 3,435,455.

Zimmermann, Gert. Coin sorting device with vibrating sorting bar. 3,434,482, 03-25-69, Cl. 133-003.

Ziolkowski, Robert L.:*See*—
Atkins, Carl E., and Ziolkowski, Robert L. 3,435,298.

Zook, James David:*See*—
Josephs, Harold C., and Zook, James David 3,434,893.

Zubiani, Ruggero:*See*—
Habicht, Ernst, and Zubiani, Ruggero 3,435,035.

Zuckerman, Ira, to Panther Machine Corporation. Adjustale roll-supporting spindle. 3,434,675, 03-25-69, Cl. 242-072.

Zuech, Ernest A., to Phillips Petroleum Company. Catalyst and process for oligomerizing conjugated dienes. 3,435,088, 03-25-69, Cl. 260-677.

Zutter, Hans:*See*—
Suter, Hans, and Zutter, Han

CLASSIFICATION OF PATENTS

ISSUED MARCH 25, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

2—129	3,434,160	35— 28.3	3,434,227	66—115	3,434,307	90— 11	3,434,384	115— .5	3,434,447	139—124	3,434,506
243	3,434,161	38— 78	3,434,228	149	3,434,308	13.1	3,434,385	41	3,434,448	125	3,434,507
3— 1	3,434,162	40— 79	3,434,229	172	3,434,309	24.3	3,434,386		3,434,449	130	3,434,508
12.8	3,434,163	43— 42.06	3,434,230	181	3,434,310	91— 1	3,434,387		3,434,450	161	3,434,509
4—100	3,434,164	53.5	3,434,231	68— 20	3,434,311	6	3,434,388	70	3,434,452	408	3,434,510
5— 61	3,434,165	44— 69	3,434,814	70— 58	3,434,312	36	3,434,389	116—129	3,434,453	140—117	3,434,511
8— 39	3,434,792	46— 11	3,434,232	70	3,434,313	51	3,434,390	133	3,434,454	141— 18	3,434,512
62	3,434,793	21	3,434,233	76	3,434,314	216	3,434,391	117— 7	3,434,860	95	3,434,513
116.3	3,434,794	92	3,434,234	202	3,434,315	414	3,434,392	9	3,434,858	143— 47	3,434,514
127.6	3,434,795	47— 41.1	3,434,235	371	3,434,316	417	3,434,393	10	3,434,861	146— 6	3,434,515
137	3,434,796	48—178	3,434,815	388	3,434,317	470	3,434,394		3,434,862		3,434,516
9— 1	3,434,166	179	3,434,816	455	3,434,318	92— 6	3,434,395	17	3,434,859	52	3,434,517
310	3,434,167	49—176	3,434,236	71—106	3,434,822	36	3,434,396	33.5	3,434,863	68	3,434,518
10— 27	3,434,168	181	3,434,237	72— 47	3,434,319	71	3,434,397	36.2	3,434,864	124	3,434,519
12— 12	3,434,169	192	3,434,238	60	3,434,320	228	3,434,398	37	3,434,865	148— 6.14	3,434,889
146	3,434,170	478	3,434,239	83	3,434,321	93— 58	3,434,399	47	3,434,866		3,434,890
147	3,434,171	51— 5	3,434,240	107	3,434,322	84	3,434,400		3,434,867	13	3,434,891
13— 13	3,435,121	14	3,434,241	258	3,434,323	94— 18	3,434,401	93	3,434,868	31.57	3,434,892
15— 21	3,434,172	34	3,434,242	324	3,434,324	95— 4.5	3,434,402	94	3,434,869	33	3,434,893
	3,434,173	59	3,434,243	354	3,434,325	10	3,434,403	106	3,434,870	187	3,434,894
104.07	3,434,174	106	3,434,244		3,434,326		3,434,404	119	3,434,871	149— 27	3,434,895
105	3,434,175	124	3,434,245	377	3,434,327	11	3,434,405	126	3,434,872	151— 38	3,434,520
177	3,434,176	165	3,434,246	405	3,434,328	86	3,434,406	127	3,434,873	41.73	3,434,521
209	3,434,177	170	3,434,247	467	3,434,329	96— 1.5	3,434,832	138.8	3,434,874	156— 17	3,434,896
369	3,434,178	234	3,434,248	73— 1	3,434,330		3,434,833	139.4	3,434,875	132	3,434,897
16—145	3,434,179	358	RE.26,552		3,434,331	.8	3,434,834	211	3,434,876	157	3,434,898
18— 8	3,434,180	52— 1	3,434,249	15	3,434,332	35	3,434,835	212	3,434,877	172	3,434,899
19	3,434,181	22	3,434,250	17	3,434,333	36.1	3,434,836	217	3,434,878	182	3,434,900
35	3,434,182		3,434,251	24	3,434,334	74	3,434,837	227	3,434,879	210	3,434,901
45	3,434,183	29	3,434,252	28	3,434,335	75	3,434,838	118— 2	RE.26,559	230	3,434,902
19— 83	3,434,184	69	3,434,253	35	3,434,336	84	3,434,839	72	3,434,455	244	3,434,903
23— 90	3,434,797	108	3,434,254	49.8	3,434,337	87	3,434,840	211	3,434,456	306	3,434,904
125	3,434,798		3,434,255	55	3,434,338	94	3,434,841	301	3,434,457	327	3,434,905
202	3,434,799	208	3,434,256	67.6	3,434,339	109	3,434,842		3,434,458	466	3,434,906
230	3,434,800	387	3,434,257	71.4	3,434,340	98— 1.5	3,434,407	119— 51.11	3,434,459	505	3,434,907
253	3,434,801	397	3,434,258	118	3,434,341	2	3,434,408	122—406	3,434,460	514	3,434,908
260	3,434,802	420	3,434,259	133	3,434,342	41	3,434,409	123— 32	3,434,461	552	3,434,909
273	3,434,803	471	3,434,260	141	3,434,343	99— 1	3,434,843	148	3,434,462	583	3,434,910
285	3,434,804	617	3,434,261	194	3,434,344	2	3,434,844		3,434,463	159— 3	3,434,522
	3,434,805		3,434,262	257	3,434,345		3,434,845	124— 23	3,434,465	47	3,434,523
288	3,434,806	715	3,434,263	334	3,434,346	56	3,434,846	125— 11	3,434,464	160—345	3,434,524
	3,434,807	53— 59	3,434,264	336	3,434,347	134	3,434,847	126— 92	3,434,466	388	3,434,525
314	3,434,808	77	3,434,265	337	3,434,348	139	3,434,848	127— 70	3,434,880	161— 16	3,434,911
338	3,434,809	180	RE.26,553	361	3,434,349	192	3,434,849	128— 1.1	3,434,467	46	3,434,912
24— 74	3,434,185		3,434,266	362.4	3,434,350	217	3,434,850	2	3,434,468	70	3,434,913
191	3,434,186	55— 56	3,434,273	368.3	3,434,351	246	3,434,410	78	3,434,469	93	3,434,914
25— 41	3,434,187	101	3,434,267	517	3,434,352	100— 90	3,434,411	136	3,434,470	199	3,434,915
28— 72.2	3,434,188	418	3,434,268	74— 5.12	3,434,354	93	3,434,412	145.8	3,434,471	231	3,434,916
75	3,434,189	490	3,434,269		3,434,355	101— 93	3,434,413	156	3,434,472	162— 3	3,434,917
29— 95	3,434,190	56— 15	3,434,270	.6	3,434,353	369	3,434,414	221	3,434,473	111	3,434,918
182.5	3,434,810	16	3,434,271	10.2	3,434,356	415.1	3,434,415	253	3,434,474	123	3,434,919
	3,434,811	57— 34	3,434,272	25	3,434,357	416	3,434,416	260	3,434,475	237	3,434,920
	3,434,812	80	3,434,274	103	3,434,358	102— 4	3,434,417	303.1	3,434,476		3,434,921
194	3,434,813	139	3,434,275	110	3,434,359	8	3,434,418		3,434,477	303	3,434,922
200	3,434,191	140	3,434,276	112	3,434,360	49.3	3,434,419	463	3,434,478	337	3,434,923
411	3,434,192	157	3,434,277	142	3,434,361	56	3,434,420	131— 10.9	3,434,479	164— 69	3,434,526
419	3,434,193		3,434,278	230.17	3,434,363	64	3,434,421	187	3,434,480		3,434,527
421	3,434,194	58—134	3,434,279	.7	3,434,362	67	3,434,422	132— 53	3,434,481	339	3,434,528
437	3,434,195	60— 32	3,434,280	391	3,434,364	70.2	3,434,423	133— 3	3,434,482	165— 47	3,434,529
	3,434,196	39.15	3,434,281	410	3,434,365		3,434,424	134— 22	3,434,881	60	3,434,530
470.1	3,434,197	52	3,434,282	421	3,434,366	92.1	3,434,425	26	3,434,882	67	3,434,531
472.3	3,434,198		3,434,283	492	3,434,367	100	3,434,426	135— 5	3,434,483	75	3,434,532
476	3,434,199	54	3,434,284	493	3,434,368	103— 38	3,434,427	16	3,434,484	111	RE.26,550
527	3,434,200	.5	3,434,285		3,434,369	40	3,434,428	136— 14	3,434,883	183	3,434,533
	3,434,201		3,434,286	569	3,434,370	113	3,434,430	86	3,434,884	166— 53	3,434,534
566	3,434,202	224	3,434,287	576	3,434,371	162	3,434,429	89	3,434,885	72	3,434,535
573	3,434,203	226	3,434,288	579	3,434,372	104—172	3,434,431	93	3,434,886	88	3,434,536
577	3,434,204	232	3,434,289	581	3,434,373	105—215	3,434,432	162	3,434,887	100	3,434,537
594	3,434,205		3,434,290	600	RE.26,555	249	3,434,433	203	3,434,888	123	3,434,538
610	3,434,206	254	3,434,291	801	3,434,374	106— 14	3,434,851	137— 13	3,434,485	153	3,434,539
612	3,434,207	61— 45	3,434,292	75— 10	3,434,823	19	3,434,852	67	3,434,486	250	3,434,540
626	3,434,208	46.5	3,434,293	68	3,434,824	52	3,434,853	81.5	3,434,487	256	3,434,541
32— 15	3,434,209	53.6	3,434,294	76	3,434,825	57	3,434,854	90	3,434,488	273	3,434,542
40	3,434,210	72.3	3,434,295	83	3,434,826	84	3,434,855	98	3,434,489	277	3,434,543
33— 1	3,434,211		3,434,296	134	3,434,827	277	3,434,856	101.31	3,434,490	303	3,434,544
27	3,434,212	.4	3,434,297	165	3,434,828	298	3,434,857	315	3,434,491	307	3,434,545
59	3,434,213	62—115	3,434,298	176	3,434,829	108— 51	3,434,434	394	3,434,492	170—160.58	3,434,546
64	3,434,214	199	3,434,299	206	3,434,830	56	3,434,435	460	3,434,493	173— 12	3,434,547
127	3,434,215	309	3,434,300	212	3,434,831	128	3,434,436	467	3,434,494	18	3,434,548
136	3,434,216	374	3,434,301	77— 58	3,434,375	111— 85	3,434,437	542	3,434,495	174— 38	3,435,124
184.5	3,434,217	457	3,434,302		3,434,376	112— 2	3,434,438	561	3,434,496	59	3,435,125
189	3,434,218	64— 6	3,434,303	82— 37	3,434,377		3,434,439	615	3,434,497	78	3,435,126
205	3,434,219		3,434,304	83—556	3,434,378	10	3,434,440	625.18	3,434,498	94	3,435,127
34— 1	3,434,220	65— 60	3,434,817	84— 1.14	3,435,122	104	3,434,441	630.12	3,434,499	151	3,435,128
6	3,434,221	152	3,434,818	.26	3,435,123	114— .5	3,434,442	138— 42	3,434,500	175— 1	3,434,549
16.5	3,434,222	155	3,434,819	85— 61	3,434,379	16	3,434,443	109	3,434,501	5	3,434,550
46	3,434,223	223	3,434,820	89— 13	3,434,380	57	3,434,444	129	3,434,502	6	3,434,551
114	3,434,224	320	3,434,821	26	3,434,381	72	3,434,445	171	3,434,503	410	3,434,552
160	3,434,225	66— 5	3,434,305	36	3,434,382	235	3,434,446	139— 25	3,434,504		3,434,553
35— 25	3,434,226	86	3,434,306	42	3,434,383		3,434,451	92	3,434,505		3,434,554

176 – 20	3,434,924	
44	3,434,925	
54	3,434,926	
177 – 52	3,434,555	
70	3,434,556	
178 – 3	3,435,129	
5.2	3,435,130	
.4	3,435,131	
	3,435,132	
.6	3,435,133	
6	3,435,134	
.6	3,435,135	
.8	3,435,136	
7.1	3,435,137	
	3,435,138	
.3	3,435,139	
.81	3,435,140	
69.5	3,435,141	
73	3,435,142	
179 – 1	3,435,143	
	3,435,144	
2	3,435,145	
6.3	3,435,146	
15	3,435,147	
	3,435,148	
18	3,435,149	
27	3,435,150	
	3,435,151	
84	3,435,152	
100.2	3,435,153	
	3,435,154	
	3,435,155	
.3	3,435,156	
110	3,435,157	
157	3,435,158	
175.2	3,435,159	
179	3,435,160	
180 – 6.48	3,434,557	
26	3,434,558	
90	3,434,559	
119	3,434,560	
181 – .5	3,434,561	
	3,434,562	
	3,434,563	
	3,434,568	
31	3,434,564	
48	3,434,565	
182 – 15	3,434,566	
222	3,434,567	
188 – 2	3,434,569	
59	3,434,570	
69	3,434,571	
152	3,434,572	
	3,434,573	
196	3,434,574	
192 – 3	3,434,575	
12	3,434,576	
46	3,434,577	
48.3	RE.26,558	
194 – 9	3,434,580	
92	3,434,578	
	3,434,579	
195 – 2	3,434,927	
29	3,434,928	
66	3,434,929	
80	3,434,930	
197 – 187	3,434,581	
198 – 31	3,434,582	
33	3,434,583	
89	3,434,584	
131	3,434,585	
220	3,434,586	
200 – 26	3,435,161	
50	3,435,162	
51.1	3,435,163	
61.46	3,435,164	
.89	3,435,165	
148	3,435,166	
156	3,435,167	
166	3,435,168	
167	3,435,169	
201 – 27	3,434,931	
	3,434,932	
32	3,434,933	
202 – 154	3,434,934	
187	3,434,935	
203 – 32	3,434,936	
79	3,434,937	
204 – 11	3,434,938	
15	3,434,939	
	3,434,940	
35	3,434,941	
38	3,434,942	
58	3,434,943	
59	3,434,944	
67	3,434,945	
72	3,434,946	
119	3,434,947	
128	3,434,948	
157.1	3,434,949	
164	3,434,950	
181	3,434,951	
	3,434,952	
195	3,434,953	
214	3,434,954	
225	3,434,955	
204 – 237	3,434,956	
243	3,434,957	
	3,434,958	
268	RE.26,547	
206 – 17.5	3,434,587	
46	3,434,588	
	3,434,589	
47	3,434,590	
52	3,434,591	
65	3,434,592	
208 – 62	3,434,959	
138	3,434,960	
	3,434,961	
237	3,434,962	
252	3,434,963	
254	3,434,964	
	3,434,965	
309	3,434,966	
	3,434,967	
209 – 31	3,434,593	
74	3,434,594	
121	3,434,595	
164	3,434,596	
210 – 44	3,434,968	
58	3,434,969	
95	3,434,597	
199	3,434,598	
266	3,434,599	
272	3,434,600	
440	3,434,601	
214 – 1	3,434,602	
6	3,434,603	
16.4	3,434,604	
17	3,434,605	
38	3,434,606	
86	3,434,607	
	3,434,608	
95	3,434,609	
339	3,434,610	
517	RE.26,546	
653	3,434,611	
658	3,434,612	
215 – 41	3,434,613	
	3,434,614	
47	3,434,615	
217 – 69	3,434,616	
219 – 10.49	3,435,170	
.61	3,435,171	
.75	3,435,172	
50	3,435,173	
69	3,435,174	
	3,435,175	
	3,435,176	
	3,435,177	
	3,435,178	
74	RE.26,549	
78	3,435,179	
85	3,435,180	
91	3,435,181	
100	3,435,182	
107	3,435,183	
119	3,435,184	
121	3,435,185	
	3,435,186	
	3,435,187	
237	3,435,188	
321	3,435,189	
384	3,435,190	
220 – 9	3,434,617	
24.2	3,434,618	
26	3,434,619	
27	3,434,620	
44	3,434,621	
54	3,434,622	
	3,434,623	
59	3,434,624	
65	3,434,625	
66	3,434,626	
67	3,434,627	
222 – 52	3,434,628	
88	3,434,629	
168.5	3,434,630	
213	3,434,631	
400.5	3,434,632	
402.13	3,434,633	
450	3,434,634	
468	3,434,635	
567	3,434,636	
570	3,434,637	
224 – 1	3,434,638	
226 – 21	3,434,639	
57	3,434,640	
188	3,434,641	
191	3,434,642	
227 – 130	3,434,643	
229 – 5.6	3,434,644	
8	3,434,645	
15	RE.26,557	
16	3,434,646	
	3,434,647	
23	3,434,648	
28	3,434,649	
	3,434,650	
43	3,434,651	
52	3,434,652	
230 – 117	3,434,653	
230 – 134	3,434,654	
152	3,434,655	
207	3,434,656	
233 – 26	3,434,657	
235 – 61.11	3,435,191	
.12	3,435,192	
84	3,434,658	
91	3,434,659	
150.52	3,435,193	
181	3,435,194	
	3,435,195	
197	3,435,196	
	3,435,197	
237 – 66	3,434,660	
239 – 2	3,434,661	
17	3,434,662	
132.3	3,434,663	
206	3,434,664	
230	3,434,665	
265.19	3,434,666	
533	3,434,667	
552	3,434,668	
240 – 1.3	3,435,198	
4.2	3,435,199	
8.2	3,435,200	
10.1	3,435,201	
11.4	3,435,206	
25	3,435,202	
46.57	3,435,203	
51.11	3,435,204	
108	3,435,205	
241 – 16	3,434,669	
37	3,434,670	
46	3,434,671	
194	3,434,672	
242 – 18.1	3,434,673	
54	3,434,674	
71.8	RE.26,556	
72	3,434,675	
84.2	RE.26,551	
.5	3,434,676	
128	3,434,677	
244 – 1	3,434,678	
53	3,434,679	
142	3,434,680	
145	3,434,681	
248 – 68	3,434,682	
119	3,434,683	
162	3,434,684	
263	3,434,685	
316	3,434,686	
361	3,434,687	
483	3,434,688	
249 – 193	3,434,689	
250 – 41.9	3,435,207	
	3,435,208	
43.5	3,435,209	
49.5	3,435,210	
51.5	3,435,211	
65	3,435,212	
71	3,435,213	
.5	3,435,214	
83	3,435,215	
.1	3,435,216	
	3,435,217	
	3,435,218	
	3,435,219	
.3	3,435,220	
	3,435,221	
	3,435,222	
	3,435,223	
.6	3,435,224	
	3,435,225	
199	RE.26,548	
	3,435,226	
	3,435,227	
	3,435,228	
	3,435,229	
	3,435,230	
201	3,435,231	
203	3,435,232	
207	3,435,233	
209	3,435,234	
	3,435,235	
211	3,435,236	
214	3,435,237	
218	3,435,238	
	3,435,239	
219	3,435,240	
	3,435,241	
	3,435,242	
	3,435,243	
	3,435,244	
	3,435,245	
237	3,435,246	
251 – 30	3,434,690	
184	3,434,691	
202	3,434,692	
203	3,434,693	
215	3,434,694	
349	3,434,695	
252 – 8.5	3,434,970	
.55	3,434,971	
51.5	3,434,972	
79.4	3,434,973	
138	3,434,974	
252 – 431	3,434,975	
453	3,434,976	
454	3,434,977	
478	3,434,978	
254 – 192	3,434,696	
259 – 3	3,434,697	
4	3,434,698	
	3,434,699	
260 – 2.1	3,434,979	
.5	3,434,980	
	3,434,981	
	3,434,982	
17.3	3,434,983	
18	3,434,984	
21	3,434,985	
	3,434,986	
	3,434,987	
23.7	3,434,988	
	3,434,989	
	3,434,990	
	3,434,991	
29.3	3,434,992	
.6	3,434,993	
.7	3,434,994	
31.2	3,434,995	
33.4	3,434,997	
.8	3,434,996	
38	3,434,998	
41.5	3,434,999	
45.75	3,435,000	
46.5	3,435,001	
	3,435,002	
47	3,435,003	
65	3,435,004	
67	3,435,005	
	3,435,006	
78	3,435,007	
.3	3,435,008	
.5	3,435,009	
79.5	3,435,010	
80.7	3,435,011	
88.3	3,435,012	
	3,435,013	
89.5	3,435,014	
93.1	3,435,015	
	3,435,016	
.5	3,435,018	
.7	3,435,017	
	3,435,019	
94.2	3,435,020	
.9	3,435,021	
147	3,435,022	
163	3,435,023	
210	3,435,024	
	3,435,025	
211.5	3,435,026	
226	3,435,027	
239	3,435,028	
.55	3,435,029	
	3,435,030	
242	3,435,031	
	3,435,032	
244	3,435,033	
250	3,435,034	
251	3,435,035	
256.4	3,435,036	
270	3,435,037	
286	3,435,038	
	3,435,039	
288	3,435,040	
	3,435,041	
293	3,435,042	
294.7	3,435,043	
.9	3,435,044	
296	3,435,045	
307	3,435,046	
	3,435,047	
	3,435,048	
309	3,435,049	
	3,435,050	
.6	3,435,051	
343.9	3,435,052	
345.2	3,435,053	
378	3,435,054	
397.3	3,435,055	
.4	3,435,056	
.45	3,435,057	
429	3,435,058	
448	3,435,059	
453	3,435,060	
465	3,435,061	
	3,435,062	
468	3,435,063	
469	3,435,064	
473	3,435,065	
	3,435,066	
475	3,435,067	
521	3,435,068	
530	3,435,069	
535	3,435,070	
566	3,435,071	
	3,435,072	
570.8	3,435,073	
576	3,435,074	
590	3,435,075	
606.5	3,435,076	
260 – 611	3,435,077	
615	3,435,078	
644	3,435,079	
648	3,435,080	
	3,435,081	
653.8	3,435,082	
655	3,435,083	
667	3,435,084	
	3,435,085	
669	3,435,086	
671	3,435,091	
674	3,435,087	
677	3,435,088	
680	3,435,089	
683.3	3,435,090	
.43	3,435,092	
857	3,435,093	
872	3,435,094	
878	3,435,095	
	3,435,096	
887	3,435,097	
897	3,435,098	
929	3,435,099	
944	3,435,100	
261 – 109	3,434,700	
114	3,434,701	
263 – 8	3,434,702	
21	3,434,703	
43	3,434,704	
264 – 45	3,435,101	
47	3,435,102	
53	3,435,103	
65	3,435,104	
95	3,435,105	
113	3,435,106	
159	3,435,107	
176	3,435,108	
322	3,435,109	
266 – 13	3,434,705	
23	3,434,706	
267 – 31	3,434,707	
63	3,434,708	
269 – 48.1	3,434,709	
271 – 51	3,434,710	
62	3,434,711	
272 – 4	3,434,712	
10	3,434,713	
54	3,434,714	
57	3,434,715	
273 – 54	3,435,120	
86	3,434,716	
101	3,434,717	
130	3,434,718	
131	3,434,719	
180	3,434,720	
	3,434,721	
186	3,434,722	
274 – 1	3,434,723	
4	3,434,724	
	3,434,725	
277 – 36	3,434,726	
58	3,434,727	
59	3,434,728	
181	3,434,729	
279 – 4	3,434,730	
280 – 11.35	3,434,731	
43.17	3,434,732	
104.5	3,434,733	
124	3,434,734	
406	3,434,735	
435	3,434,736	
461	3,434,737	
477	3,434,738	
492	3,434,739	
502	3,434,740	
507	3,434,741	
285 – 16	3,434,742	
39	3,434,743	
52	3,434,744	
111	3,434,745	
162	3,434,746	
287 – 53	3,434,747	
54	3,434,748	
189.36	3,434,749	
289 – 17	3,434,750	
292 – 218	3,434,751	
356	3,434,752	
294 – 19	3,434,753	
296 – 76	3,434,754	
297 – 269	3,434,755	
300	3,434,756	
299 – 2	3,434,757	
302 – 61	3,434,758	
303 – 14	3,434,759	
307 – 38	3,435,247	
46	3,435,248	
88	3,435,249	
.3	3,435,250	
115	3,435,251	
237	3,435,252	
	3,435,253	
252	3,435,254	
258	3,435,255	
262	3,435,256	
289	3,435,257	
293	3,435,258	
307 – 309	3,435,259	
308 – 4	3,434,760	
9	3,434,761	
	3,434,762	
70	3,434,763	
85	3,434,764	
132	3,434,765	
135	3,434,766	
243	3,434,767	
310 – 8.3	3,435,260	
54	3,435,261	
	3,435,262	
61	3,435,263	
70	3,435,264	
	3,435,265	
164	3,435,266	
168	3,435,267	
312 – 194	3,434,768	
258	3,434,769	
313 – 70	3,435,268	
78	3,435,269	
108	3,435,270	
109	3,435,271	
222	3,435,272	
283	3,435,273	
348	3,435,274	
315 – 12	3,435,275	
13	3,435,276	
18	3,435,277	
24	3,435,278	
27	3,435,279	
	3,435,280	
	3,435,281	
	3,435,282	
32	3,435,283	
39.61	3,435,284	
.77	3,435,285	
47	3,435,286	
110	3,435,287	
316 – 1	3,434,770	
317 – 11	3,435,288	
13	3,435,289	
	3,435,290	
15	3,435,291	
18	3,435,292	
31	3,435,293	
	3,435,294	
33	3,435,295	
123	3,435,296	
139	3,435,297	
146	3,435,298	
148.5	3,435,299	
157.5	3,435,300	
230	3,435,301	
234	3,435,302	
	3,435,303	
	3,435,304	
235	3,435,305	
	3,435,307	
237	3,435,306	
260	3,435,308	
262	3,435,309	
318 – 18	3,435,310	
129	3,435,311	
130	3,435,312	
138	3,435,313	
	3,435,314	
239	3,435,315	
302	3,435,316	
320 – 1	3,435,317	
15	3,435,318	
321 – 1.5	3,435,319	
2	3,435,320	
7	3,435,321	
18	3,435,322	
44	3,435,323	
45	3,435,324	
322 – 15	3,435,325	
25	3,435,326	
99	3,435,327	
323 – 8	3,435,328	
22	3,435,329	
43.5	3,435,330	
45	3,435,331	
94	3,435,332	
324 – .5	3,435,333	
33	3,435,334	
34	3,435,335	
37	3,435,336	
43	3,435,337	
	3,435,338	
105	3,435,339	
142	3,435,340	
150	3,435,341	
325 – 126	3,435,342	
389	3,435,343	
421	3,435,344	
423	3,435,345	
	3,435,346	
449	3,435,349	
452	3,435,347	
453	3,435,348	
328 – 14	3,435,350	
56	3,435,351	
120	3,435,352	
145	3,435,353	

329 – 126	3,435,354	
330 – 4.3	3,435,363	
9	3,435,355	
	3,435,356	
20	3,435,357	
22	3,435,358	
	3,435,359	
24	3,435,364	
25	3,435,360	
28	3,435,361	
29	3,435,362	
30	3,435,365	
69	3,435,366	
331 – 2	3,435,367	
37	3,435,368	
94	3,435,369	
.5	3,435,370	
	3,435,371	
	3,435,372	
	3,435,373	
107	3,435,374	
110	3,435,375	
332 – 18	3,435,376	
332 – 26	3,435,377	
41	3,435,378	
52	3,435,379	
333 – 21	3,435,380	
30	3,435,381	
31	3,435,382	
	3,435,383	
73	3,435,384	
	3,435,385	
76	3,435,386	
79	3,435,387	
335 – 68	3,435,388	
121	3,435,389	
161	3,435,390	
228	3,435,391	
230	3,435,392	
237	3,435,393	
272	3,435,394	
276	3,435,395	
336 – 139	3,435,396	
337 – 34	3,435,397	
347	RE.26,554	
338 – 22	3,435,398	
338 – 22	3,435,399	
28	3,435,400	
214	3,435,401	
339 – 5	3,435,402	
17	3,435,403	
26	3,435,404	
340 – 1	3,435,405	
	3,435,406	
3	3,435,407	
5	3,435,408	
6	3,435,409	
7	3,435,410	
15.5	3,435,411	
107	3,435,412	
146.3	3,435,414	
147	3,435,413	
163	3,435,415	
	3,435,416	
166	3,435,417	
172.5	3,435,418	
	3,435,419	
	3,435,420	
	3,435,421	
340 – 172.5	3,435,422	
	3,435,423	
	3,435,424	
173.2	3,435,425	
174	3,435,426	
	3,435,427	
	3,435,428	
	3,435,429	
	3,435,430	
	3,435,431	
	3,435,432	
	3,435,433	
	3,435,434	
	3,435,435	
	3,435,436	
	3,435,437	
	3,435,438	
	3,435,439	
.1	3,435,440	
	3,435,441	
	3,435,442	
	3,435,443	
214	3,435,444	
340 – 324	3,435,445	
547	3,435,446	
	3,435,447	
	3,435,448	
581	3,435,449	
592	3,435,450	
615	3,435,451	
343 – 6	3,435,452	
100	3,435,453	
	3,435,454	
120	3,435,455	
702	3,435,456	
719	3,435,457	
753	3,435,458	
346 – 140	3,435,459	
350 – 9	3,434,773	
16	3,434,771	
35	3,434,772	
96	3,434,774	
	3,434,775	
	3,434,776	
136	3,434,777	
160	3,434,778	
350 – 160	3,434,779	
351 – 41	3,434,780	
159	3,434,781	
352 – 72	3,434,782	
	3,434,783	
353 – 19	3,434,784	
356 – 4	3,434,785	
33	3,434,786	
106	3,434,787	
424 – 20	3,435,110	
59	3,435,111	
89	3,435,112	
225	3,435,113	
247	3,435,114	
263	3,435,115	
267	3,435,116	
271	3,435,117	
288	3,435,118	
322	3,435,119	
431 – 66	3,434,788	
126	3,434,789	
255	3,434,790	
328	3,434,791	

CLASSIFICATION OF DESIGNS

D 9 – 54	213,611	
224	213,612	
D13 – 1	213,613	
5	213,614	
D14 – 3	213,615	
	213,665	
6	213,616	
D15 – 11	213,617	
D18 – 2	213,618	
D22 – 25	213,619	
D22 – 25	213,620	
	213,621	
	213,622	
D23 – 29	213,623	
49	213,624	
D25 – 1	213,625	
D26 – 5	213,626	
14	213,627	
	213,628	
D33 – 3	213,629	
D39 – 1	213,630	
D44 – 10	213,631	
D45 – 4	213,632	
	213,633	
D48 – 23	213,634	
24	213,635	
	213,636	
D49 – 1	213,637	
D49 – 1	213,638	
14.1	213,639	
	213,640	
	213,641	
	213,642	
D52 – 6	213,643	
D54 – 1	213,644	
D55 – 1	213,645	
D56 – 1	213,646	
D56 – 1	213,647	
4	213,648	
D57 – 1	213,649	
D71 – 1	213,650	
D74 – 1	213,651	
D81 – 10	213,652	
D86 – 10	213,653	
D87 – 2	213,654	
D90 – 1	213,655	
D90 – 16	213,656	
20	213,657	
	213,658	
	213,659	
D92 – 4	213,660	
	213,661	
	213,662	
	213,663	
D95 – 3	213,664	

CLASSIFICATION OF PLANTS

P. – 57	2,872	P. – 61	2,873	P. – 61	2,874	P. – 61	2,875

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,434,287
3,434,291
3,434,455
3,434,824
4 : 3,434,242
3,434,349
3,434,394
3,435,191
3,435,375
3,435,427
5 : 3,434,496
3,434,745
6 : RE.26,552
3,434,172
3,434,197
3,434,198
3,434,208
3,434,210
3,434,213
3,434,254
3,434,261
3,434,281
3,434,284
3,434,316
3,434,327
3,434,331
3,434,335
3,434,336
3,434,342
3,434,353
3,434,354
3,434,355
3,434,362
3,434,366
3,434,371
3,434,379
3,434,380
3,434,384
3,434,408
3,434,419
3,434,426
3,434,428
3,434,429
3,434,443
3,434,452
3,434,468
3,434,469
3,434,470
3,434,471
3,434,476
6 : 3,434,480
3,434,491
3,434,497
3,434,513
3,434,518
3,434,535
3,434,539
3,434,551
3,434,566
3,434,582
3,434,584
3,434,592
3,434,594
3,434,595
3,434,616
3,434,634
3,434,635
3,434,665
3,434,681
3,434,690
3,434,691
3,434,698
3,434,711
3,434,713
3,434,715
3,434,718
3,434,729
3,434,731
3,434,735
3,434,752
3,434,761
3,434,762
3,434,769
3,434,771
3,434,784
3,434,796
3,434,815
3,434,816
3,434,856
3,434,863
3,434,878
3,434,900
3,434,906
3,434,943
3,434,953
3,434,960
3,434,963
3,434,965
3,434,966
3,434,967
6 : 3,434,972
3,434,990
3,435,043
3,435,056
3,435,076
3,435,085
3,435,113
3,435,124
3,435,140
3,435,185
3,435,193
3,435,194
3,435,208
3,435,209
3,435,211
3,435,214
3,435,222
3,435,232
3,435,233
3,435,245
3,435,248
3,435,269
3,435,273
3,435,310
3,435,314
3,435,320
3,435,322
3,435,323
3,435,334
3,435,337
3,435,342
3,435,346
3,435,351
3,435,354
3,435,357
3,435,358
3,435,377
3,435,391
3,435,415
3,435,423
3,435,431
3,435,432
3,435,433
3,435,434
3,435,441
3,435,442
3,435,446
3,435,449
8 : 3,434,329
3,434,332
8 : 3,434,401
3,434,430
3,434,598
3,434,682
3,434,741
3,434,800
9 : 3,434,250
3,434,264
3,434,302
3,434,322
3,434,330
3,434,345
3,434,365
3,434,399
3,434,407
3,434,460
3,434,531
3,434,569
3,434,632
3,434,639
3,434,709
3,434,781
3,434,825
3,434,827
3,434,970
3,434,982
3,435,008
3,435,115
3,435,156
3,435,204
3,435,212
3,435,251
3,435,341
3,435,372
3,435,392
10 : 3,434,188
3,434,252
3,434,286
3,434,421
3,434,793
3,434,797
3,434,810
3,434,889
3,434,919
3,434,959
3,435,003
3,435,020
3,435,027
3,435,093
11 : 3,434,649
3,434,650
3,434,855
3,435,246
12 : RE.26,557
3,434,193
3,434,251
3,434,385
3,434,520
3,434,583
3,434,645
3,434,676
3,434,699
3,434,882
3,435,129
3,435,192
3,435,265
3,435,458
13 : 3,434,299
3,434,474
3,434,517
3,434,780
15 : 3,434,515
3,434,516
17 : RE.26,553
RE.26,556
3,434,179
3,434,190
3,434,202
3,434,217
3,434,232
3,434,243
3,434,246
3,434,247
3,434,263
3,434,279
3,434,338
3,434,390
3,434,393
3,434,427
3,434,490
3,434,514
3,434,605
3,434,643
3,434,646
3,434,651
3,434,719
3,434,733
3,434,738
3,434,766
3,434,770
17 : 3,434,801
3,434,817
3,434,836
3,434,890
3,435,030
3,435,055
3,435,081
3,435,087
3,435,103
3,435,123
3,435,130
3,435,131
3,435,157
3,435,160
3,435,161
3,435,163
3,435,184
3,435,187
3,435,282
3,435,308
3,435,315
3,435,330
3,435,339
3,435,402
3,435,450
3,435,455
18 : 3,434,195
3,434,196
3,434,199
3,434,234
3,434,239
3,434,285
3,434,350
3,434,368
3,434,369
3,434,372
3,434,373
3,434,386
3,434,388
3,434,457
3,434,489
3,434,512
3,434,564
3,434,574
3,434,703
3,434,753
3,434,759
3,434,820
3,434,860
3,434,877

18 : 3,434,899
3,434,912
3,435,031
3,435,114
3,435,119
3,435,146
3,435,247
3,435,276
19 : 3,434,166
3,434,422
3,435,253
3,435,312
3,435,347
20 : 3,434,558
3,434,726
3,434,756
21 : 3,434,164
3,434,269
3,434,578
3,434,579
3,434,580
3,434,586
3,434,671
3,434,700
3,434,819
3,434,851
3,434,866
3,435,179
3,435,274
22 : 3,434,191
3,434,629
3,434,648
3,434,692
3,434,964
3,434,988
24 : 3,434,211
3,434,226
3,434,255
3,434,333
3,434,340
3,434,346
3,434,425
3,434,456
3,434,477
3,434,487
3,434,600
3,434,716
3,434,717
3,434,767
3,434,794
3,434,870
3,434,901
3,434,946
3,434,976
3,435,079
3,435,147
3,435,152
3,435,172
3,435,250
3,435,328
3,435,338
3,435,352
3,435,367
3,435,414
3,435,453
25 : RE.26,559
3,434,160
3,434,170
3,434,185
3,434,200
3,434,275
3,434,339
3,434,343
3,434,348
3,434,351
3,434,383
3,434,451
3,434,479
3,434,500
3,434,593
3,434,615
3,434,624
3,434,653
3,434,667
3,434,668
3,434,678
3,434,687
3,434,721
3,434,728
3,434,775
3,434,830
3,434,845
3,434,850
3,434,894
3,434,908
3,434,941
3,434,986
3,434,989
3,435,007
3,435,037
3,435,097
3,435,143
3,435,168
3,435,221
3,435,227
3,435,284
25 : 3,435,293
3,435,295
3,435,319
3,435,349
3,435,353
3,435,366
3,435,369
3,435,395
3,435,401
3,435,413
3,435,417
3,435,421
3,435,456
3,435,459
26 : RE.26,558
3,434,168
3,434,205
3,434,237
3,434,240
3,434,245
3,434,248
3,434,282
3,434,294
3,434,341
3,434,347
3,434,367
3,434,377
3,434,391
3,434,395
3,434,411
3,434,431
3,434,437
3,434,454
3,434,462
3,434,465
3,434,486
3,434,501
3,434,503
3,434,552
3,434,553
3,434,554
3,434,565
3,434,581
3,434,636
3,434,734
3,434,751
3,434,765
3,434,776
3,434,785
3,434,814
3,434,846
3,434,849
3,434,869
3,434,902
3,434,904
3,434,952
3,435,025
3,435,029
3,435,050
3,435,053
3,435,059
3,435,086
3,435,107
3,435,111
3,435,118
3,435,120
3,435,127
3,435,174
3,435,175
3,435,176
3,435,177
3,435,178
3,435,200
3,435,257
3,435,258
3,435,294
3,435,296
3,435,317
3,435,398
3,435,399
3,435,419
3,435,424
27 : 3,434,182
3,434,406
3,434,410
3,434,447
3,434,631
3,434,843
3,434,848
3,434,893
3,434,939
3,435,106
3,435,173
3,435,206
3,435,225
3,435,340
3,435,362
3,435,425
3,435,435
28 : 3,435,410
29 : 3,434,268
3,434,324
3,434,599
3,434,644
3,434,683
3,434,707
29 : 3,434,788
3,434,853
3,434,933
3,434,940
3,435,090
3,435,203
3,435,289
3,435,325
30 : 3,434,173
31 : 3,435,112
32 : 3,434,571
33 : 3,434,509
3,434,633
3,434,659
3,434,695
3,434,724
3,434,921
34 : 3,434,201
3,434,220
3,434,230
3,434,259
3,434,266
3,434,297
3,434,313
3,434,344
3,434,356
3,434,414
3,434,423
3,434,424
3,434,473
3,434,484
3,434,587
3,434,620
3,434,655
3,434,656
3,434,661
3,434,677
3,434,693
3,434,747
3,434,755
3,434,774
3,434,779
3,434,792
3,434,795
3,434,818
3,434,831
3,434,844
3,434,864
3,434,871
3,434,879
3,434,883
3,434,895
3,434,907
3,434,954
3,434,958
3,434,973
3,434,974
3,434,975
3,434,979
3,434,991
3,434,993
3,434,996
3,435,005
3,435,009
3,435,010
3,435,015
3,435,016
3,435,019
3,435,034
3,435,038
3,435,040
3,435,044
3,435,046
3,435,049
3,435,058
3,435,064
3,435,075
3,435,078
3,435,080
3,435,082
3,435,095
3,435,096
3,435,100
3,435,104
3,435,105
3,435,110
3,435,117
3,435,134
3,435,138
3,435,150
3,435,159
3,435,167
3,435,198
3,435,201
3,435,213
3,435,226
3,435,228
3,435,230
3,435,234
3,435,244
3,435,256
3,435,259
3,435,271
3,435,275
3,435,298
3,435,324
34 : 3,435,345
3,435,363
3,435,364
3,435,371
3,435,373
3,435,379
3,435,382
3,435,383
3,435,390
3,435,403
3,435,416
3,435,438
3,435,454
3,435,457
3,434,625
3,434,680
3,434,773
36 : RE.26,550
3,434,163
3,434,186
3,434,189
3,434,204
3,434,209
3,434,214
3,434,218
3,434,227
3,434,236
3,434,301
3,434,304
3,434,312
3,434,315
3,434,352
3,434,357
3,434,381
3,434,400
3,434,402
3,434,405
3,434,409
3,434,432
3,434,434
3,434,436
3,434,439
3,434,441
3,434,475
3,434,478
3,434,492
3,434,494
3,434,524
3,434,576
3,434,603
3,434,607
3,434,608
3,434,611
3,434,622
3,434,658
3,434,663
3,434,672
3,434,675
3,434,685
3,434,689
3,434,710
3,434,754
3,434,760
3,434,764
3,434,777
3,434,778
3,434,787
3,434,812
3,434,821
3,434,822
3,434,832
3,434,835
3,434,839
3,434,841
3,434,847
3,434,858
3,434,868
3,434,873
3,434,896
3,434,898
3,434,914
3,434,927
3,434,929
3,434,948
3,434,949
3,434,957
3,434,998
3,435,000
3,435,001
3,435,002
3,435,012
3,435,051
3,435,065
3,435,070
3,435,121
3,435,122
3,435,132
3,435,133
3,435,139
3,435,141
3,435,142
3,435,144
3,435,153
3,435,169
36 : 3,435,186
3,435,188
3,435,196
3,435,199
3,435,205
3,435,207
3,435,219
3,435,223
3,435,229
3,435,237
3,435,243
3,435,249
3,435,263
3,435,268
3,435,277
3,435,278
3,435,280
3,435,285
3,435,286
3,435,299
3,435,303
3,435,307
3,435,318
3,435,344
3,435,350
3,435,365
3,435,370
3,435,374
3,435,384
3,435,385
3,435,388
3,435,405
3,435,406
3,435,418
3,435,420
3,435,422
3,435,428
3,435,429
3,435,440
3,435,447
37 : 3,434,161
3,434,306
3,434,308
3,434,321
3,434,438
3,434,504
3,434,567
3,434,577
3,434,874
3,434,875
3,435,108
3,435,252
3,435,335
3,435,360
39 : RE.26,549
RE.26,554
3,434,177
3,434,178
3,434,183
3,434,231
3,434,244
3,434,262
3,434,359
3,434,376
3,434,397
3,434,433
3,434,466
3,434,498
3,434,519
3,434,521
3,434,530
3,434,588
3,434,597
3,434,612
3,434,621
3,434,628
3,434,647
3,434,652
3,434,664
3,434,679
3,434,730
3,434,799
3,434,809
3,434,811
3,434,813
3,434,829
3,434,834
3,434,854
3,434,885
3,434,888
3,434,903
3,434,983
3,434,984
3,435,004
3,435,013
3,435,061
3,435,180
3,435,183
3,435,220
3,435,236
3,435,240
3,435,241
3,435,242
3,435,270
3,435,272
3,435,290
39 : 3,435,291
3,435,309
3,435,331
3,435,393
40 : 3,434,175
3,434,219
3,434,280
3,434,446
3,434,485
3,434,495
3,434,544
3,434,555
3,434,626
3,434,701
3,434,714
3,434,732
3,434,763
3,434,852
3,434,962
3,434,995
3,435,011
3,435,084
3,435,088
3,435,092
3,435,109
41 : 3,434,463
3,434,609
3,434,739
3,434,920
3,435,412
42 : RE.26,547
3,434,162
3,434,215
3,434,216
3,434,235
3,434,241
3,434,249
3,434,256
3,434,300
3,434,378
3,434,416
3,434,420
3,434,458
3,434,481
3,434,502
3,434,508
3,434,511
3,434,526
3,434,528
3,434,560
3,434,570
3,434,589
3,434,590
3,434,619
3,434,638
3,434,669
3,434,694
3,434,708
3,434,720
3,434,722
3,434,744
3,434,746
3,434,750
3,434,758
3,434,768
3,434,786
3,434,789
3,434,876
3,434,881
3,434,913
3,434,938
3,434,956
3,434,968
3,434,969
3,435,033
3,435,039
3,435,094
3,435,125
3,435,137
3,435,162
3,435,166
3,435,189
3,435,254
3,435,288
3,435,355
3,435,400
3,435,409
3,435,426
3,435,436
3,435,437
44 : 3,434,167
3,434,591
3,434,610
3,434,673
3,434,740
3,435,408
45 : 3,434,273
3,434,440
3,434,445
3,434,602
3,435,190
46 : 3,435,386
47 : 3,434,931
3,434,932
3,434,981
48 : RE.26,551

48 : 3,434,253
3,434,293
3,434,295
3,434,296
3,434,392
3,434,467
3,434,493
3,434,534
3,434,538
3,434,540
3,434,541
3,434,542
3,434,543
3,434,546
3,434,549
48 : 3,434,561
3,434,562
3,434,563
3,434,568
3,434,614
3,434,696
3,434,742
3,434,743
3,434,757
3,434,808
3,434,828
3,434,934
3,434,971
3,435,099
48 : 3,435,181
3,435,195
3,435,215
3,435,216
3,435,217
3,435,218
3,435,224
3,435,306
3,435,411
3,435,445
3,435,451
49 : Re.26,546
3,434,187
3,434,459
49 : 3,434,697
3,434,911
51 : Re.26,548
3,434,225
3,434,314
3,434,917
3,434,937
3,435,089
3,435,452
53 : 3,434,221
54 : 3,434,915
55 : 3,434,212
3,434,317
3,434,318
55 : 3,434,364
3,434,396
3,434,412
3,434,442
3,434,448
3,434,449
3,434,450
3,434,483
3,434,527
3,434,536
3,434,556
3,434,654
3,434,772
3,434,887
55 : 3,434,918
3,434,922
3,434,923
3,435,041
3,435,042
3,435,073
3,435,126
3,435,202
3,435,297
3,435,316
3,435,326
3,435,387
3,435,389
3,435,397

Design Patents

6 : 213,625
213,628
213,646
213,647
213,656
8 : 213,629
9 : 213,643
11 : 213,618
17 : 213,614
18 : 213,616
213,626
21 : 213,623
24 : 213,627
26 : 213,619
26 : 213,620
213,621
213,622
213,630
29 : 213,638
34 : 213,632
36 : 213,612
36 : 213,617
213,635
213,649
213,650
213,652
213,653
213,654
37 : 213,631
39 : 213,624
213,640
213,641
213,659
40 : 213,636
42 : 213,645
44 : 213,611
45 : 213,639
213,642
49 : 213,644
55 : 213,615

Plant Patents

6 : 2,872
6 : 2,873
6 : 2,874
6 : 2,875

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 25, 1969 Volume 860 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 56,422. (See Reg. No. 275,775.)

Reg. No. 116,008. (See Reg. No. 275,775.)

Reg. No. 275,775 (KEM), The Sherwin-Williams Company, Paints in paste, semi-liquid, or ready-mixed form; varnishes, lacquers, and paint enamels containing synthetic resins; **Reg. No. 816,507**, same, Wood impregnating sealers for inhibiting insects, fungi, and bacteria; **Reg. No. 518,349** (KEM LUSTRAL), same, Paints (ready-mixed and paste form); paint enamels (air drying or baking); lacquers; primers and undercoaters in the nature of paints, enamels and lacquers; thinners and reducers for paints, enamels, and lacquers; **Reg. No. 286,574** (KEM-SPAR), same, Paints in paste, semiliquid, or ready-mixed form; varnishes, lacquers, paint enamels, varnish enamels, lacquer enamels, and clear varnishes; **Reg. No. 284,170** (KEMVAR), same; **Reg. No. 324,587** (KEM-NAMEL), same, Paints (ready mixed, paste form and dry), paint enamels, lacquers, japans, varnishes, stains, and paint, enamel, varnish and lacquer fillers; **Reg. No. 545,522** (KEM-GLO), same, Ready-mixed paint for use on all types of surfaces and paint enamel; **Reg. No. 573,737** (SUPER KEM-TONE), same, Paints; **Reg. No. 574,381** (KEM-KRETE AND DESIGN), same, Enamel type coating to be applied to concrete blocks, building tile, concrete surfaces, wallboard, etc.; **Reg. No. 636,712** (KEM-ALUM), same; **Reg. No. 696,990** (KEM-BOND), same, Metal primer; **Reg. No. 606,039** (KEM-PLATE), same, Paint; **Reg. No. 637,055** (KEM CATI-COAT), same Coatings for the petroleum industry which are, enamels, primers, fillers, catalysts, and thinners; **Reg. No. 763,313**, same, Inks of a screen process gloss enamel nature for use in professional sign painting or making and also for use by sporting goods apparel manufacturers; **Reg. No. 630,612** (KEM), same, Paint brush cleaner; **Reg. No. 595,521**, same, Paint brushes; **Reg. No. 658,944**, same, Spackling compound; **Reg. No. 685,423** (KEMACRYL), same, Paints; **Reg. No. 694,140** (KEMAK), same, Paints, primer-surfacers, fillers, sealers, putties and catalyst hardener therefor; **Reg. No. 703,931** (KEM COLOR-METER), same, Color mixing and measuring machine; **Reg. No. 535,620** (KEM DURA), same, Paints (ready-mixed and paste form); **Reg. No. 674,434** (KEM-WELD AND DESIGN), same, Metal plastic filler/bonder and hardener for repairing dents and holes in metal; **Reg. No. 748,065** (KEMFAST), same, Baking enamel and flating base; **Reg. No. 289,218** (KEM FINISHES AND DESIGN), same, Paints in paste, semi-liquid, or ready-mixed form; varnishes, lacquers, paint enamels, and clear varnishes; **Reg. No. 595,523** (KEM-GLO AND DESIGN), same, Rolling device for the application of paints and other kindred products; **Reg. No. 619,798** (KEM KOLD BILD), same, Enamel for freight cars and other railroad equipment; **Reg. No. 644,049** (KEM-MIX), same, Additive for synthetic enamel automotive finishes; **Reg. No. 528,-**

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	16,535
Date of oldest new application	January 3, 1968
Date of oldest amended application (filing date)	July 30, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	5-8 -68	9-8 -66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	5-21-68	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	5-12-68	7-30-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1-3 -68	9-22-65
Renewals (All Classes)	12-9 -68	----------
Sec. 12(c) Publications (All Classes)	12-11-68	----------

Applications filed during the month of January 1969—2,803

Registrations Issued ---------- 330—No. 866,993 to No. 867,322
Renewals Issued ---------- 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

644 (KEMWOOD SEAL), same, Varnish and compositions in the nature of paint, varnish, shellac, or sealers for sealing and finishing wood surfaces; **Reg. No. 732,382** (SUPER KEM-TONE), same, Paints; **Reg. No. 595,524** (SUPER KEM-TONE AND DESIGN), same, Rolling device for the application of paints and other kindred products; **Reg. No. 633,487** (KEMPRINT), same, Tints, colors, pigments, and dyes in ready-mixed, paste form or dry used for printing, stamping, and dyeing fabrics; **Reg. No. 56,422** (COVER THE EARTH AND DESIGN), same, Mixed paints and pigments used for paints, stains, and paint-oils; **Reg. No. 116,008**, same, Medicinal linseed oil for human and animal use and paranitranilin; **Reg. No. 510,867** ("COVER THE EARTH" AND GLOBE DESIGN), same, Printing inks; lithographing inks; and pigments, dyes, dyestuffs, dry colors, oils, and varnishes for manufacture of printing and lithographing inks; **Reg. No. 510,868**, same, Brushes for use by painters, paperhangers, artists, signwriters and sign painters; wiping cloths; hand-propelled floor polishers, floor waxers and wax applicators; and rolling devices in the nature of roller stipplers, for application of paint and kindred products; **Reg. No. 511,785**, same, Leaded zinc, zinc oxide, lithopone, litharge, red lead, white lead silicates, synthetic resins, vegetable oils and dry colors in the nature of pigments, all for general use in the industrial arts; **Reg. No. 512,111**, same, Putty, caulking compound, crack fillers and glazing compounds for mounting glass, filling crevices and cracks, and the like; and asphalt and coal tar compositions for roofing, repairing roofs, water-proofing and protectively coating walls and other structures of masonry and concrete, and protecting pipe, walls and other structures against moisture and corrosive agents; **Reg. No. 512,112**, same, Spray gun apparatus made up of guns, hoses, tanks, valves, and nozzles, sold as a unit; mixing machines for paints; **Reg. No. 513,019**, same, Insecticides, fungicides, herbicides, germicides, disinfectants, pesticides; intermediates for use in organic synthesis in the production of pharmaceuticals, dyes, dyestuffs, or other artificial products; castor oil and dehydrated castor oil; dyes and dyestuffs for general use in the industrial arts; and soaps (other than as detergents) for use in the chemical and other industrial arts as disbursing agents, wetting agents, flocculating agents and extenders and sub-strata for pigments and dyestuffs; **Reg. No. 513,020**, same, Soap (dry powdered paste, semi-paste, flake, liquid and other consistencies) and metal polishes; **Reg. No. 514,025**, same, Electrical insulating varnish; **Reg. No. 519,177**, same, Vegetable seed meals for cattle, livestock, and dairy animals; **Reg. No. 519,400**, same, Paints (ready mixed, paste, or dry form), varnishes; lacquers; stains; enamels; japans; undercoaters; thinners or reducers, vegetable oils, pigments, synthetic resins, dyes, dyestuffs, and dry colors, all for use in paints, lacquers, enamels, varnishes, undercoaters, stains, and japans, or in the preparation thereof; waxes and polishes for paint, varnish, enamel, and lacquer surfaces; **Reg. No. 519,884**, same, House organ, color chip compilations, and printed publications issued from time to time; **Reg. No. 522,907**, same, Liquid measuring instruments and machines for determining desired proportions of quantities in a vessel to obtain a desired color; **Reg. No. 541,899**, same, Wallpaper, poster papers and boards, show-cardboard, cardboard, process board, metallic-coated board, display board, foil paper, decalcomania paper, tracing paper, mat board, mounting board, drawing paper, crayons, charcoal stick crayons, pen points, penholders, and fountain marking pens, wood-encased lead pencils, display stands or easels (made of paper or cardboard for use on store counters or for window displays), rubber erasers, display paper, decorative paper and screen process paper, **filed** Sept. 30, 1968, D.C., N.D. Ga. (Atlanta), Doc. 12127, *The Sherwin-Williams Company* v. *Kem Manufacturing Corporation*.

Reg. No. 284,170. (See Reg. No. 275,775.)
Reg. No. 286,574. (See Reg. No. 275,775.)
Reg. No. 289,218. (See Reg. No. 275,775.)
Reg. No. 324,587. (See Reg. No. 275,775.)
Reg. No. 510,867. (See Reg. No. 275,775.)
Reg. No. 510,868. (See Reg. No. 275,775.)
Reg. No. 511,785. (See Reg. No. 275,775.)
Reg. No. 512,111. (See Reg. No. 275,775.)
Reg. No. 512,112. (See Reg. No. 275,775.)
Reg. No. 513,019. (See Reg. No. 275,775.)
Reg. No. 513,020. (See Reg. No. 275,775.)
Reg. No. 514,025. (See Reg. No. 275,775.)
Reg. No. 518,349. (See Reg. No. 275,775.)
Reg. No. 519,177. (See Reg. No. 275,775.)
Reg. No. 519,400. (See Reg. No. 275,775.)
Reg. No. 519,884. (See Reg. No. 275,775.)
Reg. No. 522,907. (See Reg. No. 275,775.)
Reg. No. 528,644. (See Reg. No. 275,775.)
Reg. No. 535,620. (See Reg. No. 275,775.)
Reg. No. 541,899. (See Reg. No. 275,775.)
Reg. No. 545,522. (See Reg. No. 275,775.)
Reg. No. 573,737. (See Reg. No. 275,775.)
Reg. No. 574,381. (See Reg. No. 275,775.)
Reg. No. 595,521. (See Reg. No. 275,775.)
Reg. No. 595,523. (See Reg. No. 275,775.)
Reg. No. 595,524. (See Reg. No. 275,775.)
Reg. No. 606,039. (See Reg. No. 275,775.)
Reg. No. 619,798. (See Reg. No. 275,775.)
Reg. No. 630,612. (See Reg. No. 275,775.)
Reg. No. 633,487. (See Reg. No. 275,775.)
Reg. No. 636,712. (See Reg. No. 275,775.)
Reg. No. 637,055. (See Reg. No. 275,775.)
Reg. No. 644,049. (See Reg. No. 275,775.)
Reg. No. 658,944. (See Reg. No. 275,775.)
Reg. No. 674,434. (See Reg. No. 275,775.)
Reg. No. 685,423. (See Reg. No. 275,775.)
Reg. No. 694,140. (See Reg. No. 275,775.)
Reg. No. 696,990. (See Reg. No. 275,775.)
Reg. No. 703,931. (See Reg. No. 275,775.)
Reg. No. 732,382. (See Reg. No. 275,775.)
Reg. No. 748,065. (See Reg. No. 275,775.)
Reg. No. 763,313. (See Reg. No. 275,775.)
Reg. No. 816,507. (See Reg. No. 275,775.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 240,362. Terni Societa per l'Industria e l'Elettricita S.p.A., Rome, Italy. Filed Mar. 7, 1966.



Owner of Italian Reg. No. 74,771, dated May 22, 1945.

Class 2—Receptacles

For Iron and Steel Storage Tanks and Sealed Vessels for Storing Materials Under Pressure (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Welded Pipes, Welded Sheet Pipes for Use in Boiler Systems in Chemical and Petroleum Plants, Special Pieces for Pipe Lines, Pen Stocks, Sluice Gates, Lock Doors and Butterfly Valves (Int. Cl. 6).

Class 14—Metals and Metal Castings and Forgings

For Iron and Steel and Iron and Steel Products—Namely, Steel Ingots, Semi-Finished Common and Special Continuous Cast or Rolled Steels, Bars, Sheets, Strip, Black Iron and Tin Plate, Forgings, Stampings and Castings, Rails and Stationary and Rolling Stock and Semi-Finished Rough Shapes Used in the Manufacture of Artillery and Cannon (Int. Cl. 6).

Class 26—Measuring and Scientific Appliances

For Nuclear Reactor Housings and Casings (Int. Cl. 11).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Parts for Boiler Systems Including Those Used in Chemical and Petroleum Plants—Namely, Reservoirs, Pressure Tanks and Columns (Int. Cl. 11).

SN 244,082. Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, by change of name from Compagnie Francaise Thomson-Houston, Paris, France. Filed Apr. 22, 1966.

INDUCTOSERV

Priority claimed under Sec. 44(d) on French Reg. No. 701,792, dated Nov. 17, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electromagnets, Electric Coils, Electric Wires and Cables, and Telegraphic and Telephonic Cables (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Spectrometers and Magnetometers (Int. Cl. 9).

SN 255,115. Nichols Aluminum Company, Davenport, Iowa, by change of name from Nichols Wire & Aluminum Co., Davenport, Iowa. Filed Sept. 26, 1966.



Class 7—Cordage

For Clothesline, Dog Run Cable and Tree Guy Wire (Int. Cl. 6).

Class 14—Metals and Metal Castings and Forgings

For General Purpose Wire (Int. Cl. 6).

First use Mar. 15, 1965.

SN 266,384. Marine Construction & Design Co., Seattle, Wash. Filed Mar. 10, 1967.



Owner of Reg. Nos. 705,931 and 808,466.

Class 19—Vehicles

For Boats of Various Types—Namely, Fishing Boats, Purse Seine Skiffs and Tugboats (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery, Gear and Equipment for the Marine and Commercial Fishing Industry—Namely, Winches; Net-Hauling and Line-Hauling Power-Driven Blocks and Guide Devices; Articulating Deck Cranes; Net Reels and Guide Roller Devices, Both Powered and Unpowered; Line Guide Blocks and Sheaves; Cable Tensioning Winch Devices and Cable Tension Metering Devices; Gear Reducers; Fish Pumping Devices and Fish-Water Separator Screens; Hydraulic Equipment and Systems for Driving, Actuating and Controlling Such Winches, Blocks, Cranes, Reels and Devices and Other Machinery; Steering Gear; Trawl Doors; Snap Purse Rings; Purse Line Releases; Brailers (Int. Cl. 7).

First use April 1954.

SN 268,162. Cummings & Co. Inc., Nashville, Tenn. Filed Apr. 3, 1967.

THE INTERNATIONAL SIGN SERVICE

No claim is made to the words "Sign Service" apart from the mark as shown.

Class 100—Miscellaneous

For Renting (or Leasing) of Sign and Poster Space, and Consultation Services Regarding Sign Programs (Int. Cl. 42).

Class 101—Advertising and Business

For Creation of Design and Advertising Material and the Designing and Re-Designing of All Types of Signs (Int. Cl. 35).

Class 103—Construction and Repair

For Painting of Design and Advertising Material Upon Bulletin Boards, the Application of Posters Upon Poster Boards, the Maintenance and Installation of Signs and Bulletin Boards (Int. Cl. 37).

First use Aug. 1, 1966.

SN 272,992. Sky Distributing Company, d.b.a. Sky Corporation and Sky, Stockton, Calif. Filed June 5, 1967.



Class 15—Oils and Greases

For Engine Tune-Up Oil, Transmission and Power Steering System Conditioner (Int. Cl. 4).
First use October 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tool Kits Comprised of Tool Box With Automotive Mechanic's Hand Tools Contained Therein, Test Mirror Used as an Inspection Mirror in the Nature of a Tool Used by a Repairman (Int. Cl. 8).
First use March 1964.

Class 31—Filters and Refrigerators

For Engine Oil Filters and Engine Oil Filter Mountings (Int. Cl. 7).
First use 1961.

SN 279,811. Commercial Mechanisms, Inc., Kansas City, Mo. Filed Sept. 7, 1967.



Class 22—Games, Toys, and Sporting Goods

For Baseball Pitching Machines (Int. Cl. 28).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hot Water Washing Systems for Vehicle Washing Units and Other Industrial Uses, Such Systems Including a Water Heater and a Pump for Delivering the Heated Water Under High Pressure and Component Parts of Such Systems (Int. Cl. 7).

First use during February 1967.

SN 281,252. Bulova Watch Company, Inc., Flushing, N.Y. Filed Sept. 27, 1967.

AMERICAN TIME PRODUCTS

Applicant makes no claim to the word "Products" apart from the mark as shown.

Class 21—Electrical Apparatus, Machines, and Supplies

For Inverters and Oscillators (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Tuning Fork Filters, Frequency Generators, Optical Choppers, Timers, Tuning Forks, Light Choppers and Optical Scanners (Int. Cl. 9).

Class 27—Horological Instruments

For Watches and Parts Thereof (Int. Cl. 14).

First use Apr. 3, 1961.

SN 281,656. United-Carr Incorporated, Boston, Mass., assignee, by mesne assignment, of United-Carr Incorporated, Boston, Mass. Filed Oct. 3, 1967.

CINCH-NULINE

Owner of Reg. No. 539,935.

Class 21—Electrical Apparatus, Machines, and Supplies

For Miniature Coaxial, Shielded Cable, Non-Shieldable Cable and Other Connectors and Components for the Foregoing Including but Not Limited to Plugs, Jacks, Adapters, Contacts, Receptacles, Potting Hoods, Caps, Chains, Junction Boxes and Mounting Flanges, and Dummy Receptacles (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Insertion and Removal Tools and Manual Feed and Automatic Feed Crimping Tools for Use in Connection With Connectors, Contacts, and Connector Components (Int. Cls. 7 and 8).

First use on or before Jan. 31, 1966.

SN 282,229. Paul Koch G.m.b.H., Papierverarbeitungswerk, Leuchtturm Albenverlag, Geesthacht, near Hamburg, Germany. Filed Oct. 11, 1967.

LIGHTHOUSE

Owner of German Reg. No. 825,577, dated Aug. 9, 1966; and U.S. Reg. No. 710,271.

Class 21—Electrical Apparatus, Machines, and Supplies

For Flash Lights (Small Portable Electric Lights) and Electric Magnifying Lights (or Lamps) (Int. Cl. 11).

Class 26—Measuring and Scientific Appliances

For Ultra-Violet Light Test Lamps and Test Devices for Cancelled and Mint Postage Stamps (Int. Cl. 9).

SN 282,475. The C. M. Paula Company, Cincinnati, Ohio. Filed Oct. 13, 1967.



Class 8—Smokers' Articles, Not Including Tobacco Products

For Plaster Plaques and Statuettes Sold as a Component Part of Ashtrays (Int. Cl. 34).
First use August 1964.

Class 37—Paper and Stationery

For Plaster Plaques and Statuettes Sold as a Component Part of Pen Sets (Int. Cl. 16).
First use August 1964.

Class 50—Merchandise Not Otherwise Classified

For Plaster Novelty Statuettes (Int. Cl. 20).
First use Sept. 21, 1963.

SN 285,815. Boussois-Souchon-Neuvesel Societe Anonyme, Paris, France. Filed Nov. 29, 1967.

BSN

Owner of French Reg. No. 720,211, dated Jan. 10, 1967.

Class 12—Construction Materials

For Window Panes Cut to Size (Int. Cl. 19).

Class 32—Furniture and Upholstery

For Raw, Polished, Enameled and Hardened Mirrors (Int. Cl. 20).

Class 33—Glassware

For Bottles, Flasks, Tumblers, and Dishes All Made of Glass; Reinforced, Pressed and Hardened Sheet Glass (Int. Cl. 21).

SN 287,157. Eddington Laboratories, Inc., Cornwells Heights, Pa. Filed Dec. 18, 1967.

FAST 'N' CLEAN

Class 6—Chemicals and Chemical Compositions

For Ammonia and a Fabric Softener (Int. Cl. 3).
First use July 27, 1966.

Class 52—Detergents and Soaps

For Dish Detergent, Laundry Detergent, and All-Purpose Cleaner (Int. Cl. 3).
First use Mar. 1, 1966.

SN 287,476. Royal Castle System, Inc., d.b.a. Royaline Foods, Miami, Fla. Filed Dec. 26, 1967.



No claim is made to the word "Foods" apart from the mark. Owner of Reg. Nos. 760,398, 817,080, and 820,352.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drink Syrups (Int. Cl. 32).
First use on or about Sept. 18, 1967.

Class 46—Foods and Ingredients of Foods

For Bakery Products—Namely, Rolls, Buns, Doughnuts, Cakes and Fruit Pies (Int. Cl. 30).
First use on or about Oct. 6, 1967.

SN 287,564. Linvar Limited, Markfield, Leicester, England. Filed Dec. 26, 1967.

LINBIN

Class 2—Receptacles

For Storage Containers—Namely, Bins, Benches and Racking (Int. Cl. 20).

Class 19—Vehicles

For Trollies (Int. Cl. 12).

First use Apr. 1, 1964; in commerce July 1967.

SN 288,153. Blackwell Burner Company, San Antonio, Tex. Filed Jan. 5, 1968.

BLACKWELL

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial Equipment in the Roofing, Construction and Road Building Industries—Namely, Roofer's Pumps, Gravel Spreaders, Hoists, Conveyors and Emulsion Sprayers (Int. Cl. 7).
First use 1949.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Industrial Equipment in the Roofing, Construction and Road Building Industries—Namely, Oil Burners, Components and Accessories Therefor, Gas Burners, Infra Red Burners, Heated Joint Sealers, Asphalt Heating Kettles, Melting Furnaces, Heated Rollers, and Tool Heaters (Int. Cl. 11).
First use 1917.

SN 293,879. Verifio Corporation, Richmond, Calif. Filed Mar. 22, 1968.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves for Regulating and Controlling the Flows and Pressures of Fluids (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools for the Maintenance and Repair of Gas Pressure Regulators and Gas Welding and Cutting Torches—Namely, Tip Pullers, Head and Tip Reseating Tools, Dies, Taps, Adapter Removing Tools, Spring Compressing Tools, Double Ended Vise Wrenches, Holding Jigs, Tip Cleaners and Wrenches All for Gas Nozzles, Gas Torches, Gas Regulators, and Gas Valves and Parts for the Foregoing (Int. Cls. 7 and 8).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Gas Welding and Cutting Outfits; Gas Welding Torches; Gas Cutting Torches; Gas Blast Heating Torches; Gas Welding Nozzles; Gas Cutting Tips, Nozzles, and Attachments; Water Cooled Nozzles for Welding Purposes; Gas Blowpipes; Gas Blowpipe Tips; Gas Blow-Torches; Circle Gas-Cutting Attachments for Cutting Along a Circular Path; Roller Gas-Cutting Attachments; Scarfing Tips; Gas Cross-fire Burners for Glassblowing; Ribbon Gas Burners; Cylinder Gas, Pipe Line, Station Outlet and Cylinder Manifold Regulators for All Cylinder Gases; Cylinder Manifolds; and Parts Therefor (Int. Cls. 7 and 11).

Class 44—Dental, Medical, and Surgical Appliances

For Equipment and Apparatus Used in the Handling and Administering of Medicinal Gases—Namely, Humidifiers for Oxygen and Other Gases, Cylinder Gas Regulators, Inspiratory Valves, Breathing Hods, Inspiratory Units (Comprising a Self-Contained Assembly Including the Gas Tank, Regulator, Gauges, Conduits, and Breathing Hoods); Alcohol Blowpipes and Torches for Dental Plate Work; and Orthodontic Blowpipes; Cylinder Manifolds, and Parts Therefor (Int. Cl. 10).

First use Dec. 11, 1967.

SN 297,890. Storktex Inc., Brooklyn, N.Y. Filed May 10, 1968.

BOBBY-LEE

Class 32—Furniture and Upholstery

For Pillows (Int. Cl. 20).

Class 39—Clothing

For Buntings and Pram Suits (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Blankets, Quilts, Comforters, Receiving Blankets, and Diaper Stackers (Int. Cl. 24).

First use Jan. 24, 1968.

SN 298,379. Raimike's Tool-A-Rama, Springfield, N.J. Filed May 17, 1968.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine Tools—Namely, Punches, V-Blocks, Laps, Taps, Collet Blocks, Clamps, Vises, Drills, Jigs, Grinding Tools, Cutting Tools, Boring Tools, Lathe Attachments and Lifting Gear (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Gaging Tools—Namely, Micrometers, Calipers, Gauge Blocks, Magnetic Cylinder Squares, Bore and Grove Gauges, Centering Scopes, and Flashlight Comparators (Int. Cl. 9).
First use Mar. 1, 1963.

SN 298,381. Raimike's Tool-A-Rama, Springfield, N.J. Filed May 17, 1968.

TOOL-A-RAMA

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine Tools—Namely, Punches, V-Blocks, Laps, Taps, Collet Blocks, Clamps, Vises, Drills, Jigs, Grinding Tools, Cutting Tools, Boring Tools, Lathe Attachments and Lifting Gear (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Gaging Tools—Namely, Micrometers, Calipers, Gauge Blocks, Magnetic Cylinder Squares, Bore and Grove Gauges, Centering Scopes, and Flashlight Comparators (Int. Cl. 9).
First use June 1966.

SN 302,813. Holophane Company, Inc., New York, N.Y. Filed July 16, 1968.



The lining on the drawing is not for color but such lining forms a part of the mark. Owner of Reg. Nos. 763,823 and 763,948.

Class 21—Electrical Apparatus, Machines, and Supplies

For Lighting Fixtures, Luminaires, Light Source Housings and Enclosures, Lighting Hardware, Including Adapters, Outlet Boxes, Brackets for Incandescent, Fluorescent, and Mercury Vapor and Other Gas Discharge Type Lighting (Int. Cl. 11).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Illuminating Lenses, Controlled Illumination Refractors and Reflectors, Prismatic Illuminating Equipment and Components (Including Refractors, Reflectors, and Mounting Supports), RF-Shielding Lighting Equipment, and Street Light Refractors (Int. Cl. 11).

First use May 31, 1968.

SN 307,704. Fenwick Industries, Inc., Leawood, Kans. Filed Sept. 19, 1968.



Class 36—Musical Instruments and Supplies

For Phonograph Records and Tape Recordings (Int. Cl. 9).

Class 38—Prints and Publications

For Books and Sheet Music (Int. Cl. 16).

First use Aug. 23, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 289,933. Uniroyal, Inc., New York, N.Y. Filed Jan. 30, 1968.

TUFT-SET

For Synthetic Latex (Int. Cl. 17).
First use June 27, 1966.

SN 295,461. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Apr. 11, 1968.

LUSTRATUF

For Synthetic Resins in Solid and Liquid Form (Int. Cl. 1).
First use Sept. 8, 1967.

SN 302,234. Indpol, Cucamonga, Calif. Filed July 8, 1968.

MONOTHANE

For Polyurethane Elastomers (Int. Cl. 17).
First use July 17, 1967.

SN 302,959. Polyplastex United, Inc., Union, N.J. Filed July 17, 1968.

PANFLEX

For Flexible Laminated Vinyl Sheet Material Having a Stain-Resistant Surface Sold for Covering Seats and Other Uses in Industrial Arts (Int. Cl. 17).
First use Sept. 16, 1958.

SN 302,965. Polyplastex United, Inc., Union, N.J. Filed July 17, 1968.

PANSHADE

For Semi-Flexible, Opaque Vinyl/Nylon/Mylar Laminated Sheet Material Sold for Aircraft Window Shades and Other Uses in Industrial Arts (Int. Cl. 17).
First use July 26, 1965.

SN 302,967. Polyplastex United, Inc., Union, N.J. Filed July 17, 1968.

PANSKYN

For Semi-Rigid Laminated Vinyl Sheet Material Sold for Side Panelling, Wall Surfaces and Bulkhead Covering on Aircraft and Other Uses in Industrial Arts (Int. Cl. 17).
First use Sept. 29, 1965.

SN 304,008. Mineral Products Corporation, Cleveland Heights, Ohio. Filed July 31, 1968.

MIONITE

For Powdered Mineral Material Useful, for Example, as a Soil Conditioner and Waterproofing Agent (Int. Cl. 1).
First use July 5, 1968.

SN 304,906. Engelhard Minerals & Chemicals Corporation, Edison, N.J. Filed Aug. 12, 1968.

SATINTONE

For Kaolin Clay (Int. Cl. 1).
First use May 1937.

Class 2—Receptades

SN 286,501. Cellu-Craft Inc., New Hyde Park, N.Y. Filed Dec. 8, 1967.

KLEEN-WELD

For Plastic Bags (Int. Cl. 22).
First use Sept. 25, 1967.

SN 295,774. Southern Container Corporation, Deer Park, N.Y. Filed Apr. 16, 1968.



Applicant disclaims the word "Container" when used apart from the mark as shown.
For Receptacles of Fiber Content—Namely, Containers of Paper and Cardboard, Both Corrugated and Non-Corrugated, With and Without Plastic Surface Coatings (Int. Cl. 16).
First use Apr. 15, 1967.

SN 296,451. Pyramid International, Inc., Ravenna, Ohio. Filed Apr. 24, 1968.



For Containers—Namely, Half Gallon Polyethylene Milk Bottles and Various Size General Utility Containers (Int. Cl. 21).
First use Feb. 2, 1967; July 10, 1963, as to "Crator."

SN 297,205. Medical Plastics, Inc., Minneapolis, Minn. Filed May 2, 1968.



The drawing is lined for the color blue but no claim is made to color.
For Disposable Containers—Namely, Water-Soluble Plastic Bags (Int. Cl. 20).
First use Mar. 1, 1968.

SN 297,974. Comet Packaging Corporation, Bronx, N.Y. Filed May 13, 1968.

TRASHKET

For Litter Bags (Int. Cl. 21).
First use Feb. 3, 1968.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 281,978. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Oct. 6, 1967.

ANSCOMATIC

Owner of Reg. Nos. 249,170 and 685,920.
For Carrying Cases, and Head Straps and Neck Straps for Carrying Cameras and Other Photographic Apparatus and Materials (Int. Cl. 18).
First use December 1965.

SN 301,101. Swank, Inc., Attleboro, Mass. Filed June 21, 1968.

MALEBAGS

For Shoulder Strap-Supported Handbags or Wallets (Int. Cl. 18).
First use June 17, 1968.

Class 4—Abrasives and Polishing Materials

SN 308,666. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Oct. 2, 1968.

PANEL AWARD

Owner of Reg. Nos. 719,513 and 719,860.
For Liquid Cleaner and Polisher for Wood, Plywood and Lumber Products, Cupboards, Furniture, Vinyl Upholstery, Leather, Chrome, High Pressure Laminates, Ceramic Tile, Kitchen Appliances, and Painted Gloss and Semi-Gloss Finishes (Int. Cl. 3).
First use on or about Aug. 13, 1968.

Class 5 — Adhesives

SN 262,787. Gisuke Konishi & Company, Limited, Higashi-ku, Osaka, Japan. Filed Jan. 18, 1967.

CONYBOND

Priority claimed under Sec. 44(d) on Japanese application filed Sept. 7, 1966; Reg. No. 793,988, dated Sept. 30, 1968.
For Adhesive Rubber Cement To Bond Rubber, Leather, Wood, Metals, Glass, Cement, Plastics, Cloth, Paper and Concrete (Int. Cl. 1).

SN 285,324. General Gummed Products, Inc., Linden, N.J. Filed Nov. 21, 1967.

CHIPSTRIP

For Reinforced Gummed Tape for Application to Corrugated Cartons (Int. Cl. 17).
First use Oct. 9, 1967.

SN 290,462. Benjamin Foster Company, Philadelphia, Pa. Filed Feb. 7, 1968.

DRION

For Contact Bond Cement (Int. Cl. 1).
First use Dec. 26, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 272,510. Mistake Out Company, Dallas, Tex. Filed May 26, 1967.

LIQUID PAPER

Owner of Reg. No. 652,928.
For Liquid Correction Fluid (Int. Cl. 16).
First use May 18, 1967.

SN 282,427. Armonk Research Company, Inc., Armonk, N.Y. Filed Oct. 13, 1967.

BREEZ

For All-Purpose Household Deodorant (Int. Cl. 5).
First use Oct. 2, 1967.

SN 286,530. International Salt Company, Clarks Summit, Pa. Filed Dec. 8, 1967.

BIG 10 DRILLERS SALT

The exclusive right to the use of the words "Drillers Salt" is disclaimed apart from the entire mark as shown.
For Salt for Use in Compounding Well Drilling Slurries (Int. Cl. 1).
First use on or about May 26, 1965.

SN 288,947. Foseco International Limited, Birmingham, England. Filed Jan. 16, 1968.

TERRACOTE

Owner of British Reg. No. 906,705, dated Mar. 14, 1967; and U.S. Reg. Nos. 770,185 and 772,593.
For Refractory Based Mold, Core and Cover Dressings for Use in the Casting of Metals (Int. Cl. 1).
First use July 1957; in commerce July 1957.

SN 289,873. The British Drug Houses Limited, London, England. Filed Jan. 30, 1968.

PANACIDE

Owner of British Reg. No. 889,367, dated Jan. 17, 1966.
For Fungicides, Algaecides, Bactericides, Microbicides, Cestocides and Disinfectants for Use in Agriculture, Horticulture and Industry (Int. Cl. 5).

SN 292,036. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 27, 1968.

REALM

For Brightener for Laundry Use (Int. Cl. 3).
First use Feb. 2, 1968.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 297,423. Lane Limited, New York, N.Y. Filed May 6, 1968.

PIPEMASTER

For Pipes (Int. Cl. 34).
First use October 1967.

SN 304,527. Wilton Brass Company, Columbia, Pa. Filed Aug. 6, 1968.

ARMETALE

For Cast Metal Ash Trays (Int. Cl. 34).
First use Dec. 1, 1962.

SN 308,407. Tanganyika Meerschaum Corporation, Ltd., Arusha, Tanzania. Filed Sept. 27, 1968.

KILIMANJARO

For Smokers' Pipes (Int. Cl. 34).
First use in or about 1966; in commerce in or about 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 299,833. Defensive Instruments, Inc., Pittsburgh, Pa. Filed June 6, 1968.

THE PREVENTOR

For Pressurized Container Filled With Liquid or Gas Which May Be Discharged To Repel Attack by Assailant (Int. Cl. 13).
First use May 3, 1968.

SN 302,396. Federal Laboratories, Inc., Saltsburg, Pa. Filed July 10, 1968.

MINI-STREAMER

For Liquid Tear Gas Repeaters (Int. Cl. 13).
First use July 1, 1948.

Class 10 — Fertilizers

SN 283,497. Allied Chemical Corporation, New York, N.Y. Filed Oct. 27, 1967.

SLF

For Liquid Fertilizers (Int. Cl. 1).
First use January 1967.

SN 291,337. American Forest Industries Ltd., Victoria, British Columbia, Canada. Filed Feb. 19, 1968.

SEAFOREST

For Soil Conditioner (Int. Cl. 1).
First use July 12, 1967; in commerce Nov. 15, 1967.

SN 297,786. Kem Manufacturing Corporation, Tucker, Ga. Filed May 9, 1968.

NORKEM

Owner of Reg. No. 565,956.
For Liquid Micro-Nutrient Supplement Used for Lawn and Soil Treatment; Concentrated Plant Food for Lawns, Ornamental Trees and Flowers; Soil Conditioning Preparation for Use on Compacted Soil and on Lawns and for Retaining Moisture (Int. Cl. 1).
First use Mar. 4, 1968.

SN 300,354. W. R. Grace & Co., New York, N.Y. Filed June 13, 1968.

MOLY-CO-FIX

For Micronutrient Seed Coating for Soybeans and Other Legumes (Int. Cl. 1).
First use Apr. 8, 1968.

Class 11 — Inks and Inking Materials

SN 288,361. Sperry Rand Corporation, New York, N.Y. Filed Jan. 8, 1968.

REMINGTON

Owner of Reg. No. 233,910.
For Inking Materials for Electrostatic Copier (Int. Cl. 16).
First use Oct. 23, 1967.

Class 12 — Construction Materials

SN 300,602. Masonite Corporation, Chicago, Ill. Filed June 17, 1968.

LIVING WALL

Applicant disclaims exclusive right to the word "Wall" apart from the mark as shown, without waiving its common law rights therein.
For Decorative Wall Paneling, Perforated To Enable Hanging Shelves, Pictures, and Other Similar Wall Accessories Thereon (Int. Cl. 19).
First use Jan. 12, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 264,840. Maga Rubinetterie S.p.A., Milan, Italy. Filed Feb. 16, 1967.

MAGA

Priority claimed under Sec. 44(d) on Italian application filed Oct. 18, 1966; Reg. No. 196,319, dated Feb. 1, 1967.
For Water Taps, Pipe and Pipe Fittings and Drain Fittings (Int. Cl. 11).

SN 269,460. Scovill Manufacturing Company, Waterbury, Conn. Filed Apr. 18, 1967.

CONMAR no/snag ZIPPER

Applicant disclaims the word "Zipper" apart from the mark as shown. Owner of Reg. Nos. 324,689, 601,525, and 691,146.
For Slide Fasteners (Int. Cl. 26).
First use Aug. 31, 1960.

SN 269,461. Scovill Manufacturing Company, Waterbury, Conn. Filed Apr. 18, 1967.

no/snag

For Slide Fasteners (Int. Cl. 26).
First use Aug. 31, 1960.

SN 277,067. Precision Products & Controls, Inc., Tulsa, Okla. Filed July 28, 1967.

RTC

For Miniature Instruments—Namely, Valves and Controls Therefor (Int. Cl. 6).
First use in or about June 1948.

SN 283,810. Eric Muller, Chicago, Ill. Filed Oct. 31, 1967.

NAIL-ALL

For Holder for Driving Nails (Int. Cl. 6).
First use Oct. 25, 1967.

SN 291,340. Aubecq-Auxi (Societe Anonyme), Auxi-le-Chateau, Pas-de-Calais, France. Filed Feb. 19, 1968.

Ligne Charme

Priority claimed under Sec. 44(d) on French Reg. No. 744,379, dated Dec. 15, 1967. The terms "Ligne Charme" can be translated to mean, in English, "charm line."
For Cooking and Table Utensils and Vessels for Household and Kitchen—Namely, All Kinds of Saucepans and Frying Pans (Int. Cl. 21).

SN 294,936. Instock Fasteners, Inc., Cleveland, Ohio. Filed Apr. 4, 1968.



For Industrial Fasteners (Int. Cl. 6).
First use at least as early as May 3, 1967.

Class 15 — Oils and Greases

SN 302,650. T. G. & Y. Stores Company, Oklahoma City, Okla. Filed July 12, 1968.

GOLDEN T

For Motor Oil and Gasoline (Int. Cl. 4).
First use Feb. 12, 1968.

Class 16 — Protective and Decorative Coatings

SN 266,223. Giordano & Rüedi, Winterthur, Zurich, Switzerland. Filed Mar. 8, 1967.



Applicant disclaims the term "Winterthur" apart from the mark as shown. Owner of Swiss Reg. No. 177,939, dated Oct. 14, 1959.
For Polyester and Epoxy Resin Coatings for Floors, Walls, Inside Walls of Swimming Pools and Bath Tubs (Int. Cl. 2).

SN 271,331. Allied Compositions Co., Inc., Maspeth, N.Y. Filed May 12, 1967.

DRYLON

For Silicone Water Repellent Preparation for Application to Exterior Above Grade Masonry (Int. Cl. 2).
First use Oct. 30, 1955.

SN 280,341. Steelcote Manufacturing Co., St. Louis, Mo. Filed Sept. 14, 1967.

EPO-LINE

For Two-Component, Anti-Corrosive, Epoxy Coating Used for Tank Linings, Floors, Structural Steel, and Machinery (Int. Cl. 2).
First use May 3, 1965.

SN 291,790. The Tremco Manufacturing Company, Cleveland, Ohio. Filed Feb. 23, 1968.

TUF-THANE

For Multi-Component, Sealant Coating for Floors (Int. Cl. 2).
First use at least as early as Nov. 22, 1967.
Subj. to Intf. with SN 295,423.

SN 295,423. Davis Paint Company, Kansas City, Mo. Filed Apr. 11, 1968.

TUFF-THANE

For Paint Enamel (Int. Cl. 2).
First use on or about Jan. 22, 1968.
Subj. to Intf. with SN 291,790.

SN 295,651. Kurfees Paint Co., Louisville, Ky. Filed Apr. 15, 1968.

KURAMIC

For Epoxy Wall Coatings, Coatings for Concrete Blocks (Liquid Base and Powder), Floor Coatings and Sealers, All in the Nature of a Liquid Paint (Int. Cl. 2).
First use Apr. 1, 1968.

SN 295,855. Steelcote Manufacturing Co., St. Louis, Mo. Filed Apr. 17, 1968.

COROTHANE

For Liquid Seamless Floor Coating Composition (Int. Cl. 2).
First use Feb. 1, 1968.

SN 299,753. Celanese Corporation, New York, N.Y. Filed June 5, 1968.

CELCON

For Paints, Dopes and Lacquers, Paint and Lacquer Primers, and Rubbing Fillers, for Application to Industrial and Commercial Products, Especially, but Not Limited to, Automobiles, Trucks, Airplanes, Buses, Tractors, and Machinery (Int. Cl. 2).
First use May 3, 1968.

SN 303,441. Plaza Playthings, Inc., Trenton, N.J. Filed July 23, 1968.

FLUORINO

For Water Color Paint (Int. Cl. 2).
First use June 4, 1968.

SN 308,281. Floquil Products, Inc., Cobelskill, N.Y. Filed Sept. 26, 1968.



For Stains, Varnishes, Lacquers, Paint Enamels, Pigments in Dry and Paste Form, Clear and Pigmented Synthetic Resin Protective Coating Materials, Glaze Finishes, and Thinners Therefor (Int. Cl. 2).
First use Jan. 16, 1941.

SN 308,724. Tenax Finishing Products Company, Newark, N.J. Filed Oct. 2, 1968.

POLESTRON

For Smooth and Textured Coatings for Wood, Metal and Plastic Based on a Combination of Polyester and Other Resins (Int. Cl. 2).
First use Oct. 24, 1967.

Class 17 — Tobacco Products

SN 292,624. Skandinavisk Tobakskompagni A/S, Rodovre, Denmark. Filed Mar. 6, 1968.

TOWN & COUNTRY

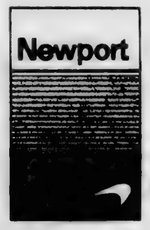
Owner of Danish Reg. No. 2071-1964, dated May 30, 1964.
For Smoking Tobacco (Shag) (Int. Cl. 34).

SN 295,056. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed Apr. 5, 1968.



Applicant makes no claim to the expression "Established 1890" apart from the mark as shown.
For Cigarettes (Int. Cl. 34).
First use Oct. 30, 1967; in commerce Oct. 30, 1967.

SN 305,331. Lorillard Corporation, New York, N.Y. Filed Aug. 16, 1968.



The mark is lined to indicate a design and not for color.
Owner of Reg. Nos. 678,757 and 689,653.
For Cigarettes (Int. Cl. 34).
First use July 16, 1968.

SN 306,405. Write Shops, Inc., Chicago, Ill. Filed Aug. 30, 1968.

PIPE PAL

The word "Pipe" is disclaimed apart from the mark as shown.
For Tobacco Products—Namely, Special Blends of Pipe Tobacco (Int. Cl. 34).
First use May 28, 1968.

Class 18 — Medicines and Pharmaceutical Preparations

SN 281,840. L. T. York Company, d.b.a. Medi-Kay Pharmacal Co., Brookfield, Mo. Filed Oct. 4, 1967.

MEDI-LUBE

Owner of Reg. Nos. 356,346, 795,689, and others.
For Mineral Oil (Int. Cl. 5).
First use Sept. 28, 1967.

SN 281,842. L. T. York Company, d.b.a. Medi-Kay Pharmacal Co., Brookfield, Mo. Filed Oct. 4, 1967.

MEDI-SWIPE

Owner of Reg. Nos. 356,346, 795,689, and others.
For Rubbing Alcohol (Int. Cl. 5).
First use Sept. 28, 1967.

SN 282,610. Oak Ridge Pharmaceuticals, Inc., Columbia, S.C. Filed Oct. 16, 1967.

APORVITE

For Medicinal Preparation for Lack of Appetite and B Complex Deficiencies (Int. Cl. 5).
First use Oct. 5, 1965.

SN 282,613. Oak Ridge Pharmaceuticals, Inc., Columbia, S.C. Filed Oct. 16, 1967.

HISTOR-D

For Medicinal Preparation for the Temporary Relief of Colds, Hay Fever and Similar Allergic Conditions (Int. Cl. 5).
First use Oct. 2, 1965.

SN 282,618. Oak Ridge Pharmaceuticals, Inc., Columbia, S.C. Filed Oct. 16, 1967.

VITORMELTS-F

For Dietary Supplement Containing Vitamins (Int. Cl. 5).
First use Oct. 5, 1965.

SN 285,036. Merck & Co., Inc., Rahway, N.J. Filed Nov. 16, 1967.

SUCRETS

Owner of Reg. Nos. 296,852 and 752,816.
For Pharmaceutical Preparation for the Relief of Coughs and Minor Throat Irritations (Int. Cl. 5).
First use Sept. 26, 1967.

SN 295,832. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed Apr. 17, 1968.

PATHMARK

Owner of Reg. Nos. 854,858, 856,671, and others.
For Vitamins and Aspirins (Int. Cl. 5).
First use Feb. 2, 1968.

SN 297,297. Carter-Wallace, Inc., New York, N.Y., assignee of Lambert-Kay, Inc., Los Angeles, Calif. Filed May 3, 1968.

FEMALT

For Medication for Cats Whose Action Is To Remove Hairballs That May Have Accumulated in the Cat's Digestive System (Int. Cl. 5).
First use May 24, 1966.

SN 299,214. Bristol-Myers Company, New York, N.Y. Filed May 28, 1968.

ALTERNIN

For Analgesic (Int. Cl. 5).
First use Apr. 9, 1968.

SN 299,400. Carter-Wallace, Inc., New York, N.Y. Filed May 31, 1968.

VANAIR

For Medicated Cream for Treatment of Pimples and Acne (Int. Cl. 5).
First use Apr. 30, 1968.

SN 299,500. Sigma-Tau Industrie Farmaceutiche Riunite S.p.A., Rome, Italy. Filed May 31, 1968.

PECTALMATO

Owner of Italian Reg. No. 217,972, dated Dec. 13, 1967.
For Antacid Preparation for the Treatment of Gastric and Duodenal Disorders (Int. Cl. 5).

SN 299,586. The Purdue Frederick Company, Yonkers, N.Y. Filed June 3, 1968.

BUCAGEL

For Topical Analgesic Preparation (Int. Cl. 5).
First use Mar. 19, 1968.

SN 299,587. The Purdue Frederick Company, Yonkers, N.Y. Filed June 3, 1968.

XERUMENEX

Owner of Reg. No. 674,459.
For Preparation for Aid in the Removal of Ear Wax (Int. Cl. 5).
First use Mar. 19, 1968.

SN 299,749. Azienda Chimiche Riunite Angelini Francesco, Rome, Italy. Filed June 5, 1968.

VERSUS

Priority claimed under Sec. 44(d) on Italian application filed Dec. 13, 1967; Reg. No. 220,360, dated Feb. 5, 1968.
For Topical Anti-Inflammatory Pharmaceutical Cream (Int. Cl. 5).

SN 300,141. USV Pharmaceutical Corporation, New York, N.Y. Filed June 10, 1968.

BUMEL

For Oral Hypoglycemic Agent (Int. Cl. 5).
First use May 23, 1968.

SN 300,242. American Cyanamid Company, Wayne, N.J. Filed June 12, 1968.

NILSTAT

For Antifungal Agent (Int. Cl. 5).
First use Jan. 15, 1968.

SN 306,858. Parke, Davis & Company, Detroit, Mich. Filed Sept. 9, 1968.

IMMU-Tetanus

Owner of Reg. No. 715,333.
For Immunological Preparation (Int. Cl. 5).
First use on or before May 25, 1967.

SN 307,173. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 12, 1968.

CLEAR-M

For Medicated Preparation for Use in the Treatment of Acne, Pimples, and Other Skin Conditions (Int. Cl. 5).
First use Aug. 9, 1968.

SN 307,174. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 12, 1968.

CLEAR-DOWN

For Medicated Preparation for Use in the Treatment of Acne, Pimples, and Other Skin Conditions (Int. Cl. 5).
First use Aug. 5, 1968.

SN 307,400. Warner-Lambert Research Institute, Morris Plains, N.J. Filed Sept. 16, 1968.

ESTROVIS

Owner of Reg. No. 858,821.
For Estrogenic Hormone (Int. Cl. 5).
First use July 22, 1968.

SN 307,714. Mead Johnson & Company, Evansville, Ind. Filed Sept. 19, 1968.

AMIGOS

The English translation of "Amigos" is "friends."
For Vitamin Preparations (Int. Cl. 5).
First use on or prior to Sept. 13, 1968.

SN 307,715. Mead Johnson & Company, Evansville, Ind. Filed Sept. 19, 1968.

AMIS

The English translation of "Amis" is "friends."
For Vitamin Preparations (Int .Cl. 5).
First use on or prior to Sept. 13, 1968.

SN 307,912. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

IMMUNITY MIST

Applicant disclaims the word "Mist" separate and apart from the mark as shown.
For Feminine Cleansing Douche (Int. Cl. 5).
First use Aug. 6, 1968.
Subj. to Intf. with SN 306,430.

SN 307,917. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

VEE MIST

Applicant disclaims the word "Mist" separate and apart from the mark as shown.
For Feminine Cleansing Douche (Int. Cl. 5).
First use Aug. 6, 1968.

SN 311,211. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Nov. 4, 1968.

CLINICARE

For Ointment for Relieving Inflammation and Associated Skin Disorders in Cats and Dogs (Int. Cl. 5).
First use Oct. 11, 1968.

SN 311,212. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Nov. 4, 1968.

MASTABAN

For Antibiotic Hormone Preparation for Veterinary Use (Int. Cl. 5).
First use Oct. 11, 1968.

SN 311,765. Beecham Inc., Clifton, N.J. Filed Nov. 12, 1968.

POSIPEN

For Antibiotic (Int. Cl. 5).
First use Nov. 4, 1968.

SN 311,800. Youngs Drug Products Corporation, New York, N.Y. Filed Nov. 12, 1968.

Youngs

Owner of Reg. Nos. 797,070, 838,052, and others.
For Disposable Applicator Saturated With a Liquid Medicated Preparation for Topical Application for Aid in Acne Therapy (Int. Cl. 5).
First use on or about June 16, 1967.

SN 313,064. Parke, Davis & Company, Detroit, Mich. Filed Nov. 26, 1968.

DILANTIN-30

Owner of Reg. No. 858,822.
For Anticonvulsant Preparation (Int. Cl. 5).
First use on or before Apr. 30, 1968.

Class 19—Vehicles

SN 273,642. Indiana Recreational Vehicle Parts and Service, Inc., Elkhart, Ind. Filed June 12, 1967.

IRV

For Parts, Accessories and Equipment for Travel Trailers and Campers—Namely, Doors, Bed Slides, Rod Racks, Roof Edges, Baggage Racks, Hitches, Steps, Metal Siding Panels and Sheets, Windows, Window Cranks and Plastic Panels (Int. Cl. 12).
First use on or before May 5, 1967.

SN 280,663. Wren Aircraft Corporation, Fort Worth, Tex. Filed Sept. 18, 1967.

WREN

For Aircraft and Components Therefor (Int. Cl. 12).
First use Mar. 20, 1964.

SN 286,255. Ferrari S.p.A. Esercizio Fabbriche Automobili e Corse, Modena, Italy. Filed Dec. 5, 1967.



For Automobiles and Parts Therefor (Int. Cl. 12).
First use Nov. 14, 1965; in commerce Aug. 13, 1967.

SN 287,049. Toyo Kogyo Company Limited, Aki-gun, Hiroshima-ken, Japan. Filed Dec. 15, 1967.

COSMO

Priority claimed under Sec. 44(d) on Japanese application filed June 22, 1967; Reg. No. 786,500, dated July 17, 1968.
For Automobiles and Parts Thereof (Int. Cl. 12).

SN 287,411. Allied Steel & Tractor Products, Inc., Cleveland, Ohio. Filed Dec. 22, 1967.

SCRAMBLER

For Off-Highway Recreational Vehicles and Structural Parts Thereof (Int. Cl. 12).
First use Dec. 14, 1967.

SN 289,000. Bombardier Limited, Valcourt, Quebec, Canada. Filed Jan. 17, 1968.

ALPINE

For Snowmobiles and Parts Therefor (Int. Cl. 12).
First use Oct. 2, 1964; in commerce Oct. 2, 1964.

SN 291,341. Autodelta Societa per Azioni, Settimo Milanese, Italy. Filed Feb. 19, 1968.

AUTODELTA

Owner of Italian Reg. No. 203,933, dated Apr. 5, 1967.
For Automobiles, Airplanes, and Boats (Int. Cl. 12).
Subj. to Intf. with SN 295,401.

SN 291,342. Autodelta Societa per Azioni, Settimo Milanese, Italy. Filed Feb. 19, 1968.

AUTODELTA

Owner of Italian Reg. No. 205,620, dated Apr. 18, 1967.
For Automobiles, Airplanes, and Boats (Int. Cl. 12).
Subj. to Intf. with SN 295,401.

SN 291,453. Universal Oil Products Company, d.b.a. UOP Bostrom Division, Des Plaines, Ill. Filed Feb. 19, 1968.

WESTCOASTER

For Seats and Parts Thereof for Cab Over Engine Trucks (Int. Cl. 12).
First use Jan. 20, 1958.

SN 295,184. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed Apr. 8, 1968.

SANLANDO

For Boats (Int. Cl. 12).
First use Sept. 20, 1967.

SN 295,186. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed Apr. 8, 1968.

CUTLASS

For Boats (Int. Cl. 12).
First use Sept. 20, 1967.

SN 295,401. General Motors Corporation, Detroit, Mich. Filed Apr. 11, 1968.

DELTA 88

For Automobiles (Int. Cl. 12).
First use 1955.
Subj. to Intf. with SN 291,341 and SN 291,342.

SN 298,106. Guido Carnielli, Milan, Italy. Filed May 14, 1968.

ANNABELLA

Owner of Italian Reg. No. 201,217, dated Feb. 17, 1965.
For Bicycles, Motorcycles, and Motorscooters (Int. Cl. 12).

SN 307,146. Sure Plus Manufacturing Company, Chicago, Ill. Filed Sept. 11, 1968.

KING OF THE ROAD

For Mirrors for Trucks and the Like (Int. Cl. 12).
First use Nov. 10, 1966.

Class 20 — Linoleum and Oiled Cloth

SN 298,705. Congoleum Industries, Inc., Kearny, N.J., assignee of Congoleum-Nairn Inc., Kearny, N.J. Filed May 21, 1968.

THE KID-CUSHIONED FLOOR

Applicant disclaims the use of the word "Floor" apart from the mark and design as shown.
For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles (Int. Cls. 19 and 27).
First use Apr. 17, 1968.

SN 298,707. Congoleum Industries, Inc., Kearny, N.J., assignee of Congoleum-Nairn Inc., Kearny, N.J. Filed May 21, 1968.

THE KID-PROOF FLOOR

Applicant disclaims the use of the word "Floor" apart from the mark and design as shown.
For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles (Int. Cls. 19 and 27).
First use Apr. 17, 1968.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 263,246. Ball Brothers Company Incorporated, Muncie, Ind. Filed Jan. 25, 1967.

BALL

For Electronic and Electrical Video Signal Generating, Processing, and Presentation Equipment—Namely, Video Signal Amplifying, Generating and Multiplexing Devices, Television Monitors, Special Effects Generators, and Television Signal Conversion and Communication Linking Systems (Int. Cl. 9).
First use in or about December 1963.

SN 267,728. Chrondek Electronics, Inc., Costa Mesa, Calif. Filed Mar. 28, 1967.

CHRONDEK

For Racing Timing Systems and Racing Starting Systems, and Components Thereof Consisting of Electronic Timers, Photo Pickups, Light Sources and Display Panels and Stands (Int. Cl. 9).
First use May 1954.

SN 282,815. Phelps Dodge Magnet Wire Corporation, Fort Wayne, Ind. Filed Oct. 18, 1967.

ARMORED POLYTHERMALEZE

Applicant disclaims the term "Armored" apart from the mark. Owner of Reg. No. 717,806.
For Magnet Wire (Int. Cl. 9).
First use Mar. 8, 1967.

SN 282,816. Phelps Dodge Magnet Wire Corporation, Fort Wayne, Ind. Filed Oct. 18, 1967.

A. P. BONDEZE

Owner of Reg. Nos. 543,516 and 787,083.
For Magnet Wire (Int. Cl. 9).
First use Apr. 14, 1967.

SN 283,044. United Co-Operatives, Inc., Alliance, Ohio. Filed Oct. 20, 1967.

HALT

For Electric Fence Controllers (Int. Cl. 9).
First use on or about Sept. 13, 1967.

SN 283,464. Shibaden Corporation of America, Woodside, N.Y. Filed Oct. 26, 1967.

SHIBADEN

For Closed Circuit Television Apparatus and Equipment—Namely, Camera Controls, Television Cameras, Radio Monitors, Video Signal Amplifiers, Video Distribution Amplifiers, Audio Modulators, Electron Tubes, Transistors, Diodes, Switches, Connectors, Broadcast Transmitters, Microphones, Receivers, and Carrying Cases for Batteries (Int. Cl. 9).
First use December 1963.

SN 283,645. Edwards Power Door Co., Inc., Mount Vernon, N.Y. Filed Oct. 30, 1967.

POWR EDWARDS DOOR

No claim is made to the words "Power Door."
For Electric Garage Door Operators and Parts Thereof (Int. Cl. 9).
First use on or about Aug. 26, 1965.

SN 285,517. Aura-Lite Mfg. Co., Hackensack, N.J. Filed Nov. 24, 1967.

Auralume

For Lighting Fixtures, Residential and Commercial, for Use With Incandescent Lamps (Int. Cl. 11).
First use December 1966.

SN 286,669. Harvey Hubbell, Incorporated, Bridgeport, Conn. Filed Dec. 11, 1967.

HUBBELL DESIGNERLINE

For Electrical Wiring Devices—Namely, Electrical Switches, Receptacles and Wall Plates (Int. Cl. 9).
First use Oct. 23, 1967.

SN 286,721. Republic Tool & Manufacturing Corp., Century City, Calif. Filed Dec. 11, 1967.

LO-VO-LITE

For Portable Low Voltage Lighting Systems for Indoor and Outdoor Safety, Security and Accent Lighting (Int. Cl. 11).
First use Feb. 21, 1966.

SN 287,837. W. B. Snook Mfg. Co., Inc., Palo Alto, Calif. Filed Dec. 29, 1967.

AGATROL

For Electrolytic Silver Recovery Unit (Int. Cl. 9).
First use July 21, 1967.

SN 289,368. Sensor Technology, Inc., Van Nuys, Calif. Filed Dec. 20, 1967.

SENSOR TECH

The electronic symbol in the center of the design portion of the mark is disclaimed apart from the mark as shown.
For Silicon Solar Cells (Int. Cl. 9).
First use Nov. 21, 1967.

SN 293,749. Standard Telefon og Kabelfabrik A/S, Okern, Oslo, Norway. Filed Mar. 20, 1968.

CRYPTEL

For Electronic Cryptographic Scrambling Machine (Int. Cl. 9).
First use on or about May 30, 1967; in commerce June 13, 1967.

SN 300,136. Tek Bearing Company, Inc., d.b.a. Auto Safety Equipment Company, Farmingdale, N.Y. Filed June 10, 1968.

GANG-WAY

For Electric Alarm Signals To Indicate That the Body of the Truck Is in a Raised Position (Int. Cl. 9).
First use Apr. 29, 1968.

SN 306,296. "Automatic" Sprinkler Corporation of America, d.b.a. "Automatic" Vandalarm, Houston, Tex. Filed Aug. 30, 1968.

The drawing is lined for the color red. Owner of Reg. Nos. 712,747, 853,041, and others.
For Electrical Burglary, Flooding, Fire, and Mechanical Failure Alarm Systems of the Individual Location and Central Station Types (Int. Cl. 9).
First use July 16, 1968.

SN 306,617. Nanbu Industrial Co., Ltd., Numazu-City, Shizuoka-Prefecture, Japan. Filed Sept. 5, 1968.

For High Intensity Electric Lamps (Int. Cl. 11).
First use at least as early as July 30, 1967; in commerce July 30, 1967.

Class 22—Games, Toys, and Sporting Goods

SN 272,207. Plastics Research and Development Corporation, Fort Smith, Ark. Filed May 23, 1967.



No claim of exclusive right is made to the word "Minnow" for fishing lures, apart from the mark as shown.
For Fishing Lures (Int. Cl. 28).
First use at least as early as May 1963.

SN 291,912. Clinton R. Sutton, d.b.a. The Loony Loop Company, Memphis, Tenn. Filed Feb. 26, 1968.



For Puzzle (Int. Cl. 28).
First use Apr. 15, 1966.

SN 291,919. Pete Uram Sales, Inc., Wyandotte, Mich. Filed Feb. 26, 1968.

1ST TEE

For Golf Bags and Golf Roll Bags (Int. Cl. 28).
First use Oct. 31, 1967.

SN 292,206. KMS Industries, Inc., Ann Arbor, Mich. Filed Feb. 29, 1968.

SKIRMISH

For Equipment for Playing a Word Game (Int. Cl. 28).
First use Feb. 23, 1968.

SN 293,548. Milton Bradley Company, East Longmeadow, Mass. Filed Mar. 18, 1968.

HAPPY FACE

For Equipment Sold as a Unit for Playing a Card Game (Int. Cl. 28).
First use Jan. 15, 1968.

SN 293,550. Milton Bradley Company, East Longmeadow, Mass. Filed Mar. 18, 1968.



Owner of Reg. Nos. 642,857 and 825,239.
For Games and Toys Comprising Board Games Played With Movable Playing Pieces, Card Games, Games Consisting of Playing Members Carrying Indicia, Jigsaw Games, Puzzles, Toy Animals, Dolls and Costumes Therefor, Toy Blocks, Toy Wheeled Vehicles, Pull Toys, Toy Houses and Furniture Therefor, Peg Boards, Toy Blocks, Colored Sticks and Balls and Squares, Toy Beads, and Sewing Cards (Int. Cl. 28).
First use Jan. 1, 1948.

SN 294,196. The H. L. Leonard Rod Co., Central Valley, N.Y. Filed Mar. 26, 1968.

UP

For Silicone Material for Application to Fishing Flies To Ensure Flotation Thereof (Int. Cl. 28).
First use April 1965.

SN 294,627. Glen E. Henson, d.b.a. Robar, Independence, Mo. Filed Apr. 1, 1968.



For Exercising Apparatus Comprising a Mechanism for Pulling a Rope Therethrough Against a Selected Sliding Frictional Resistance (Int. Cl. 28).
First use Feb. 13, 1968.

SN 295,650. S. S. Kresge Company, Detroit, Mich. Filed Apr. 15, 1968.

PAR-RITE

For Golf Products and Accessories—Namely, Men's and Ladies' Golf Spikes, Spike Wrenches, Tees, Telescoping Golf Ball Retrievers, Hand Golf Ball Washers, Golf Club Cleaning-Drying Pads, Score Keepers, Score Caddies, Ball Markers, Practice Driving Balls, Cover Keepers, Stroke Counters, Golf Accessory and Bag Straps and Putting Cups (Int. Cl. 28).
First use in or before February 1968.

SN 295,760. The Ohio Art Company, Bryan, Ohio. Filed Apr. 16, 1968.

DOODLE LITE

Applicant disclaims the word "Lite" apart from the mark as shown without waiving any of its common law rights in the mark.
For Toy Phosphorescent Screen Writing and Sketching Equipment (Int. Cl. 28).
First use Mar. 5, 1968.

SN 296,425. Mary Ann Haasl, Downey, Calif. Filed Apr. 24, 1968.

TNT

For Fish Bait Composition (Int. Cl. 28).
First use Mar. 21, 1968.

SN 297,618. Twinpak Ltd., Lachine, Quebec, Canada. Filed May 7, 1968.

FOOLSEE

Priority claimed under Sec. 44(d) on Canadian application filed Feb. 1, 1968; Reg. No. 159,093, dated Nov. 1, 1968.
For Action Toy—Namely, a Hoop With a Weight Attached by a Length of Cord (Int. Cl. 28).

SN 297,685. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed May 8, 1968.

PATHMARK

Owner of Reg. Nos. 854,358, 856,671, and others.
For Playing Cards (Int. Cl. 28).
First use Dec. 14, 1967.

SN 298,340. F. Levy & Co. Ltd., London, England. Filed May 16, 1968.



Applicant disclaims the word "Toys" apart from the mark as shown.
For Toy Models—Namely, Motor Vehicles, Aircraft, Boats; Dolls, Toy Tea Sets, Children's Card Games and Skipping Ropes (Int. Cl. 28).
First use June 1965; in commerce Mar. 1, 1968.

SN 299,425. CO-5 Company, Inc., Benton Harbor, Mich. Filed May 31, 1968.



For Apparatus Sold as a Unit for Playing a Table Type Parlor Game (Int. Cl. 28).
First use Apr. 1, 1968.

SN 300,482. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed June 14, 1968.

MARLIN

For Underwater Athletic Products—Namely, Wet Suits Including Sharkskin Boots (Int. Cl. 25).
First use September 1967.

SN 300,679. Blazon, Inc., Akron, Ohio. Filed June 18, 1968.
For Outdoor Play and Recreational Equipment (Int. Cl. 28).

SUNMASTER

First use May 23, 1968.

SN 300,730. Nova Learning Corporation, Miami, Fla. Filed June 18, 1968.

A NOVA ACADEMIC GAME

Applicant disclaims the words "Academic Game" apart from the mark as shown.
For Equipment for Use in Playing Educational Games (Int. Cl. 28).
First use at least as early as May 24, 1968.

SN 303,565. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 25, 1968.

BEAM

For Golf Balls (Int. Cl. 28).
First use May 1, 1968; in commerce May 1, 1968.

SN 303,566. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 25, 1968.

GAZELLE

For Golf Balls (Int. Cl. 28).
First use May 1, 1968; in commerce May 1, 1968.

SN 303,567. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 25, 1968.

BLUE SKY

For Golf Balls (Int. Cl. 28).
First use May 1, 1968; in commerce May 1, 1968.

SN 303,568. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 25, 1968.

SPARK

For Golf Balls (Int. Cl. 28).
First use May 1, 1968; in commerce May 1, 1968.

SN 305,383. Wham-O Mfg. Co., San Gabriel, Calif. Filed Aug. 19, 1968.

ZIP ZAP

For Elastically Suspended and Controlled Game Device (Int. Cl. 28).
First use July 31, 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 275,254. The Reece Corporation, Waltham, Mass., assignee of General Automated Machinery Corporation, Camp Hill, Pa. Filed July 3, 1967.

Air-O-Trim

For Sewing Machine Accessories—Namely, Automatic Drive and Control Systems Attachable to Sewing Machines and Including Air Operable Combination Brake and Clutch Units for Sewing Machines, Thread Cut-Offs and Presser Foot Lifters; Needle Positioners, Binding Trimmers, Work Trimmers and Thread Tensioners Individually or as a Part of Said Automatic Drive and Control Systems (Int. Cl. 7).
First use June 1, 1964.

SN 277,160. General Bearing Co., West Nyack, N.Y. Filed July 31, 1967.

GENBEARCO

For Bearings, Rollers and Balls Therefor, Ball Transfers, Label Holders, Handles and Mechanical Clutches (Int. Cl. 7).
First use on or about Feb. 15, 1966.

SN 277,161. General Bearing Co., West Nyack, N.Y. Filed July 31, 1967.



For Bearings, Rollers and Balls Therefor, Ball Transfers, Label Holders, Handles and Mechanical Clutches (Int. Cl. 7).
First use on or about Feb. 15, 1966.

SN 278,569. Atlantic Company, Atlanta, Ga. Filed Aug. 18, 1967.

WORLD BAZAAR

Owner of Reg. Nos. 833,913, 842,439, and others.
For Forks, Knives, Steak Branding Irons, Iron Barbecue Tools, and Pokers (Int. Cl. 8).
First use on or about Nov. 15, 1965.

SN 279,463. Dowty Hydraulic Units Limited, Cheltenham, England. Filed Aug. 31, 1967.

TAURO

Owner of British Reg. No. 880,644, dated June 11, 1965, and U.S. Reg. No. 780,963.
For Hydraulic Pumps and Hydraulic Motors Sold Only to Manufacturers (Int. Cl. 7).

SN 279,810. Commercial Mechanisms, Inc., Kansas City, Mo. Filed Sept. 7, 1967.

BLAZER

For Hot Water Washing Systems for Vehicle Washing Units and Other Industrial Uses, Such Systems Including a Water Heater and a Pump for Delivering the Heated Water Under High Pressure (Int. Cl. 7).
First use Aug. 14, 1967.

SN 282,363. The Cincinnati-Forte Company, Niles, Ill., assignee of Forte Equipment Company, Incorporated, Niles, Ill. Filed Oct. 12, 1967.

FORTE

For Coil Handling Machinery—Namely, Coil Threaders, Recoilers and Overarm Separators, Down Enders, Coil Loading Cars, Roller Levelers, Edge Straighteners, Edge Trimmers, Scrap Choppers, Shears, Shear Measuring Unit Stackers, Shear Blank Lines, Coil Slitter Lines, and Components Therefor (Int. Cl. 7).
First use June 8, 1962.

SN 283,030. Pivot Punch Corporation, North Tonawanda, N.Y. Filed Oct. 20, 1967.

TONDRA

For Machine Operated Metal Working Punches and Dies and Parts Thereof (Int. Cl. 7).
First use on or about Dec. 15, 1950.

SN 283,768. Cascade Corporation, Portland, Oreg. Filed Oct. 31, 1967.



Owner of Reg. Nos. 433,604 and 667,371.
For Hydraulic Cylinders and Lift Truck Attachments (Int. Cl. 7).
First use June 1958.

SN 284,299. The Eimco Corporation, Salt Lake City, Utah. Filed Nov. 7, 1967.

CAMBELT

For Material Handling Equipment for Moving Fluid and Semi-Fluid Bulk Material—Namely, Belt Conveyors (Int. Cl. 7).
First use on or about Nov. 1, 1964.

SN 284,314. Magie Bros. Oil Co., Franklin Park, Ill. Filed Nov. 7, 1967.

FEURALON

For Formed Self-Lubricating Structures Comprising Plastics and Plastic Composites for Machine Parts—Namely, Bearings and Parts Thereof, Retainers, Gears, Thrust Washers, and Wear Strips (Int. Cl. 7).
First use Oct. 25, 1967.

SN 284,773. Whitin Machine Works, Inc., Whitinsville, Mass. Filed Nov. 13, 1967.

ACCU-DRAFT

For Textile Machinery—Namely, Textile Drawing Frames (Int. Cl. 7).
First use May 1, 1963.

SN 285,383. Baker Equipment Engineering Company, Inc., Richmond, Va. Filed Nov. 22, 1967.

SPIRA-MATIC

For Construction Equipment—Namely, Derricks, Cranes and Mobile Variable Position Manlifts (Int. Cl. 7).
First use March 1963.

SN 287,924. Thomas R. Larrison, d.b.a. Larmet Company, Griffith, Ind. Filed Jan. 2, 1968.

LARMET

For Boring Bars, Milling Heads, Drilling Heads, Belt Grinders for Shaping Hard Goods, Metal Grinding Machines, Wood Grinding Machines, Plastic Grinding Machines, Ceramic Grinding Machines, Portable Electric Drills, Portable Electric Conversion Tools, Portable Electric Grinders, and Parts Therefor (Int. Cl. 7).
First use on or prior to Mar. 1, 1950.

SN 288,710. Nasco Equipment Company, Elba, Ala. Filed Jan. 12, 1968.

LOADSTER

For Industrial Lift Trucks (Int. Cl. 12).
First use Nov. 6, 1967.

SN 291,521. Puma-Werk Lauterjung & Sohn, Solingen, Germany. Filed Feb. 20, 1968.

PUMA

Owner of German Reg. No. 836,654, dated Sept. 1, 1967; and U.S. Reg. No. 688,248.
For Hunting and Sporting Knives and Sheaths Therefor (Int. Cl. 8).

SN 292,495. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed Mar. 5, 1968.

EDITOR

For Typewriters (Int. Cl. 16).
First use Jan. 12, 1968; in commerce Jan. 12, 1968.

SN 293,961. Tuthill Pump Company, Chicago, Ill. Filed Mar. 22, 1968.

CLASSIC

For Consumer Type Liquid Dispensing Pumps (Int. Cl. 7).
First use Mar. 8, 1968.

SN 295,166. Premium Corporation of America, Inc., Minneapolis, Minn. Filed Apr. 8, 1968.

LADY MARIAN

For Carpet Sweepers (Int. Cl. 21).
First use Oct. 9, 1967.

SN 295,483. Campbell Manufacturing Co., Walthill, Nebr. Filed Apr. 12, 1968.

BEE-LINE

For Agricultural Sprayers and Parts Thereof (Int. Cl. 7).
First use at least as early as February 1967; on or about Feb. 1, 1959, in a different form.

SN 295,621. Tannie C. Craighead, d.b.a. Products of Elegance, La Jolla, Calif. Filed Apr. 15, 1968.

THE VISIONETTE

For Stenographer's Copyholders (Int. Cl. 16).
First use Dec. 1, 1967.

SN 298,369. Udico Corporation, Los Angeles, Calif. Filed May 16, 1968.

UDICO

Owner of Reg. No. 737,813.
For Electrically Driven Ice Crushers (Int. Cl. 7).
First use prior to Jan. 1, 1968.

SN 300,575. Formsprag Company, Warren, Mich. Filed June 17, 1968.

FORM-LOCK

For Torque-Transmitting Devices—Namely, Clutches for Preventing Reverse Feedback of Torque (Int. Cl. 7).
First use Apr. 19, 1968.

SN 301,424. Hamilton Float & Trowel Limited, Hamilton, Ontario, Canada. Filed June 26, 1968.

DUB-L-DUTY

For Trowel Blades for Troweling Machines (Int. Cl. 7).
First use June 1, 1963; in commerce Apr. 1, 1968.

SN 303,229. National Fleetwash Systems, Incorporated, Plainfield, N.J. Filed July 22, 1968.



For Automatic Vehicle Washing Systems Including Twin-Tower Drive-Through Equipment, Single Tower Drive-In/Back-Out Equipment and Overhead Equipment and Parts Thereof (Int. Cl. 7).
First use Jan. 3, 1967.

SN 307,800. American Hoist & Derrick Company, St. Paul, Minn. Filed Sept. 20, 1968.

CHROMEINITE-H

For Tips and Liners for Asphalt Mixing Machines (Int. Cl. 7).
First use May 1, 1968.

SN 307,935. Mini-Sew Sales Ltd., Vancouver, British Columbia, Canada. Filed Sept. 23, 1968.

Mini-Sew

Owner of Canadian Reg. No. 158,114, dated Aug. 30, 1968.
For Hand Sewing Machines (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

SN 279,831. Icon Corporation, Cambridge, Mass. Filed Sept. 7, 1967.

ICON

For Drive Circuitry Controls for Stepping Motors; Stepping Motors; Numerical Control Systems for Machine Tools; Digital Automatic Positioning Controls for Instruments and Machine Assemblies; and Data Displays (Int. Cl. 9).
First use Oct. 1, 1965.

SN 282,500. E. J. Ward Limited, Scarborough, Ontario, Canada. Filed Oct. 13, 1967.

ASTROFLUX

For Machine for Inspecting for Defects in Metal Parts Including Crank Shafts, Connecting Rods, Studs, Spindles, Axles, Hangers and Gears (Int. Cl. 9).
First use February 1964; in commerce February 1964.

SN 282,716. Ohaus Scale Corporation, Union, N.J. Filed Oct. 17, 1967.

OHAUS

Owner of Reg. No. 551,269.
For Weighing Apparatus Including: Balances and Scales, Counterbalance Weights, Devices and Containers for Handling, Loading and Storing Said Weights, and Accessories for Said Balances and Scales, Including Dust Covers, Weight and Material Holding Pans, Material Handling Implements, etc. (Int. Cl. 9).
First use early in the year 1920.

SN 282,787. Duncan Electronics, Inc., Costa Mesa, Calif. Filed Oct. 18, 1967.



For Potentiometers (Int. Cl. 9).
First use Sept. 29, 1967.

SN 283,721. Scientific Instruments, Inc., Skokie, Ill. Filed Oct. 30, 1967.

DYNA-SENSE

For Electrical Control and Measuring Equipment, Particularly Liquid Level Maintaining Equipment and Temperature Measuring Equipment (Int. Cl. 9).
First use July 1967.

SN 285,191. The Bissett-Berman Corporation, Santa Monica, Calif. Filed Nov. 20, 1967.

BISSETT BERMAN

For Oceanographic Instruments—Namely, Pressure Transducers, Salinometers, Clamp-On Sensors and Temperature Sensors—Electrolytic Cells for Providing Timing Functions, Auto Service Computers, Marine Service Computers and Heavy Equipment Service Computers (Int. Cl. 9).
First use on or about Nov. 1, 1960.

SN 285,601. VEB Filmfabrik Wolfen, Wolfen, Germany. Filed Nov. 24, 1967.

ORWO COLOR

The word "Color" is disclaimed apart from the mark as shown.
For Photographic Film (Int. Cl. 1).
First use April 1963; in commerce December 1964.

SN 292,129. RDF Corporation, Hudson, N.H. Filed Feb. 28, 1968.

COMPU-THERM

For Thermal Measuring and Sensing Equipment—Namely, Resistance and Thermocouple Temperature Measuring Apparatus, Thermocouples, Thermopiles and Heat Flow Sensors (Int. Cl. 9).
First use Dec. 31, 1962.

SN 294,040. Gilson Screen Company, Malinta, Ohio. Filed Mar. 25, 1968.

SPLIT-O-MATIC

For Stationary and Portable Samplers for the Dividing of Aggregates, Ores, and Similar Materials for Purposes of Subsequent Sample Analysis and/or Physical Testing (Int. Cl. 9).
First use Jan. 25, 1968.

SN 299,277. Flow Pharmaceuticals, Inc. (Nevada corporation), Mountain View, Calif., assignee of Flow Pharmaceuticals, Inc. (Delaware corporation), Mountain View, Calif. Filed May 29, 1968.

porta-FLOW

For Container for Cleaning and Storage of Contact Lenses (Int. Cl. 9).
First use May 9, 1968.

SN 299,502. Tracor, Inc., Austin, Tex. Filed May 31, 1968.

RAPIDFRAME

For Synchronizing Apparatus for Television Cameras (Int. Cl. 9).
First use at least as early as Apr. 5, 1968.

SN 299,714. Ranging, Inc., East Rochester, N.Y. Filed May 31, 1968.

DISTRAN

For Distance Measuring Instrument Scales (Int. Cl. 9).
First use Feb. 27, 1968.

SN 299,922. Abbey Electronics Corp., Westbury, N.Y. Filed June 7, 1968.

ABBEY DIGIPRINTER

For Digital Printing Voltmeter (Int. Cl. 9).
First use Apr. 15, 1968.

SN 300,536. Raytheon Company, Lexington, Mass. Filed June 17, 1968.

RATAC

For Acoustical Telemetry and Control Equipment for Monitoring and Remote Control of Underwater Systems, Comprising Essentially a Surface Control Unit, Surface Transducer, Underwater Actuator, and Interconnecting Cables (Int. Cl. 9).
First use Mar. 19, 1968.

SN 304,412. Textron Inc., Rochester, N.Y. Filed Aug. 5, 1968.

DAKOTA

For Spectacle Frames and Parts Therefor (Int. Cl. 9).
First use June 3, 1968.

SN 309,249. General Electric Company, Schenectady, N.Y. Filed Oct. 9, 1968.

GENERAL ELECTRIC

Owner of Reg. Nos. 271,399, 821,589, and others.
For Electronic, Nuclear, Industrial and Laboratory Testing, Measuring, Computing and Control Instruments, Apparatus and Systems (Int. Cl. 9).
First use at least as early as 1930.

SN 312,547. J. K. Smit & Sons, Inc., Murray Hill, N.J. Filed Nov. 19, 1968.

INDENTOPOINT

For Diamond Pointed Tools Employed in Hardness Testing Machines (Int. Cl. 9).
First use Mar. 19, 1938.

SN 312,959. Precision Scientific Company, Chicago, Ill. Filed Nov. 25, 1968.

AQUARATOR

For Chemical Oxygen Demand Analyzer Instruments for Water (Int. Cl. 9).
First use Aug. 9, 1968.

Class 27 — Horological Instruments

SN 301,291. Telmont Corporation, St. Paul, Minn., by change of name from World Toy House, Inc., St. Paul, Minn. Filed June 24, 1968.

PASSEPORT

For Watches (Int. Cl. 14).
First use June 3, 1968.

Class 31 — Filters and Refrigerators

SN 295,278. North American Rockwell Corporation, Pittsburgh, Pa. Filed Apr. 10, 1968.

CENTRIMAZE

Owner of Reg. Nos. 255,632, 813,973, and others.
For Filters and Components Thereof (Int. Cl. 11).
First use Mar. 8, 1968.

SN 302,694. Tastee Freez Industries, Inc., Chicago, Ill. Filed July 15, 1968.

FREEZ KING

Owner of Reg. No. 770,523.
For Refrigerated Apparatus for Making and Dispensing Soft Ice Cream and Other Frozen Confections—Namely, Cones, Sundaes, Malts, Shakes and Flavored Slush (Int. Cl. 11).
First use at least as early as 1938.

Class 32 — Furniture and Upholstery

SN 287,384. The Spring Air Company, Chicago, Ill. Filed Dec. 21, 1967.



The mark is a design created from an abstraction of the letters "S" and "A" and a flower.
For Mattresses and Box Springs (Int. Cl. 20).
First use Jan. 21, 1966.

SN 293,031. The General Fireproofing Company, Youngstown, Ohio. Filed Mar. 12, 1968.



The mark consists of the letters "G.F." Owner of Reg. Nos. 286,715, 842,431, and others.
For Filing Cabinets, Desks, Tables, Chairs, Bookcases, Clothing Racks, Storage Cabinets, Transfer Cases, Shelving and Movable Office Partitions (Int. Cl. 20).
First use Nov. 1, 1967; Apr. 29, 1931, as to the letters "GF" in a different form.

SN 303,149. Drexel Enterprises, Inc., Drexel, N.C. Filed July 19, 1968.

LIVORNO

For Bedroom, Dining Room and Living Room Furniture (Int. Cl. 20).
First use May 1968.

Class 33 — Glassware

SN 256,396. Verreries Pochet et du Courval S.a.r.l., Paris, France. Filed Oct. 13, 1966.

HP

Priority claimed under Sec. 44(d) on French Reg. No. 709,975, dated Apr. 15, 1966.
For Glass Containers for the Packaging of Perfumes and Cosmetics—Namely, Bottles, Flasks, Jars and Boxes (Int. Cl. 21).

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 274,166. Air Reduction Company, Incorporated, New York, N.Y. Filed June 19, 1967.

PLASMAGRAPH

Owner of Reg. Nos. 204,977, 360,669, and 375,480.
For Cutting Machines Equipped With Plasma and/or Gas Flame Cutting Torches (Int. Cl. 9).
First use May 1964.

SN 279,355. Astro-Arc Co., Sun Valley, Calif. Filed Aug. 30, 1967.

ASTRO-ARC

For Welding Heads, Programmed Welding Power Supplies and Welding Power Supply Controls (Int. Cl. 7).
First use Feb. 12, 1965.

SN 291,887. Munters Corporation, Fort Myers, Fla. Filed Feb. 26, 1968.

ROTO-$AVE

For Rotary Regenerative Heat Exchangers for Use With Heating, Cooling, Humidifying and Dehumidifying Installations (Int. Cl. 11).
First use Jan. 15, 1968.

SN 293,209. Addison Products Company, Addison, Mich. Filed Mar. 14, 1968.

WEATHERPACK

For Combination Heating and Cooling Air Conditioning Units for Exterior Installation (Int. Cl. 11).
First use Nov. 29, 1967.

SN 293,324. The Tappan Company, Mansfield, Ohio. Filed Mar. 14, 1968.

CHAR-KROME

For Kitchen Broilers Incorporated in Cooking Ranges (Int. Cl. 11).
First use November 1967.

SN 304,525. Wilton Brass Company, Columbia, Pa. Filed Aug. 6, 1968.

ARMETALE

For Candlesticks and Sconces (Int. Cl. 21).
First use Dec. 1, 1962.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 304,569. The Armstrong Rubber Company, West Haven, Conn. Filed Aug. 7, 1968.



For Pneumatic Tires (Int. Cl. 12).
First use on or about July 1, 1968.

Class 36 — Musical Instruments and Supplies

SN 269,131. Robert D. Veech, Commack, N.Y. Filed Apr. 13, 1967.

MININOME

For Musical Instrument Tuning Devices for Marking Time (Int. Cl. 15).
First use Feb. 13, 1967.

SN 289,047. Technological Products Incorporated, Rockville, Md. Filed Jan. 17, 1968.

INSTA-TUNE

For Tuners for Guitars (Int. Cl. 15).
First use on or about Dec. 22, 1967.

SN 298,999. Donald E. Benge, Burbank, Calif. Filed May 24, 1968.

BENGE

For Non-Reed, Brass, Wind Instruments—Namely, Trumpets, Pocket Trumpets, Bugles, Trombones and Cornets (Int. Cl. 15).
First use in or about 1937.

SN 300,211. National Gramophon Works Corporation, Mount Kisco, N.Y. Filed June 11, 1968.



Applicant disclaims the representation of a phonograph record apart from the mark as shown.
For Phonograph Records and Albums (Int. Cl. 9).
First use May 29, 1968.

SN 307,252. Thomas Organ Co., Sepulveda, Calif. Filed Sept. 12, 1968.

PLAYMATE

For Auxiliary Device for Electric Organ Which Automatically Creates Organ Accompaniment and Pedal Rhythm (Int. Cl. 15).
First use Aug. 17, 1966.

SN 312,955. Robert H. Foley, d.b.a. Autodyne, Rockville, Md. Filed Nov. 25, 1968.

AUTODYNE

For Magnetic Tape Erasers (Int. Cl. 9).
First use Nov. 5, 1968.

SN 313,324. Nashboro Record Co., Inc., Nashville, Tenn. Filed Nov. 29, 1968.

CREED

For Phonograph Records (Int. Cl. 9).
First use Sept. 11, 1968.

Class 37 — Paper and Stationery

SN 280,785. Beatrice J. Kent, d.b.a. B1 Hostess Products, St. Louis, Mo. Filed Sept. 20, 1967.



The letter appearing in the left geometrical figure of the drawing is the letter "B" and the numeral appearing in the right geometrical figure of the drawing is the numeral "1."
For Bridge Score Sheets (Int. Cl. 16).
First use Mar. 1, 1964.

SN 282,151. Albert W. Trtanj, D.D.S., Granite City, Ill. Filed Oct. 9, 1967.

MED-O-MATIC

For Business Forms (Int. Cl. 16).
First use Jan. 12, 1966.

SN 282,667. The Automated Packaging Corporation, Bedford Heights, Ohio. Filed Oct. 17, 1967.

ZIP-VELOPE

For Plastic Mailing Envelopes With Opaque Printed Portions (Int. Cl. 16).
First use Mar. 8, 1967.

SN 291,338. Anson Incorporated, Providence, R.I. Filed Feb. 19, 1968.

ANSON

Owner of Reg. Nos. 672,804, 678,271, and 678,494.
For Mechanical Pen and Pencils of the Propell-Repell Type (Int. Cl. 16).
First use May 29, 1963.

SN 292,189. Frederick William Dobert, d.b.a. Credit Savers, Albany, N.Y. Filed Feb. 29, 1968.

CREDIT SAVERS'

For Business Forms To Be Used To Inform Creditors of Delayed Payments (Int. Cl. 16).
First use Dec. 26, 1967.

SN 295,940. National Press, Inc., Waukegan, Ill. Filed Apr. 18, 1968.

JET MESSAGE

Without waiver of its common law rights, applicant makes no claim to the word "Message" apart from the mark.
For Paper Message Note and Reply Forms (Int. Cl. 16).
First use Mar. 25, 1968.

SN 300,212. Nationwide Papers Incorporated, Knightsbridge, Hamilton, Ohio. Filed June 11, 1968.

SCOPA

For Uncoated Printing Paper (Int. Cl. 16).
First use Apr. 5, 1968.

SN 300,405. Mattel, Inc., Hawthorne, Calif. Filed June 14, 1968.

MAJOR MATT MASON

"Major Matt Mason" is not a living individual but is a fictional character, first embodied in one of applicant's doll products.
For Wallpaper (Int. Cl. 27).
First use Jan. 22, 1968.

SN 301,768. Rolar, Inc., Williamsport, Pa. Filed July 1, 1968.

POLY-WHITE

For Wrapping Paper—Namely, Material Made of Paper or Synthetic Materials and Used in Packaging and Wrapping (Int. Cl. 16).
First use Feb. 5, 1968.

Class 38 — Prints and Publications

SN 263,295. Scientific Film Company, La Grange Park, Ill. Filed Jan. 25, 1967.

SILENT EDUCATOR

For Series of Educational Films (Int. Cl. 9).
First use in about August 1963.

SN 278,531. Robert L. Hawley, d.b.a. Oyez, Berkeley, Calif. Filed Aug. 17, 1967.

oyez

For Books (Int. Cl. 16).
First use May 1965.

SN 280,730. Sokagakkai Religious Corporation, Shinjuku-ku, Tokyo, Japan. Filed Sept. 19, 1967.

SEIKYO TIMES

"Seikyo" translated into English means "holy teachings." Owner of U.S. Reg. No. 805,594.
For Magazine (Int. Cl. 16).
First use at least as early as Apr. 1, 1960; in commerce at least as early as May 1, 1960.

SN 282,735. Joy Ubina, New York, N.Y. Filed Oct. 17, 1967.
For Restaurant Food Guide Book (Int. Cl. 16).

THE SLIM GLUTTON

First use Oct. 11, 1967.

SN 284,984. Allan H. Bell, d.b.a. America's Best Attractions, North Kansas City, Mo. Filed Nov. 16, 1967.

ABA "GREEN SHEET"

For Printed Sheet Listing Available Entertainment (Int. Cl. 16).
First use during October 1963.

SN 285,550. Imprimerie et Librairie Berger-Levrault, Nancy (Meurthe-et-Moselle), France. Filed Nov. 24, 1967.



Priority claimed under Sec. 44(d) on French Reg. No. 734,356, dated May 23, 1967.
For Books, Reprints, Brochures, Periodicals, Collections of Reprinted Works (Int. Cl. 16).

SN 286,494. Augsburg Publishing House, Minneapolis, Minn. Filed Dec. 8, 1967.



Applicant makes no claim to the exclusive use of the word "Book."
For Series of Books Designed as Studies in Theology for Laymen (Int. Cl. 16).
First use Jan. 3, 1966.

SN 288,452. Societe Anonyme Delpire, Paris, France. Filed Jan. 9, 1968.

ACTIBOM

Priority claimed under Sec. 44(d) on French Reg. No. 727,541, dated July 12, 1967.
For Books (Int. Cl. 16).

SN 289,092. Fun-Way Publications, Inc., New York, N.Y. Filed Jan. 18, 1968.

FUN-WAY

For Books for Musical Instruction (Int. Cl. 16).
First use Feb. 1, 1966.

SN 289,753. The Third Eye, Inc., New York, N.Y. Filed Jan. 29, 1968.

THE THIRD EYE

For Reproductions of Works of Art—Namely, Posters Made by Silk Screen and Other Processes Made From Original Paintings (Int. Cl. 16).
First use Apr. 15, 1967.

SN 289,974. Contact Marketing, Inc., New York, N.Y. Filed Jan. 31, 1968.

PIT STOP

For Film Prints, Driving Safety Study Guides, Posters and Brochures and Decals (Int. Cl. 16).
First use Jan. 2, 1968.

SN 293,221. Alpha N. Brown, Kansas City, Mo. Filed Mar. 14, 1968.

The WEDNESDAY Magazine

The lining on the drawing is a feature of the mark and does not represent color. The term "Magazine" is disclaimed apart from the mark as shown. Owner of Reg. No. 521,708.
For Weekly Newspaper (Int. Cl. 16).
First use Oct. 13, 1937.

SN 295,373. Random House, Inc., New York, N.Y. Filed Apr. 10, 1968.



For Books (Int. Cl. 16).
First use at least as early as Mar. 15, 1967.

SN 301,401. John Beach, Los Angeles, Calif. Filed June 26, 1968.

SILLIGISMS

For Book of Puzzles (Int. Cl. 16).
First use June 3, 1968.

SN 301,929. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed July 3, 1968.



For Greeting Cards (Int. Cl. 16).
First use Aug. 15, 1967.

SN 301,930. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed July 3, 1968.



For Greeting Cards (Int. Cl. 16).
First use Nov. 1, 1967.

SN 301,932. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed July 3, 1968.



For Greeting Cards (Int. Cl. 16).
First use Aug. 22, 1966.

SN 302,353. Traffic Stoppers Company, Philadelphia, Pa. Filed July 9, 1968.

TRAFFIC STOPPERS

For Wall Signs and Posters, and Postal Cards (Int. Cl. 16).
First use May 8, 1967.

SN 302,587. Business Press International, Inc., Elmhurst, Ill. Filed July 12, 1968.

BUSINESS AUTOMATION

Owner of Reg. Nos. 661,183, 798,233, and others.
For Trade Magazine Produced Monthly (Int. Cl. 16).
First use July 6, 1961.

SN 302,926. Diversified Map Corporation, St. Louis, Mo. Filed July 17, 1968.

WEEKENDER

For Tour Maps (Int. Cl. 16).
First use Mar. 25, 1968.

SN 303,674. Hallmark Cards, Incorporated, Kansas City, Mo. Filed July 26, 1968.



For Greeting Cards (Int. Cl. 16).
First use November 1965.

SN 303,904. Follett Publishing Company, Chicago, Ill. Filed July 30, 1968.

BIG TABLE

For Books (Int. Cl. 16).
First use May 1, 1966.

SN 305,188. Stryker-Post Publications, Washington, D.C. Filed Aug. 15, 1968.

THE WORLD TODAY SERIES

For Books Published Annually on Political Studies of Areas of the World (Int. Cl. 16).
First use Feb. 9, 1967.

SN 312,158. National Periodical Publications, Inc., New York, N.Y. Filed Nov. 14, 1968.

SCOOTER

For Comic Magazines (Int. Cl. 16).
First use Apr. 7, 1967.

SN 312,719. Radio Corporation of America, New York, N.Y. Filed Nov. 21, 1968.

MEDLEY

For Magazine (Int. Cl. 16).
First use at least as early as March 1967.

SN 313,543. Lancer Books, Inc., New York, N.Y. Filed Dec. 4, 1968.

LANCER

For Paperback Books (Int. Cl. 16).
First use July 1961.

Class 39 — Clothing

SN 251,513. Canor Plarex Inc., Seattle, Wash. Filed Aug. 2, 1966.

CANOR PLAREX

For Foul Weather, Waterproof and Protective Clothing—Namely, Coats, Jackets, Parkas, Aprons, Protective Sleeves, Trousers, Pants, Hoods, Hats, Pullovers, Suits and Rainsuits, Not Including Gloves or Exterior Garments for Street Wear (Int. Cl. 25).
First use 1955.

SN 274,452. Norris Manufacturing Company, Taylors, S.C. Filed June 21, 1967.

Norris

Owner of Reg. No. 711,900.
For Sport Shirts for Men, Women and Children (Int. Cl. 25).
First use May 22, 1967.

SN 278,595. Hartfield-Zodys, Inc., New York, N.Y. Filed Aug. 18, 1967.



Owner of Reg. No. 790,033.
For Athletic Shirts, Shorts, Briefs and T-Shirts (Int. Cl. 25).
First use June 30, 1967.

SN 280,977. Di Leon Ltd., New York, N.Y., by change of name from Shoes by Leonardo, Ltd., New York, N.Y. Filed Sept. 22, 1967.

Di Leon

For Women's Shoes (Int. Cl. 25).
First use July 28, 1967.

SN 282,276. English Entries, Ltd., New York, N.Y. Filed Oct. 11, 1967.

ENGLISH ENTRIES

The word "English" is disclaimed apart from the mark shown.
For Ladies' and Men's Shoes (Int. Cl. 25).
First use Aug. 9, 1967.

SN 283,253. Imperial Reading Corporation, New York, N.Y. Filed Oct. 24, 1967.

BLUE JAY

For Men's and Boys' Trousers, Jeans, Slacks and Shorts (Int. Cl. 25).
First use Nov. 17, 1911.

SN 284,076. Bangor Punta Operations, Inc., New York, N.Y. Filed June 13, 1968.

YACHTSHOD

For Shoes (Int. Cl. 25).
First use at least as early as Jan. 1, 1964.

SN 284,951. Trans-World Shoe Import Co., Inc., New York, N.Y. Filed Nov. 15, 1967.

ASPEN TRAIL FINDERS

For Men's Shoes (Int. Cl. 25).
First use Oct. 13, 1967.

SN 288,605. Colfax Industries, Clifton, N.J. Filed Jan. 11, 1968.



The representation of the man shown in the drawing is not that of a particular living individual. Owner of Reg. No. 755,574.
For Jackets, Slacks, and Knitted Clothing—Namely, Sweaters and Shirts (Int. Cl. 25).
First use May 16, 1962.

SN 290,296. Interco Incorporated, St. Louis, Mo. Filed Feb. 5, 1968.

STAR BRAND

No claim is made to the word "Brand" apart from the mark as shown.
For Shoes (Int. Cl. 25).
First use as early as 1898.

SN 291,831. G. B. Britton & Sons (Holdings) Limited, Kingswood, Bristol, England. Filed Feb. 26, 1968.



Owner of British Reg. No. 709,549, dated Aug. 6, 1952.
For Boots, Shoes, Slippers and Sandals (Int. Cl. 25).

SN 293,307. The Salem Company, Inc., Winston Salem, N.C. Filed Mar. 13, 1968.



The words "Old Town" are claimed only in association shown in the drawing.
For Sportswear for Women, Girls and Children—Namely, Jeans, Slacks, Shorts, Skirts, Jackets, Blouses and Sweaters (Int. Cl. 25).
First use Jan. 24, 1968.

SN 297,050. Edmonton Manufacturing Company, d.b.a. Topps Manufacturing Co., and Elin Uniform Mfg. Co., Rochester, Ind. Filed May 1, 1968.

Elin

TAILORED TO SUIT THE BUSINESS WORLD.

The slogan "Tailored To Suit the Business World" is disclaimed apart from the mark shown.
For Industrial and Other Work Garments for Butchers, Carpenters, Doctors, Nurses, Office and Restaurant Workers, and the Like—Namely, Work Uniforms, Work Shirts, Trousers, Jackets, Coats, Coveralls, Shopcoats, Butcher Frocks, Shop Aprons, Caps, Neckties, Raincoats, Dress Slacks, Sweatshirts, Executive Style Blazers for Men and Women, Custom-Woven Neckwear, Golf Jackets, Nylon and Cotton Racing Jackets With Stripes, Blazer Style Store Coats and Vests Made Out of Washable and Disposable Materials (Int. Cl. 25).
First use on or about Feb. 1, 1968.

SN 299,498. J. Schoeneman, Inc., Owings Mills, Md. Filed May 31, 1968.

DESIGNER SHOWCASE

Applicant disclaims the right to exclusive use of the word "Designer" apart from the mark.
For Men's Suits, Sport Coats, Vests and Trousers (Int. Cl. 25).
First use Feb. 7, 1968.

SN 303,274. H. Childs & Co., Inc., Pittsburgh, Pa. Filed July 22, 1968.

RICINNI

For Women's Shoes (Int. Cl. 25).
First use not later than Oct. 1, 1959.

SN 303,933. Skaggs Drug Centers, Inc., Salt Lake City, Utah. Filed July 30, 1968.

Lorelei

For Women's and Misses' Hosiery (Int. Cl. 25).
First use Feb. 6, 1968.

SN 305,625. Brass Ass, Inc., Philadelphia, Pa. Filed Aug. 21, 1968.



For Ladies' and Misses' Sportswear—Namely, Suits, Slacks, Skirts, Shirts, Dresses, Sweaters, Blouses, and Women's Shoes (Int. Cl. 25).
First use Jan. 2, 1967.

SN 306,236. George Frost Company, Shirley, Mass. Filed Aug. 29, 1968.

GFC

For Apparel Belts (Int. Cl. 25).
First use July 1, 1968.

SN 306,613. Jack Hartley, d.b.a. Jay Hart Originals, Miami, Fla. Filed Sept. 5, 1968.

JAY HART ORIGINALS

Applicant disclaims the word "Originals" apart from the mark as shown.
For Women's Bathing Suits and Women's Beach Wear (Int. Cl. 25).
First use Aug. 1, 1963.

SN 310,966. The Lovable Company, Atlanta, Ga. Filed Oct. 31, 1968.

INVISI-FILL

For Women's Foundation Garments (Int. Cl. 25).
First use Oct. 22, 1968.

SN 310,967. Maidenform, Inc., New York, N.Y. Filed Oct. 31, 1968.

SHAPE-MATES

Owner of Reg. No. 828,628.
For Foundation Garments and Lingerie (Int. Cl. 25).
First use Oct. 17, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 265,641. Lady Madison, Inc., New York, N.Y. Filed Feb. 28, 1967.

LADY MADISON

For Textile Rugs (Int. Cl. 27).
First use Oct. 10, 1966.

SN 300,933. Independent Associated Distributors, Inc., New York, N.Y. Filed June 20, 1968.

The Blanket Beautiful

For Blankets (Int. Cl. 24).
First use 1942.

SN 302,627. Ludlow Corporation, Needham Heights, Mass. Filed July 12, 1968.

SYNVEK

For Non-Woven Fabrics of Synthetic Fibers (Int. Cl. 24).
First use Apr. 15, 1968.

SN 302,628. Ludlow Corporation, Needham Heights, Mass. Filed July 12, 1968.

SYNLYN

For Non-Woven Fabrics of Synthetic Fibers (Int. Cl. 24).
First use Apr. 30, 1968.

SN 302,629. Ludlow Corporation, Needham Heights, Mass. Filed July 12, 1968.

SYNTEL

For Non-Woven Fabrics of Synthetic Fibers (Int. Cl. 24).
First use Mar. 12, 1968.

SN 302,982. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 17, 1968.

ZODIAC

• Owner of Reg. No. 250,660.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or Synthetic Fibers or Cellulosic Fibers or Blends of the Foregoing (Int. Cl. 24).
First use Dec. 11, 1928.

Class 44—Dental, Medical, and Surgical Appliances

SN 220,602. United States Catheter & Instrument Corporation (Delaware corporation), Glens Falls, N.Y., assignee of United States Catheter & Instrument Corporation (New York corporation), Glens Falls, N.Y. Filed June 7, 1965.

DOTTER LUKAS

For Cardiovascular Catheters (Int. Cl. 10).
First use about April 1950.

SN 258,658. American Hospital Supply Corporation, Evanston, Ill. Filed Nov. 15, 1966.

TOMAC

Owner of Reg. Nos. 326,450, 732,775, and 836,601.
For Surgical Instruments; Catheters and Catheterization Sets; Dressings, Irrigation, Enema, Suture Removal, and Exchange Transfusion Sets; Surgical Binders; Body and Limb Holders; Diathermy Units; Standards for Intravenous Equipment; Perineal Heaters and Lamps; Ultrasonic, Galvanic, and Low Voltage Generators; Operating Footstools; Canes, Walkers, and Crutches; Intravenous Arm Boards; Clinical and Bath Thermometers; Tongue Depressors; Cotton Tipped Applicators; Hot Water Bottles; Ice Bags; Maternity and Patient Care Kits; Bandages; Absorbent Pads and Wadding; Surgical and Medical Tubes and Tubing; Gloves, Finger Cots, and Masks; Oxygen Tent Canopies; Sanitary Belts; Urinals, Commodes, and Bedpans; Stethoscopes; Operating Room Stools, Tables, and Appliances; Bed Cradles; Adjustable Foot Boards; Invalid Ring Cushions; Syringes and Needles; Umbilical Tape; Foot and Leg Supports; Muscle Exercise Weights; Wheeled Stretchers and Intensive Care Stretcher Beds; Emesis Basins; and Wheel Chairs (Int. Cls. 5, 10, and 12).
First use in or before June 1924.

SN 301,750. Hollister Incorporated, Chicago, Ill. Filed July 1, 1968.

AMNIHOOK

For Amniotic Membrane Perforator (Int. Cl. 10).
First use May 20, 1968.

Class 45—Soft Drinks and Carbonated Waters

SN 272,400. Lawrence W. Patterson, d.b.a. General Bottling Company, Santa Ana, Calif. Filed May 25, 1967.

CHERRI MERRI

The word "Cherri" is disclaimed apart from the mark as shown.
For Cherry-Flavored Carbonated Soft Drink (Int. Cl. 32).
First use Apr. 27, 1967.

SN 291,653. Sun-Vi Products, Inc., Marshall, Minn., by change of name from Vita Sun Fruit Juices, Inc., Marshall, Minn. Filed Feb. 21, 1968.

SUN·VI 1+3

Applicant disclaims the element "1+3" except as it appears in combination with the mark.
For Concentrates for Making Fruit Drinks (Int. Cl. 32).
First use Dec. 16, 1967.

SN 295,717. Bohemian Distributing Company, d.b.a. Calcutta Products Company, Los Angeles, Calif. Filed Apr. 16, 1968.

CALCUTTA

Owner of Reg. No. 711,664.
For Quinine Water (Int. Cl. 32).
First use May 18, 1959.

SN 308,853. Kahan & Lessin Co., d.b.a. Natural Brands Co., Los Angeles, Calif. Filed Oct. 4, 1968.



Applicant disclaims the words "Natural Foods of California" apart from the mark as shown, without waiver of applicant's common law rights therein.
For Fruit Flavored Non-Alcoholic Drinks Containing Water (Int. Cl. 32).
First use on or about June 15, 1966.

Class 46—Foods and Ingredients of Foods

SN 265,255. Old Dutch Foods, Inc., Minneapolis, Minn., assignee of Vernon O. Aanenson, d.b.a. Old Dutch Foods, Minneapolis, Minn. Filed Feb. 23, 1967.

Old Dutch

Owner of Reg. No. 648,659.
For Cheese-Flavored Popcorn, Caramel Popcorn, Unpopped Popcorn, Chow Mein Noodles, Fried Pork Skins, Candy, Pickles, Mustard, Shelled Salted Nuts, and Processed Potatoes, Corn, Corn Meal and Cereals Manufactured Into Snack Foods of Varying Shapes and Forms—Namely, Chip Forms, Flake Forms, Conical Forms, Curl Forms and Generally Globular Forms (Int. Cls. 29, 30, and 31).
First use November 1937.

SN 281,039. Creative Programs, Incorporated, Salt Lake City, Utah. Filed Sept. 25, 1967.

GROOVY

For Potato, Corn, and Similar Chips (Int. Cl. 29).
First use Sept. 3, 1967.

SN 282,523. American Dairy Queen Corporation, Minneapolis, Minn. Filed Oct. 16, 1967.

BLIZZARD

Owner of Reg. No. 559,844.
For Milk Shakes and Semi-Frozen Ice Milk and Ice Cream Confections With Carbonated Beverages (Int. Cl. 30).
First use January 1952.

SN 288,436. Kabushiki Kaisha Kibun, d.b.a. Kibun Co., Ltd., Chuo-ku, Tokyo-to, Japan. Filed Jan. 9, 1968.

KIBUN

For Preserved Fish, Shell-Fish, Sea Weeds, Other Marine Products (e.g. Sea Urchin, Jelly-Fish, Caviar), Egg, Vegetable, Grains, Fruits, and Mixture Thereof in a Form of Canned, Bottled, Vacuum Packed, Salted, Dried, Boiled, Frozen or Smoked; Condensed Soup Essence (Int. Cls. 29 and 31).
First use Sept. 15, 1966; in commerce Oct. 31, 1966.

SN 288,982. Societe des Laboratoires Jean-Pierre Daul, Ville-sur-Yron par Jarny (Meurthe-et-Moselle), France. Filed Jan. 16, 1968.

SUPREME D'ARPEGE

Owner of French Reg. No. 256, dated Oct. 26, 1963 (Briey); Natl. Inst. No. 214,096.
For Mustard, Spices, Pepper, Edible Oils, Salt, Canned Meat and Sauces for Meats, Fish and Vegetables (Int. Cls. 29 and 30).

SN 291,242. Auto-Dine Corporation, d.b.a. Auto-Dine, Bismarck, N. Dak. Filed Feb. 16, 1968.



For Hamburger Sandwiches (Int. Cl. 29).
First use Mar. 11, 1967.
Subj. to Intf. with SN 293,284.

SN 292,355. Cream Products Company, Inc., Cicero, Ill. Filed Mar. 4, 1968.

STEM

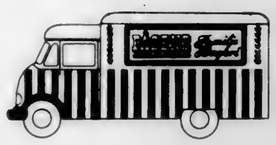
For Stabilizer-Emulsion for Food Manufacturing Purposes (Int. Cl. 1).
First use June 12, 1967.

SN 297,933. AB A. Pahlssons Bagerl, Malmo, Sweden. Filed May 13, 1968.



The words "Familje Bageriet" are in the Swedish language meaning "family bakery." Owner of Swedish Reg. No. 116,246, dated May 6, 1966.
For Canned Fruit, Canned Vegetables, Powdered Eggs, Powdered Milk, Fresh Cream, Butter, Ice-Cream, Flour, Breakfast Cereals, Bread, Biscuits, Pastry, Candy, Yeast, Baking-Powder, Jellies, Jams and Honey (Int. Cls. 29 and 30).

SN 298,035. Pagens Familjebageri AB, Malmo, Sweden. Filed May 13, 1968.



The word "Pagens" is a word, the dialect of a Swedish province, meaning "boy's" or "lad's." The words "Familje Bageri" are Swedish words meaning "family bakery." Owner of Swedish Reg. No. 122,308, dated Jan. 26, 1968.
For Canned Fruit, Canned Vegetables, Powdered Eggs, Powdered Milk, Fresh Cream, Butter, Ice-Cream, Flour, Breakfast Cereals, Bread, Biscuits, Pastry, Candy, Yeast, Baking-Powder, Jellies, Jams and Honey (Int. Cls. 29 and 30).

SN 298,906. San Diego Products Co., d.b.a. Palomar Foods and Palomar Foods Company, San Diego, Calif. Filed May 23, 1968.

MOUNT PALOMAR "THE PEAK OF QUALITY"

Owner of Reg. Nos. 791,491 and 791,501.
For Cheese; Canned Cherries; Chocolate Flavored Syrup; Crackers; Salad Dressing; Mayonnaise; Thousand Island Dressing; French Dressing; Bleu Cheese Dressing; Flour Mixes—Namely, Hot Cake Mix, Buttermilk Pancake Mix, Waffle Mix, Butterwheat Mix, Wheat Cake Mix, Cornbread Mix, Fry Mix; Fountain Toppings; Gelatin Desserts; Honey; Horseradish; Jellies; Jams; Mustard; Peanut Butter; Potato Chips; Instant Potatoes; Chili Con Corne With Beans; Salt; Pepper; Cooking Oils; Shortening; Margarine; Olives; Peppers, Pickled; Mixed Pickled Vegetables Dill Pickles; Sweet Pickles; Sweet Relish; Barbecue Sauce; Cocktail Sauce; Worcestershire Sauce; Tartar Sauce; Fresh Sweet Pickles; Fresh Dill Pickles; Taco Sauce; Maraschino Cherries; Pepperoncini; Food Spices; Food Seasonings; Syrups, Pancake and Waffle; Soup Bases; Food Coloring; Dehydrated Vegetables; Monosodium Glutamate for Food Purposes; Malted Milk Powder; Tomato Puree; Tomato Catsup; Vinegar; Imitation Vanilla Extract; Pure Bourbon Vanilla; Imitation Lemon Extract; Canned Spanish Rice Without Meat; Canned Mushroom Flavored Meatless Spaghetti Sauce (Int. Cls. 29 and 30).
First use Mar. 9, 1936.

SN 299,095. Better Foods Foundation Cooperative, Assn., d.b.a. Better Foods Co-Op, Assoc., Greencastle, Pa. Filed May 27, 1968.

BIO-FACTURED

For Fresh Foods—Namely, Grains, Vegetables, Fruits, and Eggs (Int. Cls. 29 and 31).
First use May 1966.

SN 300,386. Tak-A-Taco, Inc., Longview, Tex. Filed June 13, 1968.

Pepperados

For Tortilla Chips (Int. Cl. 29).
First use Feb. 3, 1968.

SN 300,421. Caxton Chocolate Company Limited, London, England. Filed June 14, 1968.

TRIO

Owner of British Reg. No. 713,157, dated Dec. 12, 1952.
For Chocolate Candy (Int. Cl. 30).

SN 300,626. Schweigert Meat Co., Minneapolis, Minn. Filed June 17, 1968.

Old Meister

The words presented for registration may be interpreted as "old master."
For Processed Meat Products—Namely, Brown and Serve Sausages (Int. Cl. 29).
First use Sept. 1, 1953.

SN 300,725. National Institutional Food Distributor Associates, Inc., Atlanta, Ga. Filed June 18, 1968.



For Food Products—Namely, Catsup, Tea, Mustard, and Worcestershire Sauce (Int. Cl. 30).
First use on or about Aug. 21, 1963.

SN 300,783. International Minerals & Chemical Corporation, d.b.a. Ac'cent International, Skokie, Ill. Filed June 19, 1968.

Accent

Owner of Reg. Nos. 435,707, 607,483, and 838,471.
For Plain and Flavored Rice (Int. Cl. 30).
First use Apr. 4, 1968.

SN 303,425. Mason, Au & Magenheimer Confy. Mfg. Co., Inc., Mineola, N.Y. Filed July 23, 1968.

DOTS-A-POPPIN

Owner of Reg. Nos. 532,303 and 532,417.
For Candy (Int. Cl. 30).
First use Feb. 4, 1966.

SN 303,707. Riviana Foods Inc., Houston, Tex. Filed July 26, 1968.

MAHATMA

Owner of Reg. Nos. 410,635, 790,083, and others.
For Rice (Int. Cl. 30).
First use about Feb. 3, 1932.

SN 304,723. Wick's Pies, Inc., Winchester, Ind. Filed Aug. 8, 1968.

WICK'S

Owner of Reg. No. 800,073.
For Fruit Pies and Cream Pies (Int. Cl. 30).
First use Apr. 1, 1963.

SN 304,779. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. Filed Aug. 9, 1968.

LOOK-Fit

For Instant Diet Food Mix for Milk (Int. Cl. 5).
First use Aug. 5, 1968.

SN 304,886. Carnation Company, Los Angeles, Calif. Filed Aug. 12, 1968.

TAWNY

For Cat Food (Int. Cl. 31).
First use July 17, 1968.

SN 304,887. Carnation Company, Los Angeles, Calif. Filed Aug. 12, 1968.

TOPIC

Owner of Reg. Nos. 571,364 and 605,886.
For Non-Dairy Coffee Creamer (Int. Cl. 29).
First use July 18, 1968.

SN 304,888. Carnation Company, Los Angeles, Calif. Filed Aug. 12, 1968.

TENDERBRED

For Dog Food (Int. Cl. 31).
First use July 17, 1968.

SN 308,250. Breddo Food Products Corporation, Inc., Kansas City, Kans. Filed Sept. 26, 1968.

MG-100

For Anti-Staling Agent and Quality Improver for Bakery Products—Namely, a Modified Wheat Protein (Int. Cl. 30).
First use Apr. 2, 1968.

Class 47 — Wines

SN 275,485. Vine Products, Limited, Kingston-on-Thames, Surrey, England. Filed Nov. 29, 1968.

VP

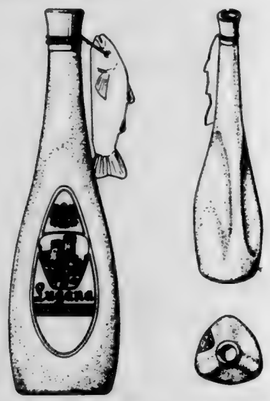
For Ginger Wine (Int. Cl. 33).
First use at least 1937; in commerce 1959.

SN 284,844. Ellen K. Taylor, d.b.a. The Lake Keuka Wine Co., Hammondsport, N.Y. Filed Nov. 14, 1967.

BULLY HILL

For Wine (Int. Cl. 33).
First use August 1967.

SN 290,345. Societa per Azioni Fratelli Folonari, Brescia, Italy. Filed Feb. 5, 1968.



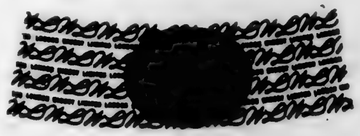
The English translation of the Italian word "Leone" is "lion." Applicant disclaims the term "Lugana" separate and apart from the mark as shown. The mark consists of the conformation of a triangular bottle, together with a tag, label, wording and designs thereon. Owner of U.S. Reg. Nos. 317,288, 824,173, and others.
For Wines (Int. Cl. 33).
First use at least as early as Apr. 26, 1961; in commerce at least as early as Apr. 26, 1961.

SN 293,286. London Winery Limited, London, Ontario, Canada. Filed Mar. 14, 1968.

410

Owner of Canadian Reg. No. 155,599, dated Feb. 16, 1968.
For Wines (Int. Cl. 33).

SN 295,445. London Winery Limited, London, Ontario, Canada. Filed Apr. 11, 1968.



Priority claimed under Sec. 44(d) on Canadian application filed Jan. 23, 1968; Reg. No. 158,818, dated Oct. 18, 1968. No claim is made to the words "London Winery Limited" apart from the mark shown.
For Wines (Int. Cl. 33).

SN 297,573. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. Filed May 7, 1968.

CIAO-CIAO

The word "Ciao-Ciao" may be translated as "good-by."
For Wines (Int. Cl. 33).
First use Apr. 24, 1968.

Class 48 — Malt Beverages and Liquors

SN 291,957. Arthur Guinness Son & Company Limited, London, England. Filed Feb. 27, 1968.

HARP

Owner of U.S. Reg. Nos. 63,040, 63,041, and 729,538.
For Lager Beer (Int. Cl. 32).
First use May 1963; in commerce May 1963.

Class 49 — Distilled Alcoholic Liquors

SN 277,898. E. Delatour & Cie., Soslete Anonime, Christiansted, St. Croix, Virgin Islands. Filed Aug. 9, 1967.

ZUISS CREAMS

Applicant disclaims "Creams" apart from the mark.
For Liqueur (Int. Cl. 33).
First use Dec. 15, 1965.

Class 50 — Merchandise Not Otherwise Classified

SN 257,456. Brinn's China and Glassware Co., Pittsburgh, Pa. Filed Oct. 28, 1966.

BRINNCO

For Artificial Flowers and Christmas Decorations—Namely, Santa Claus and Christmas Figurines and Caricatures, Christmas Planters, Artificial Christmas Holly, Wreaths, Garlands, Pine and Cedar Sprays, and Christmas Ornaments and Decorations (Int. Cls. 26 and 28).
First use November 1956.

SN 259,464. Perry Manufacturing, Inc., Indianapolis, Ind. Filed Nov. 25, 1966.



Applicant disclaims the words "Scaffold Positive Engagement" apart from the mark as shown.
For Scaffolds and Parts Thereof (Int. Cl. 19).
First use Mar. 15, 1965.

SN 274,339. Pictorial Spot-Lite, Inc., Mount Vernon, N.Y. Filed June 20, 1967.



For Luminescent Signs and Displays for Use by Others for Business, Advertising, Public, and Educational Purposes (Int. Cl. 16).
First use Jan. 6, 1967.

SN 284,413. Wingmaster Company, Inc., Brooklyn, N.Y. Filed Nov. 8, 1967.

WING-MASTER

For Display Units Consisting of Panels and a Rack (Int. Cl. 20).
First use at least as early as Jan. 1, 1951.

SN 286,448. Frank S. Sander, Stamford, Conn. Filed Dec. 7, 1967.

THE FRANK SLACKS FORM

Applicant disclaims the words "Slacks Form" apart from the mark as shown.
For Dress Forms for Slacks and Pants (Int. Cl. 20).
First use Feb. 9, 1967.

SN 290,873. National Soda Straw Company, Chicago, Ill. Filed Feb. 12, 1968.

PLASTIFLEX

For Drinking Straws (Int. Cl. 20).
First use Nov. 20, 1967.

SN 291,974. Ecco-Lite A/S (Ravnholm Emaljevaerk A/S), Ravnholm, Lyngby, Denmark. Filed Feb. 27, 1968.

ECCOLITE

Owner of Danish Reg. No. 1617/1960, dated July 9, 1960.
For Road Signs; and Reflective Sheetings for Road Signs and for Use as Number Plates on Automobiles (Int. Cls. 17 and 19).

SN 292,294. Roberts and Porter, Inc., Chicago, Ill. Filed Mar. 1968.

TRU-SIZE

For Masking Sheets for Blocking Out Light in Exposure of Photographic Film and Aiding in Registration With Film Negatives (Int. Cl. 16).
First use Aug. 18, 1967.

SN 298,118. F and J Enterprises, Willoughby, Ohio. Filed May 14, 1968.

KRAZY STRAW

Applicant disclaims the word "Straw" apart from the mark as shown.
For Plastic Drinking Straws or Siphons (Int. Cl. 20).
First use at least as early as Jan. 9, 1968.

SN 298,209. Dra-Dell Inc., North Bergen, N.J. Filed May 15, 1968.

MACCABEE

For Enlarged Revolving Dreidel Mounted on a Stand (Int. Cl. 28).
First use Apr. 24, 1968.

SN 299,750. Bevelite Mfg. Company, Vernon, Calif. Filed June 5, 1968.

VISUALITE

For Changeable Individual Flat Translucent Sign Letters of Three Dimensional Appearance (Int. Cl. 16).
First use May 1, 1968.

SN 300,477. National Electrotype Company, Inc., New York, N.Y. Filed June 14, 1968.

PROGPRO

For Press Plates for Printing (Int. Cl. 7).
First use on or about June 3, 1968.

SN 300,954. National Educational Aids, Inc., Abilene, Tex. Filed June 20, 1968.

WEATHERCASTER

For Visual Aids for Teaching, Consisting of Maps Combined With Indicator Dials and Movable Discs Bearing Informational Symbols and Weather Forecasting Notes (Int. Cl. 9).
First use Sept. 1, 1965.

SN 302,791. Basic Buddy Products, Minneapolis, Minn. Filed May 10, 1968.



For Instruction Kits for Use in Dressmaking Arts To Teach Correct Fitting Procedures Containing Essentially Patterns and Practice Materials and Informational Printed Matter (Int. Cl. 16).
First use Oct. 10, 1966.

SN 306,006. R. D. Werner Co., Inc., Greenville, Pa. Filed Aug. 26, 1968.

SPIN-PROOF

Owner of Reg. No. 791,593.
For Ladders, Extension Ladders, Stepladders and Platform Ladders (Int. Cl. 6).
First use July 10, 1963.

Class 51 — Cosmetics and Toilet Preparations

SN 280,960. Marcel Jean-Marie Bleriot, Formerie (Oise), France. Filed Sept. 22, 1967.

KLEENAGA

Owner of French Reg. No. 2,507, dated May 4, 1962 (Beauvais); Natl. Inst. No. 185,570.
For Cleaning Detergent for Dentures (Int. Cl. 3).

SN 281,769. Clairol Incorporated, New York, N.Y. Filed Oct. 4, 1967.

BLONDES REALLY DO HAVE MORE FUN

Owner of Reg. No. 828,668.
For Hair Lightener (Int. Cl. 3).
First use July 12, 1967.

SN 281,770. Clairol Incorporated, New York, N.Y. Filed Oct. 4, 1967.

BLONDES HAVE MORE FUN

Owner of Reg. No. 828,668.
For Lotion Toner (Int. Cl. 3).
First use July 12, 1967.

SN 282,918. Nutrine, Ltd., Brooklyn, N.Y. Filed Oct. 19, 1967.

GET STRAIGHT

Without prejudice to its common law rights, applicant disclaims the word "Straight" apart from the mark as shown.
For Hair Straightening Preparation (Int. Cl. 3).
First use Oct. 15, 1957.

SN 282,919. Nutrine, Ltd., Brooklyn, N.Y. Filed Oct. 19, 1967.

NUTRI-LAC

For Hair Spray (Int. Cl. 3).
First use May 1954.

SN 282,920. Nutrine, Ltd., Brooklyn, N.Y. Filed Oct. 19, 1967.

Nutrine*

Owner of Reg. Nos. 444,582 and 563,558.
For Hair and Scalp Conditioners, Hair Dressings, Hair Sprays and Lacquers, Bleaching, Tinting, Dying Preparations and Tint and Dye Removers, Permanent Waving Preparations—Namely, Cold Waves, Body Waves, Neutralizers, Hair Straightening and Relaxing Preparations, Hair Setting and Styling Lotions, Face and Body Creams and Lotions, Face Packs, Cutical Oil, Brittle Nail Lotion, Nail Polish Remover, Nail Polish Drying Lotion, Wig Lacquer and Dressing Preparations and Personal Deodorants (Int. Cls. 3 and 5).
First use Jan. 1, 1933.

SN 282,921. Nutrine, Ltd., Brooklyn, N.Y. Filed Oct. 19, 1967.

NICE N' STRAIGHT

Without prejudice to its common law rights, applicant disclaims the word "Straight" apart from the mark as shown.
For Hair Straightening Preparation (Int. Cl. 3).
First use June 1, 1966.

SN 282,922. Nutrine, Ltd., Brooklyn, N.Y. Filed Oct. 19, 1967.

EXTRA TOUCH

For Additive for Hair Processing Solutions, Including Bleaching, Tinting, Waving and Straightening Solutions (Int. Cl. 3).
First use Feb. 1, 1966.

SN 285,026. Eiichi Kimura, Fukushima-ku, Osaka-shi, Japan. Filed Nov. 16, 1967.

SIBOLEY

The word "Siboley" means "loving beauty" in Japanese.
Owner of Japanese Reg. No. 372,031, dated Apr. 20, 1948.
For Perfume, Eau de Cologne, Hair Spray, Hair Oil, Hair Cream, Hair Tonics and Vegetable Pomade (Int. Cl. 3).

SN 285,549. Helene Curtis Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. Filed Nov. 24, 1967.

TRIUMPH

For Cold Permanent Waving Lotion (Int. Cl. 3).
First use on or about Nov. 10, 1967.

SN 290,737. Lancôme S.A., Paris, France. Filed Feb. 9, 1968.

BALAFRE

The term "Balafre" means in translation, "scar." Owner of French Reg. No. 704,278, dated Jan. 22, 1966.
For Perfumeries for Men (Int. Cl. 3).

SN 291,142. Daggett & Ramsdell International Corp., New York, N.Y. Filed Feb. 15, 1968.

DEBUTANTE INTERNATIONAL

Owner of Reg. Nos. 297,827, 738,349, and others.
For Cologne (Int. Cl. 3).
First use Feb. 10, 1968.

SN 292,232. White Cross Stores, Inc., Monroeville, Pa. Filed Feb. 29, 1968.

LUMBERJACK LOTION

Applicant disclaims "Lotion" apart from the mark as shown.
For Toilet Preparations—Namely, Hand Lotions (Int. Cl. 3).
First use Sept. 15, 1967.

SN 293,526. John Oster Manufacturing Co., Milwaukee, Wis. Filed Mar. 18, 1968.

OSTER

Owner of Reg. Nos. 515,517, 834,711, and 835,917.
For Shaving Soaps (Int. Cl. 3).
First use on or about Dec. 27, 1941.

SN 293,663. Andree Biallot, Ltd., New York, N.Y. Filed Mar. 20, 1968.

PARTOUT

The translation of the trademark is "everywhere."
For Toiletries—Namely, Perfume, Solid Perfume, Bath Oil, Toilet Water, Body Lotion and Body Powder (Int. Cl. 3).
First use June 1, 1967.

SN 299,712. The Wella Corporation, Englewood, N.J. Filed June 4, 1968.

CARE-DO

For Hair Conditioning and Hair Setting Lotion (Int. Cl. 3).
First use May 31, 1968.

SN 307,490. Lemur Laboratories, Inc., New York, N.Y. Filed Sept. 16, 1968.

BLACK & BEAUTIFUL

For Hair Spray (Int. Cl. 3).
First use Sept. 10, 1968.
Subj. to Intf. with SN 310,198 and SN 311,209.

SN 311,241. Helene Curtis Industries, Inc., Chicago, Ill. Filed Nov. 4, 1968.

SURE THING

Owner of Reg. No. 863,265.
For Cold Permanent Waving Lotion (Int. Cl. 3).
First use on or about Oct. 22, 1968.

SN 312,385. The Gillette Company, Boston, Mass. Filed Nov. 18, 1968.

EL LEON

For After Shave Lotion (Int. Cl. 3).
First use Oct. 10, 1968.

SN 312,693. Posner Laboratories, Inc., Corona, N.Y. Filed Nov. 20, 1968.

BLACK BEAUTIFUL

For Cosmetics—Namely, Face and Body Softening and Conditioning Creams, Face and Body Conditioning Lotions and Hair Conditioner (Int. Cl. 3).
First use Nov. 1, 1968.
Subj. to Intf. with SN 311,209.

SN 312,956. The Gillette Company, Boston, Mass. Filed Nov. 25, 1968.

SHADES O' SUMMER

For Suntan Lotion (Int. Cl. 3).
First use Oct. 28, 1968.

SN 313,061. The Gillette Company, Boston, Mass. Filed Nov. 26, 1968.

RIGHT AFTER

For Deodorants for Personal Use (Int. Cl. 5).
First use Oct. 23, 1968.

Class 52 — Detergents and Soaps

SN 268,971. Martin-Brower Corporation, Chicago, Ill. Filed Apr. 12, 1967.



The mark consists of the letters "MB" in distinctive block design. Owner of Reg. No. 817,202.
For Cleaning Compounds; Dishwashing Detergent; Liquid Hand Soap; Degreasing Compounds; Glass Cleaners; Food Equipment Cleansers; Metal Cleaning Compounds (Int. Cl. 3).
First use prior to Jan. 16, 1967.

SN 274,352. St. Lawrence Chemical Company, Inc., Ogdensburg, N.Y. Filed June 20, 1967.

C-EM-CLEAN

For General Purpose Cleaner for Commercial, Industrial, Institutional, and Household Use (Int. Cl. 3).
First use May 26, 1942.

SN 290,589. Dun Win Company, South Williamsport, Pa. Filed Feb. 8, 1968.



The word "Drain" is disclaimed apart from the mark as shown.
For Cleaner for Drains, Grease Traps, Septic Tanks, Cess Pools (Int. Cl. 3).
First use Jan. 25, 1966.

SN 293,570. The Purdue Frederick Company, Yonkers, N.Y. Filed Mar. 18, 1968.

SURGI-SPUNG

For Scrubbing and Washing Cleanser for Use by Hospital Operating Personnel (Int. Cl. 3).
First use Feb. 16, 1968.

SN 293,571. The Purdue Frederick Company, Yonkers, N.Y. Filed Mar. 18, 1968.

SURGI-SPONGE

For Scrubbing and Washing Cleanser for Use by Hospital Operating Personnel (Int. Cl. 3).
First use Feb. 16, 1968.

SN 298,057. Texize Chemicals, Inc., Mauldin, S.C. Filed May 13, 1968.

fantastik

Owner of Reg. Nos. 709,443, 855,771, and others.
For Spray Cleaner for Household Use (Int. Cl. 3).
First use June 1, 1965.

SN 300,290. Radiator Specialty Company, Charlotte, N.C. Filed June 12, 1968.

Lano-cel

For Abrasive-Free Hand Cleaner (Int. Cl. 3).
First use Oct. 14, 1953.

SN 300,888. Armour-Dial, Inc., Chicago, Ill. Filed June 20, 1968.

CHARGE

Owner of Reg. Nos. 624,636 and 822,119.
For All Purpose Household Cleaner (Int. Cl. 3).
First use on or prior to Apr. 25, 1968.

SN 300,913. The Diversey Corporation, Chicago, Ill. Filed June 20, 1968.

DIVO

Owner of Reg. No. 503,862.
For Detergent Composition for Cleaning Dishes, Glasses, Pots and Pans, Silverware, Appliances, Painted Surfaces, Woodwork and Floors (Int. Cl. 3).
First use November 1955.

SN 301,075. Huntington Laboratories, Inc., Huntington, Ind. Filed June 21, 1968.

NIP-AN-TUCK

Owner of Reg. No. 294,224.
For Spot and Stain Absorber for Oil Type Stains on Rugs and Upholstery (Int. Cl. 3).
First use June 12, 1968.

SN 301,466. Sudsy's, Inc., Galesburg, Ill. Filed June 26, 1968.



For Detergent for Washing Automobiles (Int. Cl. 3).
First use on or about June 17, 1967.

SN 307,262. A. I. Root Co. of Texas, Inc., d.b.a. A. I. Root Company, San Antonio, Tex. Filed Sept. 13, 1968.



For Toilet Soap (Int. Cl. 3).
First use Aug. 14, 1968.

SN 307,936. Purex Corporation, Ltd., Lakewood, Calif. Filed Sept. 23, 1968.

Anything Goes!

For Cleaning Preparation for Whitening, Brighting and Removing Stains From Fabrics (Int. Cl. 3).
First use Aug. 6, 1968.

SN 311,792. Montrose Oil and Belting Co., Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. Filed Nov. 12, 1968.

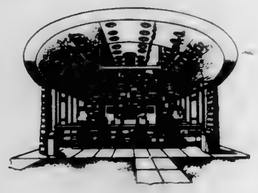
POWER-KLENE

For Dry Cleaning Fluid (Int. Cl. 3).
First use July 6, 1961.

SERVICE MARKS

Class 100 — Miscellaneous

SN 258,474. Arby's, Inc., Youngstown, Ohio. Filed Nov. 14, 1966.



Owner of Reg. No. 801,497.
For Restaurant Services (Int. Cl. 42).
First use May 29, 1964.

SN 275,529. The Johnson-March Corporation, d.b.a. Johnson-March Corporation, d.b.a. Johnson-March Corporation, Philadelphia, Pa. Filed July 7, 1967.



For Consulting and Engineering Services Rendered to Industry in the Field of Air Pollution (Int. Cl. 42).
First use on or about Mar. 14, 1967.

SN 279,843. McDonald's Corporation, Chicago, Ill. Filed Sept. 7, 1967.



The figure on the drawing does not identify nor is it intended to identify any particular living individual.
For Drive-In Restaurant Services (Int. Cl. 42).
First use September 1966.

SN 283,670. Carl Koch & Associates, Inc., Boston, Mass. Filed Oct. 30, 1967.

TECHCRETE

For Architectural and Engineering Services in the Building Construction Field (Int. Cl. 42).
First use at least as early as January 1966.

SN 291,517. National Personnel Consultants, Detroit, Mich. Filed Feb. 20, 1968.

NPC

Owner of Reg. No. 854,374.
For Association Services—Namely, Consultation Services to and Exchange of Business Information and Ideas Between Member Employment Agencies (Int. Cl. 42).
First use January 1953.

SN 295,151. Lubbock Chamber of Commerce, Lubbock, Tex. Filed Apr. 8, 1968.



Applicant disclaims the words "Lubbock, Texas" apart from the mark as shown.
For Association Services—Namely, Publicizing and Developing the Business and Industrial Interests of Lubbock, Texas, and Promoting the Establishment of New Industries and Businesses in Said City (Int. Cl. 42).
First use Oct. 14, 1965.

SN 297,546. Enzyme Process Company, Inc., Van Nuys, Calif. Filed May 7, 1968.

Dietronics

For Diet Analysis Services (Int. Cl. 42).
First use Dec. 15, 1967.

Class 101 — Advertising and Business

SN 269,798. Scientific Associates, Inc., Concord, Mass. Filed Apr. 21, 1967.

SPORT HOUSE

For Retail Mail Order Services Primarily Dealing With Sporting Goods (Int. Cl. 35).
First use at least as early as Nov. 1, 1966.

SN 288,014. Glendinning Companies, Inc., Westport, Conn. Filed Jan. 3, 1968.

MONEY CIRCLE

For Services Related To Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designs for Promotional Games (Int. Cl. 35).
First use Oct. 19, 1967.

SN 294,372. Central Solvents and Chemicals Company, Chicago, Ill. Filed Mar. 28, 1968.

CHEMISTRIBUTORS

The Distribution of Solvents and Chemicals Manufactured by Others (Int. Cl. 35).
First use Jan. 1, 1968.

Class 102 — Insurance and Financial

SN 261,925. Home State Insurance Agency, Inc., Cleveland, Ohio. Filed Jan. 4, 1967.

MICHIGAN FARMER

For Insurance Underwriting Services (Int. Cl. 36).
First use at least as early as 1926.

SN 261,926. Home State Insurance Agency, Inc., Cleveland, Ohio. Filed Jan. 4, 1967.

PENNSYLVANIA FARMER

For Insurance Underwriting Services (Int. Cl. 36).
First use at least as early as 1928.

SN 283,289. The Timeplan Corporation, Tulsa, Okla. Filed Oct. 24, 1967.



The drawing is lined for gold and brown.
For Credit Financing Services—Namely, Direct Consumer Installment Loans, Loans for Bill Consolidations, Loans on Accounts Receivable, and the Purchasing and Discounting of Loan Contracts (Int. Cl. 36).
First use January of 1966.

Class 103 — Construction and Repair

SN 274,064. Harvestall Industries, Inc., New Hampton, Iowa. Filed June 16, 1967.

THE NATION'S GRAIN GUARDIANS

For Custom Manufacture and Installation of Grain Storage Equipment (Int. Cl. 37).
First use Jan. 12, 1965.

SN 278,122. Milford Automatics, Inc., Milford, Conn. Filed Aug. 11, 1967.



Applicant disclaims the expression "Mark of Quality," and the representation of a machine part. The letters "MA" form a part of the mark.

For Manufacture of Valves and Screw Machine Products to the Specification of Others (Int. Cl. 37).

First use on or about Apr. 1, 1967.

SN 283,992. Deep Steam Extraction Ltd., Montreal, Quebec, Canada. Filed Nov. 2, 1967.

DEEP STEAM

No claim is made to the word "Steam" apart from the mark as shown.

For Cleaning Services—Namely, the Cleaning of Carpets and Upholstery (Int. Cl. 37).

First use at least as early as January 1966.

Subj. to Intf. with SN 310,607.

SN 283,995. Deep Steam Extraction Ltd., Montreal, Quebec, Canada. Filed Nov. 2, 1967.



For Cleaning Services—Namely, the Cleaning of Carpets and Upholstery (Int. Cl. 37).

First use at least as early as January 1966.

SN 310,607. Deep Steam Carpet Cleaners, Inc., Santa Barbara, Calif. Filed Oct. 30 1968.

DEEP STEAM

Applicant disclaims the word "Steam" apart from the entire mark as shown.

For Cleaning Carpets, Rugs, Upholstery and Fabrics (Int. Cl. 37).

First use in or before April 1964.

Subj. to Intf. with SN 283,992 and SN 283,993.

Class 104 — Communication

SN 304,434. Cosmos Broadcasting Corporation, Columbia, S.C. Filed Aug. 6, 1968.



The drawing of the mark is lined for the colors red and blue. No claim is made to the channel designation "11" apart from the mark as shown.

For Television Broadcasting Services (Int. Cl. 38).

First use Nov. 20, 1967.

Class 105 — Transportation and Storage

SN 287,527. Deutsche Lufthansa Aktiengesellschaft, Cologne, Germany. Filed Dec. 26, 1967.

PICK-A-TOUR

For Providing Travel Guidance, Transportation, Arrangements and Accommodations (Int. Cl. 39).

First use 1963; in commerce 1963.

SN 313,005. Kinney National Service, Inc., New York, N.Y. Filed Nov. 25, 1968.

KINCAR

Owner of Reg. Nos. 710,068, 757,055, and 844,310.

For Car and Truck Leasing and Renting (Int. Cl. 39).

First use Aug. 20, 1968.

Class 107 — Education and Entertainment

SN 229,423. Lin Folk, Nashville, Tenn. Filed Oct. 6, 1965.

THE LOLLIPOP PRINCESS

For Entertainment Services—Namely, Telling Children's Stories by Radio Broadcasting and by Personal Appearances (Int. Cl. 41).

First use November 1954.

SN 270,989. Washington State University, Pullman, Wash. Filed May 8, 1967.



Applicant disclaims the words "Washington," "State," "University" except as shown in the combination mark.

For University Educational Services (Int. Cl. 41).

First use Sept. 1, 1959.

SN 295,793. Charles T. Evans, d.b.a. Safety Motivations, Newtown, Pa. Filed Apr. 17, 1968.



The lining which appears on the drawing is a feature of the mark and is not symbolic of color. The designs which appear above and below the arms of the cross are likenesses of International Code Flags. These flags respectively represent: in the upper left hand corner the letter "S," in the upper right hand corner the letter "A," in the lower left hand corner the letter "F," and in the lower right hand corner the letter "E."

For Composing and Compiling Pay Slots, Articles, Messages, Feature Columns and Decals Promoting Public Awareness of Safety (Int. Cl. 41).

First use June 27, 1967.

SN 297,179. Eastman Kodak Company, Rochester, N.Y. Filed May 2, 1968.

PRINTIQUES

For Conducting Seminars and Workshops in Photographic Techniques and Exhibiting Photographic Apparatus and Materials Useful in Such Techniques (Int. Cl. 41).

First use Mar. 22, 1968.

SN 302,555. Chicago Cardinals Football Club, d.b.a. St. Louis Football Cardinals, St. Louis, Mo. Filed July 12, 1968.



The drawing is lined for the color red.

For Entertainment Services—Namely, Football Exhibitions Rendered Live in Stadia and Through the Media of Radio and Television Broadcasts (Int. Cl. 41).

First use year 1961.

CERTIFICATION MARKS

Class A — Goods

SN 298,729. Kentucky Seed Improvement Association, Inc., Lexington, Ky. Filed May 21, 1968.





The drawing is lined for the colors red and blue. The words "Kentucky Bluegrass" and the term "Kenblue," are disclaimed apart from the mark as shown. The mark certifies quality of the seed in relation to its meeting the minimum standards for inert matter and weed seed, and to certify its purity of strain as regards its stabilized genetic characteristics. Owner of Reg. Nos. 836,471 and 836,472.

For Bluegrass Seeds.

First use on or about Aug. 15, 1967.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

866,993. DEKALB. De Kalb AG Research, Inc., by change of name from De Kalb Agricultural Association, Inc. SN 271,452. Pub. 1–7–69. Filed 5–15–67.

866,994. TENNECO AND DESIGN. Tenneco Inc. MULTIPLE CLASS (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37, 46, 50, 52, 100, 103, and 105). SN 273,345. Pub. 7–30–68. Filed 6–8–67.

866,995. TENNECO. Tenneco Inc. MULTIPLE CLASS (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37, 46, 50, 52, 100, 103, and 105). SN 273,346. Pub. 7–16–68. Filed 6–8–67.

866,996. CLOISONETTE. House of Rousseau, Ltd. SN 273,640. Pub. 1–7–69. Filed 6–12–67.

866,997. 35. L. Teweles Seed Co. SN 291,914. Pub. 1–7–69. Filed 2–26–68.

866,998. 62. L. Teweles Seed Co. SN 291,915. Pub. 1–7–69. Filed 2–26–68.

866,999. ASTRO-PACK. The Baxter Corporation. SN 308,171. Pub. 1–7–69. Filed 9–25–68.

867,000. FLOTUBE. Natvar Corporation. SN 308,174. Pub. 1–7–69. Filed 9–25–68.

Class 2 — Receptades

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,001. BURLINGTON CRAFTS AND DESIGN. J. Chein & Company. SN 265,986. Pub. 1–7–69. Filed 3–6–67.

867,002. GLASTEEL. National Steel Construction Co. MULTIPLE CLASS (Classes 2 and 34). SN 270,730. Pub. 12–5–67. Filed 5–5–67.

867,003. WITT. The Witt Company. SN 283,484. Pub. 1–7–69. Filed 10–26–67.

867,004. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,371. Pub. 1–7–69. Filed 1–8–68.

867,005. PERMA-MINT. Samuel Perlin. SN 299,155. Pub. 1–7–69. Filed 5–27–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

867,006. HANDI-TOTE. Samsonite Corporation. SN 281,632. Pub. 1–7–69. Filed 10–2–67.

867,007. DESIGN OF TWO FIGURES. Dominique France, Inc. MULTIPLE CLASS (Classes 3, 51, and 52). SN 284,778. Pub. 1–7–69. Filed 11–13–67.

867,008. MEDALIST. Samsonite Corporation. SN 295,958. Pub. 1–7–69. Filed 4–18–68.

Class 4 — Abrasives and Polishing Materials

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

Class 5 — Adhesives

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

Class 6 — Chemicals and Chemical Compositions

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,009. MISCELLANEOUS DESIGN. Cook Chemical Company. SN 259,409. Pub. 1–7–69. Filed 11–25–66.

867,010. SUBSTRAL. Hans Smith. MULTIPLE CLASS (Classes 6 and 10). SN 260,363. Pub. 1–7–69. Filed 12–8–66.

867,011. HEART AND LEAF DESIGN. Hans Smith. MULTIPLE CLASS (Classes 6 and 10). SN 260,461. Pub. 1–7–69. Filed 12–9–66.

867,012. SIKA. Kaspar Winkler & Co. SN 269,901. Pub. 1–7–69. Filed 4–24–67.

867,013. SILCOLOR. Imperial Chemical Industries Limited. SN 272,062. Pub. 1–7–69. Filed 5–22–67.

867,014. BIG DAN. Kert Manufacturing Company Limited. SN 280,786. Pub. 1–7–69. Filed 9–20–67.

867,015. TRACOR AND DESIGN. Tracor, Inc. MULTIPLE CLASS (Classes 6 and 16). SN 282,415. Pub. 1–7–69. Filed 10–13–67.

867,016. ICAL. Abbott Laboratories. SN 282,756. Pub. 1–7–69. Filed 10–18–67.

867,017. SHOCK. Xttrium Laboratories, Inc. SN 285,283. Pub. 1–7–69. Filed 11–20–67.

867,018. INUSAY. Abbott Laboratories. SN 285,506. Pub. 1–7–69. Filed 11–24–67.

867,019. RIDDELL. Riddell, Inc. MULTIPLE CLASS (Classes 6, 16, and 22). SN 286,593. Pub. 1–7–69. Filed 12–11–67.

867,020. DUOWET. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 289,294. Pub. 1–7–69. Filed 1–22–68.

867,021. CARDIOCREME. A. R. Williams & Co. SN 290,677. Pub. 1–7–69. Filed 2–8–68.

867,022. R–7. Relton Corporation. SN 293,579. Pub. 1–7–69. Filed 3–18–68.

867,023. IM-TIN. Vulcan Materials Company. SN 295,690. Pub. 1–7–69. Filed 4–15–68.

867,024. GOOD-LIFE. Good-Life Chemicals, Incorporated. MULTIPLE CLASS (Classes 6 and 10). SN 302,815. Pub. 1–7–69. Filed 7–16–68.

Class 7 — Cordage

867,025. NYLASH. General Machine Products Company, Inc. SN 288,094. Pub. 1–7–69. Filed 1–4–68.

Class 8 — Smokers' Artides, Not Induding Tobacco Products

867,026. HAPPENINGS. Scripto, Inc. SN 294,672. Pub. 1–7–69. Filed 4–1–68.

867,027. RIESCO. Ries Distributors, Inc. SN 301,088. Pub. 1–7–69. Filed 6–21–68.

867,028. RWP. Wilton Brass Company. SN 304,528. Pub. 1–7–69. Filed 8–6–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

867,029. STREAMER. Federal Laboratories, Inc. SN 302,401. Pub. 1–7–69. Filed 7–10–68.

Class 10 — Fertilizers

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,010. (See Class 6 for this trademark.)

867,011. (See Class 6 for this trademark.)

867,024. (See Class 6 for this trademark.)

867,030. NURISH. W. R. Grace & Co. SN 279,551. Pub. 1–7–69. Filed 9–1–67.

867,031. FERTI-YARD AND DESIGN. Clover Chemical Company. SN 298,109. Pub. 1–7–69. Filed 5–14–68.

867,032. MOBILE-AID. City of Mobile. SN 300,254. Pub. 1–7–69. Filed 6–12–68.

Class 11 — Inks and Inking Materials

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

Class 12 — Construction Materials

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,033. QUINWALL AND DESIGN. Hess Manufacturing Company. SN 269,761. Pub. 1–7–69. Filed 4–21–67.

867,034. ALTRO. The Adamite Company Limited. SN 287,503. Pub. 1–7–69. Filed 12–26–67.

867,035. P.W.P. Pacific Wood Products Company. SN 291,631. Pub. 1–7–69. Filed 2–21–68.

867,036. GALAXIE. Rusco Industries, Inc., d.b.a. Galaxie Window Company. SN 301,089. Pub. 1–7–69. Filed 6–21–68.

867,037. PERMA-JOINT. The Tremco Manufacturing Co. SN 301,104. Pub. 1–7–69. Filed 6–21–68.

867,038. TRU-STONE. Wells Badger Industries, Inc. SN 305,011. Pub. 1–7–69. Filed 8–12–68.

867,039. STOK LAM. Simpson Timber Company. SN 306,316. Pub. 1–7–69. Filed 8–30–68.

867,040. ALUMITHANE. Alumiseal Corporation. SN 307,377. Pub. 1–7–69. Filed 9–16–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

867,041. HELIFLEX. Aristovoulos George Petsetakis. SN 249,825. Pub. 10–24–67. Filed 7–8–66.

867,042. NYLO-FLEX. Southern Tire & Patch Company, Inc. SN 284,054. Pub. 8–20–68. Filed 11–2–67.

867,043. MINI-COOLER. The Halsey W. Taylor Company. SN 285,590. Pub. 1–7–69. Filed 11–24–67.

867,044. SAFE T GARD AND DESIGN. Towlsaver, Inc. MULTIPLE CLASS (Classes 13 and 37). SN 295,077. Pub. 1–7–69. Filed 4–8–68.

867,045. GRIPTITE. The Shelby Metal Products Co. SN 297,606. Pub. 1–7–69. Filed 5–7–68.

867,046. CAMP-TEEN. S. H. Leggitt Company, Inc. SN 299,028. Pub. 1–7–69. Filed 5–24–68.

867,047. VENUS. Venetian Marble Company. SN 300,856. Pub. 1–7–69. Filed 6–19–68.

867,048. INSUL-SCREW AND DESIGN. Austin Continental Industries, Inc. SN 300,890. Pub. 1–7–69. Filed 6–20–68.

867,049. SQUAREHED. Independent Nail, Inc. SN 301,229. Pub. 1–7–69. Filed 6–24–68.

867,050. ANCHORFAST. Independent Nail, Inc. SN 301,230. Pub. 1–7–69. Filed 6–24–68.

867,051. SP WITHIN CIRCLE. The S-P Manufacturing Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 301,578. Pub. 1–7–69. Filed 6–28–68.

867,052. PHILDUCT. Phillips Petroleum Company. SN 301,992. Pub. 1–7–69. Filed 6–27–68.

867,053. FRONTIER. Beneke Corporation. SN 302,707. Pub. 1–7–69. Filed 7–15–68.

867,054. SUBURBAN. Beneke Corporation. SN 302,708. Pub. 1–7–69. Filed 7–15–68.

867,055. HARLOC. Harloc Products Corporation. MULTIPLE CLASS (Classes 13 and 25). SN 302,812. Pub. 1–7–69. Filed 7–16–68.

867,056. INFAST. Industrial Fasteners Corporation. SN 303,310. Pub. 1–7–69. Filed 7–22–68.

867,057. NEU-LIFT. Crane Co. SN 304,208. Pub. 1–7–69. Filed 8–2–68.

867,058. EVER-GRIP. Screw and Bolt Corporation of America. SN 304,400. Pub. 1–7–69. Filed 8–5–68.

867,059. NEO-NAILS. Deniston Company. SN 308,946. Pub. 1–7–69. Filed 10–7–68.

Class 14 — Metals and Metal Castings and Forgings

867,060. R-V BRITE. Arvey Corporation. MULTIPLE CLASS (Classes 14 and 37). SN 275,505. Pub. 1–7–69. Filed 7–7–67.

Class 15 — Oils and Greases

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,061. ANDOLEC. Lubrication Engineers, Inc. SN 291,080. Pub. 1–7–69. Filed 2–14–68.

867,062. COMPLEX/O. Lubrication Engineers, Inc. SN 292,393. Pub. 1–7–69. Filed 3–4–68.

867,063. AMARYLLIS. Candle-Lite, Inc. SN 294,722. Pub. 1–7–69. Filed 4–2–68.

Class 16 — Protective and Decorative Coatings

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,015. (See Class 6 for this trademark.)

867,019. (See Class 6 for this trademark.)

Class 17 — Tobacco Products

867,064. MOYA. Carlos A. Fuente, d.b.a. Arturo Fuente Cigar Factory. SN 283,336. Pub. 1–7–69. Filed 10–25–67.

867,065. HUMITRAY. Bayuk Cigars Incorporated. SN 283,852. Pub. 1–7–69. Filed 11–1–67.

867,066. HUMIRAP. Bayuk Cigars Incorporated. SN 283,853. Pub. 1-7-69. Filed 11-1-67.

867,067. STATE EXPRESS LONDON MIXTURE AND DESIGN. Ardath Tobacco Company, Limited. SN 294,879. Pub. 1-7-69. Filed 4-4-68.

867,068. NEVADA. Philip Morris Incorporated. SN 308,134. Pub. 1-7-69. Filed 9-24-68.

867,069. COLORADO. Philip Morris Incorporated. SN 308,135. Pub. 1-7-69. Filed 9-24-68.

867,070. ARIZONA. Philip Morris Incorporated. SN 308,136. Pub. 1-7-69. Filed 9-24-68.

Class 18 — Medicines and Pharmaceutical Preparations

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,071. TANAC. Commerce Drug Co., Inc. SN 275,640. Pub. 1-7-69. Filed 7-10-67.

867,072. PROP-A-GRO. Associated Researchers, Inc. SN 277,123. Pub. 1-7-69. Filed 7-31-67.

867,073. KEY-E. Susan E. F. Carlson, d.b.a. J. R. Carlson Laboratories. SN 279,624. Pub. 1-7-69. Filed 9-5-67.

867,074. GYROCAPS. Dooner Laboratories Inc. SN 286,107. Pub. 1-7-69. Filed 12-4-67.

867,075. THE FATIGUE FIGHTER. American Home Products Corporation. SN 287,989. Pub. 1-7-69. Filed 1-2-68.

867,076. PRELU-SED. Boehringer Ingelheim, G.m.b.H. SN 291,021. Pub. 1-7-69. Filed 2-14-68.

867,077. GREEN GO. American Home Products Corporation. SN 292,653. Pub. 1-7-69. Filed 3-7-68.

867,078. GO ALERT. American Home Products Corporation. SN 292,654. Pub. 1-7-69. Filed 3-7-68.

867,079. ECHOPHEN. American Home Products Corporation. SN 303,757. Pub. 1-7-69. Filed 7-29-68.

867,080. CHUMS. Mead Johnson & Company. SN 307,713. Pub. 1-7-69. Filed 9-19-68.

867,081. FRIENDS. Mead Johnson & Company. SN 307,716. Pub. 1-7-69. Filed 9-19-68.

867,082. BUDDIES. Mead Johnson & Company. SN 307,717. Pub. 1-7-69. Filed 9-19-68.

867,083. TRANQUA-SELTZER. American Home Products Corporation. SN 307,801. Pub. 1-7-69. Filed 9-20-68.

867,084. TRANQUI-SELTZER. American Home Products Corporation. SN 307,802. Pub. 1-7-69. Filed 9-20-68.

Class 19 — Vehicles

867,085. SPORTOMATIC. Firma Dr. Ing. H.C.F. Porsche KG. MULTIPLE CLASS (Classes 19 and 23). SN 286,336. Pub. 1-7-69. Filed 12-6-67.

867,086. SNO-KASTLE AND DESIGN. Dolphin-Kamper, Inc. SN 297,393. Pub. 1-7-69. Filed 5-6-68.

867,087. TRAILCO. Trailco Manufacturing and Sales Company. SN 308,079. Pub. 1-7-69. Filed 9-24-68.

Class 20 — Linoleum and Oiled Cloth

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,088. ALTRO. The Adamite Company Limited. SN 287,502. Pub. 1-7-69. Filed 12-26-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

867,089. VISION. Vision Electronics, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 257,807. Pub. 12-5-67. Filed 11-2-66.

867,090. POWER DOME. Charles Messenger. SN 274,977. Pub. 1-7-69. Filed 6-28-67.

867,091. ANASHIELD. Anaconda Aluminum Company. SN 276,212. Pub. 1-7-69. Filed 7-18-67.

867,092. AUDIO-COMMAND. Shooting Equipment, Inc. SN 276,696. Pub. 1-7-69. Filed 7-24-67.

867,093. FERROTEC. Ferrotec, Incorporated. SN 277,826. Pub. 1-7-69. Filed 8-8-67.

867,094. NADYNE. North American Rockwell Corporation, by change of name from North American Aviation, Inc. SN 280,723. Pub. 1-7-69. Filed 9-19-67.

867,095. ADLO. General Motors Corporation. SN 281,370. Pub. 1-7-69. Filed 9-28-67.

867,096. TURNER AND DESIGN. Conrac Corporation. SN 281,458. Pub. 1-7-69. Filed 9-29-67.

867,097. OCTATRON. Alpha Industries, Inc. SN 281,665. Pub. 1-7-69. Filed 10-3-67.

867,098. ME CAN DO! Marathon Electric Manufacturing Corporation. SN 283,961. Pub. 4-16-68. Filed 11-2-67.

867,099. BTR. Reda Pump Company. SN 284,895. Pub. 9-10-68. Filed 11-8-67.

867,100. X-MOD. Preston Scientific Incorporated. MULTIPLE CLASS (Classes 21 and 26). SN 287,670. Pub. 1-7-69. Filed 12-27-67.

867,101. IMCUBE. IMC Magnetics Corp. SN 288,096. Pub. 1-7-69. Filed 1-4-68.

867,102. PERMA GOLD. S & A Electronics, Inc. SN 288,353. Pub. 1-7-69. Filed 1-8-68.

867,103. TIP. Magnetics, Inc. SN 288,834. Pub. 1-7-69. Filed 1-15-68.

867,104. CRAZY LEGS. George Kovacs, Inc. SN 290,393. Pub. 1-7-69. Filed 2-6-68.

867,105. COTTRELL-ETTE. Research-Cottrell, Inc. SN 291,523. Pub. 1-7-69. Filed 2-20-68.

867,106. CRESTLINE AND DESIGN. Grossman Music Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 291,606. Pub. 1-7-69. Filed 2-21-68.

867,107. CDE AND DESIGN. Cornell-Dubilier Electric Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 292,735. Pub. 1-7-69. Filed 3-8-68.

867,108. MIDBY. Middlebury Manufacturing Co., Inc. SN 294,068. Pub. 1-7-69. Filed 3-25-68.

867,109. TEISCO. WMI Corporation. SN 295,203. Pub. 1-7-69. Filed 4-8-68.

867,110. PLASTAN. Sprague Plastan Company. SN 296,207. Pub. 1-7-69. Filed 4-22-68.

867,111. HOTPOINT. General Electric Company. SN 296,417. Pub. 1-7-69. Filed 4-24-68.

867,112. TEXACO AND DESIGN. Texaco Inc. SN 296,470. Pub. 1-7-69. Filed 4-24-68.

867,113. RED BALL. Eastern Electric Sales Co., Inc., d.b.a. Eastern Electric Wire & Cable Company. SN 296,674. Pub. 1-7-69. Filed 4-26-68.

867,114. GENERAL ELECTRIC AND DESIGN. General Electric Company. SN 306,439. Pub. 1-7-69. Filed 9-3-68.

Class 22 — Games, Toys, and Sporting Goods

867,019. (See Class 6 for this trademark.)

867,115. KIDDIE KOPTER AND DESIGN. Marlin Toy Products, Inc. SN 274,814. Pub. 4-30-68. Filed 6-26-67.

867,116. DEBBIE'S. Standard Toykraft Inc. SN 275,973. Pub. 1-7-69. Filed 7-13-67.

867,117. GIMMIES. Endicott Johnson Corporation. SN 277,036. Pub. 1-7-69. Filed 7-28-67.

867,118. PERMIT AND DESIGN. Woodstream Corporation. SN 278,548. Pub. 1-7-69. Filed 8-17-67.

867,119. TRIGGERFISH AND DESIGN. Woodstream Corporation. SN 278,549. Pub. 1-7-69. Filed 8-17-67.

867,120. BONEFISH AND DESIGN. Woodstream Corporation. SN 278,550. Pub. 1-7-69. Filed 8-17-67.

867,121. HOT DOG! James L. Thomas, d.b.a. Hot Dog Tackle Company. SN 280,897. Pub. 1-7-69. Filed 9-21-67.

867,122. JOHNNY TARHEEL. Empire Plastic Corp. SN 284,179. Pub. 1-7-69. Filed 11-6-67.

867,123. OLYMPET AND DESIGN. Handy Manufacturing Co. SN 286,139. Pub. 1-7-69. Filed 12-4-67.

867,124. TEN-PIN GOLF AND DESIGN. Samuel A. Moses. SN 291,995. Pub. 1-7-69. Filed 2-27-68.

867,125. JEAN AND DESIGN. Firma Jean Hofler & Co. KG. SN 295,075. Pub. 1-7-69. Filed 2-16-68.

867,126. SWING MONITOR. Frank D. Macri. SN 300,036. Pub. 1-7-69. Filed 6-10-68.

867,127. KIDDLES. Mattel, Inc. SN 303,965. Pub. 12-17-68. Filed 7-31-68.

Class 23 — Cutlery, Machinery, and Tools and Parts Thereof

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,051. (See Class 13 for this trademark.)

867,085. (See Class 19 for this trademark.)

867,128. IDEAL-TEK AND DESIGN. Ideal Outils S.A. SN 262,736. Pub. 1-7-69. Filed 1-18-67.

867,129. ECHLIN. The Echlin Manufacturing Company. SN 281,364. Pub. 1-7-69. Filed 9-28-67.

867,130. BOSS AND DESIGN. Cincinnati Butchers' Supply Company. SN 287,520. Pub. 1-7-69. Filed 12-26-67.

867,131. GLIDECOTE. Dana Corporation. SN 292,187. Pub. 1-7-69. Filed 2-29-68.

867,132. PERKINS DIESELATION AND DESIGN. Massey-Ferguson-Perkins Limited. SN 292,216. Pub. 1-7-69. Filed 2-29-68.

867,133. ACRA-PLANT AND DESIGN. Acra-Plant, Inc. SN 292,334. Pub. 1-7-69. Filed 3-4-68.

867,134. EVER-FLEX. Browning Manufacturing Company. SN 293,621. Pub. 1-7-69. Filed 3-19-68.

867,135. LILYPAK. Lily-Tulip Cup Corporation. SN 297,196. Pub. 1-7-69. Filed 5-2-68.

867,136. FASHION MATE. The Singer Company. SN 298,630. Pub. 1-7-69. Filed 5-20-68.

867,137. SHRINKASE. Reynolds Metals Company. SN 298,757. Pub. 1-7-69. Filed 5-21-68.

867,138. REV-LOK. Fly-Wheel Corporation, d.b.a. Schiefer Mfg. Co. SN 299,343. Pub. 1-7-69. Filed 5-29-68.

Class 24 — Laundry Appliances and Machines

867,139. CHORE BOY. Ametek, Inc. SN 287,333. Pub. 3-26-68. Filed 12-21-67.

867,140. MERVILLE. Mercantile Stores Company, Inc. SN 304,864. Pub. 1-7-69. Filed 8-12-68.

Class 25 — Locks and Safes

867,055. (See Class 13 for this trademark.)

Class 26 — Measuring and Scientific Appliances

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,100. (See Class 21 for this trademark.)

867,107. (See Class 21 for this trademark.)

867,141. MILLITEMP. Leeds & Northrup Company. SN 248,817. Pub. 1-7-69. Filed 6-23-66.

867,142. VERITRAK. Motorola, Inc. SN 281,714. Pub. 1-7-69. Filed 10-3-67.

867,143. USSI AND DESIGN. United States Scientific Instruments, Inc. SN 282,152. Pub. 1-7-69. Filed 10-9-67.

867,144. DYNASEAT. Goodyear Aerospace Corporation. SN 283,249. Pub. 1-7-69. Filed 10-24-67.

867,145. LOGEGAMMA. Logetronics Inc. SN 283,532. Pub. 1-7-69. Filed 10-27-67.

867,146. SUPER FAM. Thiokol Chemical Corporation. SN 284,251. Pub. 1-7-69. Filed 11-6-67.

867,147. CYCLOPS. Cyclops Industries. SN 284,995. Pub. 1-7-69. Filed 11-16-67.

867,148. MISCELLANEOUS DESIGN. Ocean Technology, Inc. MULTIPLE CLASS (Classes 26 and 38). SN 287,395. Pub. 1-7-69. Filed 12-22-67.

867,149. CONSERV-A-TRIEVE. Supreme Equipment & Systems Corp. SN 287,682. Pub. 1-7-69. Filed 12-27-67.

867,150. TELEREAD. Buffalo Meter Company, Incorporated. SN 291,708. Pub. 1-7-69. Filed 2-23-68.

867,151. ANSCORAMA. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 294,730. Pub. 1-7-69. Filed 4-2-68.

867,152. GOLDEN CIRCLE. Duncan Industries, Inc., by change of name from Duncan Parking Meter Corporation. SN 297,989. Pub. 1-7-69. Filed 5-13-68.

867,153. RCA. Radio Corporation of America. SN 308,661. Pub. 1-7-69. Filed 10-2-68.

867,154. RCA. Radio Corporation of America. SN 308,662. Pub. 1-7-69. Filed 10-2-68.

Class 28 — Jewelry and Precious-Metal Ware

867,155. WRISTLINE. Lucien A. Marsh, d.b.a. Wristline Adjustable Watch Bands. SN 298,462. Pub. 1-7-69. Filed 5-17-68.

867,156. TIE-GER TACKS. George Weston Mitchell, Jr., d.b.a. Weston of Williamsburg. SN 298,747. Pub. 1-7-69. Filed 5-21-68.

Class 29 — Brooms, Brushes, and Dusters

867,157. WEST AND W DESIGN. West Chemical Products, Inc. SN 280,287. Pub. 1-7-69. Filed 9-13-67.

Class 32 — Furniture and Upholstery

867,158. OLD STURBRIDGE VILLAGE OSV AND DESIGN. Old Sturbridge, Inc. SN 279,849. Pub. 1-7-69. Filed 9-7-67.

867,159. VIDMAR. Volkert Stampings, Inc. SN 284,057. Pub. 1-7-69. Filed 11-2-67.

867,160. AMERFOAM. American Seating Company. SN 287,264. Pub. 1-7-69. Filed 12-20-67.

867,161. THE KIT STOOL. Edward S. Reid. SN 292,133. Pub. 1-7-69. Filed 2-28-68.

867,162. SOFT-SPOT. The Soft Spot Products Company. SN 295,059. Pub. 1-7-69. Filed 4-5-68.

867,163. INHERITANCE HOUSE. Sachs Quality Stores, Inc. SN 300,116. Pub. 1-7-69. Filed 6-10-68.

867,164. ELECTA. Stow/Davis Furniture Company. SN 300,384. Pub. 1-7-69. Filed 6-13-68.

867,165. POSTURE LIFT AND DESIGN. Con-Tex Corporation. SN 301,042. Pub. 1-7-69. Filed 6-21-68.

867,166. LYRIC. Eastman Kodak Company. SN 301,413. Pub. 1-7-69. Filed 6-26-68.

867,167. MATADOR. David M. Lea & Co., Inc. SN 302,092. Pub. 1-7-69. Filed 7-5-68.

867,168. SANI-CLAD. Robert Haws Company. SN 302,620. Pub. 1-7-69. Filed 7-12-68.

867,169. FOX AND DESIGN. Fox Manufacturing Company. SN 302,929. Pub. 1-7-69. Filed 7-17-68.

867,170. CLOSET-MASTER. Reinhart, Inc. SN 304,123. Pub. 1-7-69. Filed 8-1-68.

Class 33 — Glassware

867,171. GRAND PRIX. Crossbow, Inc. SN 298,580. Pub. 1-7-69. Filed 5-20-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

867,002. (See Class 2 for this trademark.)

867,172. THE ROYAL FAMILY OF FIREPLACES. Malm Fireplaces, Inc. SN 270,795. Pub. 1-7-69. Filed 5-5-67.

867,173. FIRE KING. Malm Fireplaces, Inc. SN 270,796. Pub. 1-7-69. Filed 5-5-67.

867,174. RWP. Wilton Brass Company. SN 304,523. Pub. 1-7-69. Filed 8-6-68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

867,175. WORK HORSE AND DESIGN. The Goodyear Tire & Rubber Company. SN 299,669. Pub. 1-7-69. Filed 6-4-68.

Class 36 — Musical Instruments and Supplies

867,089. (See Class 21 for this trademark.)

867,106. (See Class 21 for this trademark.)

867,176. WAYSIDE AND DESIGN. Wayside Records, Incorporated, assignee of Wayside Records. SN 269,003. Pub. 1-7-69. Filed 4-12-67.

867,177. FIBES AND DESIGN. Fibes Drum Corporation. SN 287,160. Pub. 1-7-69. Filed 12-18-67.

867,178. AUDIO SCRIPTS ASK DR. QUIZMEE AND DESIGN. Kogan Productions, Inc. SN 295,238. Pub. 1-7-69. Filed 4-9-68.

867,179. CURTOM AND DESIGN. Chi-Record Company, d.b.a. Curtom Records. SN 300,328. Pub. 1-7-69. Filed 6-13-68.

867,180. NORTH STATE. North State Musical Productions, Incorporated, d.b.a. North State Music. SN 305,153. Pub. 1-7-69. Filed 8-14-68.

867,181. FRONTIER AND DESIGN. Timothy D. Diehl. SN 305,818. Pub. 1-7-69. Filed 8-23-68.

867,182. CLASSETTE. Audiotronics Corporation. SN 307,183. Pub. 1-7-69. Filed 9-12-68.

867,183. GOLDEX. Goldsmith Bros. SN 307,470. Pub. 1-7-69. Filed 9-16-68.

867,184. BUDDAH RECORDS AND DESIGN. Buddah Records, Inc. SN 308,271. Pub. 1-7-69. Filed 9-26-68.

Class 37 — Paper and Stationery

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,044. (See Class 13 for this trademark.)

867,060. (See Class 14 for this trademark.)

867,185. MONOGRAM OF CALIFORNIA AND DESIGN. Monogram of California. SN 267,054. Pub. 1-7-69. Filed 3-17-67.

867,186. WEST AND W DESIGN. West Chemical Products, Inc. SN 280,286. Pub. 1-7-69. Filed 9-13-67.

867,187. FAVORLINE. Favorline, Incorporated, d.b.a. John R. Christensen Assoc. MULTIPLE CLASS (Classes 37 and 50). SN 285,699. Pub. 1-7-69. Filed 11-28-67.

867,188. PAPPAGALLO. Pappagallo, Inc. SN 300,230. Pub. 1-7-69. Filed 6-12-68.

Class 38 — Prints and Publications

867,148. (See Class 26 for this trademark.)

867,189. CARDS AND SHARDS. Robert Fesler, Jr. SN 277,551. Pub. 1-7-69. Filed 8-4-67.

867,190. HILTONITEMS. Hilton Hotels Corporation. SN 279,293. Pub. 1-7-69. Filed 8-29-67.

867,191. TEK TALK. American Dynamics Corporation. SN 280,921. Pub. 1-7-69. Filed 9-22-67.

867,192. TIZ TRAVEL INTERNATIONAL AND DESIGN. Willy Nussbaumer, d.b.a. Touristisches Institut Zürich. SN 286,771. Pub. 1-7-69. Filed 12-12-67.

867,193. OVERSEAS FAMILY. Overseas Media Corporation. SN 287,090. Pub. 1-7-69. Filed 12-18-67.

867,194. OVERSEAS WEEKLY. Overseas Media Corporation. SN 287,091. Pub. 1-7-69. Filed 12-18-67.

867,195. SKI INDUSTRY ADVISOR. Ski Industries America. SN 287,324. Pub. 1-7-69. Filed 12-20-67.

867,196. IT'S YOUR MONEY. General Features Corporation. SN 287,730. Pub. 1-7-69. Filed 12-28-67.

867,197. THE WALL STREET ECONOMIST. Amott, Baker & Co. Inc. and Martin J. Crean (joint owners). SN 288,420. Pub. 1-7-69. Filed 1-9-68.

867,198. PARTNERSHIP IN CONTINUING EDUCATION AND DESIGN. American Society for Metals. SN 288,462. Pub. 1-7-69. Filed 1-3-68.

867,199. MHEDA. Material Handling Equipment Distributors Association. SN 290,865. Pub. 1-7-69. Filed 2-12-68.

867,200. DIAL-A-PAGE AND DESIGN. Walsworth Publishing Company, Inc. SN 291,458. Pub. 1-7-69. Filed 2-19-68.

867,201. THE ACCOUNTANT. Laventhol Krekstein Horwath & Horwath. SN 291,881. Pub. 1-7-69. Filed 2-26-68.

867,202. SEZ WHO? The McNaught Syndicate, Inc. SN 292,403. Pub. 1-7-69. Filed 3-4-68.

867,203. TELL-A-TALE. Western Publishing Company, Inc. SN 292,443. Pub. 1-7-69. Filed 3-4-68.

867,204. FIND. National Design Center Delaware Inc. SN 294,955. Pub. 1-7-69. Filed 4-4-68.

867,205. BATTER MAGIC. The Pillsbury Company. SN 295,052. Pub. 1-7-69. Filed 4-5-68.

867,206. HUNTTING BOUND AND DESIGN. The H. R. Huntting Co., Inc. SN 301,228. Pub. 1-7-69. Filed 6-24-68.

867,207. SAV-ON. Sav-On, Inc. SN 308,749. Pub. 1-7-69. Filed 10-3-68.

Class 39 — Clothing

867,208. CATHERINES. Catherine's Stout Shoppe, Inc. SN 260,723. Pub. 1-7-69. Filed 12-14-66.

867,209. GC. Federated Department Stores, Inc. SN 287,010. Pub. 1-7-69. Filed 12-15-67.

867,210. PARIKEN AND DESIGN. Société Dite Etablissements Vaskene et Cie (Société Anonyme). SN 288,877. Pub. 1-7-69. Filed 1-15-68.

867,211. BRAND X ETC. AND DESIGN. Chadbourn Gotham, Inc. SN 289,274. Pub. 1-7-69. Filed 1-22-68.

867,212. HAEDKESUEDE. Hazantown, Inc. SN 292,270. Pub. 1-7-69. Filed 3-1-68.

867,213. CAPITOL COLLECTION. Woodward & Lothrop Incorporated. SN 294,988. Pub. 1-7-69. Filed 4-4-68.

867,214. GREEN HILL CASUALS. F. & C. Sportswear, Inc. SN 295,818. Pub. 1-7-69. Filed 4-17-68.

867,215. LOOM 88. S. Augstein & Co., Inc. SN 296,502. Pub. 1-7-69. Filed 4-25-68.

867,216. GRANDINI. Interco Incorporated. SN 297,566. Pub. 1-7-69. Filed 5-7-68.

867,217. LISA KAY. Margaret E. Rolston. SN 299,383. Pub. 1-7-69. Filed 5-29-68.

867,218. EXCELLURE. Kayser-Roth Corporation. SN 299,676. Pub. 1-7-69. Filed 6-4-68.

867,219. MILMAR. Milmar Associates, Inc. SN 301,238. Pub. 1-7-69. Filed 6-24-68.

867,220. DOVELONS. S. D. Arrowood & Co. Inc. SN 303,030. Pub. 1-7-69. Filed 7-18-68.

867,221. STYLE MANOR. Bond Stores, Incorporated. SN 303,266. Pub. 1-7-69. Filed 7-22-68.

867,222. BIG BRAD. Puritan Fashions Corporation. SN 303,341. Pub. 1-7-69. Filed 7-22-68.

867,223. FASHION TIME. Maidenform, Inc. SN 305,614. Pub. 1-7-69. Filed 8-21-68.

867,224. SIL-CREASED. Silver Mfg. Co., Inc. SN 307,357. Pub. 1-7-69. Filed 9-13-68.

Class 40 — Fancy Goods, Furnishings, and Notions

867,225. NIGHT OUT. Stanley Comb Products Corp. SN 296,592. Pub. 1-7-69. Filed 4-25-68.

867,226. ATTACHE. Fashion Tress, Inc. SN 308,344. Pub. 1-7-69. Filed 9-27-68.

Class 41 — Canes, Parasols, and Umbrellas

867,227. REX. Telesco Brophey Limited. SN 301,780. Pub. 1-7-69. Filed 7-1-68.

867,228. PREMIER. Telesco Brophey Limited. SN 301,781. Pub. 1-7-69. Filed 7-1-68.

867,229. FAVORITE. Telesco Brophey Limited. SN 301,782. Pub. 1-7-69. Filed 7-1-68.

867,230. CLASSIC. Telesco Brophey Limited. SN 301,783. Pub. 1-7-69. Filed 7-1-68.

867,231. AMBASSADOR. Telesco Brophey Limited. SN 301,784. Pub. 1-7-69. Filed 7-1-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

867,232. DAN RIVER DESIGNER FABRICS AND DESIGN. Dan River Mills, Incorporated. SN 271,232. Pub. 1-7-69. Filed 5-11-67.

867,233. JEAN/ALAN. Trend Mills, Inc. SN 292,227. Pub. 1-7-69. Filed 2-29-68.

867,234. SANDSTONE. A. Leon Capel & Sons, Incorporated. SN 292,676. Pub. 1-7-69. Filed 3-7-68.

867,235. TRIPLE PLAY. A. Leon Capel & Sons, Incorporated. SN 292,677. Pub. 1-7-69. Filed 3-7-68.

867,236. A BELL ORIGINAL. Bell Bedspreads, Inc. SN 297,267. Pub. 1-7-69. Filed S.R. 5-3-68; Am. P.R. 11-8-68.

867,237. PREGO. Freiss Inc. SN 300,817. Pub. 1-7-69. Filed 6-19-68.

867,238. BOCATELLE. Freiss Inc. SN 300,818. Pub. 1-7-69. Filed 6-19-68.

867,239. COULAGE. Freiss Inc. SN 300,819. Pub. 1-7-69. Filed 6-19-68.

867,240. FASTBAC. The General Tire & Rubber Company. SN 300,927. Pub. 1-7-69. Filed 6-20-68.

867,241. OZITE. Ozite Corporation. SN 300,958. Pub. 1-7-69. Filed 6-20-68.

867,242. TRITEMP. J. P. Stevens & Co., Inc. SN 301,457. Pub. 1-7-69. Filed 6-26-68.

867,243. TRIFINISH 9172. J. P. Stevens & Co., Inc. SN 301,458. Pub. 1-7-69. Filed 6-26-68.

867,244. KOYN. Coin Sales Corporation. SN 301,716. Pub. 1-7-69. Filed 7-1-68.

Class 43 — Thread and Yarn

867,245. LEE TARGET. George Lee & Sons Limited. SN 300,204. Pub. 1-7-69. Filed 6-11-68.

867,246. SPINCON. Roselon Yarns, Inc. SN 300,966. Pub. 1-7-69. Filed 6-20-68.

Class 44 — Dental, Medical, and Surgical Appliances

867,247. LIV. American Hygienic Co. SN 302,701. Pub. 1-7-69. Filed 7-15-68.

867,248. ASMASTIK. Bird Space Technology, Inc. SN 303,257. Pub. 1-7-69. Filed 7-22-68.

Class 46 — Foods and Ingredients of Foods

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,249. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 278,589. Pub. 1-7-69. Filed 8-18-67.

867,250. TOASTA AND DESIGN. Toasta Foods Company. SN 290,114. Pub. 8-27-68. Filed 2-1-68.

867,251. HUNGRY DOG. Carnation Company. SN 299,426. Pub. 12-31-68. Filed 5-31-68.

Class 47 — Wines

867,252. WILE. Julius Wile Sons & Co., Inc. MULTIPLE CLASS (Classes 47 and 49). SN 274,024. Pub. 1-7-69. Filed 6-16-67.

Class 49 — Distilled Alcoholic Liquors

867,252. (See Class 47 for this trademark.)

867,253. DEERSTALKER AND DESIGN. J. G. Thomson & Co. Limited. SN 281,833. Pub. 1–7–69. Filed 10–4–67.

867,254. DEERSTALKER. J. G. Thomson & Co. Limited. SN 281,834. Pub. 1–7–69. Filed 10–4–67.

867,255. HERBSAINT VERITAS BY LEGENDRE ETC. AND DESIGN. Sazerac Company, Inc., d.b.a. Legendre Co. SN 289,211. Pub. 1–7–69. Filed 1–19–68.

Class 50 — Merchandise Not Otherwise Classified

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,187. (See Class 37 for this trademark.)

867,256. SEE-THRU. W. R. Grace & Co. SN 261,922. Pub. 5–14–68. Filed 1–4–67.

867,257. COUNTER-CARPET. Robfogel Mill-Andrews Corporation. SN 275,304. Pub. 1–7–69. Filed 7–3–67.

867,258. MODEL-FOAM. Model-Foam Inc. SN 276,158. Pub. 1–7–69. Filed 7–17–67.

Class 51 — Cosmetics and Toilet Preparations

867,007. (See Class 3 for this trademark.)

867,259. ZEN. Shiseido Company, Limited. MULTIPLE CLASS (Classes 51 and 52). SN 262,715. Pub. 1–7–69. Filed 1–17–67.

867,260. MARY QUANT P.M. Mary Quant Limited, assignee of Mary Quant Cosmetics Limited. SN 265,199. Pub. 1–7–69. Filed 2–21–67.

867,261. MARY QUANT A.M. Mary Quant Limited, assignee of Mary Quant Cosmetics Limited. SN 265,200. Pub. 1–7–69. Filed 2–21–67.

867,262. RED GARTER. Jartiere Rouge Ltd. SN 283,343. Pub. 1–7–69. Filed 10–25–67.

867,263. LUESCENT. Mrs. Stanley M. Lockie, d.b.a. Auta and By Auta. SN 289,057. Pub. 1–7–69. Filed 1–18–68.

867,264. SKIPPER. Lander Co., Inc. SN 292,389. Pub. 1–7–69. Filed 3–4–68.

867,265. SUPER H-BLAST. Helene Curtis Industries, Inc. SN 293,257. Pub. 1–7–69. Filed 3–14–68.

867,266. H-BLAST, Jr. Helene Curtis Industries, Inc. SN 293,258. Pub. 1–7–69. Filed 3–14–68.

867,267. DERMA-THER. Helene Curtis Industries, Inc. SN 293,376. Pub. 1–7–69. Filed 3–15–68.

867,268. THERA-DRY. Helene Curtis Industries, Inc. SN 293,377. Pub. 1–7–69. Filed 3–15–68.

867,269. MEDI-DRY. Helene Curtis Industries, Inc. SN 293,378. Pub. 1–7–69. Filed 3–15–68.

867,270. SALUBRIA. Faberge, Inc. SN 307,928. Pub. 1–7–69. Filed 9–23–68.

867,271. X-SPRAY. Faberge, Inc. SN 307,929. Pub. 1–7–69. Filed 9–23–68.

Class 52 — Detergents and Soaps

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,007. (See Class 3 for this trademark.)

867,259. (See Class 51 for this trademark.)

867,272. T AND DESIGN. Todd Chemical Company, Inc. SN 279,120. Pub. 1–7–69. Filed 8–25–67.

867,273. SOMETHING NEW AND DESIGN. Better Home Products Corp. SN 282,232. Pub. 1–7–69. Filed 10–11–67.

867,274. SKE. Puritan Chemical Company. SN 290,525. Pub. 1–7–69. Filed 2–7–68.

867,275. DYNAPHENE. Dynasurf Chemical Corporation. SN 291,054. Pub. 1–7–69. Filed 2–14–68.

867,276. JANITOR IN A DRUM. Texize Chemicals, Inc. SN 298,059. Pub. 1–7–69. Filed 5–13–68.

867,277. ZEP AEROSOLVE. National Service Industries, Inc. SN 298,618. Pub. 1–7–69. Filed 5–20–68.

867,278. SHIELD. Lever Brothers Company. SN 308,743. Pub. 1–7–69. Filed 10–3–68.

Service Marks

Class 100 — Miscellaneous

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,279. NATIONWIDE CONSUMER TESTING INSTITUTE, INC. ETC. AND DESIGN. Nationwide Consumer Testing Institute, Inc. SN 161,726. Pub. 1–23–68. Filed 1–30–63.

867,280. CONVERTALEASE. United States Leasing Corporation, by change of name and assignment from United States Leasing Corporation. SN 276,194. Pub. 1–7–69. Filed 7–17–67.

867,281. BIO-SCAN. Wilson Pharmaceutical & Chemical Corporation. SN 293,969. Pub. 1–7–69. Filed 3–22–68.

867,282. ART. Art Academy of Hair Fashion. MULTIPLE CLASS (Classes 100 and 107). SN 303,959. Pub. 1–7–69. Filed 7–31–68.

Class 101 — Advertising and Business

867,283. SLOT MACHINE. David Douglas & Co., Inc. SN 257,836. Pub. 1–7–69. Filed 11–3–66.

867,284. MISCELLANEOUS DESIGN. Road Runner Campgrounds, Incorporated. SN 278,821. Pub. 1–7–69. Filed 8–22–67.

Class 102 — Insurance and Financial

867,285. BLUE RIBBON. Peoples Bank of Bloomington. SN 299,480. Pub. 1–7–69. Filed 5–31–68.

Class 103 — Construction and Repair

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

867,286. MISCELLANEOUS DESIGN. Caterpillar Tractor Co. SN 290,257. Pub. 1–7–69. Filed 2–5–68.

867,287. PORT-A-LUBE PAL AND DESIGN. Portable Lubrication, Inc. SN 291,769. Pub. 1–7–69. Filed 2–23–68.

867,288. UNICHECK. Union Oil Company of California. SN 293,605. Pub. 1–7–69. Filed 3–18–68.

Class 104 — Communication

867,289. RCA (DESIGN). Radio Corporation of America. SN 302,364. Pub. 1–7–69. Filed 7–10–68.

867,290. RCA. Radio Corporation of America. SN 302,366. Pub. 1–7–69. Filed 7–10–68.

Class 105 — Transportation and Storage

866,994. (See Class 1 for this trademark.)

866,995. (See Class 1 for this trademark.)

Class 107 — Education and Entertainment

867,282. (See Class 100 for this trademark.)

867,291. THE SONNA NOBLE SCHOOL OF KNITTING AND HANDCRAFT AND DESIGN. Sonna Noble, d.b.a. Sonna Noble Schol of Knitting and Handcraft. SN 271,506. Pub. 1–7–69. Filed 5–15–67.

867,292. ST. LOUIS FOOTBALL CARDINALS. Chicago Cardinals Football Club, d.b.a. St. Louis Football Cardinals. SN 302,556. Pub. 1–7–69. Filed 7–12–68.

Certification Marks

Class A — Goods

867,293. ANOTHER FINE FOOD PRODUCT FROM WORLD FAMOUS LEXINGTON MARKET AND DESIGN. Lexington Market Authority. SN 276,144. Pub. 1–7–69. Filed 7–17–67.

867,294. VAPOR-PHASE. DHJ Industries Inc. SN 284,169. Pub. 1–7–69. Filed 11–6–67.

867,295. VAPORON. DHJ Industries Inc. SN 284,170. Pub. 1–7–69. Filed 11–6–67.

867,296. VAPORSET. DHJ Industries Inc. SN 284,293. Pub. 1–7–69. Filed 11–7–67.

867,297. VAPOR-PRESS. DHJ Industries Inc. SN 284,294. Pub. 1–7–69. Filed 11–7–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

867,298. The O. M. Scott & Sons Company, Marysville, Ohio. SN 280,098. Filed P.R. 9–11–67; Am. S.R. 12–2–68.

INSECT STOP

For Insect Repellant (Int. Cl. 5).
First use July 25, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

867,299. Harnischfeger Corporation, Milwaukee, Wis. SN 283,657. Filed P.R. 10–30–67; Am. S.R. 12–30–68.

DIAL-A-SWING

For Control Valves for Earth Moving Equipment (Int. Cl. 7).
First use Sept. 21, 1967.

Class 14 — Metals and Metal Castings and Forgings

867,300. Veneered Metals, Inc., Edison, N.J. SN 279,124. Filed P.R. 8–25–67; Am. S.R. 8–26–68.

VENEERMETL

For Flat, Rolled Metal Bodies Adhesively Laminated Together and Disposed in Flat Sheets or Coils (Int. Cl. 6).
First use July 11, 1967.

Class 19 — Vehicles

867,301. Deering Milliken, Inc., Spartanburg, S.C., assignee of Callaway Mills Company, La Grange, Ga. SN 280,551. Filed P.R. 9–18–67; Am. S.R. 1–10–69.

DRYLOAD

For Fabric Covers Adapted To Fit Over Railway Cars (Int. Cl. 22).
First use June 30, 1967.

Class 31 — Filters and Refrigerators

867,302. Defiance International, Limited, Jamaica, N.Y. SN 260,025. Filed P.R. 12–5–66; Am. S.R. 12–26–68.

INSTANT COLD

For Refrigerators and Freezers (Int. Cl. 11).
First use during March 1964.

Class 32 — Furniture and Upholstery

867,303. Sportsgear, Inc., Minneapolis, Minn. SN 285,896. Filed P.R. 11–30–67; Am. S.R. 9–25–68.

TOTE-SEAT

For Portable Camp Furniture, and Specifically a Combination Seat and Pack Frame and Knapsack (Int. Cl. 20).
First use July 17, 1967.

Class 37 — Paper and Stationery

867,304. Lever Brothers Company, New York, N.Y. SN 284,678. Filed P.R. 11–13–67; Am. S.R. 12–20–68.

Towel T-DRI

For Paper Towels (Int. Cl. 16).
First use Oct. 30, 1967.

Class 38 — Prints and Publications

867,305. Gibson Greeting Cards, Inc., Cincinnati, Ohio. SN 271,463. Filed P.R. 5–15–67; Am. S.R. 12–19–68.

"POP-UP" PLAY CARDS

The word "Cards" is disclaimed apart from the mark as shown.
For Greeting Cards (Int. Cl. 16).
First use on or about Dec. 20, 1966.

867,306. Haywood Publishing Company, d.b.a. Oakes Consumer Catalogs, New York, N.Y. SN 276,751. Filed P.R. 7–25–67; Am. S.R. 12–2–68.

Very Imaginative Playthings For Very Important People!

For Consumer Catalogs Published Annually (Int. Cl. 16).
First use August 1958.

867,307. The Harvest Publishing Company, Cleveland, Ohio. SN 288,313. Filed 1–8–68.

WEEDS TREES AND TURF

For Magazine Published Monthly (Int. Cl. 16).
First use Nov. 1, 1964.

867,308. U.S. Industrial Publications, Inc., Stamford, Conn. SN 288,986. Filed P.R. 1–16–68; Am. S.R. 1–16–69.

FoodDigest

For Periodical Publication—Namely, a Magazine (Int. Cl. 16).
First use Dec. 5, 1967.

867,309. Sound Publishing Company, Inc., New York, N.Y. SN 293,178. Filed P.R. 3–13–68; Am. S.R. 1–6–69.

MUSICAL ELECTRONICS

For Trade Newspaper Directed to Merchandisers of Musical Instruments (Int. Cl. 16).
First use Nov. 10, 1967.

867,310. Mactier Publishing Corporation, New York, N.Y. SN 306,034. Filed P.R. 8–27–68; Am. S.R. 1–10–69.

BROADCAST EQUIPMENT BUYERS GUIDE

For Annual Publication—Namely, a Broadcast, Closed Circuit and CATV Equipment Directory (Int. Cl. 16).
First use at least as early as Feb. 20, 1967.

Class 39 — Clothing

867,311. Catalina, Inc., Los Angeles, Calif. SN 300,064. Filed 6–10–68.

END O' PRESS

For Ladies' and Children's Blouses, Skirts, Suits, Jackets, Dresses, and Swimwear; and Men's Pants, Jackets, and Swimwear (Int. Cl. 25).
First use Mar. 26, 1966.

867,312. Sidney J. Kreiss, Inc., New York, N.Y. SN 304,355. Filed 8–5–68.

SOMETHING SPECIAL

For Ladies' Hosiery (Int. Cl. 25).
First use Apr. 15, 1966.

Class 46 — Foods and Ingredients of Foods

867,313. Otto Roth and Co., Inc., New York, N.Y. SN 257,305. Filed P.R. 10–26–66; Am. S.R. 1–24–68.

CRÈMA DANIA

The words "Crèma Dania" mean "Danish cream."
For Cheese (Int. Cl. 29).
First use July 13, 1965.

867,314. John H. Wilkins Company, Inc., d.b.a. Wilkins Coffee Company, Landover, Md. SN 282,739. Filed P.R. 10–17–67; Am. S.R. 10–3–68.

SERVED BY THE WORLD'S MOST DISTINGUISHED CHEFS

For Coffee (Int. Cl. 30).
First use Sept. 11, 1967.

867,315. Alroy Packing Co., San Francisco, Calif. SN 293,454. Filed P.R. 3–18–68; Am. S.R. 10–30–68.

TAHITI ISLE

For Food Products—Namely, Coconut Syrup, Jellies, Poha Jam, and Grenadine Pomegranate Syrup (Int. Cls. 29 and 30).
First use Mar. 26, 1957.

867,316. Anderson, Clayton & Co., Dallas, Tex. SN 298,099. Filed P.R. 5–14–68; Am. S.R. 10–24–68.

RESTAURANT PAK

For Margarine (Int. Cl. 29).
First use Sept. 6, 1967.

Class 47 — Wines

867,317. Les Fils de Pierre Gilardi, Nice (Alpes-Maritimes), France. SN 294,290. Filed P.R. 3–27–68; Am. S.R. 11–5–68.

L'AMPHORE DE PROVENCE

Owner of French Reg. No. 3,219, dated Sept. 1, 1966.
For Wines (Int. Cl. 33).

Class 50 — Merchandise Not Otherwise Classified

867,318. Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y. SN 272,201. Filed P.R. 5–23–67; Am. S.R. 11–14–68.

COVERCAP

For Protective Covers for the Upper Ends of Exposed Timber (Int. Cl. 20).
First use May 3, 1967.

Class 51 — Cosmetics and Toilet Preparations

867,319. Revlon, Inc., New York, N.Y. SN 278,033. Filed P.R. 8–10–67; Am. S.R. 12–6–68.

APPLEMELON

For Lipstick and Nail Enamel (Int. Cl. 3).
First use July 3, 1967.

867,320. Revlon, Inc., New York, N.Y. SN 278,035. Filed P.R. 8–10–67; Am. S.R. 12–6–68.

PUMPKINPEEL

For Lipstick and Nail Enamel (Int. Cl. 3).
First use July 3, 1967.

867,321. Avon Products, Inc., New York, N.Y. SN 279,921. Filed P.R. 9–8–67; Am. S.R. 12–23–68.

VIVID

For Lipstick, Rouge, and Nail Enamels (Int. Cl. 3).
First use in or about October 1935.

Service Mark

Class 101 — Advertising and Business

867,322. Strategic Television Promotions, Ltd., New York, N.Y. SN 279,688. Filed P.R. 9–5–67; Am. S.R. 8–9–68.

IRISH INTERNATIONAL Steeplechase SWEEPSTAKES

For Conducting Games and Contests by Television To Promote the Sale of Goods of Others in Supermarkets (Int. Cl. 35).
First use Mar. 21, 1967.

TRADEMARK REGISTRATIONS RENEWED

33,151. REPRESENTATION OF SWAN. Cl. 52 (Int. Cl. 3). 6–27–1899.
33,152. SWAN. Cl. 52 (Int. Cl. 3). 6–27–1899.
69,626. "FRANKLIN BRAND" AND DESIGN. Cl. 46 (Int. Cl. 29). 6–23–08.
70,548. WHIZ. Cl. 52 (Int. Cl. 3). 9–15–08.
71,420. CINDERELLA. Cl. 39 (Int. Cl. 25). 11–24–08.
72,478. CYKO. Cl. 26 (Int. Cl. 1). 1–26–09.
73,131. ADLAKE. Cl. 34 (Int. Cl. 9). 3–16–09.
248,589. "WHITE SEA" ETC. AND DESIGN. Cl. 46 (Int. Cl. 29). 10–23–28.
249,652. FFF. Cl. 28 (Int. Cl. 14). 11–20–28.
251,382. BLUE BOY. Cl. 23 (Int. Cl. 7). 1–8–29.
251,776. BAYUK RIBBON. Cl. 17 (Int. Cl. 34). 1–15–29.
251,799. VARSOL. Cl. 6 (Int. Cl. 1). 1–15–29.
251,904. LETHANE. Cl. 6 (Int. Cl. 5). 1–15–29.
252,339. OZALID. Cl. 26 (Int. Cl. 1). 2–5–29.
252,537. PRIMOL. Cls. 15 and 46 (Int. Cl. 29). 2–12–29.
253,465. BEECHIES. Cl. 46 (Int. Cl. 30). 2–26–29.
253,780. TRUMP. Cl. 39 (Int. Cl. 25). 3–5–29.
253,825. THE ARNOLTON. Cl. 39 (Int. Cl. 25). 3–5–29.
254,120. FELTRON. Cl. 6 (Int. Cl. 1). 3–12–29.
254,386. YOLANDA. Cl. 46 (Int. Cls. 29 and 30). 3–26–29.
254,401. TRES FLORES. Cl. 51 (Int. Cls. 3 and 5). 3–26–29.
254,681. "BOSS STOKER" AND DESIGN. Cl. 39 (Int. Cl. 25). 3–26–29.
254,717. DESIGN OF ECCENTRICALLY ARRANGED CONCENTRIC CIRCLES. Cl. 46 (Int. Cl. 31). 3–26–29.
255,111. SUNNY SUZY. Cl. 22 (Int. Cl. 28). 4–16–29.
255,197. TRETHYLENE. Cl. 18 (Int. Cl. 5). 4–16–29.
255,524. MARQUITA. Cl. 46 (Int. Cl. 31). 4–23–29.
256 319. SUGAR CREEK. Cl. 46 (Int. Cl. 29). 5–14–29.
256,604. HOCUT. Cl. 15 (Int. Cl. 4). 5–21–29.
256,723. HOUGHTODRAW. Cl. 15 (Int. Cl. 4). 5–21–29.
256,724. HOUGHTOGRIND. Cl. 15 (Int. Cl. 4). 5–21–29.
441,196. "BABES" BY INFANTA AND DESIGN. Cl. 39 (Int. Cl. 25). 11–2–48.
441,623. YOUNGSTOWN KITCHENS BY MULLINS AND DESIGN. Cl. 38 (Int. Cl. 16). 12–21–48.
441,766. KOROSEAL. Cl. 1 (Int. Cl. 17). 1–4–49.
441,802. CITRUS AND LEMON DESIGN. Cl. 4 (Int. Cl. 3). 1–4–49.
441,948. CEEB OF MIAMI AND DESIGN. Cl. 39 (Int. Cl. 25). 2–1–49.
441,953. KOROSEAL. Cl. 42 (Int. Cls. 17 and 42). 2–1–49.
442,101. EARL MARSHALL. Cl. 17 (Int. Cl. 34). 2–22–49.
442,263. ADLAKE. Cl. 32 (Int. Cl. 24). 3–15–49.
442,329. CHAMPALL. Cl. 23 (Int. Cl. 7). 3–22–49.
442,445. CULLSORB. Cl. 31 (Int. Cl. 1). 4–12–49.
442,446. CULLAR. Cl. 31 (Int. Cl. 1). 4–12–49.
442,516. PIPPERMINT ETC. AND DESIGN. Cl. 49 (Int. Cl. 33). 4–19–49.
442,608. KOROSEAL. Cl. 2 (Int. Cl. 17). 5–3–49.
442,686. SQUEAK. Cl. 38 (Int. Cl. 16). 5–10–49.
442,741. INKY. Cl. 38 (Int. Cl. 16). 5–24–49.
501,235. MARKEM. Cl. 11 (Int. Cl. 2). 7–27–48.
504,595. TUFFLEX. Cl. 50 (Int. Cl. 22). 12–7–48.
504,931. ST. LOUIS BLUE. Cl. 34 (Int. Cl. 6). 12–21–48.
504,932. HEARTH-GLO. Cl. 34 (Int. Cl. 11). 12–21–48.
504,963. TUFFLEX. Cl. 1 (Int. Cl. 24). 12–21–48.
505,146. DO IT ELECTRICALLY AND DESIGN. Cl. 21 (Int. Cl. 9). 12–28–48.
505,218. BALLY. Cl. 22 (Int. Cl. 28). 12–28–48.
505,336. RESOFORM. Cl. 6 (Int. Cl. 2). 1–4–49.
505,339. GDC AND DESIGN. Cl. 52 (Int. Cl. 1). 1–4–49.
505,377. AZO PHLOXINE. Cl. 6 (Int. Cl. 2). 1–4–49.
505,391. QUICK CHANGE. Cl. 6 (Int. Cl. 3). 1–4–49.
505,824. CROWN. Cl. 6 (Int. Cl. 1). 1–18–49.
506,252. PLATINUM GLACE. Cl. 39 (Int. Cl. 25). 2–1–49.
506,268. CARD-TAINER. Cl. 3 (Int. Cl. 18). 2–1–49.
506,989. DREAMWELL. Cl. 32 (Int. Cls. 6 and 20). 2–22–49.
507,071. FICO. Cl. 6 (Int. Cl. 1). 2–22–49.
507,085. DESIGN OF A RUNNING MAN. Cl. 103 (Int. Cl. 37). 2–22–49.

507,128. PALLATELLE. Cl. 46 (Int. Cl. 29). 3-1-49.
507,164. HETTRICH. Cl. 50 (Int. Cl. 22). 3-1-49.
507,215. CHANTIELLE. Cl. 46 (Int. Cl. 29). 3-1-49.
507,349. BUNTING. Cl. 14 (Int. Cl. 6). 3-8-49.
507,370. THEMO-CAL. Cl. 38 (Int. Cl. 16). 3-8-49.
507,372. TATOO. Cl. 38 (Int. Cl. 16). 3-8-49.
507,528. EMULPHOGENE. Cl. 52 (Int. Cls. 1 and 3). 3-15-49.
507,621. CLEANSBEST. Cl. 29 (Int. Cl. 21). 3-15-49.
507,863. WESTFIELD. Cl. 19 (Int. Cl. 12). 3-22-49.
508,063. MOOSE BRAND AND DESIGN. Cl. 46 (Int. Cl. 29). 3-29-49.
508,075. CORSEES. Cl. 39 (Int. Cl. 25). 3-29-49.
508,412. NACROMER AND DESIGN. Cl. 16 (Int. Cl. 2). 4-12-49.
508,523. LAGOTEX. Cl. 16 (Int. Cl. 2). 4-12-49.
508,736. HORTONSPHEROID. Cl. 2 (Int. Cl. 6). 4-19-49.
509,087. FLEXEES. Cl. 39 (Int. Cl. 25). 4-26-49.
509,224. STITT. Cl. 21 (Int. Cl. 7). 5-3-49.
509,274. BLANCHARD. Cl. 23 (Int. Cl. 7). 5-3-49.
509,328. SILVER VALLEY. Cl. 46 (Int. Cls. 29 and 32). 5-3-49.
509,570. SAFARI. Cl. 1 (Int. Cl. 18). 5-10-49.
509,735. CHLORMYCETIN. Cl. 18 (Int. Cl. 5). 5-10-49.
509,747. PROMACETIN. Cl. 18 (Int. Cl. 5). 5-10-49.
509,884. MORTON. Cl. 46 (Int. Cl. 30). 5-17-49.
510,086. SINGAPORE. Cl. 16 (Int. Cl. 2). 5-24-49.
510,167. SPOON SQUID. Cl. 22 (Int. Cl. 28). 5-31-49.
510,223. HAIRLIFE. Cl. 51 (Int. Cl. 3). 5-31-49.
510,224. HAIR SHEEN. Cl. 51 (Int. Cl. 3). 5-31-49.
510,304. OHIO. Cl. 31 (Int. Cl. 6). 5-31-49.
510,350. GERMANIA. Cl. 18 (Int. Cl. 5). 5-31-49.
510,542. ELLISON LOUVRE AND DESIGN. Cl. 12 (Int. Cl. 6). 6-7-49.
510,578. HILL'S. Cl. 46 (Int. Cl. 31). 6-7-49.
510,900. DECCA. Cl. 36 (Int. Cl. 9). 6-14-49.
510,916. DIEPO. Cl. 37 (Int. Cl. 16). 6-14-49.
511,203. WESTON CLOTHES. Cl. 39 (Int. Cl. 25). 6-21-49.
511,242. AUTOBODY & THE RECONDITIONED CAR. Cl. 38 (Int. Cl. 16). 6-21-49.
511,381. HILLTOP. Cl. 49 (Int. Cl. 33). 6-21-49.
511,382. OLD GENTRY. Cl. 49 (Int. Cl. 33). 6-21-49.
511,383. QUEEN ANNE. Cl. 49 (Int. Cl. 33). 6-21-49.
511,388. RUPPERT. Cl. 48 (Int. Cl. 32). 6-21-49.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

771,478. MEDA FOAM AND DESIGN. Cl. 32. 6-16-64.
746,882. MINICOM. Cl. 26. 3-19-63.

Section 8

161,417. CHILPRUFE. Cl. 42. 11-14-22.

The following registrations issued Feb. 5, 1963

744,581. TREGALON. Cl. 1.
744,584. M.T. BOARD. Cl. 2.
744,585. FOAMITE. Cl. 2.
744,587. TUBE TAMER. Cl. 2.
744,589. DURALAM. Cl. 5.
744,607. CRYLOR. Cl. 7.
744,610. 600. Cl. 12.
744,611. STYROTOP. Cl. 12.
744,612. SOLID STEEL SURVIVAL SHELTERS AND DESIGN. Cl. 12.
744,613. ARTCOVE. Cl. 12.
744,614. TILETTE. Cl. 12.
744,626. FAIRWAY. Cl. 13.
744,628. LEG-MATE. Cl. 13.
744,633. LOCKIT. Cl. 13.
744,634. TINY-T. Cl. 13.
744,639. SPEC-INGOT. Cl. 14.
744,642. G.S.-1000. Cl. 15.
744,643. A.T.S.-12. Cl. 15.
744,644. AQUAZINC. Cl. 15.
744,648. MUSSO AND DESIGN. Cl. 15.
744,652. TURLOC. Cl. 18.
744,656. HAVERINE. Cl. 18.
744,658. BON SAN. Cl. 18.
744,660. CO-NIL. Cl. 18.
744,662. PHAR-MED. Cl. 18.
744,665. SPIRASOL. Cl. 18.
744,667. GRAVA-VITE. Cl. 18.
744,671. U.S. ROYAL. Cl. 19.
744,672. ROYAL MASTER. Cl. 19.
744,674. REPRESENTATION OF A CARD KING. Cl. 19.
744,675. SENTRY. Cl. 19.
744,679. POP-TOP FUNMOBILE. Cl. 19.
744,680. SELECTARIDE. Cl. 19.
744,682. CON-GRIP. Cl. 20.
744,690. KST. Cl. 21.
744,691. BETA. Cl. 21.
744,693. N-E-W-S AND DESIGN. Cl. 21.
744,695. TELE-QUEST. Cl. 21.
744,699. MINEL-R. Cl. 21.
744,703. MICROGUIDE AND DESIGN. Cl. 21.
744,713. MARBLE. Cl. 21.
744,714. KONAMIK. Cl. 21.
744,715. PREFERRED STOCK. Cl. 21.
744,717. IRASER. Cl. 21.
744,725. THIRTY-TEN. Cl. 21.
744,727. SOPHISTIGIFT. Cl. 22.
744,735. METER-PAK. Cl. 23.
744,741. HOLIDAY. Cl. 23.
744,745. THERM-O-PAK. Cl. 23.
744,746. LILLISTON WITH BLOCK L AND SPIDER DESIGN. Cl. 23.
744,752. TORNADO. Cl. 23.
744,753. THE TORNADO IMPACT CRUSHER AND DESIGN. Cl. 23.
744,759. DURA-FOAM. Cl. 24.
744,760. IRON-WISE. Cl. 24.
744,762. SELECT-O-MATIC. Cl. 25.
744,765. TC. Cl. 26.
744,766. D AND DESIGN. Cl. 26.
744,772. HERLIN. Cl. 27.
744,777. GTC AND DESIGN. Cl. 28.
744,781. T-D. Cl. 28.
744,790. VT. Cl. 28.
744,796. SB. Cl. 28.
744,797. W WITHIN DIAMOND DESIGN. Cl. 28.
744,800. KL AND DESIGN. Cl. 28.
744,805. ABREVO. Cl. 29.
744,813. INTERPLAY. Cl. 32.
744,818. NEBULEX STARDUST. Cl. 33.
744,819. NEBULEX CONSTELLATION. Cl. 33.
744,820. NEBULEX ASTRAL. Cl. 33.
744,821. NEBULEX COMET. Cl. 33.
744,822. NEBULEX METEOR. Cl. 33.
744,823. NEBULEX POLARIS. Cl. 33.
744,827. 600 AND DESIGN. Cl. 34.
744,838. UNICORDER. Cl. 36.
744,839. KIDDIE KORNER. Cl. 36.
744,840. AMETEK AND DESIGN A. Cl. 36.
744,842. KAYLENE. Cl. 37.
744,848. TILLIKUM. Cl. 37.
744,850. HUM-I-BOARD. Cl. 37.
744,853. IDENT-O-CARD. Cl. 38.
744,855. BLITZ BROTHERS. Cl. 38.
744,857. PERSONALLY YOURS. Cl. 39.
744,858. MINNEHAHA. Cl. 39.
744,859. TODDLEKINS. Cl. 39.
744,861. SAILMASTER. Cl. 39.
744,862. RAIN-TROP. Cl. 39.
744,869. LONG LAKE. Cl. 39.
744,875. TATTLE TALE TASSLE. Cl. 39.
744,877. BABY SUE. Cl. 39.
744,878. YAKITY-JAC. Cl. 39.
744,883. RACI-LACER BOOT BOY AND DESIGN. Cl. 40.
744,887. BROOKHAVEN BY LADY CAROLYN. Cl. 42.
744,893. TOCCARE AND DESIGN. Cl. 42.
744,894. ELASTOVEL. Cl. 42.
744,898. TEKLAN. Cl. 43.
744,903. IONHALER. Cl. 44.
744,906. MOTIV-AIRE. Cl. 44.
744,912. IDENT-O-PRINT. Cl. 44.

744,913. TAYLOR-MADE AND DESIGN. Cl. 44.
744,917. GROTESQUE REPRESENTATION OF A MALE. Cl. 46.
744,918. UNITED DAIRY FARMERS AND DESIGN. Cl. 46.
744,928. KOFEE-AIDE. Cl. 46.
744,933. KARAM'S AND DESIGN. Cl. 46.
744,937. VITA FRIES. Cl. 46.
744,949. ANIMALS OF THE WORLD AND DESIGN. Cl. 50.
744,950. FILL-A-FRAME AND DESIGN. Cl. 50.
744,957. TRU-SCENT. Cl. 51.
744,959. MSQ-45. Cl. 51.
744,962. CAMEO. Cl. 51.
744,977. HEX-O-GRIME. Cl. 52.
744,979. DURLAC. Cl. 52.
744,981. UNISPOT. Cl. 52.
744,982. CROSSWAY MOTOR HOTELS, INC. AND DESIGN. Cl. 100.
744,986. SYMBOL OF TWO HEADS IN ACADEMIC COSTUME. Cl. 101.
744,994. CHECK-R-DICE. Cl. 22.
744,999. WETAID. Cl. 52.

TRADEMARK REGISTRATIONS RENEWED DISCLAIMED, CORRECTED, ETC.

156,273. SUPRAMIN. Cl. 6. 6-20-22. The Grasselli Chemical Company, GAF Corporation, New York, N.Y. Amended to appear:

SUPRAMINE

613,489. SYSTEM ANALYZER DIV AND DESIGN. Cl. 21. 10-4-55. System Analyzer Corporation. Rock Electrical Industries, Inc., Nokomis, Ill. Amended to appear:



794,162. BONNIE HUBBARD. Cl. 46. 8-10-65. United Grocers, Ltd., Richmond, Calif. Amended: In the statement, column 2, line 9, "Hubbard's" is deleted and *Hubbard* is inserted, and the drawing is amended to appear:

BONNIE HUBBARD

794,163. BONNIE HUBBARD AND DESIGN. Cl. 46. 8-10-65. United Grocers, Ltd., Richmond, Calif. Amended to appear:



809,780. PCI AND DESIGN. Cl. 13. 6-14-66. Plymouth Cordage Industries, Inc. Emhart Corporation, Hartford, Conn. Amended to appear:



862,191. LE PETIT SIDEWALK CAFE. Cl. 100. 12-17-68. Donald C. Linn, Mount Prospect, Ill. Corrected: In the statement, column 1, line 1, "(Illinois corporation)" should be deleted.

864,302. 2ND CHOICE. Cl. 42. 1-28-69. M. Fortunoff of Westbury Corp., Westbury, N.Y. Corrected: In the statement, column 1, line 3, "County" should be deleted and *Country* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

276,541. FOR GOODNESS SAKE. Cl. 46. Mother's Grandma Cookie Company. 10-21-30. New Cert. Sec. 7(c) to Grandma Cookie Co., Portland, Oreg.

718,831. TRANSOCEAN MARINE PAINT AND DESIGN. Cl. 16. Koninklijke Lak-, Vernis- en Verffabriek Molyn & Co. 7-25-61. New Cert. Sec. 7(c) to Patterson-Sargent, a Division of Textron Inc., North Brunswick, N.J.

744,412. ROLLUPMATIC. Cl. 26. Solari Inc. 1-29-63. New Cert. Sec. 7(c) to Signatronic Company, Ltd., East Elmhurst, N.Y.

804,215. SIGNALTRON. Cl. 26. Signaltron Corporation, by change of name from Solari Inc. 2-22-66. New Cert. Sec. 7(c) to Signatronic Company, Ltd., East Elmhurst, N.Y.

804,216. SIGNATRONIC. Cl. 26. Signaltron Corporation, by change of name from Solari Inc. 2-22-66. New Cert. Sec. 7(c) to Signatronic Company, Ltd., East Elmhurst, N.Y.

842,993. FOIL Cl. 51. Rexall Drug and Chemical Company, doing business as Vanda Cosmetics Company. 1-23-68. New Cert. Sec. 7(c) to Carbisulphoil Company, Dallas, Tex.

INDEX OF REGISTRANTS

MARCH 25, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

Abbott Laboratories, North Chicago, Ill. 867,016, pub. 1–7–69. Cl. 6.
Abbott Laboratories, North Chicago, Ill. 867,018, pub. 1–7–69. Cl. 6.
Abrevo Corp., Wyndmoor, Pa. 744,805, canc. Cl. 29.
Acra-Plant, Inc., Newton, Kans. 867,133, pub. 1–7–69. Cl. 23.
Adamite Co., Ltd., The, Hertfordshire, England. 867,034, pub. 1–7–69. Cl. 12.
Adamite Co., Ltd., The, Hertfordshire, England. 867,088, pub. 1–7–69. Cl. 20.
Adams Engineering Co., Chicago, Ill. 744,752–3, canc. Cl. 23.
Adams & Westlake Co., The, Chicago, Ill. 73,131, ren. 3–25–69. Cl. 34.
Adams & Westlake Co., The, Chicago, Ill. 442,263, ren. 3–25–69. Cl. 32.
Adhesives, Inc., Fairlawn, N.J. 744,589, canc. Cl. 5.
Alpha Industries, Inc., Newton Upper Falls, Mass. 867,097, pub. 1–7–69. Cl. 21.
Alroy Packing Co., San Francisco, Calif. 867,315. Cl. 46.
Alumiseal Corp., New York, N.Y. 867,040, pub. 1–7–69. Cl. 12.
Amb-A-Tip Cigar Co., Baltimore, Md., to The S. Frieder & Sons Co., Philadelphia, Pa. 442,101, ren. 3–25–69. Cl. 17.
American Dynamics Corp., Cambridge, Mass. 867,191, pub. 1–7–69. Cl. 38.
American Hygienic Co., Baltimore, Md. 867,247, pub. 1–7–69. Cl. 44.
American Home Products Corp., New York, N.Y. 867,075, pub. 1–7–69. Cl. 18.
American Home Products Corp., New York, N.Y. 867,077–9, pub. 1–7–69. Cl. 18.
American Home Products Corp., New York, N.Y. 867,083–4, pub. 1–7–69. Cl. 18.
American Seating Co., Grand Rapids, Mich. 867,160, pub. 1–7–69. Cl. 32.
American Society For Metals, Metals Park, Ohio. 867,198, pub. 1–7–69. Cl. 38.
American-Saint Gobain Corp., Kingsport, Tenn. 744,818–23, canc. Cl. 33.
Ametek, Inc., New York, N.Y. 744,840, canc. Cl. 36.
Ametek, Inc., New York, N.Y. 867,139, pub. 3–26–68. Cl. 24.
Amott, Baker & Co. Inc., and Martin J. Crean, New York, N.Y. 867,197, pub. 1–7–69. Cl. 38.
Anaconda Aluminum Co., Louisville, Ky. 867,091, pub. 1–7–69. Cl. 21.
Anderson, Clayton & Co., Dallas, Tex. 867,316. Cl. 46.
Andrews, A. B., Co., New York, N.Y., to Ely & Walker, Inc., Memphis, Tenn. 71,420, ren. 3–25–69. Cl. 39.
Ansco Co., Binghamton, to GAF Corp., New York, N.Y. 72,478, ren. 3–25–69. Cl. 26.
Apparel, Inc., d.b.a. Pacific Trail Sportswear, Seattle, Wash. 744,878, canc. Cl. 39.
Ardath Tobacco Co., Ltd., London, England. 867,067, pub. 1–7–69. Cl. 17.
Aristovoulos George Petzetakis, Kiphissia, Athens, Greece. 867,041, pub. 10–24–67. Cl. 13.
Armour Pharmaceutical Co., Chicago, Ill. 744,652, canc. Cl. 18.
Armstrong Patents Co. Ltd., Beverley, England. 744,680, canc. Cl. 19.
Arnold, Constable & Co., Inc., to Arnold Constable Corp., New York, N.Y. 253,825, ren. 3–25–69. Cl. 39.
Arnold Constable Corp. : *See*—
Arnold, Constable & Co., Inc.
Arrowood, S. D., & Co. Inc., New York, N.Y. 867,220, pub. 1–7–69. Cl. 39.
Art Academy of Hair Fashion, Richmond, Va. 867,282, pub. 1–7–69. Multiple Class (Classes 100 and 107).
Artistic Foundations, Inc., to Flexees International, Inc., New York, N.Y. 508,075, ren. 3–25–69. Cl. 39.
Artistic Foundations, Inc., to Flexees International, Inc., New York, N.Y. 509,087, ren. 3–25–69. Cl. 39.
Arvey Corp., Chicago, Ill. 867,060, pub. 1–7–69. Multiple Class (Classes 14 and 37).
Associated Researchers, Inc., Las Vegas, Nev. 867,072, pub. 1–7–69. Cl. 18.
Audiotronics Corp., North Hollywood, Calif. 867,182, pub. 1–7–69. Cl. 36.
Augstein, S., & Co., Inc., New York, N.Y. 867,215, pub. 1–7–69. Cl. 39.
Austin Continental Industries, Inc., Chicago, Ill. 867,048, pub. 1–7–69. Cl. 13.
"Auta" : *See*—
Lockie, Stanley M., Mrs.
Avon Products, Inc., New York, N.Y. 867,321. Cl. 51.
Bachmann Bros., Inc., Philadelphia, Pa. 744,949, canc. Cl. 50.
Bally Mfg. Co., to Bally Mfg. Corp., Chicago, Ill. 505,218, ren. 3–25–69. Cl. 22.
Bally Mfg. Corp. : *See*—
Bally Mfg. Co.
Barry New York, Inc., Brooklyn, N.Y. 744,628, canc. Cl. 13.
Baxter Corp., The, Paterson, N.J. 866,999, pub. 1–7–69. Cl. 1.
Bayuk Cigars Inc., Philadelphia, Pa. 251,776, ren. 3–25–69. Cl. 17.
Bayuk Cigars Inc., Philadelphia, Pa. 867,065–6, pub. 1–7–69. Cl. 17.
Beacon Chemical Industries, Inc., Cambridge, Mass. 744,644, canc. Cl. 15.
Beech-Nut, Inc. : *See*—
Beech-Nut Packing Co.
Beech-Nut Packing Co., Canajoharie, to Beech-Nut, Inc., New York, N.Y. 253,465, ren. 3–25–69. Cl. 46.
Bell Bedspreads, Inc., New York, N.Y. 867,236, pub. 1–7–69. Cl. 42.
Beneke Corp., Columbus, Miss. 867,053–4, pub. 1–7–69. Cl. 13.
Bentivegna, Joe : *See*—
Clemente, Lorenzo.
Beta Instruments Corp., Dallas, Tex. 744,691, canc. Cl. 21.
Better Home Products Corp., Minneapolis, Minn. 867,273, pub. 1–7–69. Cl. 52.
Bird Space Technology, Inc., Palm Springs, Calif. 867,248, pub. 1–7–69. Cl. 44.
Blanchard Machine Co., The, Cambridge, Mass., to Pneumodynamics Corp., Cleveland, Ohio. 509,274, ren. 3–25–69. Cl. 23.
Bloom, Abraham S., d.b.a. Pioneer Shoe Co., Minneapolis, Minn. 744,858, canc. Cl. 39.
Boehringer Ingelheim, G.m.b.H., Rhine, Germany. 867,076, pub. 1–7–69. Cl. 18.
Bolton, John A., d.b.a. The Chilprufe Mfg. Co., Leicester, England. 161,417, canc. Cl. 42.
Bon San Food Supplement Co. : *See*—
Cowles, Leonard C.
Bond Stores, Inc., New York, N.Y. 867,221, pub. 1–7–69. Cl. 39.
Boss Mfg. Co. : *See*—
Boss Mfg. Co., The.
Boss Mfg. Co., The, Kewanee, Ill., and Brooklyn, N.Y., to Boss Mfg. Co., Kewanee, Ill. 253,780, ren. 3–25–69. Cl. 39.
Boss Mfg. Co., The, Kewanee, Ill., and Brooklyn, N.Y., to Boss Mfg. Co., Kewanee, Ill. 254,681, ren. 3–25–69. Cl. 39.
Brown, Ray, Automotive, Los Angeles, Calif. 744,675, canc. Cl. 19.
Browning Mfg. Co., Maysville, Ky. 867,134, pub. 1–7–69. Cl. 23.
Buddah Records, Inc., New York, N.Y. 867,184, pub. 1–7–69. Cl. 36.
Buffalo Meter Co., Inc., Buffalo, N.Y. 867,150, pub. 1–7–69. Cl. 26.
Bulluck Hosiery, Inc., New York, N.Y. 744,877, canc. Cl. 39.
Bunting Brass & Bronze Co., The, Toledo, Ohio. 507,349, ren. 3–25–69. Cl. 14.
Butt, H. E., Grocery Co. : *See*—
Harlingen Canning Co.
Buxton, Inc., Agawam, Mass. 506,268, ren. 3–25–69. Cl. 3.
"By Auta" : *See*—
Lockie, Mrs. Stanley M.
California Sea Food Co. : *See*—
Rex, M. A.
Callaway Mills Co. : *See*—
Deering Milliken, Inc.
Cameo, Inc., Toledo, Ohio. 744,962, canc. Cl. 51.
Candle-Lite, Inc., Cincinnati, Ohio. 867,063, pub. 1–7–69. Cl. 15.
Cannon Electric Development Co. : *See*—
Cannon, James H.
Cannon, James H., d.b.a. Cannon Electric Development Co., Los Angeles, Calif., to International Telephone & Telegraph Corp., New York, N.Y. 505,146, ren. 3–25–69. Cl. 21.
Capel, A. Leon, & Sons, Inc., Troy, N.C. 867,234–5, pub. 1–7–69. Cl. 42.
Carbisulphoil Co. : *See*—
Rexall Drug & Chemical Co.
Cardinal Laboratories, Inc., Los Angeles, Calif. 744,957, canc. Cl. 51.
Carlson, J. R., Laboratories : *See*—
Carlson, Susan E. F.
Carlson, Susan E. F., d.b.a. J. R. Carlson Laboratories, Chicago, Ill. 867,073, pub. 1–7–69. Cl. 18.
Carnation Co., Los Angeles, Calif. 867,251, pub. 12–31–68. Cl. 46.
Carolyn Chenilles, Inc., New York, N.Y. 744,887, canc. Cl. 42.
Catalina, Inc., Los Angeles, Calif. 867,311. Cl. 39.
Caterpillar Tractor Co., Peoria, Ill. 867,286, pub. 1–7–69. Cl. 103.
Catherine's Stout Shoppe, Inc., Memphis, Tenn. 867,208, pub. 1–7–69. Cl. 39.
Chadbourn Gotham, Inc., Charlotte, N.C. 867,211, pub. 1–7–69. Cl. 39.
Champall Mfg. Co. : *See*—
Kuhl, Gerald L.
Channel Master Corp., Ellenville, N.Y. 744,715, canc. Cl. 21.
Chein, J., & Co., Burlington, N.J. 867,001, pub. 1–7–69. Cl. 2.
Chicago Bridge & Iron Co., Oak Brook, Ill. 508,736, ren. 3–25–69. Cl. 2.
Chicago Cardinals Football Club, d.b.a. St. Louis Football Cardinals, St. Louis, Mo. 867,292, pub. 1–7–69. Cl. 107.
Chilprufe Mfg. Co., The : *See*—
Bolton, John A.

Chi-Record Co., d.b.a. Curtom Records, Chicago, Ill. 867,179, pub. 1–7–69. Cl. 36.
Chisholm-Moore Hoist Corp., Cleveland, Ohio, to Columbus McKinnon Corp., Tonawanda, N.Y. 251,382, ren. 3–25–69. Cl. 23.
Christensen, John R., Assn.: *See*— Favorline, Inc.
Cincinnati Butchers' Supply Co., Cincinnati, Ohio. 867,130, pub. 1–7–69. Cl. 23.
City of Mobile, Mobile, Ala. 867,032, pub. 1–7–69. Cl. 10.
Clark, James E., St. Petersburg, Fla. 510,167, ren. 3–25–69. Cl. 22.
Clemente, Lorenzo, d.b.a. Yolanda Packing Co., Los Angeles, to J. Bentivegna, d.b.a. Yolanda Ravioli Co., San Gabriel, Calif. 254,386, ren. 3–25–69. Cl. 46.
Clover Chemical Co., Eighty Four, Pa. 867,031, pub. 1–7–69. Cl. 10.
Cohen, George, Sons & Co., Ltd., London, England. 744,610, canc. Cl. 12.
Cohen, George, Sons & Co., Ltd., London, England. 744,827, canc. Cl. 34.
Cohen, Joseph H., & Sons, Inc., New York, N.Y. 744,862, canc. Cl. 39.
Coin Sales Corp., New York, N.Y. 867,244, pub. 1–7–69. Cl. 42.
Columbia Mfg. Co., Inc., The: *See*— Westfield Mfg. Co., The.
Columbus McKinnon Corp.: *See*— Chisholm-Moore Hoist Corp.
Commerce Drug Co., Inc., Farmingdale, N.Y. 867,071, pub. 1–7–69. Cl. 18.
Community Engineering Corp., State College, Pa. 744,695, canc. Cl. 21.
Condotti, Inc., New York, N.Y. 744,893, canc. Cl. 42.
Conrac Corp., New York, N.Y. 867,096, pub. 1–7–69. Cl. 21.
Consolidated Research & Mfg. Corp., New Haven, Conn. 744,682, canc. Cl. 20.
Consolidated Royal Chemical Corp., Chicago, Ill. 510,350, ren. 3–25–69. Cl. 18.
Con-Tex Corp., Milwaukee, Wis. 867,165, pub. 1–7–69. Cl. 32.
Conwed Corp.: *See*— Wood Conversion Co.
Cook Chemical Co., Kansas City, Mo. 867,009, pub. 1–7–69. Cl. 6.
Cornell-Dubilier Electric Corp., Newark, N.J. 867,107, pub. 1–7–69. Multiple Class (Classes 21 and 26).
Corplastics Canada Ltd.: *See*— Courtaulds Plastics Canada Ltd.
Courtaulds, Ltd., London, England. 744,898, canc. Cl. 43.
Courtaulds Plastics Canada Ltd., Cornwall, Ontario, now by change of name Corplastics Canada Ltd., Montreal, Quebec, Canada. 744,611, canc. Cl. 12.
Cowles, Leonard C., d.b.a. Bon San Food Supplement Co., Compton, Calif. 744,658, canc. Cl. 18.
Crane Co., New York, N.Y. 867,057, pub. 1–7–69. Cl. 13.
Crossbow, Inc., Cincinnati, Ohio. 867,171, pub. 1–7–69. Cl. 33.
Crossway Motor Hotels, Inc., New York, N.Y. 744,982, canc. Cl. 100.
Crylor, Paris, France. 744,607, canc. Cl. 7.
Culligan, Inc.: *See*— Culligan Zeolite Co.
Culligan Zeolite Co., to Culligan, Inc., Northbrook, Ill. 442,445–6, ren. 3–25–69. Cl. 31.
Curtis, Helene, Industries, Inc., Chicago, Ill. 867,265–9, pub. 1–7–69. Cl. 51.
Curtom Records: *See*— Chi-Record Co.
Custom Wood Products, Inc., Denver, Colo. 744,813, canc. Cl. 32.
Cyclops Industries, Charleston, W. Va. 867,147, pub. 1–7–69. Cl. 26.
DHJ Industries, Inc., New York, N.Y. 867,294–7, pub. 1–7–69. Cl. A.
Dache, Lilly, Cosmetics Inc.: *See*— Lelong, Lucien, Inc.
Dana Corp., Toledo, Ohio. 867,131, pub. 1–7–69. Cl. 23.
Dan-River Mills, Inc., Danville, Va. 867,232, pub. 1–7–69. Cl. 42.
Davies, J. P., Co., The, Dayton, Ohio, to Flash Sales Co., Inc., Woburn, Mass. 70,548, ren. 3–25–69. Cl. 52.
Davies, Rose & Co., Ltd., Boston, to The Kendall Co., Walpole, Mass. 255,197, ren. 3–25–69. Cl. 18.
Decca Records, Inc., New York, N.Y., to MCA Inc., Universal City, Calif. 510,900, ren. 3–25–69. Cl. 36.
Deering Milliken, Inc., Spartanburg, S.C., from Callaway Mills Co., La Grange, Ga. 867,301. Cl. 19.
Defiance International, Ltd., Jamaica, N.Y. 867,302. Cl. 31.
De Kalb Ag Research, Inc., from De Kalb Agriculture Association, Inc., De Kalb, Ill. 866,993, pub. 1–7–69. Cl. 1.
Delander, John B., d.b.a. Torette Mfg. Co., St. Paul, Minn. 744,760, canc. Cl. 24.
Deniston Co., Chicago, Ill. 867,059, pub. 1–7–69. Cl. 13.
Densco, Inc., Denver, Colo. 744,906, canc. Cl. 44.
Dexon, Inc., Minneapolis, Minn. 744,693, canc. Cl. 21.
Diehl, Timothy D., Chillicothe, Ohio. 867,181, pub. 1–7–69. Cl. 36.
Dieterich-Post Co., San Francisco, Calif. 510,916, ren. 3–25–69. Cl. 37.
Dipak Mfg. Co., Inc., Westport, N.Y. 744,950, canc. Cl. 50.
Dolphin-Kamper, Inc., Corunna, Ind. 867,086, pub. 1–7–69. Cl. 19.
Dooner Laboratories Inc., Haverhill, Mass. 867,074, pub. 1–7–69. Cl. 18.
Douglas, David, & Co., Inc., Manitowoc, Wis. 867,283, pub. 1–7–69. Cl. 101.
Dresser Products, Inc., Great Barrington, Mass. 744,766, canc. Cl. 26.
Duncan Industries, Inc., from Duncan Parking Meter Corp., Elk Grove Village, Ill. 867,152, pub. 1–7–69. Cl. 26.
Duncan Parking Meter Corp.: *See*— Duncan Industries, Inc.
Durlacque Mfg. Co., St. Louis, Mo. 744,979, canc. Cl. 52.
Dynasurf Chemical Corp., Baltimore, Md. 867,275, pub. 1–7–69. Cl. 52.
Eastern Electric Sales Co., Inc., d.b.a. Eastern Electric Wire & Cable Co., Belimawr, N.J. 867,113, pub. 1–7–69. Cl. 21.
Eastern Electric Wire & Cable Co.: *See*— Eastern Electric Sales Co., Inc.
Eastman Kodak Co., Rochester, N.Y. 867,166, pub. 1–7–69. Cl. 32.
Echlin Mfg. Co., The, Branford, Conn. 867,129, pub. 1–7–69. Cl. 23.
Ellison Louvre Co., Inc., Marietta, Ohio. 510,542, ren. 3–25–69. Cl. 12.
Ely & Walker, Inc.: *See*— Andrews, A. B., Co.
Empire Plastic Corp., New York, N.Y. 867,122, pub. 1–7–69. Cl. 22.
Endicott Johnson Corp., Endicott, N.Y. 867,117, pub. 1–7–69. Cl. 22.
Engineered Container Corp., Houston, Tex. 744,584, canc. Cl. 2.
Engineered Container Corp., Houston, Tex. 744,859, canc. Cl. 37.
Faberge, Inc., New York, N.Y. 867,270–1, pub. 1–7–69. Cl. 51.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 744,581, canc. Cl. 1.
Fashion Tress, Inc., Hialeah, Fla. 867,226, pub. 1–7–69. Cl. 40.
Favorline, Inc., d.b.a. John R. Christensen Assoc., Green Bay, Wis. 867,187, pub. 1–7–69. Multiple Class (Classes 37 and 50).
Federal Laboratories, Inc., Saltsburg, Pa. 867,029, pub. 1–7–69. Cl. 9.
Federated Department Stores, Inc., Columbus, Ohio. 867,209, pub. 1–7–69. Cl. 39.
Felger, F. & F., Inc., Springfield, N.J. 249,652, ren. 3–25–69. Cl. 28.
Ferrotec, Inc., Newton, Mass. 867,093, pub. 1–7–69. Cl. 21.
Fesler, Robert, Jr., Cohasset, Mass. 867,189, pub. 1–7–69. Cl. 38.
Fibes Drum Corp., Bayside, N.Y. 867,177, pub. 1–7–69. Cl. 36.
Firma Dr. Ing. H. C. F. Porsche KG, Ltd., Stuttgart-Zuffenhausen, Germany. 867,085, pub. 1–7–69. Multiple Class (Classes 19 and 23).
Firma Jean Hofler & Co. KG., Furth/Bavaria, Germany. 867,125, pub. 1–7–69. Cl. 22.
Flash Sales Co., Inc.: *See*— Davies, J. P., Co., The.
Flexees International, Inc.: *See*— Artistic Foundations, Inc.
Fly-Wheel Corp., d.b.a. Schiefer Mfg. Co., Monterey Park, Calif. 867,138, pub. 1–7–69. Cl. 23.
Food Fair Stores, Inc., Philadelphia, Pa. 744,928, canc. Cl. 46.
Fortunoff, M., of Westbury Corp., Westbury, N.Y. 864,302, cor. Cl. 42.
Fouke Co., The: *See*— Fouke Fur Co.
Fouke Fur Co., St. Louis, Mo., to The Fouke Co., Greenville, S.C. 509,570, ren. 3–25–69. Cl. 1.
Fox Mfg. Co., Rome, Ga. 867,169, pub. 1–7–69. Cl. 32.
France, Dominique, Inc., New York, N.Y. 867,007, pub. 1–7–69. Multiple Class (Classes 3, 51, and 52).
Franklinville Canning Co., The, Franklinville, N.Y., to Rossville Packing Co., Rossville, Ill. 69,626, ren. 3–25–69. Cl. 46.
Freiss Inc., New York, N.Y. 867,237–9, pub. 1–7–69. Cl. 42.
Frick Co.: *See*— Ohio Galvanizing & Mfg. Co., The.
Frieder, S., & Sons Co., The: *See*— Amb-A-Tip Cigar Co.
Fuels Research Corp., Denver, Colo. 744,642–3, canc. Cl. 15.
Fuente, Arturo, Cigar Factory: *See*— Fuente, Carlos A.
Fuente, Carlos A., d.b.a. Arturo Fuente Cigar Factory, Tampa, Fla. 867,064, pub. 1–7–69. Cl. 17.
GAF Corp.: *See*— Ansco Co.
Kalle & Co. Aktiengesellschaft.
I.G. Farbenindustrie Aktiengesellschaft.
General Dyestuff Corp.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 867,020, pub. 1–7–69. Cl. 6.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 867,151, pub. 1–7–69. Cl. 26.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 867,249, pub. 1–7–69. Cl. 46.
Galaxie Window Co.: *See*— Rusco Industries, Inc.
Gavilan Citrus Assn.: *See*— Holden, Arthur S.
General Aniline & Film Corp.: *See*— GAF Corp.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 505,336, ren. 3–25–69. Cl. 6.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 505,339, ren. 3–25–69. Cl. 52.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 505,377, ren. 3–25–69. Cl. 6.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 507,528, ren. 3–25–69. Cl. 52.
General Electric Co., Louisville, Ky. 867,111, pub. 1–7–69. Cl. 21.

General Electric Co., Schenectady, N.Y. 867,114, pub. 1–7–69. Cl. 21.
General Features Corp., New York, N.Y. 867,196, pub. 1–7–69. Cl. 38.
General Machine Products Co., Inc., Trevose, Pa. 867,025, pub. 1–7–69. Cl. 7.
General Motors Corp., Detroit, Mich. 867,095, pub. 1–7–69. Cl. 21.
General Tire & Rubber Co., The, Akron, Ohio. 867,240, pub. 1–7–69. Cl. 42.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 867,305. Cl. 38.
Goldsmith Bros., New York, N.Y. 867,183, pub. 1–7–69. Cl. 36.
Good-Life Chemicals, Inc., Effingham, Ill. 867,024, pub. 1–7–69. Multiple Class (Classes 6 and 10).
Goodrich, B. F., Co., The, Akron, Ohio. 441,766, ren. 3–25–69. Cl. 1.
Goodrich, B. F., Co., The, Akron, Ohio. 441,953, ren. 3–25–69. Cl. 42.
Goodrich, B. F., Co., The, Akron, Ohio. 442,608, ren. 3–25–69. Cl. 2.
Goodyear Aerospace Corp., Akron, Ohio. 867,144, pub. 1–7–69. Cl. 26.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 867,175, pub. 1–7–69. Cl. 35.
Gould-National Batteries, Inc., St. Paul, Minn. 744,725, canc. Cl. 21.
Grace, W. R., & Co., New York, N.Y. 867,030, pub. 1–7–69. Cl. 10.
Grace, W. R., & Co., Cambridge, Mass. 867,256, pub. 5–14–68. Cl. 50.
Grandma Cookie Co.: *See*— Mother's Grandma Cookie Co.
Grasselli Chemical Co., The, to GAF Corp., New York, N.Y. 156,273. Am. 7(d). Cl. 6.
Grossman Music Corp., Cleveland, Ohio. 867,106, pub. 1–7–69. Multiple Class (Classes 21 and 36).
Handy Mfg. Co., Marshalltown, Iowa. 867,123, pub. 1–7–69. Cl. 22.
Harlingen Canning Co., Harlingen, to H. E. Butt Grocery Co., Corpus Christi, Tex. 509,328, ren. 3–25–69. Cl. 46.
Harloc Products Corp., West Haven, Conn. 867,055, pub. 1–7–69. Multiple Class (Classes 13 and 25).
Harnischfeger Corp., Milwaukee, Wis. 867,299. Cl. 13.
Harry & David, Medford, Oreg. 744,727, canc. Cl. 22.
Harvest Publishing Co., The, Cleveland, Ohio. 867,307. Cl. 38.
Haws, Robert, Co., Detroit, Mich. 867,168, pub. 1–7–69. Cl. 32.
Haywood Publishing Co., d.b.a. Oakes Consumer Catalogs, New York, N.Y. 867,306. Cl. 38.
Hazantown, Inc., New York, N.Y. 867,212, pub. 1–7–69. Cl. 39.
Heatbath Corp., Indian Orchard, Mass. 744,999, canc. Cl. 52.
Herlin & Co., Inc., St. Louis, Mo. 744,772, canc. Cl. 27.
Hertzberg, H., & Son, Inc., Middletown, N.Y. 507,621, ren. 3–25–69. Cl. 29.
Hess Mfg. Co., Quincy, Pa. 867,033, pub. 1–7–69. Cl. 12.
Hettrick Mfg. Co., The, Toledo, Ohio, to The Hettrick Mfg., Co., Statesville, N.C. 507,164, ren. 3–25–69. Cl. 50.
Hickerson & Co., Brainerd, Minn. 744,869, canc. Cl. 39.
Hickok Mfg. Co., Inc., Rochester, N.Y., from Pioneer Industries, Inc., Darby, Pa. 744,857, canc. Cl. 39.
Hill, Thomson & Co. Ltd., Edinburgh, Scotland. 511,381–3, ren. 3–25–69. Cl. 49.
Hill Packing Co., Topeka, Kans., to Riviana Foods Inc., Houston, Tex. 510,578, ren. 3–25–69. Cl. 46.
Hilton Hotels Corp., Chicago, Ill. 867,190, pub. 1–7–69. Cl. 38.
Holden, Arthur S., d.b.a. Gavilan Citrus Association, Arlington, to Gavilan Citrus Association, Riverside, Calif. 255,524, ren. 3–25–69. Cl. 46.
Hot Dog Tackle Co.: *See*— Thomas, James L.
Houghton, E. F., & Co., Philadelphia, Pa. 256,604, ren. 3–25–69. Cl. 15.
Houghton, E. F., & Co., Philadelphia, Pa. 256,723–4, ren. 3–25–69. Cl. 15.
House of Rousseau, Ltd., Astoria, N.Y. 866,996, pub. 1–7–69. Cl. 1.
Hoyt Pharmaceutical Corp., Newton, Mass. 744,667, canc. Cl. 18.
Hubbard Milling Co., Mankato, Minn. 254,717, ren. 3–25–69. Cl. 46.
Hudnut, Richard, Morris Plains, N.J. 254,401, ren. 3–25–69. Cl. 51.
Humble Oil & Refining Co.: *See*— Stanco Inc.
Standard Oil Co. of New Jersey.
Huntting, H. R., Co., Inc., The, Chicopee, Mass. 867,206, pub. 1–7–69. Cl. 38.
Hunt-Wesson Foods, Inc.: *See*— Rex, M. A.
Hynd, A. C., Corp., Dayton, Ohio. 510,223–4, ren. 3–25–69. Cl. 51.
I.G. Farbenindustrie Aktiengesellschaft, Frankfurt-on-the-Main, Germany, to GAF Corp., New York, N.Y. 254,120, ren. 3–25–69. Cl. 6.
IMC Magnetics Corp., Westbury, N.Y. 867,101, pub. 1–7–69. Cl. 21.
Ideal Outils S.A., Chiasso, Switzerland. 867,128, pub. 1–7–69. Cl. 23.
Ident-o-Card, Dallas, Tex. 744,853, canc. Cl. 38.
Ident-O-Print Inc., Detroit, Mich. 744,912, canc. Cl. 44.
Imperial Chemical Industries Ltd., London, England. 867,013, pub. 1–7–69. Cl. 6.
Independent Nail, Inc., Bridgewater, Mass. 867,049–50, pub. 1–7–69. Cl. 13.
Industrial Fasteners Corp., New York, N.Y. 867,056, pub. 1–7–69. Cl. 13.
Infanta Knitting Mills, Rockledge, Pa. 441,196, ren. 3–25–69. Cl. 39.
Interco Inc., St. Louis, Mo. 867,216, pub. 1–7–69. Cl. 39.
International Paint Co., Inc., New York, N.Y. 508,523, ren. 3–25–69. Cl. 16.
International Paint Co., Inc., New York, N.Y. 510,086, ren. 3–25–69. Cl. 16.
International Resistance Co., Philadelphia, Pa. 744,699, canc. Cl. 21.
International Telephone & Telegraph Corp.: *See*— Cannon, James H.
Jackes-Evans Mfg. Co., to Jackes-Evans Mfg. Co., St. Louis, Mo. 504,931–2, ren. 3–25–69. Cl. 34.
Jartiere Rouge Ltd., New York, N.Y. 867,262, pub. 1–7–69. Cl. 51.
Jones, M. C., Electronics Co. Inc., Bristol, Conn. 744,703, canc. Cl. 21.
Kalle & Co. Aktiengesellschaft, Wiesbaden-Biebrich, Germany, to GAF Corp., New York, N.Y. 252,339, ren. 3–25–69. Cl. 26.
Karam's: *See*— Karam, James.
Karam, James, d.b.a. Karam's, Newport Beach, Calif. 744,933, canc. Cl. 46.
Kay & Co. (Engineers) Ltd., Bolton, England. 744,714, canc. Cl. 21.
Kayser-Roth Corp.: *See*— Wimelbacher & Rice Inc.
Kayser-Roth Corp., New York, N.Y. 867,218, pub. 1–7–69. Cl. 39.
Kendall Co., The: *See*— Davies, Rose & Co., Ltd.
Kert Mfg. Co. Ltd., Toronto, Ontario, Canada. 867,014, pub. 1–7–69. Cl. 6.
Kessler & Landau, Inc., New York, N.Y. 744,800, canc. Cl. 28.
King Brakes, Inc., Jamaica, N.Y. 744,674, canc. Cl. 19.
King-Kullen Grocery Co., Inc., Jamaica, N.Y. 744,917, canc. Cl. 46.
King-Seeley Thermos Co., Ann Arbor, Mich. 744,690, canc. Cl. 21.
Klein, Robert, d.b.a. R.K. Industries, Allentown, Pa. 744,633, canc. Cl. 13.
Kogan Productions, Inc., New York, N.Y. 867,178, pub. 1–7–69. Cl. 36.
Koninklijke Lak-, Vernis- en Verffabriek Molyn & Co., to Patterson-Sargent, a division of Textron Inc., North Brunswick, N.J. 718,831, new cert. Cl. 16.
Kovacs, George, Inc., New York, N.Y. 867,104, pub. 1–7–69. Cl. 21.
Kraft Foods Co., to National Dairy Products Corp., Chicago, Ill. 507,215, ren. 3–25–69. Cl. 46.
Kraft Foods Co., to National Dairy Products Corp., Chicago, Ill. 508,063, ren. 3–25–69. Cl. 46.
Kreiss, Sidney J., Inc., New York, N.Y. 867,312. Cl. 39.
Kuehnle-Wilson, Inc., Philadelphia, Pa. 507,085, ren. 3–25–69. Cl. 103.
Kuhl, Gerald L., d.b.a. Champall Mfg. Co., Chester, Minn. 442,329, ren. 3–25–69. Cl. 23.
Lander Co., Inc., New York, N.Y. 867,264, pub. 1–7–69. Cl. 51.
Laventhol Krekstein Horwath & Horwath, Philadelphia, Pa. 867,201, pub. 1–7–69. Cl. 38.
Lea, David M., & Co., Inc., Richmond, Va. 867,167, pub. 1–7–69. Cl. 32.
Lee, George, & Sons Ltd., Yorkshire, England. 867,245, pub. 1–7–69. Cl. 43.
Leeds & Northrup Co., Philadelphia, Pa. 867,141, pub. 1–7–69. Cl. 26.
Legendre Co.: *See*— Sazerac Co., Inc.
Leggitt, S. H., Co., Inc., Marshall, Mich. 867,046, pub. 1–7–69. Cl. 13.
Lelong, Lucien, Inc., Chicago, Ill., to Lilly Dache Cosmetics Inc., Union, N.J. 505,391, ren. 3–25–69. Cl. 6.
Les Fils de Pierre Gilardi, Nice (Alpes-Maritimes), France. 867,317. Cl. 47.
Lever Bros. Co.: *See*— Lever Bros. Ltd.
Lever Bros. Co., New York, N.Y. 867,278, pub. 1–7–69. Cl. 52.
Lever Bros. Co., New York, N.Y. 867,304. Cl. 37.
Lever Bros. Ltd., Port Sunlight, England, to Lever Bros. Co., New York, N.Y. 33,151–2, ren. 3–25–69. Cl. 52.
Lexington Market Authority, Baltimore, Md. 867,293, pub. 1–7–69. Cl. A.
Lilliston Implement Co., Albany, Ga. 744,746, canc. Cl. 23.
Lily-Tulip Cup Corp., New York, N.Y. 867,135, pub. 1–7–69. Cl. 23.
Linn, Donald C., Mount Prospect, Ill. 862,191, cor. Cl. 100.
Lloyd-Kent Interiors, Los Angeles, Calif. 744,883, canc. Cl. 40.
Lockie, Mrs. Stanley M., d.b.a. "Auta" and "By Auta," Alexandria, Va. 867,263, pub. 1–7–69. Cl. 51.
Logetronics Inc., Springfield, Va. 867,145, pub. 1–7–69. Cl. 26.
Lubrication Engineers, Inc., Fort Worth, Tex. 867,061–2, pub. 1–7–69. Cl. 15.
MCA Inc.: *See*— Decca Records, Inc.
Macri, Frank D., Meriden, Conn. 867,126, pub. 1–7–69. Cl. 22.
Mactier Publishing Corp., New York, N.Y. 867,310. Cl. 38.
Magic Car-Pet Travel Trailers: *See*— Oswald, J. C.
Magnetics, Inc., East Butler, Pa. 867,103, pub. 1–7–69. Cl. 21.

Maidenform, Inc., New York, N.Y. 867,223, pub. 1–7–69. Cl. 39.
Malm Fireplaces, Inc., Santa Rosa, Calif. 867,172–3, pub. 1–7–69. Cl. 34.
Marathon Electric Mfg. Corp., Wausau, Wis. 867,098, pub. 4–16–68. Cl. 21.
Marble Electric Corp., Gladstone, Mich. 744,713, canc. Cl. 21.
Markem Corp.: *See*— Markem Machine Co.
Markem Machine Co., to Markem Corp., Keene, N.H. 501,235, ren. 3–25–69. Cl. 11.
Marlin Toy Products, Inc., Horicon, Wis. 867,115, pub. 4–30–68. Cl. 22.
Marsh, Lucien A., d.b.a. Wristline Adjustable Watch Bands, San Francisco, Calif. 867,155, pub. 1–7–69. Cl. 28.
Martin, J. B., Co., Norwich, Conn. 744,894, canc. Cl. 42.
Marx & Haas-Korrekt Co., to Marx-Haas Clothing Co., St. Louis, Mo. 511,203, ren. 3–25–69. Cl. 39.
Marx-Haas Clothing Co.: *See*— Marx & Haas-Korrekt Co.
Massey-Ferguson-Perkins Ltd., London, England. 867,132, pub. 1–7–69. Cl. 23.
Material Handling Equipment Distributors Assn., Chicago, Ill. 867,199, pub. 1–7–69. Cl. 38.
Mattel, Inc., Hawthorne, Calif. 867,127, pub. 12–17–68. Cl. 22.
McNaught Syndicate, Inc., The, New York, N.Y. 744,855, canc. Cl. 38.
McNaught Syndicate, Inc., The, New York, N.Y. 867,202, pub. 1–7–69. Cl. 38.
Mead Johnson & Co., Evansville, Ind. 867,080–2, pub. 1–7–69. Cl. 18.
Mearl Corp., The, Ossining, N.Y. 508,412, ren. 3–25–69. Cl. 16.
Meda-Plast Products Co., Palmyra, N.J. 771,478, canc. Cl. 32.
Mennen Co., The, Morristown, N.J. 744,959, canc. Cl. 51.
Mercantile Stores Co., Inc., New York, N.Y. 867,140, pub. 1–7–69. Cl. 24.
Mercer Plastics Co., Inc., Newark, N.J. 744,613, canc. Cl. 12.
Messenger, Charles, North Hollywood, Calif. 867,090, pub. 1–7–69. Cl. 21.
Meyercord Co., The, Carol Stream (Wheaton), Ill. 507,370, ren. 3–25–69. Cl. 38.
Meyercord Co., The, Carol Stream (Wheaton), Ill. 507,372, ren. 3–25–69. Cl. 38.
Miami Sportswear Co., Miami, to Miami Sportswear Co., Inc., Opa Locka, Fla. 441,948, ren. 3–25–69. Cl. 39.
Miami Sportswear Co., Inc.: *See*— Miami Sportswear Co.
Middlebury Mfg. Co., Inc., Waterbury, Conn. 867,108, pub. 1–7–69. Cl. 21.
Milford Canning Co., Milford, Ill. 256,319, ren. 3–25–69. Cl. 46.
Milmar Associates, Inc., New York, N.Y. 867,219, pub. 1–7–69. Cl. 39.
Mitchell, George W., Jr., d.b.a. Weston of Williamsburg, Williamsburg, Va. 867,156, pub. 1–7–69. Cl. 28.
Model-Foam Inc., Sylvania, Ohio. 867,258, pub. 1–7–69. Cl. 50.
Monogram of California, San Francisco, Calif. 867,185, pub. 1–7–69. Cl. 37.
Montgomery Ward & Co., Inc., Chicago, Ill. 744,626, canc. Cl. 13.
Morrill, Harry L., Jr., Marietta, Ga. 744,994, canc. Cl. 22.
Morris, Philip, Inc., New York, N.Y. 867,068–70, pub. 1–7–69. Cl. 17.
Morton International, Inc.: *See*— Morton Salt Co.
Morton Salt Co., to Morton International, Inc., Chicago, Ill. 509,884, ren. 3–25–69. Cl. 46.
Moses, Samuel A., Hollidaysburg, Pa. 867,124, pub. 1–7–69. Cl. 22.
Mother's Grandma Cookie Co., to Grandma Cookie Co., Portland, Oreg. 276,541, new cert. Cl. 46.
Motorola, Inc., Franklin Park, Ill. 867,142, pub. 1–7–69. Cl. 26.
Mullins Mfg. Corp., Salem, and Warren, to Mullins Mfg. Corp., Salem, Ohio. 441,623, ren. 3–25–69. Cl. 38.
Musolino & Sons, Inc., Alexandria, Va. 744,648, canc. Cl. 15.
National Dairy Products Corp.: *See*— Kraft Foods Co.
National Design Center Delaware Inc., New York, N.Y. 867,204, pub. 1–7–69. Cl. 38.
National Service Industries, Inc., Atlanta, Ga. 867,277, pub. 1–7–69. Cl. 52.
National Steel Construction Co., Newark, Calif. 867,002, pub. 12–5–67. Multiple Class (Classes 2 and 34).
Nationwide Consumer Testing Institute, Inc., Hoboken, N.J. 867,279, pub. 1–23–68. Cl. 100.
Natvar Corp., Woodbridge, N.J. 867,000, pub. 1–7–69. Cl. 1.
Nicholas International Ltd., Toronto, Ontario, Canada. 744,656, canc. Cl. 18.
Noble, Sonna, d.b.a. Sonna Noble School of Knitting and Handcraft, Washington, D.C. 867,291, pub. 1–7–69. Cl. 107.
Noble, Sonna, School of Knitting and Handcraft: *See*— Noble, Sonna.
Non-Tox Chemical Corp., Mamaroneck, N.Y. 744,977, canc. Cl. 52.
Norcross, Inc., New York, N.Y. 442,686, ren. 3–25–69. Cl. 38.
Norcross, Inc., New York, N.Y. 442,741, ren. 3–25–69. Cl. 38.
North American Aviation, Inc.: *See*— North American Rockwell Corp.
North American Rockwell Corp., from North American Aviation, Inc., El Segundo, Calif. 867,094, pub. 1–7–69. Cl. 21.
North State Music: *See*— North State Musical Productions, Inc.
North State Musical Productions, Inc., d.b.a. North State Music, Goldsboro, N.C. 867,180, pub. 1–7–69. Cl. 36.
Nuclear Fallout Shelters of America, Miami, Fla. 744,612, canc. Cl. 12.
Oakes Consumer Catalogs: *See*— Haywood Publishing Co.
Ocean Technology, Inc., Burbank, Calif. 867,148, pub. 1–7–69. Multiple Class (Classes 26 and 38).
Ohio Galvanizing & Mfg. Co., The, Niles, Ohio, to Frick Co., Waynesboro, Pa. 510,304, ren. 3–25–69. Cl. 31.
Old Sturbridge, Inc., Sturbridge, Mass. 867,158, pub. 1–7–69. Cl. 32.
Ore-Ida Foods, Inc., d.b.a. Ore-Ida Potato Products, Ontario, Oreg. 744,937, canc. Cl. 46.
Ore-Ida Potato Products: *See*— Ore-Ida Foods, Inc.
Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y. 867,318. Cl. 50.
Oswald, J. G., d.b.a. Magic Car-Pet Travel Trailers, Elkhart, Ind. 744,679, canc. Cl. 19.
Overseas Media Corp., New York, N.Y. 867,193–4, pub. 1–7–69. Cl. 38.
Ozite Corp., Chicago, Ill. 867,241, pub. 1–7–69. Cl. 42.
Pacific Soap Co., Vernon, Calif. 441,802, ren. 3–25–69. Cl. 4.
Pacific Trail Sportswear: *See*— Apparel, Inc.
Pacific Wood Products Co., Los Angeles, Calif. 867,035, pub. 1–7–69. Cl. 12.
Papercraft Corp., The, Pittsburgh, Pa. 744,842, canc. Cl. 37.
Pappagallo, Inc., New York, N.Y. 867,188, pub. 1–7–69. Cl. 37.
Parke, Davis & Co., Detroit, Mich. 509,735, ren. 3–25–69. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 509,747, ren. 3–25–69. Cl. 18.
Parker-Hannifin Corp., Cleveland, Ohio. 744,634, canc. Cl. 13.
Patterson-Sargent, A Division of Textron Inc.: *See*— Koninklijke Lak-, Vernis- en Verffabriek Molyn & Co.
Peoples Bank of Bloomington, Bloomington, Ill. 867,285, pub. 1–7–69. Cl. 102.
Perlin, Samuel, Roslyn Heights, N.Y. 867,005, pub. 1–7–69. Cl. 2.
Peyster, Maurice C., Inc., New York, N.Y. 744,777, canc. Cl.28.
Phar-Med, Inc., East Detroit, Mich. 744,662, canc. Cl. 18.
Phillips Petroleum Co., Bartlesville, Okla. 867,052, pub. 1–7–69. Cl. 13.
Pillsbury Co., The, Minneapolis, Minn. 867,205, pub. 1–7–69. Cl. 38.
Pioneer Industries, Inc.: *See*— Hickok Mfg. Co., Inc.
Pioneer Shoe Co.: *See*— Bloom, Abraham S.
Plymouth Cordage Industries, Inc., to Emhart Corp., Hartford, Conn. 809,780. Am. 7(d). Cl. 13.
Pneumodynamics Corp.: *See*— Blanchard Machine Co., The.
Portable Lubrication, Inc., Minneapolis, Minn. 867,287, pub. 1–7–69. Cl. 103.
Potlatch Forests, Inc., Pomona, Calif. 744,848, canc. Cl. 37.
Precision Lock Mfg. Co., Inc., Brooklyn, N.Y. 744,762, canc. Cl. 25.
Preston Scientific Inc., Anaheim, Calif. 867,100, pub. 1–7–69. Multiple Class (Classes 21 and 26).
Provident Pharmaceuticals, Inc., Chattanooga, Tenn. 744,660, canc. Cl. 18.
Puritan Chemical Co., Atlanta, Ga. 867,274, pub. 1–7–69. Cl. 52.
Puritan Fashions Corp., New York, N.Y. 867,222, pub. 1–7–69. Cl. 39.
Quant, Mary, Cosmetics Ltd.: *See*— Quant, Mary, Ltd.
Quant, Mary, Ltd., London, from Mary Quant Cosmetics Ltd., Surbiton, Surrey, England. 867,260–1, pub. 1–7–69. Cl. 51.
R.K. Industries: *See*— Klein, Robert.
Radio Corp. of America, New York, N.Y. 867,153–4, pub. 1–7–69. Cl. 26.
Radio Corp. of America, New York, N.Y. 867,289–90, pub. 1–7–69. Cl. 104.
Reda Pump Co., Bartlesville, Okla. 867,099, pub. 9–10–68. Cl. 21.
Reid, Edward S., Hartsville, S.C. 867,161, pub. 1–7–69. Cl. 32.
Reinhart, Inc., Philadelphia, Pa. 867,170, pub. 1–7–69. Cl. 32.
Relton Corp., Arcadia, Calif. 867,022, pub. 1–7–69. Cl. 6.
Research-Cottrell, Inc., Bound Brook, N.J. 867,105, pub. 1–7–69. Cl. 21.
Revlon, Inc., New York, N.Y. 867,319–20. Cl. 51.
Rex, M. A., d.b.a. California Sea Food Co., Los Angeles, to Hunt-Wesson Foods, Inc., Fullerton, Calif. 248,589, ren. 3–25–69. Cl. 46.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., to Carbisulphoil Co., Dallas, Tex. 842,993, new cert. Cl. 51.
Reynolds Metals Co., Richmond, Va. 867,137, pub. 1–7–69. Cl. 23.
Rheingold Breweries, Inc.: *See*— Ruppert, Jacob.
Riddell, Inc., Des Plaines, Ill. 867,019, pub. 1–7–69. Multiple Class (Classes 6, 16, and 22).
Ries Distributors, Inc., Chicago, Ill. 867,027, pub. 1–7–69. Cl. 8.
Riviana Foods Inc.: *See*— Hill Packing Co.
Road Runner Campgrounds, Inc., Hamburg, Ark. 867,284, pub. 1–7–69. Cl. 101.

Robfogel Mill-Andrews Corp., Rochester, N.Y. 867,257, pub. 1–7–69. Cl. 50.
Rohm & Haas Co., Philadelphia, Pa. 251,904, ren. 3–25–69. Cl. 6.
Rolston, Margaret E., Kirksville, Mo. 867,217, pub. 1–7–69. Cl. 39.
Romine Enterprises, Inc., Fort Wayne, Ind. 744,986, canc. Cl. 101.
Roselon Yarns, Inc., Philadelphia, Pa. 867,246, pub. 1–7–69. Cl. 43.
Rossville Packing Co.: *See*— Franklinville Canning Co., The.
Roth, Otto, & Co., Inc., New York, N.Y. 867,313. Cl. 46.
Royal Mfg. Co., Inc., Allentown, Pa. 744,859, canc. Cl. 39.
Ruppert, Jacob, New York, to Rheingold Breweries, Inc., Brooklyn, N.Y. 511,388, ren. 3–25–69. Cl. 48.
Rusco Industries, Inc., d.b.a. Galaxie Window Co., Cleveland, Ohio. 867,036, pub. 1–7–69. Cl. 12.
Ryser Bros. of Wisconsin, Inc., Mount Horeb, Wis. 507,128, ren. 3–25–69. Cl. 46.
S & A Electronics, Inc., Toledo, Ohio. 867,102, pub. 1–7–69. Cl. 21.
S-P Mfg. Corp., The, Cleveland, Ohio. 867,051, pub. 1–7–69. Multiple Class (Classes 13 and 23).
Sachs Quality Stores, Inc., Bronx, N.Y. 867,163, pub. 1–7–69. Cl. 32.
St. Louis Football Cardinals: *See*— Chicago Cardinals Football Club.
Samsonite Corp., Denver, Colo. 867,006, pub. 1–7–69. Cl. 3.
Samsonite Corp., Denver, Colo. 867,008, pub. 1–7–69. Cl. 3.
Sani-Gard Mfg. Co., Los Angeles, Calif. 744,585, canc. Cl. 2.
Sapien Enterprises, Gardena, Calif. 744,839, canc. Cl. 36.
Sav-On, Inc., Yonkers, N.Y. 867,207, pub. 1–7–69. Cl. 38.
Sazerac Co., Inc., d.b.a. Legendre Co., New Orleans, La. 867,255, pub. 1–7–69. Cl. 49.
Schiefer Mfg. Co.: *See*— Fly-Wheel Corp.
Schira Bros.: *See*— Schira, John.
Schira, John, d.b.a. Schira Bros., Cincinnati, Ohio. 744,796, canc. Cl. 28.
Scientific Sound Corp., Pasadena, Calif. 744,913, canc. Cl. 44.
Scott, O. M., & Sons Co., The, Marysville, Ohio. 867,298. Cl. 6.
Screw & Bolt Corp. of America, Pittsburgh, Pa. 867,058, pub. 1–7–69. Cl. 13.
Scripto, Inc., Atlanta, Ga. 867,026, pub. 1–7–69. Cl. 8.
Semi-Elements, Inc., Saxonburg, Pa. 744,717, canc. Cl. 21.
Shelby Metal Products Co., The, Shelby, Ohio. 867,045, pub. 1–7–69. Cl. 13.
Shiseido Co., Ltd., Tokyo, Japan. 867,259, pub. 1–7–69. Multiple Class (Classes 51 and 52).
Shooting Equipment, Inc., Chicago, Ill. 867,092, pub. 1–7–69. Cl. 21.
Signaltron Corp., by change of name from Solari Inc., to Signatronic Co., Ltd., East Elmhurst, N.Y. 804,215–6, new cert. Cl. 26.
Signatronic Co., Ltd.: *See*— Solari Inc. Signaltron Corp.
Silver Mfg. Co., Inc., Michigan City, Ind. 867,224, pub. 1–7–69. Cl. 39.
Simmons Co., New York, N.Y. 506,989, ren. 3–25–69. Cl. 32.
Simpson Timber Co., Seattle, Wash. 867,039, pub. 1–7–69. Cl. 12.
Singer Co., The, New York, N.Y. 867,136, pub. 1–7–69. Cl. 23.
Ski Industries America, New York, N.Y. 867,195, pub. 1–7–69. Cl. 38.
Smith, Hans, Monte Carlo, Monaco. 867,010–11, pub. 1–7–69. Multiple Class (Classes 6 and 10).
Societe Anonyme Le Pippermint, Revel (Haute-Garonne), France. 442,516, ren. 3–25–69. Cl. 49.
Societe Des Usines Chimiques Rhone-Poulenc, Paris, France. 744,665, canc. Cl. 18.
Societe Dite Etablissements Vaskene Et Cie (Societe Anonyme), Salbris, Loir et Cher, France. 867,210, pub. 1–7–69. Cl. 39.
Soft Spot Products Co., The, Passaic, N.J. 867,162, pub. 1–7–69. Cl. 32.
Solari Inc., to Signatronic Co., Ltd., East Elmhurst, N.Y. 744,412, new cert. Cl. 26.
Solari Inc.: *See*— Signaltron Corp.
Sound Publishing Co., Inc., New York, N.Y. 867,309. Cl. 38.
Southern Tire & Patch Co., Inc., Mobile, Ala. 867,042, pub. 8–20–68. Cl. 13.
Spec-Ingot, Inc., Wheatridge, Colo. 744,639, canc. Cl. 14.
Spokesman Publishing Co., Cincinnati, Ohio. 511,242, ren. 3–25–69. Cl. 38.
Sportsgear, Inc., Minneapolis, Minn. 867,303. Cl. 32.
Sportswear, F. & C., Inc., Philadelphia, Pa. 867,214, pub. 1–7–69. Cl. 39.
Sportville Mens Wear, Inc., New York, N.Y. 744,861, canc. Cl. 39.
Sprague Plastan Co., San German, Puerto Rico. 867,110, pub. 1–7–69. Cl. 21.
Stanco Inc., Wilmington, Del., and New York, N.Y., to Humble Oil & Refining Co., Houston, Tex. 252,537, ren. 3–25–69. Multiple Class (Classes 15 and 46).
Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 251,799, ren. 3–25–69. Cl. 6.
Standard Packaging Corp., Stamford, Conn. 867,004, pub. 1–7–69. Cl. 2.
Standard Radio Corp., Kanagawa, Japan. 744,838, canc. Cl. 36.
Standard Toykraft Inc., Brooklyn, N.Y. 867,116, pub. 1–7–69. Cl. 22.
Stanley Comb Products Corp., Brooklyn, N.Y. 867,225, pub. 1–7–69. Cl. 40.
Stauffer Chemical Co., San Francisco, Calif., to Stauffer Chemical Co., New York, N.Y. 505,824, ren. 3–25–69. Cl. 6.
Stauffer Chemical Co., San Francisco, Calif., to Stauffer Chemical Co., New York, N.Y. 507,071, ren. 3–25–69. Cl. 6.
Stevens, J. P., & Co., Inc., New York, N.Y. 867,242–3, pub. 1–7–69. Cl. 42.
Stewart-Warner Corp., Chicago, Ill. 744,735, canc. Cl. 23.
Stitt Ignition Co., to Stitt Spark Plug Co., Columbus, Ohio. 509,224, ren. 3–25–69. Cl. 21.
Stitt Spark Plug Co.: *See*— Stitt Ignition Co.
Stow/Davis Furniture Co., Grand Rapids, Mich. 867,164, pub. 1–7–69. Cl. 32.
Strategic Television Promotions, Ltd., New York, N.Y. 867,322. Cl. 101.
Supreme Equipment & Systems Corp., Brooklyn, N.Y. 867,149, pub. 1–7–69. Cl. 26.
System Analyzer Corp., to Rock Electrical Industries, Inc., Nokomis, Ill. 613,489, cor. Cl. 21.
Tattle Tale Tassel Co., Waterloo, Iowa. 744,875, canc. Cl. 39.
Taylor, Halsey W., Co., The, Warren, Ohio. 867,043, pub. 1–7–69. Cl. 13.
Techni Electronics, Inc., Orange, N.J. 744,741, canc. Cl. 23.
Techni-Rite Electronics, Inc., Warwick, R.I. 746,882, canc. Cl. 26.
Teem Co., Milwaukee, Wis. 744,587, canc. Cl. 2.
Teitelman-Danziger, Inc., Newark, N.J. 744,781, canc. Cl. 28.
Telecomputing Corp., Los Angeles, Calif. 744,765, canc. Cl. 26.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 867,227–31, pub. 1–7–69. Cl. 41.
Tenneco Inc., Houston, Tex. 866,994–5, pub. 7–30–68. Multiple Class (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37, 46, 50, 52, 100, 103, and 105).
Teweles, L., Seed Co., Milwaukee, Wis. 866,997–8, pub. 1–7–69. Cl. 1.
Texaco Inc., New York, N.Y. 867,112, pub. 1–7–69. Cl. 21.
Texize Chemicals, Inc., Mauldin, S.C. 867,276, pub. 1–7–69. Cl. 52.
Textile Mills Co., Chicago, Ill. 744,759, canc. Cl. 24.
Therm-O-Pak Inc., Springfield, Ohio. 744,745, canc. Cl. 23.
Thiokol Chemical Corp., Bristol, Pa. 867,146, pub. 1–7–69. Cl. 26.
Thomas, James L., d.b.a. Hot Dog Tackle Co., Traverse City, Mich. 867,121, pub. 1–7–69. Cl. 22.
Thomson, J. G., & Co., Ltd., Leith, Edinburgh, Scotland. 867,253–4, pub. 1–7–69. Cl. 49.
Tilette Cement Co., Inc., The, New York, N.Y. 744,614, canc. Cl. 12.
Toasta Foods Co., Minneapolis, Minn. 867,250, pub. 8–27–68. Cl.46.
Todd Chemical Co., Inc., Great Neck, N.Y. 867,272, pub. 1–7–69. Cl. 52.
Torette Mfg. Co.: *See*— Delander, John B.
Touristisches Institut Zurich: *See*— Nussbaumer, Willy.
Towlsaver, Inc., Los Angeles, Calif. 867,044, pub. 1–7–69. Multiple Class (Classes 13 and 37).
Tracor, Inc., Austin, Tex. 867,015, pub. 1–7–69. Multiple Class (Classes 6 and 16).
Trailco Mfg. & Sales Co., Hummels Wharf, Pa. 867,087, pub. 1–7–69. Cl. 19.
Tremco Mfg. Co., The, Cleveland, Ohio. 867,037, pub. 1–7–69. Cl. 12.
Trend Mills, Inc., Rome, Ga. 867,233, pub. 1–7–69. Cl. 42.
Union Oil Co. of California, Los Angeles, Calif. 867,288, pub. 1–7–69. Cl. 103.
United Dairy Farmers, Norwood, Ohio. 744,918, canc. Cl. 46.
United Grocers, Ltd., Richmond, Calif. 794,162–3. Am. 7(d). Cl. 46.
U.S. Industrial Publications, Inc., Stamford, Conn. 867,308. Cl. 38.
United States Leasing Corp., from United States Leasing Corp., San Francisco, Calif. 867,280, pub. 1–7–69. Cl. 100.
United States Rubber Co., New York, N.Y. 744,671–2, canc. Cl. 19.
United States Scientific Instruments, Inc., Watertown, Mass. 867,143, pub. 1–7–69. Cl. 26.
Vanda Cosmetics Co.: *See*— Rexall Drug & Chemical Co.
Veneered Metals, Inc., Edison, N.J. 867,300. Cl. 14.
Venetian Marble Co., Dallas, Tex. 867,047, pub. 1–7–69. Cl.13.
Veribest Jewelry Co., Inc., New York, N.Y. 744,790, canc. Cl. 28.
Vision Electronics, Inc., San Antonio, Tex. 867,089, pub. 12–5–67. Multiple Class (Classes 21 and 36).
Volkert Stampings, Inc., Queens Village, N.Y. 867,159, pub. 1–7–69. Cl. 32.
Vulcan Materials Co., Clark, N.J. 867,023, pub. 1–7–69. Cl. 6.
WMI Corp., Evanston, Ill. 867,109, pub. 1–7–69. Cl. 21.
Walsworth Publishing Co., Inc., Marceline, Mo. 867,200, pub. 1–7–69. Cl. 38.
Waterbury Pressed Metal Co., Waterbury, Conn. 744,903, canc. Cl. 44.
Wayside Records: *See*— Wayside Records, Inc.
Wayside Records, Inc., Maynard, from Wayside Records, Sudbury, Mass. 867,176, pub. 1–7–69. Cl. 36.
Wells Badger Industries, Inc., Milwaukee, Wis. 867,038, pub. 1–7–69. Cl. 12.

West Chemical Products, Inc., Long Island City, N.Y. 867,157, pub. 1–7–69. Cl. 29.
West Chemical Products, Inc., Long Island City, N.Y. 867,186, pub. 1–7–69. Cl. 37.
Western Publishing Co., Inc., Racine, Wis. 867,203, pub. 1–7–69. Cl. 38.
Westfield Mfg. Co., The, to The Columbia Mfg. Co., Inc., d.b.a. The Westfield Mfg. Co., Westfield, Mass. 507,863, ren. 3–25–69. Cl. 19.
Weston of Williamsburg: *See*—
Mitchell, George W., Jr.
Whirlpool Corp., Benton Harbor, Mich. 744,981, canc. Cl. 52.
Wile, Julius, Sons & Co., Inc., New York, N.Y. 867,252, pub. 1–7–69. Multiple Class (Classes 47 and 49).
Wilkins Coffee Co.: *See*—
Wilkins, John H., Co., Inc.
Wilkins, John H., Co., Inc., d.b.a. Wilkins Coffee Co., Landover, Md. 867,314. Cl. 46.
Williams, A. R., & Co., Carteret, N.J. 867,021, pub. 1–7–69. Cl. 6.
Nussbaumer, Willy, d.b.a. Touristisches Institut Zurich, Zurich, Switzerland. 867,192, pub. 1–7–69. Cl. 38.
Wilson Pharmaceutical & Chemical Corp., Chicago, Ill. 867,281, pub. 1–7–69. Cl. 100.
Wilton Brass Co., Columbia, Pa. 867,028, pub. 1–7–69. Cl. 8.
Wilton Brass Co., Columbia, Pa. 867,174, pub. 1–7–69. Cl. 34.
Wimelbacher & Rice Inc., to Kayser-Roth Corp., New York, N.Y. 506,252, ren. 3–25–69. Cl. 39.
Winkler, Kaspar, & Co., Zurich, Switzerland. 867,012, pub. 1–7–69. Cl. 6.
Witt Co., The, Cincinnati, Ohio. 867,003, pub. 1–7–69. Cl. 2.
Wolf, Alex, and Leo, New York, N.Y. 744,797, canc. Cl. 28.
Wolverine Supply & Mfg. Co., to Wolverine Toy Co., Pittsburgh, Pa. 255,111, ren. 3–25–69. Cl. 22.
Wolverine Toy Co.: *See*—
Wolverine Supply & Mfg. Co.
Wood Conversion Co., to Conwed Corp., St. Paul, Minn. 504,595, ren. 3–25–69. Cl. 50.
Wood Conversion Co., to Conwed Corp., St. Paul, Minn. 504,963, ren. 3–25–69. Cl. 1.
Woodstream Corp., Lititz, Pa. 867,118–20, pub. 1–7–69. Cl. 22.
Woodward & Lothrop Inc., Washington, D.C. 867,213, pub. 1–7–69. Cl. 39.
Wristline Adjustable Watch Bands: *See*—
Marsh, Lucien A.
Xttrium Laboratories, Inc., Chicago, Ill. 867,017, pub. 1–7–69. Cl. 6.
Yolanda Packing Co.: *See*—
Clemente, Lorenzo.
Yolanda Ravioli Co.: *See*—
Clemente, Lorenzo.

U.S. GOVERNMENT PRINTING OFFICE: 0——1969

OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL. 860

MARCH 1969

MICRO PHOTO DIVISION